

# INDEXABLE MILLING



**A**

Turning

**B**

Milling

**C**

Drilling

**D**Technical  
Information**E**

Index

# B




## **Indexable milling**

Product overview	B2-B3
System overview	B4-B19
Chip breaker overview	B20
Grade overview	B21-B23
Application fields of grades	B24-B25
System code – milling bodies	B26-B27
ISO code – inserts	B28-B29
System code – slot milling	B30
System code – QCH series	B31-B32
Face milling	B33-B102
Square shoulder milling	B103-B132
Profile milling	B133-B150
Slot milling	B151-B162
High feed milling	B163-B172
Bore milling	B173-B174
T-slot milling	B175-B176
Helical milling	B177-B182
Chamfer milling	B183-B194
QCH series	B195-B217
General milling inserts	B218-B229
Recommended cutting data	B230-B263
Trouble shooting	B528
Technical information	B529-B536
Special tools	B541

## Milling inserts




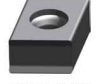




**A**

Turning

								
<b>ANGX-GM</b>	<b>ANGX-LH</b>	<b>APKT-ALH</b>	<b>APKT-APF</b>	<b>APKT-APM</b>	<b>APKT-LH</b>	<b>APKT-NM</b>	<b>APKT-PF</b>	
11 15	11 15	11 16	11 16	07 11 16	11 16	11	11 16	Edge length
B124, B126, B128, B130, B132	B124, B126, B128, B130, B132	B104, B107, B111, B114, B116, B202, B213	B104, B107, B111, B114, B116, B202, B213	B104, B107, B111, B114, B116, B202, B213	B104, B107, B111, B114, B116, B202, B213	B104, B107, B111, B114, B116, B202, B213	B104, B107, B111, B114, B116, B202, B213	Page

**B**

Milling

								
<b>APKT-PM/PR</b>	<b>APKT-XR</b>	<b>APMT</b>	<b>CNE-A/B</b>	<b>HNEX-DR</b>	<b>HNGX-HDR</b>	<b>HNGX-MR</b>	<b>LNCX</b>	
11 15 16	11	11 16	12	09	09	09	18	Edge length
B104, B107, B111, B114, B116, B202, B213	B104, B107, B111, B114, B116, B202, B213	B118	B174	B64	B218	B218	B220	Page

**C**





Drilling

								
<b>LNE32.534</b>	<b>LNKT-GL</b>	<b>LNKT-GM</b>	<b>LNKT-ZR</b>	<b>MPHT-DM</b>	<b>ODHT-GH</b>	<b>ODHT-GL</b>	<b>ODHT-GM</b>	
	08 12 16	08 12 16	12 15 20 25	06 08 12	06	06	06	Edge length
B219	B120, B122	B120, B122	B66, B73, B80	B156, B158, B176	B47	B47	B47	Page

**D**

Technical Information

								
<b>ODHT-LH</b>	<b>ODMT-GM</b>	<b>OFKR-DF</b>	<b>OFKR-DM</b>	<b>OFKR-LH</b>	<b>OFKT-DF</b>	<b>OFKT-DM</b>	<b>OFKT-LH</b>	
06	06	07	07	07	05	05	05	Edge length
B47	B47	B45	B45	B45	B43	B43	B43	Page

								
<b>ONHU-CM</b>	<b>ONHU-GH</b>	<b>ONHU-GL</b>	<b>ONHU-GM</b>	<b>ONHU-PF</b>	<b>ONHU-PM</b>	<b>PNEG-CF</b>	<b>PNEG-CM</b>	
06 08	06	06	06 08	06 08	06 08	11	11	Edge length
B49, B51	B56	B56	B56	B49, B51	B49, B51	B59, B61	B59, B61	Page













































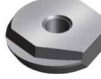
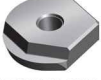

								
<b>PNEG-CR</b>	<b>PNEG-PF</b>	<b>PNEG-PM</b>	<b>PNEG-PR</b>	<b>RCKT-DM</b>	<b>RCKT-DR</b>	<b>RCKT-ER</b>	<b>RCKT-NM</b>	
11	11	11	11	10 12 16 20	12 16 20	12 16 20	12 16 20	Edge length
B59, B61	B58, B61	B58, B61	B58, B61	B89, B92	B89, B92	B89, B92	B89, B92	Page

**E**

Index

								
<b>RDKT-MM</b>	<b>RDKW</b>	<b>ROHX</b>	<b>SDMT</b>	<b>SDMT-DM</b>	<b>SDMT-NM</b>	<b>SDMT-PM</b>	<b>SEEN</b>	
10 12	07 08 10 12 16 20	12 16 20	09	06 09 12 15	09 12	06 09 12 15	12	Edge length
B95, B99, B205	B95, B99, B205	B137	B135	B164, B167, B198, B211	B164	B164, B167, B198, B211	B41	Page

**Milling inserts**

								
<b>SEET-APF</b>	<b>SEET-APM</b>	<b>SEET-APR</b>	<b>SEET-CF</b>	<b>SEET-CM</b>	<b>SEET-CR</b>	<b>SEET-DF</b>	<b>SEET-DM</b>	
09 12	09 12	09 12	12	12	12	12	12 18	Edge length
B77	B77	B77	B35, B37	B35, B37	B35, B37	B35, B37	B35, B37	Page
								
<b>SEET-DR</b>	<b>SEET-EF</b>	<b>SEET-EM</b>	<b>SEET-LH</b>	<b>SEET-PF</b>	<b>SEET-PM</b>	<b>SEET-PR</b>	<b>SEET-W</b>	
12	12	12	12	09 12	09 12	09 12	12	Edge length
B35, B37	B35, B37	B35, B37	B35, B37	B77	B77	B77	B34, B37	Page
								
<b>SEKN</b>	<b>SEKR</b>	<b>SNEG-E</b>	<b>SNEG-GM</b>	<b>SNEG-GR</b>	<b>SNEG-HGR</b>	<b>SNEG-W</b>	<b>SNKN</b>	
12 15	12	15	12 15	12 15 19	15	12	12 15	Edge length
B40	B41	B53	B53	B53	B53	B54	B221	Page
								
<b>SPCN</b>	<b>SPGN</b>	<b>SPKN</b>	<b>SPKR</b>	<b>SPKR-GM</b>	<b>SPKT</b>	<b>SPKW</b>	<b>SPMR</b>	
12 15	12	12 15	12	12 15	12	12	09 12	Edge length
B222	B225	B70	B71	B71	B68	B68	B223	Page
								
<b>SPMT</b>	<b>SPMT-HT</b>	<b>SPMT-KT</b>	<b>SPMT-PM</b>	<b>SPUN</b>	<b>TPKN</b>	<b>TPMR</b>	<b>TPUN</b>	
06 09 12	09 12	06	12	12 15	16 22	11 16 22	11 16 22	Edge length
B135, B184, B186, B188, B190, B192, B194	B224	B135, B224	B178, B180, B182	B225	B75, B226	B227	B227	Page
								
<b>WPGT</b>	<b>WPGT-PM</b>	<b>XEEC</b>	<b>XPHT-GM</b>	<b>XSEQ</b>	<b>ZDET</b>	<b>ZDET-PM</b>	<b>ZOHX-GF</b>	
05 06 08 09	05 06 08 09	12	16 20 25 30 32 40 50	12	08 11	13	12 16 20 25 30 32	Edge length
B169, B171, B200	B169, B171, B200	B87	B139, B141, B143, B145, B196	B152, B154	B134	B134	B147, B149, B209	Page
								
<b>ZOHX-GM</b>	<b>ZPNT</b>							
12 16 20 25 30 32	22							Edge length
B147, B149, B209	B134							Page

**A**

Turning

**B**

Milling

**C**

Drilling










**D**

Technical  
Information

**E**

Index













## Face milling

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
FMA01		 SEET12T3 SEET18T6	45°	✓	✓	✓	✓	✓		<ul style="list-style-type: none"> <li>• Diameter range Ø50 – 315 mm</li> <li>• For steel, stainless steel, cast iron, non-ferrous metals and heatresistant alloys</li> <li>• Milling cutter with positive, soft cutting geometry</li> <li>• Wiper inserts for good surface quality</li> </ul>	B33
FMA02		 SEET12T3	45°	✓	✓	✓	✓	✓		<ul style="list-style-type: none"> <li>• Diameter range Ø50 – 125 mm</li> <li>• For steel, stainless steel, cast iron, non-ferrous metals and heatresistant alloys</li> <li>• Milling cutter with positive, soft cutting geometry</li> <li>• Wide pitch</li> </ul>	B36
FMA03		 SEEN1203 SEKN1203 SEKR1203 SEKN1504 SEKR1504	45°	✓	✓	✓	✓			<ul style="list-style-type: none"> <li>• Diameter range Ø80 – 315 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Milling cutter with positive, soft cutting geometry</li> <li>• Wedge clamping</li> </ul>	B39
FMA04		 OFKT05T3	45°	✓	✓	✓	✓			<ul style="list-style-type: none"> <li>• Diameter range Ø50 – 160 mm</li> <li>• For steel, stainless steel, cast iron and non-ferrous metals</li> <li>• Inserts with eight cutting edges</li> <li>• Screw clamping</li> </ul>	B42
FMA04		 OFKR0704	45°	✓	✓	✓	✓			<ul style="list-style-type: none"> <li>• Diameter range Ø125 – 315 mm</li> <li>• For steel, stainless steel, cast iron and non-ferrous metals</li> <li>• Inserts with eight cutting edges</li> <li>• Wedge clamping</li> </ul>	B44
FMA04		 OD*T0605**	45°	✓	✓	✓	✓			<ul style="list-style-type: none"> <li>• Diameter range Ø50 – 160 mm</li> <li>• For steel, stainless steel, cast iron and non-ferrous metals</li> <li>• Inserts with eight cutting edges</li> <li>• Screw clamping</li> </ul>	B46

✓ Very suitable    ✓ Suitable

**A**  
Turning  
**B**  
Milling  
**C**  
Drilling  
**D**  
Technical Information  
**E**  
Index

**Face milling**

Series	Milling body	Inserts	Kr	Application						Features	Page	
				P	M	K	N	S	H			
FMA07		 ONHU0604 ONHU08T5	45°	✓		✓				✓	<ul style="list-style-type: none"> <li>• Diameter range Ø25 – 50 mm</li> <li>• For steel and cast iron</li> <li>• Inserts with 16 cutting edges</li> </ul>	B48
FMA07		 ONHU0604 ONHU08T5	45°	✓		✓				✓	<ul style="list-style-type: none"> <li>• Diameter range Ø40 – 315 mm</li> <li>• For steel and cast iron</li> <li>• Inserts with 16 cutting edges</li> </ul>	B50
FMA11		 SNEG1205 SNEG1506 SNEG1907	45°	✓	✓	✓			✓		<ul style="list-style-type: none"> <li>• Diameter range Ø63 – 315 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Inserts with eight cutting edges</li> <li>• Double sided, thicker inserts for high stability and deeper cutting depths</li> <li>• Wiper geometry for good surface quality</li> <li>• Normal and fine pitch</li> </ul>	B52
FMA12		 ON*U0604** ONHU08T6	45°	✓	✓	✓			✓		<ul style="list-style-type: none"> <li>• Diameter range Ø63 – 315 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Inserts with 16 cutting edges</li> </ul>	B55
FMD02		 PNEG1105	67°	✓	✓	✓					<ul style="list-style-type: none"> <li>• Diameter range Ø50 – 315 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Inserts with ten cutting edges</li> <li>• Wedge clamping or screw clamping</li> <li>• Normal and fine pitch</li> </ul>	B57
FMD02		 PNEG1105	67°			✓					<ul style="list-style-type: none"> <li>• Diameter range Ø50 – 315 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Inserts with ten cutting edges</li> <li>• Wedge clamping or screw clamping</li> <li>• Normal and fine pitch</li> </ul>	B60

✓ Very suitable    ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling













**D**

Technical Information

**E**

Index













## Face milling

Series	Milling body	Inserts	Kr	Application						Features	Page	
				P	M	K	N	S	H			
FMD02		 HNEX0905	55°			✓					<ul style="list-style-type: none"> <li>Diameter range Ø80 – 315 mm</li> <li>For cast iron</li> <li>Wedge clamping</li> <li>Inserts with twelve cutting edges</li> </ul>	B63
FMD03		 LNKT2007-ZR LNKT2510-ZR	60°	✓		✓					<ul style="list-style-type: none"> <li>Diameter range Ø100 – 400 mm</li> <li>For steel, stainless steel and cast iron</li> <li>Tangential insert with four cutting edges</li> <li>Heavy duty machining for high cutting depths</li> <li>Screw clamping</li> </ul>	B65
FME02		 SPKT1204 SPKW1204	75°	✓	✓	✓					<ul style="list-style-type: none"> <li>Diameter range Ø50 – 125 mm</li> <li>For steel and cast iron</li> <li>Screw clamping</li> </ul>	B67
FME03		 SPKN1203 SPKR1203 SPEX1203 SPKN1504 SPKR1504 SPEX1504	75°	✓	✓	✓					<ul style="list-style-type: none"> <li>Diameter range Ø80 – 400 mm</li> <li>For steel and cast iron</li> <li>Wedge clamping</li> </ul>	B69
FME04		 LNKT1506-ZR	75°	✓		✓					<ul style="list-style-type: none"> <li>Diameter range Ø125 – 315 mm</li> <li>For steel, stainless steel and cast iron</li> <li>Tangential insert with four cutting edges</li> <li>Heavy duty machining for high cutting depths</li> <li>Screw clamping</li> </ul>	B72
FMP01		 TPKN2204	90°	✓	✓	✓			✓		<ul style="list-style-type: none"> <li>Diameter range Ø80 – 315 mm</li> <li>For steel, stainless steel and cast iron</li> <li>Milling cutter with positive, soft cutting geometry</li> <li>Wedge clamping</li> </ul>	B74

✓ Very suitable    ✓ Suitable

**A**  
Turning  
  
**B**  
Milling  
  
**C**  
Drilling  
  
**D**  
Technical Information  
  
**E**  
Index

**Face milling**

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
FMP02		 SEET09T3 SEET1203	90°	✓	✓	✓	✓	✓		<ul style="list-style-type: none"> <li>• Diameter range Ø50 – 315 mm</li> <li>• For steel, stainless steel, cast iron an non-ferrous metals</li> <li>• Screw clamping</li> </ul>	B76
FMP03		 LNKT120608-ZR LNKT1506EN-ZR LNKT2007DN-ZR LNKT2510-ZR	89°	✓		✓				<ul style="list-style-type: none"> <li>• Diameter range Ø50 – 315 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Tangential insert with four cutting edges</li> <li>• Screw clamping</li> </ul>	B79
FMP12		 WNHU0604 WNHU0806	90°	✓		✓				<ul style="list-style-type: none"> <li>• Diameter range Ø50 – 315 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Tangential insert with four cutting edges</li> <li>• Screw clamping</li> </ul>	B81
FMP12		 WNHU0604	90°	✓		✓				<ul style="list-style-type: none"> <li>• Diameter range Ø50 – 315 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Tangential insert with four cutting edges</li> <li>• Screw clamping</li> </ul>	B83
FMWX		 XEEC1209		✓		✓				<ul style="list-style-type: none"> <li>• Diameter range Ø50–125 mm</li> <li>• High feed finishing cutters for steel and cast materials</li> <li>• Inserts with four cutting edges</li> <li>• Reserve insert seats for increased safety</li> <li>• The milling body is only equipped with two opposing inserts</li> </ul>	B86
FMR01		 RCKT10T3 RCKT1204 RCGX1204		✓	✓	✓	✓	✓		<ul style="list-style-type: none"> <li>• Diameter range Ø25 – 63 mm</li> <li>• For steel, stainless steel, cast iron, non-ferrous metals and heatresistant alloys</li> <li>• Screw clamping</li> </ul>	B88

✓ Very suitable    ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**



Technical Information

**E**

Index



## Face milling

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
FMR02		 RCGX1204 RCKT1204 RCMW1204 RCKT1606 RCKT2006		✓	✓	✓	✓	✓		<ul style="list-style-type: none"> <li>• Diameter range Ø50 – 250 mm</li> <li>• For steel, stainless steel, cast iron, non-ferrous metals and heatresistant alloys</li> <li>• Screw clamping</li> </ul>	B90
FMR03		 RD**0803 RD**10T3 RD**1204		✓	✓	✓			✓	<ul style="list-style-type: none"> <li>• Diameter range Ø15 – 50 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Screw clamping</li> <li>• Mould and die industry</li> </ul>	B94
FMR03		 RDKW0702 RDKW1003		✓	✓	✓			✓	<ul style="list-style-type: none"> <li>• Diameter range Ø15 – 50 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Screw clamping</li> <li>• Mould and die industry</li> </ul>	B96
FMR04		 RD**1204 RD**1605 RD**2006		✓	✓	✓			✓	<ul style="list-style-type: none"> <li>• Diameter range Ø50 – 200 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Screw clamping</li> <li>• Mould and die industry</li> </ul>	B98
FMR04		 RDKW1003 RDKW12T3 RDKW1604		✓	✓	✓			✓	<ul style="list-style-type: none"> <li>• Diameter range Ø42 – 200 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Screw clamping</li> <li>• Mould and die industry</li> </ul>	B100

✓ Very suitable    ✓ Suitable

A

Turning

B

Milling

C

Drilling













D

Technical Information

E

Index

**Square shoulder milling**

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
EMP01		 APKT0702 APKT11T3 APKT1604	90°	✓	✓	✓	✓	✓		<ul style="list-style-type: none"> <li>• Diameter range Ø12 – 63 mm</li> <li>• For steel, stainless steel, cast iron, non-ferrous metals and heatresistant alloys</li> <li>• Weldon shank</li> <li>• For square shoulder milling, slot milling and ramping</li> <li>• Milling cutter with positive, soft cutting geometry</li> <li>• Inserts with two cutting edges</li> </ul>	B103
EMP01		 APKT11T3 APKT0702 APKT1604	90°	✓	✓	✓	✓	✓		<ul style="list-style-type: none"> <li>• Diameter range Ø12 – 63 mm</li> <li>• For steel, stainless steel, cast iron, non-ferrous metals and heatresistant alloys</li> <li>• Weldon shank</li> <li>• For square shoulder milling, slot milling and ramping</li> <li>• Milling cutter with positive, soft cutting geometry</li> <li>• Inserts with two cutting edges</li> </ul>	B106
EMP02		 APKT0702 APKT11T3 APKT1604	90°	✓	✓	✓	✓	✓		<ul style="list-style-type: none"> <li>• Diameter range Ø40–250 mm</li> <li>• For steel, stainless steel, cast iron, non-ferrous metals and heat-resistant alloys</li> <li>• For square-shoulder, slot and plunge milling</li> <li>• Milling cutter with positive, soft cutting geometry</li> <li>• INSERTs with two cutting edges</li> </ul>	B109
EMP03		 APKT11T3	90°	✓	✓	✓	✓			<ul style="list-style-type: none"> <li>• Diameter range Ø50–100 mm</li> <li>• For steel, stainless steel, cast iron, non-ferrous metals and heat-resistant alloys</li> <li>• For square-shoulder, slot and plunge milling</li> <li>• Milling cutter with positive, soft cutting geometry</li> <li>• INSERTs with two cutting edges</li> </ul>	B113
EMP04		 APKT11T3	90°	✓	✓	✓	✓			<ul style="list-style-type: none"> <li>• Diameter range Ø20–40 mm</li> <li>• For steel, stainless steel, cast iron, non-ferrous metals and heat-resistant alloys</li> <li>• For square-shoulder, slot and plunge milling</li> <li>• Milling cutter with positive, soft cutting geometry</li> <li>• INSERTs with two cutting edges</li> </ul>	B115
EMP05		 APMT1135	90°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø25–40 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Straight shank</li> <li>• For square-shoulder, slot and plunge milling</li> <li>• Milling cutter with positive, soft cutting geometry</li> <li>• INSERTs with two cutting edges</li> <li>• Machining in z-direction possible</li> </ul>	B117

✓ Very suitable    ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling











**D**

Technical Information

**E**

Index

## Square shoulder milling

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
EMP09		 LNKT0804PNR LNKT1206PNR LNKT1607PNR	90°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø40 – 125 mm</li> <li>• Sharp cutting edge geometry combined with robust tangential inserts</li> <li>• First choice for large cutting depths with high feed rates.</li> <li>• Specially designed cutting edge with high precision control for high quality 90 degree square shoulder milling</li> </ul>	B119
EMP09		 LNKT1206PNR	90°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø40 – 80 mm</li> <li>• Sharp cutting edge geometry combined with robust tangential inserts</li> <li>• First choice for large cutting depths with high feed rates.</li> <li>• Specially designed cutting edge with high precision control for high quality 90 degree square shoulder milling</li> </ul>	B121
EMP13		 ANGX1105 ANGX1506	90°	✓	✓	✓	✓			<ul style="list-style-type: none"> <li>• Diameter range Ø40 – 250 mm</li> <li>• For steel, cast iron and non-ferrous metals</li> <li>• Double sided, thicker inserts for high stability and deeper cutting depths</li> <li>• Inserts with four cutting edges</li> </ul>	B123
EMP13		 ANGX1105 ANGX1506	90°	✓	✓	✓	✓			<ul style="list-style-type: none"> <li>• Diameter range Ø25 – 40 mm</li> <li>• For steel, cast iron and non-ferrous metals</li> <li>• Double sided, thicker inserts for high stability and deeper cutting depths</li> <li>• Inserts with four cutting edges</li> </ul>	B125
EMP13		 ANGX1105 ANGX1506	90°	✓	✓	✓	✓			<ul style="list-style-type: none"> <li>• Diameter range Ø25 – 40 mm</li> <li>• For steel, cast iron and non-ferrous metals</li> <li>• Double sided, thicker inserts for high stability and deeper cutting depths</li> <li>• Inserts with four cutting edges</li> </ul>	B127

✓ Very suitable    ✓ Suitable

A

Turning

B

Milling

C

Drilling





D

Technical Information







E

Index

### Square shoulder milling

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
EMP13		 ANGX1105 ANGX1506	90°	✓	✓	✓	✓			<ul style="list-style-type: none"> <li>• Diameter range Ø50 – 80 mm</li> <li>• For steel, cast iron and non-ferrous metals</li> <li>• Double sided, thicker inserts for high stability and deeper cutting depths</li> <li>• Inserts with four cutting edges</li> </ul>	B129
EMP13		 ANGX1105 ANGX1506	90°	✓	✓	✓	✓			<ul style="list-style-type: none"> <li>• Diameter range Ø25 – 40 mm</li> <li>• For steel, cast iron and non-ferrous metals</li> <li>• Double sided, thicker inserts for high stability and deeper cutting depths</li> <li>• Inserts with four cutting edges</li> </ul>	B131

### Profile milling

BMR01		 ZDET08T2 & SPMT0603 ZDET1103 & SPMT0603 ZDET13T2 & SDMT0903 ZPNT2204 & SPMT1204		✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø20 – 63 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Very suitable for roughing of big moulds</li> <li>• Inserts with three cutting edges</li> </ul>	B133
BMR02		 ROHX1203 ROHX1604 ROHX2005		✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø12 – 20 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Very suitable for finishing in mould and die industry</li> <li>• Inserts with two cutting edges</li> </ul>	B136
BMR03		 XPHT16 XPHT20 XPHT25 XPHT30 XPHT32 XPHT40		✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø16 – 40 mm</li> <li>• For steel and cast iron</li> <li>• Very suitable for roughing in mould and die industry</li> <li>• Tool with high stability</li> </ul>	B138

✓ Very suitable    ✓ Suitable

A

Turning

B

Milling

C

Drilling











D

Technical Information

E

Index

## Profile milling

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
BMR03		 XPHT16 XPHT20 XPHT25 XPHT30 XPHT32 XPHT40 XPHT50		✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø16 – 40 mm</li> <li>• For steel and cast iron</li> <li>• Very suitable for roughing in mould and die industry</li> <li>• Tool with high stability</li> </ul>	B140
BMR03		 XPHT20 XPHT25 XPHT30 XPHT32 XPHT40 XPHT50		✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø16 – 40 mm</li> <li>• For steel and cast iron</li> <li>• Very suitable for roughing in mould and die industry</li> <li>• Tool with high stability</li> </ul>	B142
BMR03		 XPHT40 XPHT50		✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø16 – 40 mm</li> <li>• For steel and cast iron</li> <li>• Very suitable for roughing in mould and die industry</li> <li>• Tool with high stability</li> </ul>	B144
BMR04		 ZOHX12 ZOHX16 ZOHX20 ZOHX25 ZOHX30 ZOHX32		✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø12 – 32 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Very suitable for finishing in mould and die industry</li> <li>• Inserts with two cutting edges</li> </ul>	B146
BMR04		 ZOHX12 ZOHX16 ZOHX20 ZOHX25 ZOHX30 ZOHX32		✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø12 – 32 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Very suitable for finishing in mould and die industry</li> <li>• Inserts with two cutting edges</li> </ul>	B148

✓ Very suitable    ✓ Suitable

A

Turning

B

Milling

C

Drilling









D

Technical Information

E

Index

**Slot milling**

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
SMP01		 XSEQ1202 XSEQ1203 XSEQ12T3 XSEQ1204 XSEQ12T4	90°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø100 – 250 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Bore with keyway</li> <li>• Groove widths 4, 5, 6, 7, 8 mm</li> </ul>	B151
SMP01		 XSEQ1202 XSEQ1203 XSEQ12T3 XSEQ1204 XSEQ12T4	90°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø63 – 160 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Groove widths 4, 5, 6, 7, 8 mm</li> </ul>	B153
SMP03		 MPHT0603 MPHT0803 MPHT1204	90°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø80 – 200 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Bore with keyway</li> <li>• Groove widths 8, 10, 12, 16, 18, 20 mm</li> </ul>	B155
SMP03		 MPHT0603 MPHT0803 MPHT1204	90°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø80 – 200 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Groove widths 8, 10, 12, 16, 18, 20 mm</li> </ul>	B157
SMP05		 QC16L QC22L	90°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø25 – 44 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Groove widths range 1,1 – 4,8 mm</li> </ul>	B159

✓ Very suitable    ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling









**D**

Technical Information



**E**

Index

## High-feed milling



Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
XMR01		 SDMT06T2 SDMT09T3 SDMT1204 SDMT1505	15°	✓	✓	✓				<ul style="list-style-type: none"> <li>Diameter range Ø20 – 40 mm</li> <li>For steel, stainless steel and cast iron</li> <li>Inserts with four cutting edges</li> <li>Ramping possible</li> <li>Double clamping system for inserts</li> </ul>	B163
XMR01		 SDMT06T2 SDMT09T3 SDMT1204 SDMT1505	15°	✓	✓	✓				<ul style="list-style-type: none"> <li>Diameter range Ø40 – 125 mm</li> <li>For steel, stainless steel and cast iron</li> <li>Inserts with four cutting edges</li> <li>Ramping possible</li> <li>Double clamping system for inserts</li> </ul>	B165
XMR01		 WPGT0503 WPGT0604	11°- 22°	✓	✓	✓				<ul style="list-style-type: none"> <li>Diameter range Ø20 – 40 mm</li> <li>For steel, stainless steel and cast iron</li> <li>Inserts with three cutting edges</li> <li>Ramping possible</li> <li>Double clamping system for inserts</li> </ul>	B168
XMR01		 WPGT0604 WPGT0806 WPGT0907	11°- 22°	✓	✓	✓				<ul style="list-style-type: none"> <li>Diameter range Ø42 – 160 mm</li> <li>For steel, stainless steel and cast iron</li> <li>Inserts with three cutting edges</li> <li>Ramping possible</li> <li>Double clamping system for inserts</li> </ul>	B170

## Bore milling







XMP01		 CNE12	90°	✓	✓	✓				<ul style="list-style-type: none"> <li>Diameter range Ø80 – 400 mm</li> <li>For steel, stainless steel and cast iron</li> <li>Also for face and square shoulder milling</li> </ul>	B173
-------	---	--	-----	---	---	---	--	--	--	--	------

✓ Very suitable    ✓ Suitable

### T-slot milling

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
TMP01		 MPHT0603 MPHT0803 MPHT1204	90°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø21 – 60 mm</li> <li>• For cast iron</li> <li>• Groove widths 9, 11, 14, 18, 22, 28 mm</li> </ul>	B175

### Helical milling

HMP01		 APKT1504 & SPMT1204	90°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø40 – 50 mm</li> <li>• For steel and cast iron</li> <li>• Weldon shank</li> </ul>	B177
HMP01		 APKT1504 & SPMT1204	90°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø50 – 80 mm</li> <li>• For steel and cast iron</li> <li>• With JT coupling</li> </ul>	B179
HMP01-EC		 APKT1504 & SPMT1204	90°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø50 – 80 mm</li> <li>• For steel and cast iron</li> <li>• With JT coupling</li> <li>• With indexable head</li> </ul>	B181

✓ Very suitable    ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**













Technical  
Information

**E**

Index







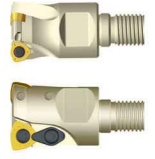







## Chamfer milling

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
CMZ01		 SPMT1204	30°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø12 – 32 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Chamfer milling cutter 30°</li> </ul>	B185
CMZ01		 SPMT1204	30°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø12 – 32 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Chamfer milling cutter 30°</li> </ul>	B183
CMA01		 SPMT1204	45°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø12 – 32 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Chamfer milling cutter 45°</li> <li>• Weldon shank</li> </ul>	B187
CMA01		 SPMT1204	45°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø12 – 32 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Chamfer milling cutter 45°</li> <li>• Weldon shank</li> </ul>	B189
CMD01		 SPMT1204	60°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø12 – 32 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Chamfer milling cutter 60°</li> <li>• Weldon shank</li> </ul>	B191
CMD01		 SPMT1204	60°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø12 – 32 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Chamfer milling cutter 60°</li> <li>• Weldon shank</li> </ul>	B193

✓ Very suitable    ✓ Suitable

**A**  
Turning  
  
**B**  
Milling  
  
**C**  
Drilling  
  
**D**  
Technical Information  
  
**E**  
Index

**Indexable heads - QCH series**

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
QCH-XPHT		 XPHT16 XPHT20 XPHT25 XPHT30 XPHT32		✓	✓	✓				<ul style="list-style-type: none"> <li>Diameter range Ø16 – 32 mm</li> <li>For steel and cast iron</li> <li>Very suitable for roughing in mould and die industry</li> </ul>	B195
QCH-SDMT		 SDMT06T2 SDMT09T3 SDMT1204	15°	✓	✓	✓				<ul style="list-style-type: none"> <li>Diameter range Ø20 – 40 mm</li> <li>For steel, stainless steel and cast iron</li> <li>Inserts with four cutting edges</li> <li>Ramping possible</li> <li>Double clamping system for inserts</li> </ul>	B197
QCH-WPGT		 WPGT0503 WPGT0604 WPGT0806	11°-22°	✓	✓	✓				<ul style="list-style-type: none"> <li>Diameter range Ø16 – 42 mm</li> <li>For steel, stainless steel and cast iron</li> <li>Inserts with three cutting edges</li> <li>Ramping possible</li> <li>Double clamping system for inserts</li> </ul>	B199
QCH-APKT		 APKT11T3 APKT1604	90°	✓	✓	✓	✓	✓		<ul style="list-style-type: none"> <li>Diameter range Ø16–40 mm</li> <li>For steel, stainless steel, cast iron, non-ferrous metals and heat-resistant alloys</li> <li>For square-shoulder, slot and plunge milling</li> <li>Milling cutter with positive, soft cutting geometry</li> <li>INSERTs with two cutting edges</li> <li>For metric ISO threads according to DIN standard only</li> </ul>	B201
QCH-RD		 RDKW0702 RDKW10T3 RDKW1605		✓	✓	✓			✓	<ul style="list-style-type: none"> <li>Diameter range Ø15 – 42 mm</li> <li>For steel, stainless steel and cast iron</li> <li>Screw clamping</li> <li>Mould and die industry</li> <li>For two different thicknesses of inserts</li> </ul>	B204
QCH-RD		 RDKW0702 RDKW1003 RDKW12T3 RDKW1604		✓	✓	✓			✓	<ul style="list-style-type: none"> <li>Diameter range Ø15 – 42 mm</li> <li>For steel, stainless steel and cast iron</li> <li>Screw clamping</li> <li>Mould and die industry</li> <li>For two different thicknesses of inserts</li> </ul>	B206

✓ Very suitable    ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling


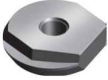






**D**

Technical Information

**E**

Index

## QCH series

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
QCH-ZOHX		 ZOHX16 ZOHX20 ZOHX25 ZOHX30 ZOHX32		✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø16 – 32 mm</li> <li>• For steel, stainless steel and cast iron</li> <li>• Very suitable for finishing in mould and die industry</li> <li>• Inserts with two cutting edges</li> </ul>	B208
QCH-SDMT-Q		 SDMT09T3		✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø16–40 mm&lt;BR&gt;</li> <li>• For steel, stainless steel, cast iron, non-ferrous metals and heat-resistant alloys&lt;BR&gt;</li> <li>• For square-shoulder, slot and plunge milling&lt;BR&gt;</li> <li>• Milling cutter with positive, soft cutting geometry&lt;BR&gt;</li> <li>• Inserts with two cutting edges&lt;BR&gt;</li> <li>• Only for Q-thread according to ZCC-CT factory standard</li> </ul>	B210
QCH-APKT-Q		 APKT11T3	90°	✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø20 – 40 mm&lt;BR&gt;</li> <li>• For steel, stainless steel and cast iron&lt;BR&gt;</li> <li>• Inserts with four cutting edges&lt;BR&gt;</li> <li>• Ramping possible&lt;BR&gt;</li> <li>• Double clamping system for inserts&lt;BR&gt;</li> <li>• Only for Q-thread according to ZCC-CT factory standard</li> </ul>	B212
QCH-SPGT-Q		 SPGT0502		✓	✓	✓				<ul style="list-style-type: none"> <li>• Diameter range Ø16 – 20 mm&lt;BR&gt;</li> <li>• For steel, stainless steel and cast iron&lt;BR&gt;</li> <li>• For deburring and chamfer milling&lt;BR&gt;</li> <li>• Soft cutting milling cutter with large, positive cutting edge geometry&lt;BR&gt;</li> <li>• Inserts with four cutting edges&lt;BR&gt;</li> <li>• Only for Q-thread according to ZCC-CT factory standard</li> </ul>	B214

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

**Notes**

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical  
Information

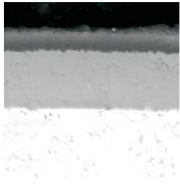
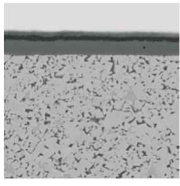
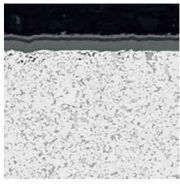
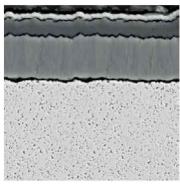
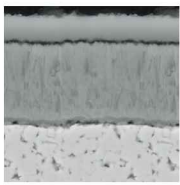
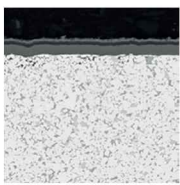
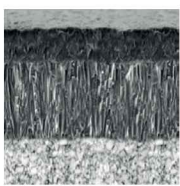

**E**

Index

## Chip breaker overview

	Finishing	Medium machining	Roughing	
<b>A</b> Turning	DF	DM	DR	
	APF	APM	-	
	PF	PM	PR	
	GF	GM	GR	
	GL	GM	GH	
	-	HGR	-	
	-	-	ZR	
	-	XR	-	
	-	MM	-	
	MO-2	MO-1	MO-3	
<b>B</b> Milling	EF	EM	-	
	APF	APM	-	
	DF	DM	-	
	PF	PM	PR	
	GF	GM	GR	
	GL	GM	GH	
	-	HGR	-	
	E	E	-	
	-	-	ZR	
	-	XR	-	
<b>C</b> Drilling	-	MM	-	
	CF	CM	CR	
	DF	DM	DR	
	EDFR	DER	DER	
	PF	PM	PR	
	GF	GM	GR	
	GL	GM	GH	
	-	-	ZR	
	-	XR	-	
	MO-2	MO-1	MO-3	
<b>D</b> Technical Information	EF	EM	-	
	NM	NM	-	
	LH	LH	LH	
	ALH	ALH	ALH	
	<b>E</b> Index			

**Coated cemented carbide CVD**

Grade	ISO	Micro structure	Grade description
<b>YBC302</b>	P20 - P35		CVD coated P20-P35 carbide grade for medium operation to roughing of steel at higher cutting speed. Optimal performance of wear resistance and toughness for a wide application field.
<b>YBC301</b>	P20 - P35		CVD coated P20-P35 carbide grade for medium operation to roughing of steel at lower cutting speed.
<b>YBC401</b>	P30 - P50 M30 - M40		CVD coated P30-P50/M30-M40 carbide grade for roughing operation of steel at lower cutting speed and unstable condition.
<b>YBM251</b>	P20 - P30 M15 - M35		CVD coated P20-P30/M15-M35 carbide grade for medium to roughing operation in stainless steel and steel with wide application field. Good wear resistance and capability against plastic deformation at normal cutting speed.
<b>YBM253</b>	M15 - M35		CVD coated M15-M35 carbide grade for medium to roughing operation in stainless steel with wide application field. High wear resistance and capability against plastic deformation at higher cutting speed.
<b>YBM351</b>	P25 - P40 M20 - M40		CVD coated P25-P40/M25-M40 carbide grade for roughing operation in stainless steel and steel. Good wear resistance and edge stability at normal cutting speed.
<b>YBD152</b>	K10 - K25		CVD coated K10-K25 carbide substrate. Optimized for medium to roughing operation of cast iron. Good wear resistance and toughness at higher cutting speed.
<b>YBD252</b>	K20 - K35		CVD coated K20-K35 carbide substrate. Optimized for medium to roughing operation of cast iron and Steel. Good wear resistance and toughness at higher cutting speed.

**A**

Turning

**B**

Milling

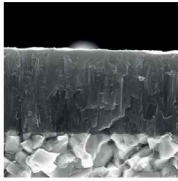
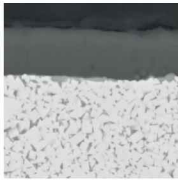
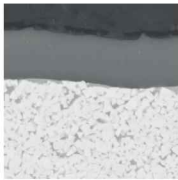

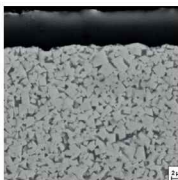
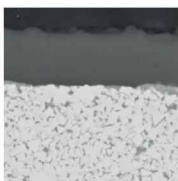
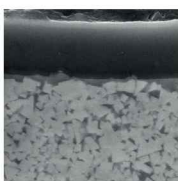
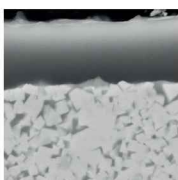
**C**

Drilling

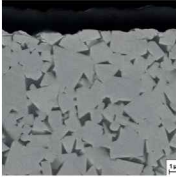
**D**Technical  
Information**E**

Index

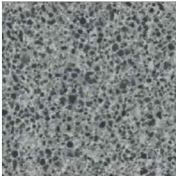
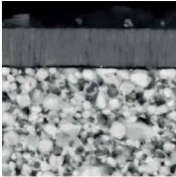
## Coated cemented carbide PVD

Grade	ISO	Micro structure	Grade description
<b>A</b> Turning	<b>YBG101</b>	N05–N20 	PVD coated N05–N20 carbide substrate for finishing to semi-finishing in aluminium materials. Coating only on the top face, in combination with the aluminium chip breakers, prevents built-up edges and gives a smooth cut.
	<b>YBG102</b>	S05 - S15 	PVD coated S05–S15 carbide substrate for finishing to medium application of super alloy material, stainless steel and aluminum. Good wear resistance in a wide application field.
<b>B</b> Milling	<b>YBG202</b>	P10 - P30 M10-M25 	PVD coated P10–P30/M10–M25 carbide substrate for finishing to medium application of stainless steel and steel (milling). Good wear resistance in a wide application field.
	<b>YBG212</b>	P25 - P35 M25-M40 	PVD coated M25–M40/P25–P35 carbide substrate for steel and stainless steel. Especially for inner insert at drilling operation.
<b>C</b> Drilling	<b>YBS203</b>	S15 – S25 	Turning and milling grades for processing heat-resistant materials. A special carbon substrate and the latest PVD coating technology enable a very good wear behaviour, high fracture toughness and high thermal stability.
	<b>YBG205</b>	P10 - P30 M20 - M40 S15-S25 	PVD multilayer coated P10–P30/M20–M40/S15–S25 carbide substrate for finishing to medium machining of stainless steel, super alloys and steel (milling). Excellent wear resistance and thermal stability in a wide range of applications.
<b>D</b> Technical Information	<b>YB9320</b>	P10 - P30 M10-M25 	PVD multilayer coated P10–P30/M10–M25 carbide substrate for finishing to medium machining of stainless steel, super alloys and steel (grooving/milling). Optimised coating stability for higher wear resistance and thermal stability in a wide range of applications.
	<b>YBG302</b>	P15 - P30 M25 - M40 	PVD coated P15–P30/M25–M40 carbide substrate for medium roughing application of stainless steel and steel (milling). Good wear resistance and toughness.
<b>E</b> Index			

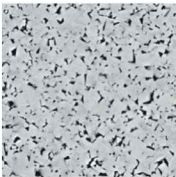

**Coated cemented carbide PVD**

Grade	ISO	Micro structure	Grade description
<b>YBS303</b>	S25 - S35		Milling grade for machining titanium alloys. A tough carbide substrate and the latest PVD coating technology with increased impact resistance and high thermal stability.

**Cermet**

Grade	ISO	Micro structure	Grade description
<b>YNG151</b>	P05 - P15		Uncoated P05-P15 cermet grade for fine finishing operation of steel and stainless steel. Good resistance against plastic deformation for good surface finishing.
<b>YNG151C</b>	P05 - P15		PVD coated P05-P15 cermet grade for fine finishing operation of steel and stainless steel. Good wear resistance and capability against plastic deformation for good surface roughness.

**Uncoated cemented carbide**

Grade	ISO	Micro structure	Grade description
<b>YD101</b>	N05 - N25 K05 - K20		Uncoated K05-K20/N05-N20 carbide substrate for fine to medium application in aluminum and other material.
<b>YD201</b>	K10 - K30 N10 - N30		Uncoated K10-K30/N10-N30 carbide substrate for medium application in aluminum and other material.

**A**

Turning

**B**

Milling

**C**

Drilling

**D**Technical  
Information**E**

Index



## Application fields of grades – indexable milling

	ISO	HC <sup>1</sup> (CVD)	HC <sup>1</sup> (PVD)	HT	HC <sup>2</sup>	HW	PCBN/PCD
A Turning	P01		YBG102		YNG151C		
	P10		YBG202	YNG151			
	P20	YBC301	YBG205				
	P30	YBC302				YC305	
	P40	YBC401	YBG302				
		YBM351	YB9320				
		YBM253					
B Milling	M01		YBG102		YNG151C		
	M10	YBM251	YBG202	YNG151			
	M20	YBM253	YBG205				
	M30	YBM351	YBG302			YC305	
	M40	YBC401	YB9320				
C Drilling	K01		YBG102				
	K10	YBD152	YBG152				
	K20	YBD252	YBG202			YD201	
	K30						
	K40						
D Technical Information	N01					YD051	
	N10		YBG101			YD101	
	N20		YBG202			YD201	
	N30						
E Index	S01		YBG102				
	S10		YBG202				
	S20		YBG205				
	S30		YBS203				
			YBS303				
F	H01		YBG102				
	H10						
	H20						
	H30						

<b>P</b>	Steel
<b>M</b>	Stainless steel
<b>K</b>	Cast iron

<b>N</b>	Non-ferrous metals
<b>S</b>	Heat-resistant alloys
<b>H</b>	Hardened materials

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated carbide  
 HW Uncoated carbide

**Notes**

Dotted lines for writing notes.

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical  
Information

**E**


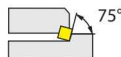
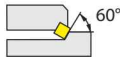
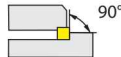

Index

## FM A 12 050 – A22 O – N 06 – 04 (L) (C)

1 2 3 4 5 6 7 8 9 10 11

Type	
Code	Description
BM	Profile milling
CM	Chamfer milling
EM	Square shoulder milling
FM	Face milling
HM	Helical milling
SM	Slot milling
TM	T-slot milling
XM	Special

1

Entering angle	
A	
E	
D	
P	
R	

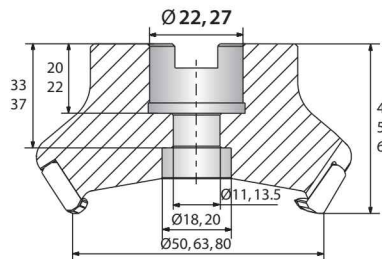
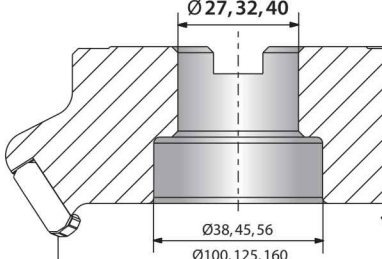
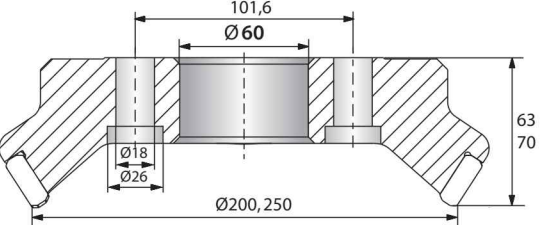
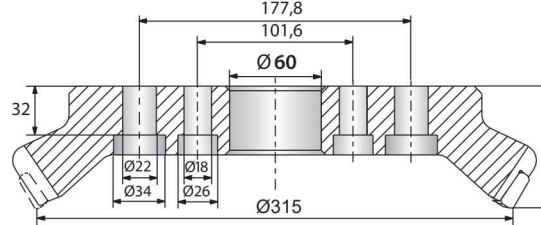
2

Serial number
---------------

3












Nominal diameter [mm]	
Code	Description
025	25
050	50
160	160
315	315
...	

4








Type and size of tool holders			
Code	Type	Code	Type
A	Nominal diameter Ø50 – 80 mm	B	Nominal diameter Ø100 – 160 mm
			
C	Nominal diameter Ø200 – 250 mm	D	Nominal diameter Ø315 mm
			
G	Straight shank	XP	Weldon shank
K	Bore with keyway		

5









With respect to mounting please adhere to the information provided by the tool holder manufacturer.

Insert shape	
A 	C 
H 	L 
M 	O 
P 	R 
S 	T 
W 	X Special
Z Special	

6

Clearance angle	
B 	C 
D 	E 
F 	N 
P 	

7

Cutting edge length l [mm]	
Insert shape	
	
A	C, M
	
H, O, P	L
	
R	S
	
T	W

8

Number of teeth

9

Cutting direction	
Code	Description
L	Left

10

With inner cooling

11



Tools with B coupling and inner coolant supply require the following spare parts:





Coolant clamp screw



Coolant shower plate



Spare parts (B coupling with inner coolant supply)

		B27	B32	B40	B40
	∅	80	100	125	160
	Coolant clamp screw	LDB27C	LDB32C	LDB40C	LDB40C
	Coolant shower plate	B27-002-CP	B32-002-CP	B40-002-CP	B40-003-CP

When purchasing tools with inner coolant supply and B coupling these spare parts are included in delivery.

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

**S P K N 12 04 ED T21K R – DM**

**1 2 3 4 5 6 7 8 9 10**

**A**

Turning

**B**

Milling

**C**












Drilling








**D**





Technical Information

**E**

Index

Insert shape	
A 	C 
H 	L 
M 	O 
P 	R 
S 	T 
W 	X Special
Z Special	















Clearance angle	
B 	C 
D 	E 
F 	N 
P 	









Tolerance class			
			
Code	I.C [mm]	m [mm]	S [mm]
A	±0,025	±0,005	±0,025
C	±0,025	±0,013	±0,025
E	±0,025	±0,025	±0,025
F	±0,013	±0,005	±0,025
G	±0,025	±0,025	±0,130
H	±0,013	±0,013	±0,025
J	±0,05-0,13	±0,005	±0,025
K	±0,05-0,13	±0,013	±0,025
L	±0,05-0,13	±0,025	±0,025
M	±0,05-0,13	±0,08-0,18	±0,130
N	±0,05-0,13	±0,08-0,18	±0,025
U	±0,08-0,25	±0,13-0,38	±0,130

**1**

**2**

**3**

Fastening features (metric)	
Insert shape	
A 	B 
C 	F 
G 	H 
J 	M 
N 	Q 
R 	T 
U 	W 
X Special	

Cutting edge length l [mm]	
Insert shape	
	
A	C, M
	
H, O, P	L
	
R	S
	
T	W

**4**

**5**

Insert thickness S [mm]			
Code	S	Code	S
00	0,79	05	5,56
T0	0,99	T5	5,95
01	1,59	06	6,35
T1	1,98	T6	6,75
02	2,38	07	7,94
T2	2,58	09	9,52
03	3,18	T9	9,72
T3	3,97	11	11,11
04	4,76	12	12,70
T4	4,96		

**6**

Angle			
Code	Kr	Code	an
A	45°	A	3°
D	60°	B	5°
E	75°	C	7°
F	85°	D	15°
P	90°	E	20°
Z	Special	F	25°
		G	30°
		N	0°
		P	11°
		Z	Special

**7**

Chamfer							
Code	Type	Code	Angle	Code	Width [mm]	Code	Position
F		0	5°	0	0,10	K	
E		1	10°	1	0,15	P	
T		2	15°	2	0,20	W	
S		3	20°	3	0,25	-	
		4	25°	4	0,30		
		5	30°	5	0,35		
				6	0,40		
				7	0,45		

**8**

Cutting direction	
Code	Description
R	Right
L	Left
N	Right and left

**9**

Chip breaker overview  
(on page B20)

**10**

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

# Indexable milling System code – slot milling

**SM P 03 – 160 × 16 – K 40 – M P 12 – 12 L**

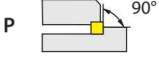
**1 2 3 4 5 6 7 8 9 10 11 12**

**A**

Turning

Type	
Code	Description
SM	Slot milling cutter

**1**

Entering angle


**2**

**B**

Milling

Serial number
---------------

**3**

Nominal diameter [mm]
-----------------------

**4**

Cutting width [mm]
--------------------

**5**

**C**

Drilling

Tool holder type			
Code	Description	Code	Description
A	A type	B	B type
C	C type	D	D type
K	With feather key		



**6**

Diameter of mounting hole [mm]
--------------------------------



**7**

**D**

Technical Information

Insert shape	
M	
S	

**8**

Clearance angle	
N	
P	

**9**

Insert size [mm]
------------------

**10**

Number of teeth
-----------------

**11**

Cutting direction	
Code	Description
R	Right
L	Left

**12**

**E**

Index

**QCH – 35 – SDMT 09 – Q 18 – 03**

**1      2      3      4      5      6      7**

Series [mm]	
Code	Description
QCH	Indexable head system




Nominal diameter [mm]	
Code	Description
16	16
20	20
25	25
35	35
...	

Insert shape

**1**

**2**

**3**

Cutting edge length l [mm]	
A	
R	
S	

Thread type	
Code	Description
M	Metric
Q	Q thread

Thread size [mm]	
Code	Description
8	8
10	10
12	12
14	14
...	

**4**

**5**

**6**

Number of teeth

**7**

**A**

Turning

**B**

Milling

**C**

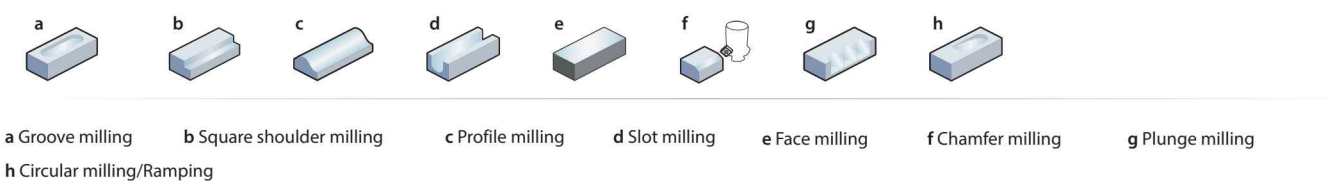
Drilling

**D**

Technical Information

**E**

Index





**A**
**G 25 – QCH – Q 12 – 250 C – (ZJ) (115)**
**1**
**2**
**3**
**4**
**5**
**6**
**7**
**8**
**9**

Turning

Clamping form	
Code	Description
<b>G</b>	Cylindrical
<b>XP</b>	Weldon

Clamping diameter [mm]	
Code	Description
<b>12</b>	12
<b>16</b>	16
<b>20</b>	20
<b>25</b>	25
<b>32</b>	32

Series [mm]	
Code	Description
<b>QCH</b>	Indexable head system

**1**
**2**
**3**
**B**

Milling

Thread type	
Code	Description
<b>M</b>	Metric
<b>Q</b>	Q thread

Thread size [mm]	
Code	Description
<b>8</b>	8
<b>10</b>	10
<b>12</b>	12
<b>14</b>	14
...	

Total length [mm]	
Code	Description
<b>85</b>	85
<b>150</b>	150
<b>200</b>	200
...	

**4**
**5**
**6**
**C**

Drilling

Material	
Code	Description
<b>C</b>	Solid carbide
<b>S</b>	Steel

Shank	
Code	Description
<b>ZJ</b>	Conical
–	Cylindrically stepped

Taper length [mm]	
Code	Description
<b>90</b>	90
<b>115</b>	115
...	

**7**
**8**
**9**
**D**

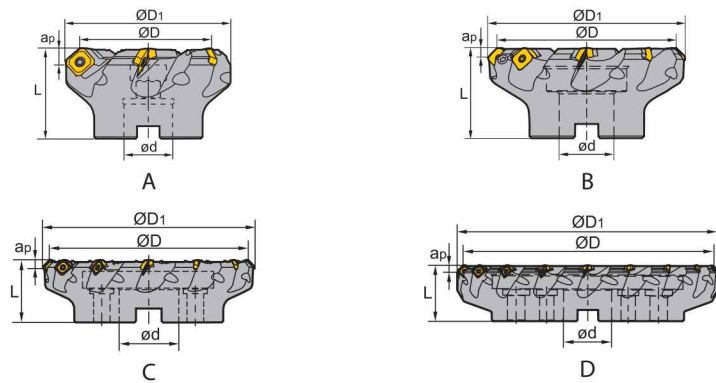
Technical Information

**E**

Index

Face milling

FMA01 Kr: 45° 



Article	*	Stock		Dimensions [mm]					Teeth	Coupling	kg	Inserts
		R	L	ØD	ØD <sub>1</sub>	ød	L	a <sub>p max</sub>				
FMA01-050-A22-SE12-04	● ○	50	61	22	40	6	4	A	0.3	SEET12T3		
FMA01-050-A22-SE12-04C	* ● ○	50	61	22	40	6	4	A	0.3			
FMA01-063-A22-SE12-05	● ○	63	74	22	40	6	5	A	0.5			
FMA01-063-A22-SE12-05C	* ● ○	63	74	22	40	6	6	A	1.2			
FMA01-080-A27-SE12-06	● ●	80	91	27	50	6	6	A	1.2			
FMA01-080-A27-SE12-06C	* ● ○	80	91	27	50	6	6	A	1.2			
FMA01-100-B32-SE12-07	● ○	100	107	32	50	6	7	B	1.2			
FMA01-100-B32-SE12-07C	* ○ ○	100	107	32	50	6	7	B	1.2			
FMA01-125-B40-SE12-08	● ●	125	136	40	63	6	8	B	2.6			
FMA01-125-B40-SE12-08C	* ○ ○	125	136	40	63	6	8	B	2.6			
FMA01-160-B40-SE12-10	● ●	160	170	40	63	6	10	B	4.3			
FMA01-160-B40-SE12-10C	* ○ ○	160	170	40	63	6	10	B	4.3			
FMA01-200-C60-SE12-12	● ○	200	210	60	63	6	12	C	7.6			
FMA01-250-C60-SE12-14	● ○	250	260	60	63	6	14	C	13.5			
FMA01-315-D60-SE12-18	● ○	315	325	60	70	6	18	D	20.8			
FMA01-100-B32-SE18-04	○ ○	100	120	32	63	10	4	B	1.2		SEET18T6	
FMA01-125-B40-SE18-05	○ ○	125	145	40	63	10	5	B	2.6			
FMA01-160-C40-SE18-06	○ ○	160	180	40	63	10	6	C	4.3			
FMA01-200-C60-SE18-08	● ○	200	220	60	63	10	8	C	7.6			
FMA01-250-C60-SE18-10	● ○	250	270	60	63	10	10	C	13.5			
FMA01-315-D60-SE18-12	○ ○	315	335	60	80	10	12	D	20.8			

● Ex stock ○ On demand

\* With internal cooling

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230



A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

**A**

Turning

**B**

Milling

**C**

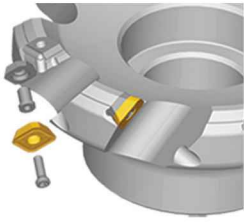






Drilling

**D**

Technical Information

**E**

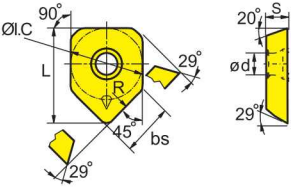

Index

Spare parts					
	Insert	SEET12T3	SEET12T3	SEET18T6	
	ØD	50-100	125 - 315	100- 315	
	Screw (insert)	I60M3.5×10 (2.7 Nm)	I60M3.5×12 (2.7 Nm)	I60M5×17 (6.7 Nm)	
	Screw (shim)		SM5×7XA	SM8×9XA	
	Shim		S13BS	S18BS	
	Wrench (shim)		WH35L	WH50L	
	Wrench (insert)	WT15IS	WT15IS		
	Wrench (insert)			WT20IT	

## Milling inserts

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

SEET	L	I.C	S	d
12 T3	17.82	13.4	3.97	4.1

SE** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW									
	P	M	K	N	S	H																				
	ISO	R	bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
		SEET12T3-W		9.46																						

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

Grade selection > B24

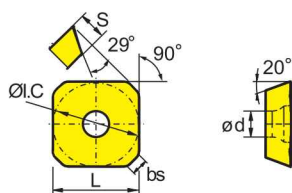
Technical info > B527

Cutting data > B230

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

SEET	L	I.C	S	d
<b>12 T3</b>	13.4	13.4	3.97	4.1
<b>18 T6</b>	18	18	6.1	5.5

**Milling inserts**



SE** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	ISO	bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	SEET12T3-CF	2.55							○	●															
	SEET12T3-CM	2.55							●	●															
	SEET12T3-CR	2.55							● ●		○														
	SEET12T3-DF	2.55	● ●			○ ●						○						○			○	○			
	SEET12T3-DM	2.55	● ● ● ●			○ ●						○				● ●									
	SEET18T6-DM	2.29	●			●																			
	SEET12T3-DR	2.55	● ●				●		○			○													
	SEET12T3-EF	2.55										○							●						
	SEET12T3-EM	2.55					○ ●					○							●						
	SEET12T3-LH	2.55										○												● ●	

● Ex stock    ○ On demand

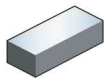
HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A** Turning  
**B** Milling  
**C** Drilling  
**D** Technical Information  
**E** Index

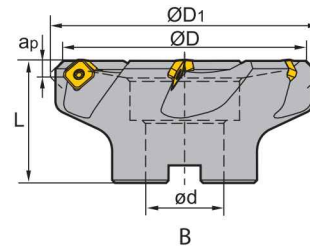
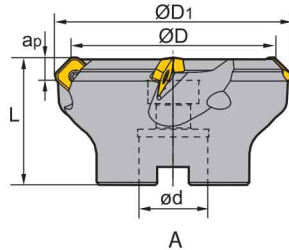


## Face milling

FMA02 Kr: 45°



Coarse and differential pitch



Article	* Stock	Dimensions [mm]					Teeth	Coupling	kg	Inserts
		ØD	ØD <sub>1</sub>	ød	L	a <sub>p max</sub>				
FMA02-050-A22-SE12-03	●	50	61	22	40	6	3	A	0.4	SEET12T3
FMA02-063-A22-SE12-04	●	63	74	22	40	6	4	A	0.6	
FMA02-080-A27-SE12-04	●	80	91	27	50	6	4	A	1.3	
FMA02-100-B32-SE12-05	●	100	107	32	50	6	5	B	1.3	
FMA02-125-B40-SE12-06	○	125	131	40	63	6	6	B	2.6	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts		
	<b>Insert</b>	<b>SEET12T3</b>
	<b>ØD</b>	<b>50-125</b>
	Screw (insert)	I60M3.5×10 (2.7 Nm)
	Wrench (insert)	WT15IS



**Milling inserts**

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

SEET	L	I.C	S	d
12 T3	17.82	13.4	3.97	4.1

SE** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>		⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●								
	<b>M</b>		⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●								
	<b>K</b>								⊗	⊗					●		⊗								
	<b>N</b>								⊗								⊗								
	<b>S</b>			⊗	⊗				⊗	⊗	⊗	⊗	⊗	⊗											
	<b>H</b>																								
ISO	R	bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
		9.46							○							●					○	○			

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**Milling inserts**

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

SEET	L	I.C	S	d
12 T3	13.4	13.4	3.97	4.1

SE** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>		⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●								
	<b>M</b>		⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●								
	<b>K</b>								⊗	⊗					●		⊗								
	<b>N</b>								⊗								⊗								
	<b>S</b>			⊗	⊗				⊗	⊗	⊗	⊗	⊗	⊗											
	<b>H</b>																								
ISO		bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
		2.55							○			●													
		2.55							●		●														
		2.55							●	●		○													

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

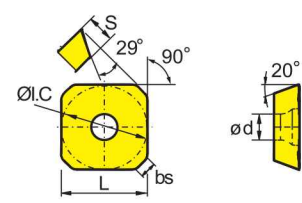






**E**

Index

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SEET	L	I.C	S	d
12 T3	13.4	13.4	3.97	4.1

## Milling inserts

SE** milling insert		HC <sup>1</sup> (CVD)								HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW							
		P																						
		M																						
		K																						
		N																						
		S																						
		H																						
ISO		bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	SEET12T3-DF	2.55	●	●			○	●					○					○				○		
	SEET12T3-DM	2.55	●	●	●	●	○	●				○				●	●							
	SEET12T3-DR	2.55	●	●			●		○			○						○						
	SEET12T3-EF	2.55										○				●								
	SEET12T3-EM	2.55					○	●				○				●								
	SEET12T3-LH	2.55									○												●	●

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

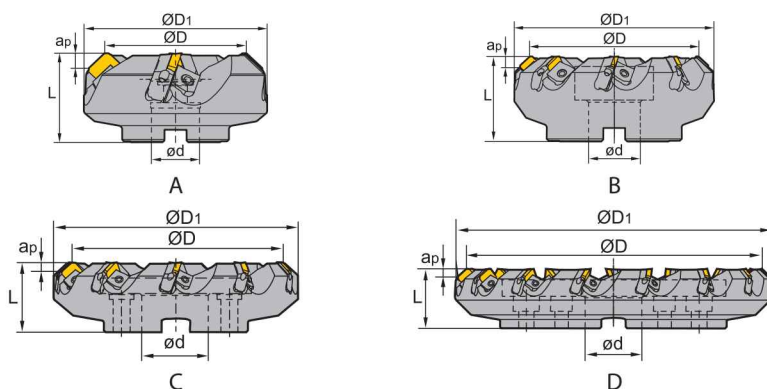
Grade selection > B24

Technical info > B527

Cutting data > B230

Face milling

FMA03 Kr: 45°



Article	*	Stock		Dimensions [mm]					Teeth	Coupling	kg	Inserts
		R	L	ØD	ØD <sub>1</sub>	ød	L	a <sub>p max</sub>				
FMA03-080-A27-SE12-04		○	○	80	103	27	50	5.5	4	A	1.8	SEEN1203 SEKN1203 SEKR1203
FMA03-100-B32-SE12-05		○	○	100	122	32	50	5.5	5	B	2.4	
FMA03-125-B40-SE12-06		○	○	125	147	40	63	5.5	6	B	4.4	
FMA03-160-B40-SE12-08		○	○	160	181	40	63	5.5	8	B	6.4	
FMA03-200-C60-SE12-10		○	○	200	221	60	63	5.5	10	C	8.5	
FMA03-250-C60-SE12-12		○	○	250	270	60	63	5.5	12	C	14.1	
FMA03-315-D60-SE12-15		○	○	315	353	60	63	5.5	15	D	22.2	SEKN1504 SEKR1504
FMA03-080-A27-SE15-04		○		80	103	27	50	7.5	4	A	1.7	
FMA03-100-B32-SE15-05		○		100	122	32	50	7.5	5	B	2.3	
FMA03-125-B40-SE15-06		○		125	147	40	63	7.5	6	B	4.2	
FMA03-160-B40-SE15-08		○		160	181	40	63	7.5	8	B	6.1	
FMA03-200-C60-SE15-10		○		200	221	60	63	7.5	10	C	8.3	
FMA03-250-C60-SE15-12		○		250	270	60	63	7.5	12	C	13.6	
FMA03-315-D60-SE15-15		○	○	315	353	60	63	7.5	15	D	21.8	

● Ex stock    ○ On demand

\* With internal cooling

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230





**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

Spare parts

	Insert	SEEN1203 SEKN1203 SEKR1203	SEKN1504 SEKR1504
	ØD	80- 315	80- 315
	Adjustable screw	LOM5×15.1	LOM5×15.1
	Cassette (left)	LSE12L	LSE15L
	Cassette (right)	LSE12R	LSE15R
	Screw (wedge)	DM8×21X (10.2 Nm)	DM8×21X (10.2 Nm)
	Wedge (left)	W01L	W01L
	Wedge (right)	W01R	W01R
	Wrench (locator)	WT20T	WT20T
	Wrench (wedge)	WH40T	WH40T



- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SEKN	L	I.C	S
<b>12 03</b>	12.7	12.7	3.18
<b>15 04</b>	15.875	15.875	4.76

## Milling inserts

SE** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
ISO	bs	P	M	K	N	S	H	P	M	K	N	S	H											
		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	SEKN1203AFN	1.8	○																					
	SEKN1203AFTN	1.8	●	●	●	○	○					○									●	●		○
	SEKN1504AFTN	1.6	●	○	●	●										●								
	SEKN1504AZ	1.6	○																					○

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SEEN	L	I.C	S
12 03	12.7	12.7	3.18

### Milling inserts

SE** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
	<b>P</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	●									
	<b>M</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	●									
	<b>K</b>							●								●								
	<b>N</b>							●								●								
	<b>S</b>		●		●			●	●	●	●	●	●	●										
	<b>H</b>																							
ISO	bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	SEEN1203AFTN	1.8																		●				

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
HT Uncoated cermet  
HC<sup>2</sup> Coated cermet  
HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

### Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SEKR	L	I.C	S
12 03	12.7	12.7	3.18

SE** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
	<b>P</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	●									
	<b>M</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	●									
	<b>K</b>							●								●								
	<b>N</b>							●								●								
	<b>S</b>		●		●			●	●	●	●	●	●	●										
	<b>H</b>																							
ISO	bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	SEKR1203AFN	1.8	●								○													

● Ex stock ○ On demand

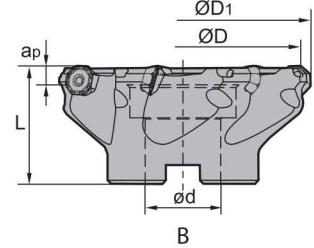
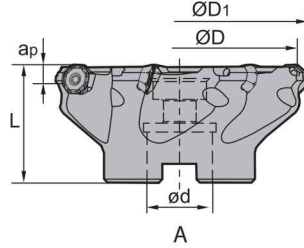
HC<sup>1</sup> Coated carbide  
HT Uncoated cermet  
HC<sup>2</sup> Coated cermet  
HW Uncoated carbide

## Face milling

FMA04 Kr: 45°



Screw Clamping



Article	*	Stock		Dimensions [mm]					Teeth	Coupling	kg	Inserts
		R	L	ØD	ØD <sub>1</sub>	ød	L	a <sub>p max</sub>				
FMA04-050-A22-OF05-04	●			50	56	22	40	3.5	4	A	0.3	OFKT05T3
FMA04-050-A22-OF05-05	●			50	56	22	40	3.5	5	A	0.4	
FMA04-050-A22-OF05-05C	* ○			50	56	22	40	3.5	5	A	0.4	
FMA04-063-A22-OF05-05	●			63	69	22	40	3.5	5	A	0.5	
FMA04-063-A22-OF05-05C	* ○			63	69	22	40	3.5	5	A	0.5	
FMA04-080-A27-OF05-06	● ○			80	86	27	50	3.5	6	A	0.8	
FMA04-080-A27-OF05-06C	* ●			80	86	27	50	3.5	6	A	0.8	
FMA04-100-B32-OF05-07	● ○			100	106	32	50	3.5	7	B	1.2	
FMA04-100-B32-OF05-07C	* ○			100	106	32	50	3.5	7	B	1.2	
FMA04-125-B40-OF05-08	●			125	130	40	63	3.5	8	B	2.7	
FMA04-125-B40-OF05-08C	* ○			125	130	40	63	3.5	8	B	2.7	
FMA04-160-B40-OF05-10	●			160	165	40	63	3.5	10	B	5.1	

● Ex stock ○ On demand

\* With internal cooling

### Spare parts

	Insert	OFKT05T3 50-63	OFKT05T3 80-160
	Screw (insert)	I60M4×8.4 (3.4 Nm)	I60M4×10 (3.4 Nm)
	Wrench (insert)	WT15IS	WT15IS



System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

OFKT	L	I.C	S	d
05 T3	5.26	12.7	3.97	4.4

### Milling inserts

OF** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
		P	M	K	N	S	H																	
ISO		R	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	OFKT05T3-DF	0.5									●	○												
	OFKT05T3-DM	0.5				○	●				●	○						●						
	OFKT05T3-LH	0.5																					●	

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

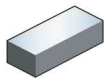
Technical Information

**E**

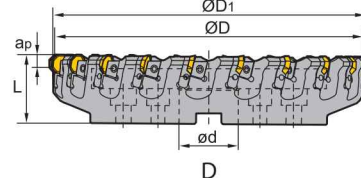
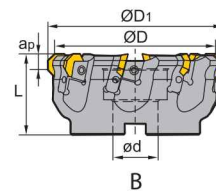
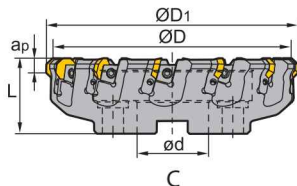
Index

## Face milling

FMA04 Kr: 45°



Wedge



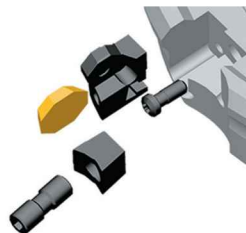
Article	*	Stock		Dimensions [mm]					Teeth	Coupling	kg	Inserts
		R	L	ØD	ØD <sub>1</sub>	ød	L	a <sub>p max</sub>				
FMA04-125-B40-OF07-08	○			125	136	40	63	5	8	B	3.9	OFKR0704
FMA04-160-B40-OF07-10	○			160	171	40	63	5	10	B	5.9	
FMA04-200-C60-OF07-12	○			200	211	60	63	5	12	C	7.6	
FMA04-250-C60-OF07-16	○			250	261	60	63	5	16	C	13.3	
FMA04-315-D60-OF07-20	○	○		315	321	60	63	5	20	D	20.3	

● Ex stock    ○ On demand

\* With internal cooling

### Spare parts

	Insert	OFKR0704
	ØD	125 - 315
	Adjustable screw	LOM5×15.1
	Cassette (left)	LOF07L
	Cassette (right)	LOF07R
	Screw (wedge)	DM8×21X (10.2Nm)
	Wedge (left)	W02L
	Wedge (right)	W02R
	Wrench (locator)	WT20T
	Wrench (wedge)	WH40T






System code > B26

Grade selection > B24

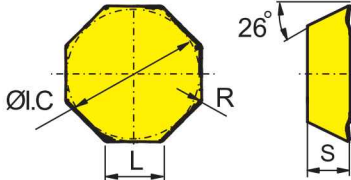

















Technical info > B527

Cutting data > B230

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

OFKR	L	I.C	S
07 04	7.45	17.94	4.76

**Milling inserts**

OF** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
		<b>P</b>																							
		<b>M</b>																							
		<b>K</b>																							
		<b>N</b>																							
		<b>S</b>																							
		<b>H</b>																							
ISO		R	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	OFKR0704-DF	0.8																							
	OFKR0704-DM	0.8																							
	OFKR0704W-DM	0.8																							
	OFKR0704-LH	0.8																							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

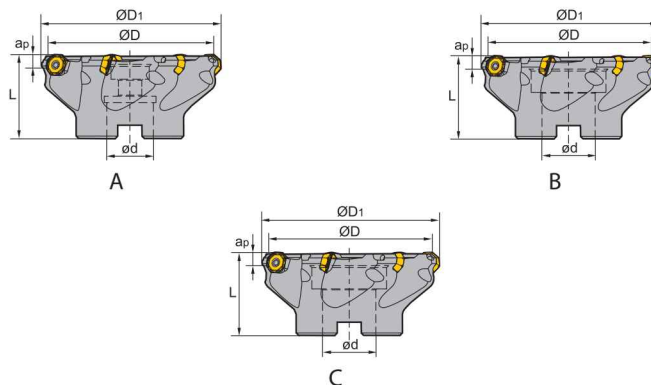



## Face milling

FMA04 Kr: 45°



Screw Clamping





Article	*	Stock	Dimensions [mm]					Teeth	kg	Inserts
			ØD	ØD <sub>1</sub>	ød	L	a <sub>p max</sub>			
FMA04-050-A22-OD06-04C	*	●	50	60	22	40	4	4	0.284	 OD*T0605**
FMA04-063-A22-OD06-05C	*	●	63	73	22	40	4	5	0.409	
FMA04-080-A27-OD06-06C	*	●	80	90	27	50	4	6	1.017	
FMA04-100-A32-OD06-07C	*	●	100	110	32	50	4	7	1.536	
FMA04-125-B40-OD06-08		○	125	135	40	63	4	8	2.931	
FMA04-160-C40-OD06-10		○	160	170	40	63	4	10	3.838	

● Ex stock ○ On demand

\* With internal cooling

### Spare parts

	Insert	OD*T0605**
	ØD	50-160
	Screw (insert)	I60M5x13 (6.7 Nm)
	Wrench (insert)	WT20IS




System code > B26

Grade selection > B24






Technical info > B527

Cutting data > B230

**Milling inserts**

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

ODHT
06 05
06 05

OD**milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW							
		P																					
		M																					
		K																					
		N																					
		S																					
		H																					
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	ODHT060508-GH				●			●	●						●								
	ODHT060508-GL				○				○						●								
	ODHT060508-GM	●			●		●								●								
	ODHT060508-LH																					●	○
	ODMT060512-GM														○								

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

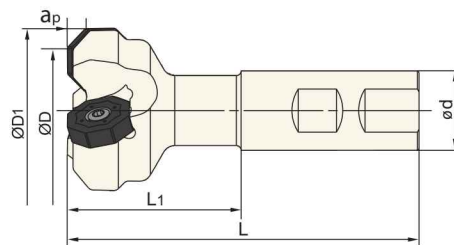
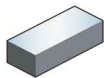
**A** Turning  
**B** Milling  
**C** Drilling  
**D** Technical Information  
**E** Index





## Face milling

FMA07 Kr: 45°



Weldon shank

Article	*	Stock	Dimensions [mm]						Teeth	kg	Inserts
			ØD	ØD <sub>1</sub>	ød	L <sub>1</sub>	L	a <sub>p max</sub>			
FMA07-025-XP20-ON06-02		○	25	37	20	45	95	4	2	0.2	ONHU0604
FMA07-025-XP20-ON06-02C	*	○	25	37	20	45	95	4	2	0.2	
FMA07-032-XP25-ON06-02C	*	○	32	44	25	55	111	4	2	0.4	
FMA07-040-XP25-ON06-03		○	40	52	25	50	106	4	3	0.4	ONHU08T5
FMA07-032-XP25-ON08-02		○	32	47	25	55	111	5	2	0.4	
FMA07-040-XP25-ON08-03		○	40	55	25	55	111	5	3	0.5	
FMA07-040-XP25-ON08-03C	*	○	40	55	25	55	111	5	3	0.5	
FMA07-050-XP25-ON08-04		○	50	65	25	55	111	5	4	0.6	

● Ex stock ○ On demand

\* With internal cooling

Spare parts			
	Insert	ONHU0604	ONHU08T5
	ØD	25-40	32-50
	Screw (insert)	I60M4×10 (3.4 Nm)	I60M5×13 (6.7 Nm)
	Wrench (insert)	WT15IS	
	Wrench (insert)		WT20IT



- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

ONHU	L	I.C	S	d
06 04	6.58	15.875	4.76	4.4
08 T5	8.39	20.2	5.77	5.3

**Milling inserts**

ON**milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>M</b>	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>K</b>					●	●	●							●									
	<b>N</b>							●							●									
	<b>S</b>		●	●				●	●	●	●	●	●											
	<b>H</b>																							
ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	ONHU060408-CM							○																
	ONHU08T512-CM		○					○																
	ONHU060408-PF	0.8	○	○		●				○														
	ONHU08T508-PF	0.8	○	○		○				○				○										
	ONHU060408-PM	0.8	●	●	●	●								●										
	ONHU08T508-PM	0.8	○	○		○	○																	

● Ex stock ○ On demand

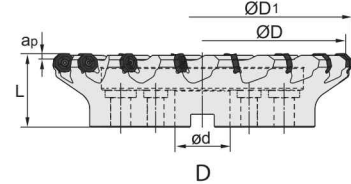
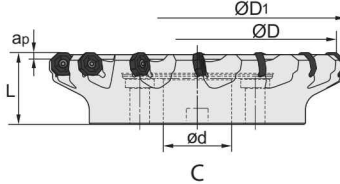
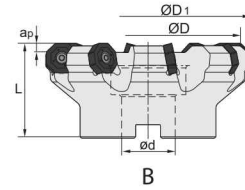
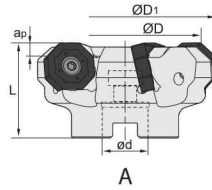
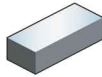
HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A** Turning  
**B** Milling  
**C** Drilling  
**D** Technical Information  
**E** Index



## Face milling

FMA07 Kr: 45°



Article	*	Stock		Dimensions [mm]					Teeth	Coupling	kg	Inserts	
		R	L	ØD	ØD <sub>1</sub>	ød	L	a <sub>p max</sub>					
FMA07-050-A22-ON06-05		○	○	50	62	22	40	4	5	A	0.3	ONHU0604	
FMA07-050-A22-ON06-05C	*	○		50	62	22	40	4	5	A	0.3		
FMA07-063-A22-ON06-06		○		63	75	22	40	4	6	A	0.5		
FMA07-063-A22-ON06-06C	*	○		63	75	22	40	4	6	A	0.5		
FMA07-080-A27-ON06-07C	*	○		80	92	27	50	4	7	A	1		
FMA07-080-B27-ON06-07		○		80	92	27	50	4	7	B	1		
FMA07-100-B32-ON06-08		○		100	112	32	63	4	8	B	1.9		
FMA07-100-B32-ON06-08C	*	○		100	112	32	63	4	8	B	1.9		
FMA07-125-B40-ON06-09		○		125	137	40	63	4	9	B	3.5		
FMA07-125-B40-ON06-09C	*	○		125	137	40	63	4	9	B	3.5		
FMA07-160-C40-ON06-11		○	○	160	172	40	63	4	11	C	4.3		
FMA07-200-C60-ON06-13		○		200	212	60	63	4	13	C	6.4		
FMA07-250-C60-ON06-15		○		250	262	60	63	4	15	C	13.4		
FMA07-315-D60-ON06-17		○		315	327	60	80	4	17	D	21.9		
FMA07-063-A22-ON08-05		○		63	78	22	40	5	5	A	0.5		ONHU08T5
FMA07-063-A22-ON08-05C	*	○		63	78	22	40	5	5	A	0.5		
FMA07-080-A27-ON08-06C	*	○		80	95	27	50	5	6	A	0.9		
FMA07-080-B27-ON08-06		○	○	80	95	27	50	5	6	B	0.9		
FMA07-100-B32-ON08-07		○		100	115	32	63	5	7	B	1.8		
FMA07-100-B32-ON08-07C	*	○		100	115	32	63	5	8	B	3.1		
FMA07-125-B40-ON08-08		○	○	125	140	40	63	5	8	B	3.1		
FMA07-125-B40-ON08-08C	*	○		125	140	40	63	5	8	B	3.1		
FMA07-160-C40-ON08-10		○	○	160	175	40	63	5	10	C	4.1		
FMA07-200-C60-ON08-12		○	○	200	215	60	63	5	12	C	6.1		
FMA07-250-C60-ON08-14		○	○	250	265	60	63	5	14	C	12		
FMA07-315-D60-ON08-16		○	○	315	330	60	80	5	16	D	21		

● Ex stock ○ On demand

\* With internal cooling

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

Spare parts			
Insert	ONHU0604	ONHU08T5	
ØD	50- 315	63- 315	
	Screw (insert)	I60M4×10 (3.4 Nm)	I60M5×13 (6.7 Nm)
	Wrench (insert)	WT15IS	
	Wrench (insert)		WT20IT

**Milling inserts**

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

ONHU	L	I.C	S	d
<b>06 04</b>	6.58	15.875	4.76	4.4
<b>08 T5</b>	8.39	20.2	5.77	5.3

ON**milling insert		HC <sup>1</sup> (CVD)					HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW										
	<b>P</b>																							
	<b>M</b>																							
	<b>K</b>																							
	<b>N</b>																							
	<b>S</b>																							
	<b>H</b>																							
ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	ONHU060408-CM																							
	ONHU08T512-CM		○				○																	
	ONHU060408-PF	0.8	○		○		●				○													
	ONHU08T508-PF	0.8	○		○		○				○													
	ONHU060408-PM	0.8	●		●		●	●						●										
	ONHU08T508-PM	0.8	○		○		○	○																

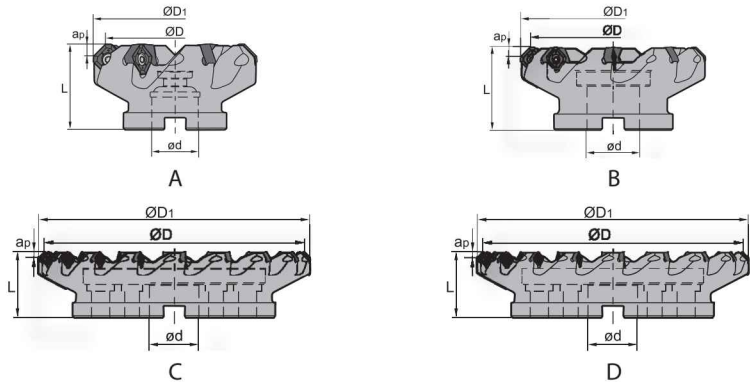
● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A** Turning  
**B** Milling  
**C** Drilling  
**D** Technical Information  
**E** Index

## Face milling

FMA11 Kr: 45°



Article	*	Stock	Dimensions [mm]					Teeth	Coupling	kg	Inserts
			ØD	ØD <sub>1</sub>	ød	L	a <sub>p max</sub>				
FMA11-063-A22-SN12-05C	*	●	63	74.47	22	40	5.5	5	A	0.55	SNEG1205
FMA11-063-A22-SN12-06C	*	●	63	74.47	22	40	5.5	6	A	0.58	
FMA11-080-A27-SN12-06C	*	●	80	91.47	27	50	5.5	6	A	1.14	
FMA11-100-B32-SN12-07		●	100	111.47	32	50	5.5	7	B	1.42	
FMA11-100-B32-SN12-07C	*	○	100	111.47	32	50	5.5	7	B	1.42	
FMA11-100-B32-SN12-10C	*	●	100	111.47	32	50	5.5	10	B	1.42	
FMA11-125-B40-SN12-08		●	125	136.47	40	63	5.5	8	B	2.86	
FMA11-125-B40-SN12-08C	*	○	125	136.47	40	63	5.5	8	B	2.86	
FMA11-125-B40-SN12-12C	*	●	125	136.47	40	63	5.5	12	B	2.86	
FMA11-160-C40-SN12-10		●	160	171.47	40	63	5.5	10	C	4.06	
FMA11-160-C40-SN12-15		●	160	171.47	40	63	5.5	15	C	4.06	
FMA11-200-C60-SN12-14		●	200	212.08	60	63	5.5	14	C	6.89	
FMA11-063-A22-SN15-05C	*	●	63	77.4	22	40	7	5	A	0.56	SNEG1506
FMA11-080-A27-SN15-06C	*	●	80	94.4	27	50	7	6	A	1.06	
FMA11-100-B32-SN15-07		●	100	114.4	32	50	7	7	B	1.47	
FMA11-100-B32-SN15-07C	*	○	100	114.4	32	50	7	7	B	1.47	
FMA11-100-B32-SN15-09C	*	●	100	114.4	32	50	7	9	B	1.47	
FMA11-125-B40-SN15-08		●	125	139.4	40	63	7	8	B	2.7	
FMA11-125-B40-SN15-08C	*	○	125	139.4	40	63	7	8	B	2.7	
FMA11-125-B40-SN15-10C	*	●	125	140.25	40	63	7	10	B	3.1	
FMA11-160-C40-SN15-10		●	160	174.4	40	63	7	10	C	3.92	
FMA11-160-C40-SN15-13		●	160	175.25	40	63	7	13	C	4.14	
FMA11-200-C60-SN15-12		●	200	214.4	60	63	7	12	C	5.46	
FMA11-250-C60-SN15-14		●	250	264.4	60	63	7	14	C	11.26	
FMA11-315-D60-SN15-18		○	315	329.4	60	80	7	18	D	20	
FMA11-125-B40-SN19-07		●	125	142.63	40	63	9	7	B	3	SNEG1907
FMA11-125-B40-SN19-07C	*	●	125	142.63	40	63	9	7	B	3	
FMA11-160-C40-SN19-09		●	160	167.63	40	63	9	9	C	4.25	
FMA11-200-C60-SN19-11		●	200	217.63	60	63	9	11	C	6.18	

● Ex stock ○ On demand


\* With internal cooling

System code > B26

Grade selection > B24





Technical info > B527

Cutting data > B230




Article	* Stock	Dimensions [mm]					Teeth	Coupling	kg	Inserts 
		ØD	ØD <sub>1</sub>	ød	L	a <sub>p</sub> max				
FMA11-250-C60-SN19-13	●	250	267.63	60	63	9	13	C	11.55	SNEG1907
FMA11-315-D60-SN19-16	○	315	332.63	60	80	9	16	D	20.9	

● Ex stock ○ On demand

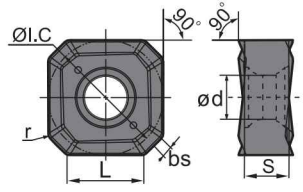



\* With internal cooling

Spare parts					
Insert	SNEG1205	SNEG1506	SNEG1907		
ØD	63-200	63-315	125-315		
 Screw (insert)	I60M3.5×10 (2.7 Nm)	I60M5×13 (6.7 Nm)	I43M6×16 (9.1 Nm)		
 Wrench (insert)	WT15IS				
 Wrench (insert)		WT20IT	WT25IT		

### Milling inserts

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

SNEG	L	I.C	S	d
12 05	7.6	12	4.76	4.6
15 06	9.4	15	5.6	5.5
19 07	12.1	19	7	7.2

SN** negative insert				HC <sup>1</sup> (CVD)				HC <sup>1</sup> (PVD)				HT	HC <sup>2</sup>	HW															
		P	M	K	N	S	H	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
ISO	r	bs																											
 SNEG1506ANR-E	0.9	1.3																											
 SNEG1205ANR-GM	0.8	1.05	●	●	●																								
 SNEG1506ANR-GM	0.9	1.3	●	●	●																								

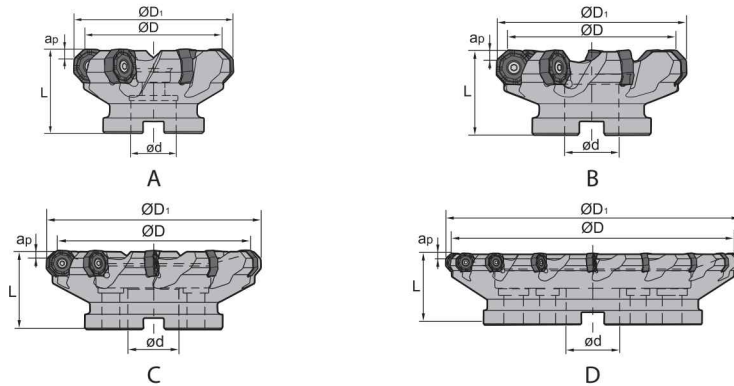
● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



Face milling

FMA12 Kr: 45°



Article	*	Stock	Dimensions [mm]					Teeth	Coupling	kg	Inserts	
			ØD	ØD <sub>1</sub>	ød	L	a <sub>p max</sub>					
FMA12-050-A22-ON06-04C	*	●	50	59	22	40	4	4	A	0.309	ON*U0604**	
FMA12-050-A22-ON06-05C	*	●	50	59	22	40	4	5	A	0.352		
FMA12-063-A27-ON06-05C	*	●	63	72	27	50	4	5	A	0.645		
FMA12-063-A27-ON06-07C	*	●	63	72	27	50	4	7	A	0.695		
FMA12-080-A27-ON06-07C	*	●	80	90	27	50	4	7	A	1.071		
FMA12-080-A27-ON06-09C	*	●	80	90	27	50	4	9	A	1.098		
FMA12-100-A32-ON06-08C	*	●	100	110	32	50	4	8	A	1.599		
FMA12-100-A32-ON06-11C	*	●	100	110	32	50	4	11	A	1.616		
FMA12-125-B40-ON06-10		●	125	135	40	63	4	10	B	3.114		
FMA12-125-B40-ON06-14		●	125	135	40	63	4	14	B	3.151		
FMA12-160-C40-ON06-12		●	160	170	40	63	4	12	C	4.504		
FMA12-160-C40-ON06-18		●	160	170	40	63	4	18	C	4.568		
FMA12-063-A22-ON08-05		○	63	78	22	50	5	5	A	0.6		ONHU08T6
FMA12-080-A27-ON08-06		○	80	95	27	50	5	6	A	0.97		
FMA12-100-B32-ON08-07		○	100	115	32	50	5	7	B	1.28		
FMA12-100-B32-ON08-07C	*	○	100	115	32	50	5	7	B	1.28		
FMA12-125-B40-ON08-08		○	125	140	40	63	5	8	B	2.59		
FMA12-125-B40-ON08-08C	*	○	125	140	40	63	5	8	B	2.59		
FMA12-160-C40-ON08-10		○	160	175	40	63	5	10	C	4.1		
FMA12-200-C60-ON08-12		○	200	215	60	63	5	12	C	5.68		
FMA12-250-C60-ON08-14		○	250	265	60	63	5	14	C	11.9		
FMA12-315-D60-ON08-18		○	315	330	60	80	5	18	D	20.41		

● Ex stock ○ On demand

\* With internal cooling

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230



A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index




# Indexable milling Face milling

**A**

Turning

Spare parts		ON*U0604**	ONHU08T6
Insert	ØD	50-160	63-315
	Screw (insert)		I60M5x13 (6.7Nm)
	Wrench (insert)	WT15IS	
	Wrench (insert)		WT20IT



**B**

Milling

## Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

ONHU	L	I.C	S	d
06 04	6.15	15.875	5.54	6
08 T6	6.38	20.2	6.3	5.3

ON**milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW							
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	ONHU060408ANN-GH					●			●	●						●	●	○						
	ONMU060408-GH								●							●								
	ONHU060404ANN-GL					●			○						●	●	○							
	ONHU060408ANN-GM	0,8				●			●						●	●								
	ONHU08T624R-GM	2,4				○			○						○									
	ONMU060408-GM					○			○						●		●							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B26

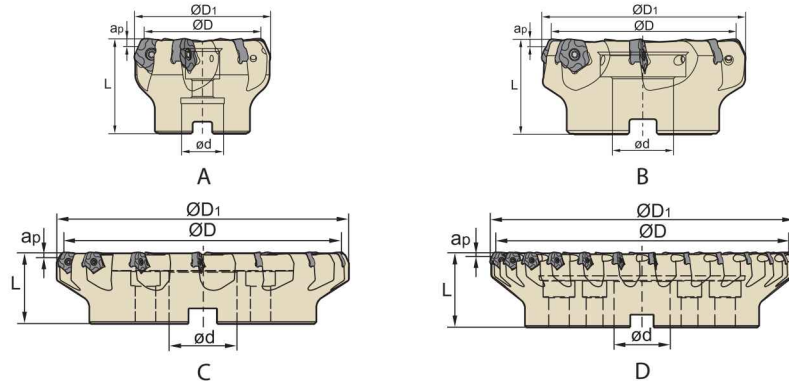
Grade selection > B24


Technical info > B527

Cutting data > B230

Face milling

FMD02 Kr: 67°



Article	*	Stock		Dimensions [mm]					Teeth	Coupling	kg	Inserts
		R	L	ØD	ØD <sub>1</sub>	ød	L	a <sub>p max</sub>				
FMD02-050-A22-PN11-04	● ○	●	○	50	60.1	22	50	5	4	A	0.6	
FMD02-050-A22-PN11-04C	* ○	○	○	50	60.1	22	50	5	4	A	0.6	
FMD02-050-A22-PN11-05	●	●	○	50	60.1	22	50	5	5	A	0.6	
FMD02-050-A22-PN11-05C	* ●	●	○	50	60.1	22	50	5	5	A	0.6	
FMD02-063-A22-PN11-05	● ○	●	○	63	73.1	22	50	5	5	A	0.8	
FMD02-063-A22-PN11-05C	* ○	○	○	63	73.1	22	50	5	5	A	0.8	
FMD02-063-A22-PN11-06	●	●	○	63	73.1	22	50	5	6	A	0.9	
FMD02-063-A22-PN11-06C	* ●	●	○	63	73.1	22	50	5	6	A	0.9	
FMD02-080-A27-PN11-06	●	●	○	80	90.1	27	50	5	6	A	1.1	
FMD02-080-A27-PN11-08	●	●	○	80	90.1	27	50	5	8	A	1.2	
FMD02-080-A27-PN11-08C	* ●	●	○	80	90.1	27	50	5	8	A	1.2	
FMD02-100-B32-PN11-07	●	●	○	100	110.1	32	50	5	7	B	1.8	
FMD02-100-B32-PN11-07C	* ○	○	○	100	110.1	32	50	5	7	B	1.8	
FMD02-100-B32-PN11-10	●	●	○	100	110.1	32	50	5	10	B	1.9	
FMD02-100-B32-PN11-10C	* ○	○	○	100	110.1	32	50	5	10	B	1.9	
FMD02-125-B40-PN11-08	● ●	●	○	125	135.1	40	63	5	8	B	2.9	
FMD02-125-B40-PN11-08C	* ○	○	○	125	135.1	40	63	5	8	B	2.9	
FMD02-125-B40-PN11-12	● ○	●	○	125	135.1	40	63	5	12	B	3.2	
FMD02-125-B40-PN11-12C	* ○	○	○	125	135.1	40	63	5	12	B	3.2	
FMD02-160-B40-PN11-10	● ○	●	○	160	170.1	40	63	5	10	B	5.6	
FMD02-160-B40-PN11-14	● ○	●	○	160	170.1	40	63	5	14	B	6.4	
FMD02-200-C60-PN11-12	○ ○	○	○	200	210.1	60	63	5	12	C	7.9	
FMD02-200-C60-PN11-16	●	○	○	200	210.1	60	63	5	16	C	8.5	
FMD02-200-C60-PN11-20	○	○	○	200	210.1	60	63	5	20	C	8.5	
FMD02-200-C60-PN11-24	●	○	○	200	210.1	60	63	5	24	C	8.6	
FMD02-250-C60-PN11-14	○	○	○	250	260.1	60	63	5	14	C	13.4	
FMD02-250-C60-PN11-18	● ○	●	○	250	260.1	60	63	5	18	C	18	
FMD02-250-C60-PN11-30	○	○	○	250	260.1	60	63	5	30	C	13.5	
FMD02-315-D60-PN11-26	○ ○	○	○	315	325.1	60	80	5	26	D	24.5	

PNEG1105

● Ex stock ○ On demand

\* With internal cooling

System code > B26

Grade selection > B24

Technical info > B527


Cutting data > B230



**A**

Turning

Spare parts		
Insert	PNEG1105	
ØD	50-315	
	Screw (insert)	I60M4x10 (3.4Nm)
	Wrench (insert)	WT15IS



**B**

Milling

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

PNEG	L	I.C	S	d
11 05	7.5	15.875	5.56	4.64

## Milling inserts

PN** milling insert		HC <sup>1</sup> (CVD)							HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW													
		P	M	K	N	S	H	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
ISO	bs	a <sub>p</sub> max																											
PNEG110512L-PF	1.6	7.5	○																										
PNEG110512R-PF	1.6	7.5	○	○																									
PNEG110512L-PM	1.6	7.5	○	○																									
PNEG110512R-PM			●	●			○																						
PNEG110512L-PR	1.6	7.5	○	●																									
PNEG110512R-PR	1.6	7.5	○	●																									

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B26

Grade selection > B24




Technical info > B527

Cutting data > B230

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

PNEG	L	I.C	S	d
11 05	5.4	15.875	5.56	4.64

### Milling inserts

PN** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW											
ISO		bs	a <sub>p</sub> max	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	PNEG110512L-CF	1.6	5																							
	PNEG110512R-CF	1.6	5							○																
	PNEG110512L-CM	1.6	5							○																
	PNEG110512R-CM	1.6	5							●																
	PNEG110512L-CR	1.6	5							○ ○																
	PNEG110512R-CR	1.6	5							● ●																

● Ex stock    ○ On demand

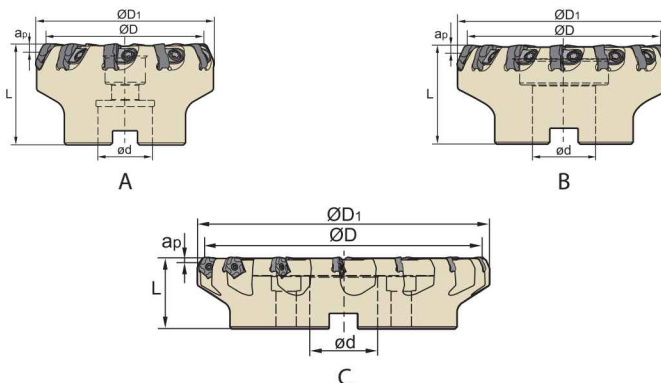
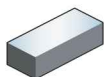
HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A** Turning  
**B** Milling  
**C** Drilling  
**D** Technical Information  
**E** Index



## Face milling

FMD02 Kr: 67°



Article	*	Stock		Dimensions [mm]					Teeth	Coupling	kg	Inserts
		R	L	ØD	ØD <sub>1</sub>	ød	L	a <sub>p max</sub>				
FMD02-080-A27-PN11-10	●			80	90.1	27	50	5	10	A	1.3	PNEG1105
FMD02-100-B32-PN11-14	●	○		100	110.1	32	50	5	14	B	1.6	
FMD02-125-B40-PN11-18	●			125	135.1	40	63	5	18	B	3.2	
FMD02-160-B40-PN11-22	●			160	170.1	40	63	5	22	B	5.8	
FMD02-200-C60-PN11-28	○	○		200	210.1	60	63	5	28	C	8.5	

● Ex stock ○ On demand

\* With internal cooling

### Spare parts

Insert		PNEG1105	
ØD		80-200	
	Screw (wedge)	DM6x20A (7.0 Nm)	
	Wedge	W18N	
	Wrench (wedge)	WT15IT	

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

PNEG	L	I.C	S	d
11 05	7.5	15.875	5.56	4.64

**Milling inserts**

PN** milling insert				HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW								
		<b>P</b>		⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗								
		<b>M</b>		⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗								
		<b>K</b>								⊗						⊗		⊗							
		<b>N</b>									⊗						⊗	⊗							
		<b>S</b>				⊗	⊗			⊗	⊗	⊗	⊗	⊗	⊗										
		<b>H</b>																							
ISO		bs	ap max	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	PNEG110512L-PF	1.6	7.5	○																					
	PNEG110512R-PF	1.6	7.5	○			○																		
	PNEG110512L-PM	1.6	7.5	○			○																		
	PNEG110512R-PM			●		●				○															
	PNEG110512L-PR	1.6	7.5	○			●																		
	PNEG110512R-PR	1.6	7.5	○			●																		

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

PNEG	L	I.C	S	d
11 05	5.4	15.875	5.56	4.64

**Milling inserts**

PN** milling insert				HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW								
		<b>P</b>		⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗									
		<b>M</b>		⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗									
		<b>K</b>								⊗					⊗		⊗								
		<b>N</b>									⊗					⊗	⊗								
		<b>S</b>				⊗	⊗			⊗	⊗	⊗	⊗	⊗											
		<b>H</b>																							
ISO		bs	ap max	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	PNEG110512L-CF	1.6	5							○															
	PNEG110512R-CF	1.6	5							●															

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

PNEG	L	I.C	S	d
11 05	5.4	15.875	5.56	4.64

## Milling inserts

PN** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW
	<b>P</b>															
	<b>M</b>															
	<b>K</b>															
	<b>N</b>															
	<b>S</b>															
	<b>H</b>															

ISO		bs	a <sub>p max</sub>	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	PNEG110512L-CM	1.6	5							○																
	PNEG110512R-CM	1.6	5							●																
	PNEG110512L-CR	1.6	5							○	○															
	PNEG110512R-CR	1.6	5							●	●															

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

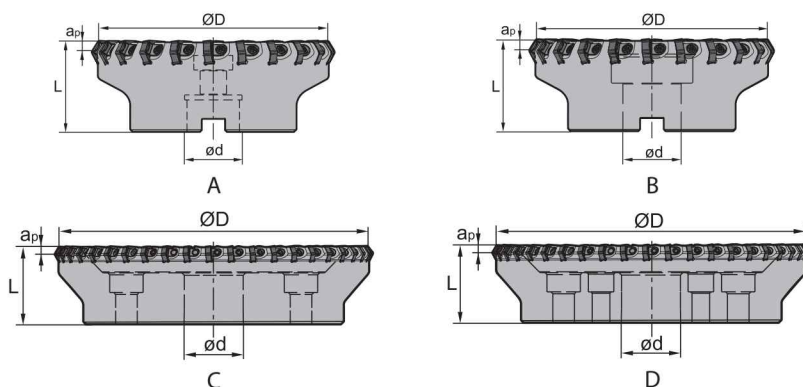
Grade selection > B24

Technical info > B527

Cutting data > B230

Face milling

FMD02 Kr: 55°



Article	*	Stock		Dimensions [mm]				Teeth	Coupling	kg	Inserts
		R	L	ØD	ød	L	ap max				
FMD02-080-A27-HN09-08	○			80	27	50	6	8	A	1.19	HNEX0905
FMD02-100-B32-HN09-10	○			100	32	50	6	10	B	1.77	
FMD02-125-B40-HN09-14	○			125	40	63	6	14	B	3.55	
FMD02-125-B40-HN09-18	○			125	40	63	6	18	B	3.7	
FMD02-160-B40-HN09-18	●			160	40	63	6	18	B	5.62	
FMD02-160-B40-HN09-22	○			160	40	63	6	22	B	5.6	
FMD02-200-C60-HN09-22	○			200	60	63	6	22	C	6.7	
FMD02-250-C60-HN09-28	○	○		250	60	63	6	28	C	13	
FMD02-315-D60-HN09-44	○			315	60	63	6	44	D	21.7	

● Ex stock ○ On demand

\* With internal cooling

Spare parts			
Insert	HNEX0905		
ØD	80- 315		
Screw (wedge)	DM6x20A (7.0Nm)		
Wedge	W18N		
Wrench (wedge)	WT15IT		

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230



A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index



**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

HNEX	L	I.C	S
09 05	9.16	15.875	5.56

## Milling inserts

HN** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
	<b>P</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●								
	<b>M</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●								
	<b>K</b>							⊗	⊗	⊗	⊗	⊗	⊗			⊗								
	<b>N</b>							⊗	⊗	⊗	⊗	⊗	⊗		⊗	⊗								
	<b>S</b>		⊗	⊗				⊗	⊗	⊗	⊗	⊗	⊗											
	<b>H</b>																							
	ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	HNEX090512-DR	1.2					●	●																

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

Grade selection > B24

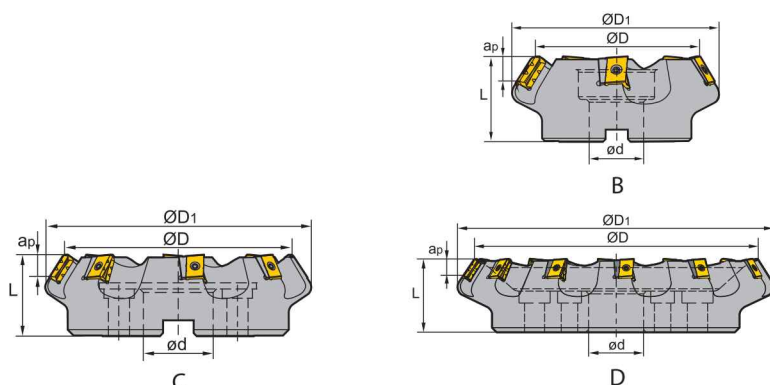
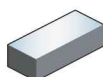
Technical info > B527

Cutting data > B230



Face milling

FMD03 Kr: 60°



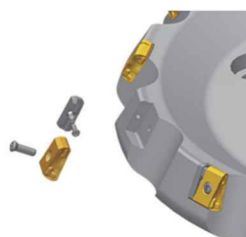
Article	*	Stock		Dimensions [mm]					Teeth	Coupling	kg	Inserts	
		R	L	ØD	ØD <sub>1</sub>	ød	L	a <sub>p max</sub>					
FMD03-100-B32-LN20-05	○			100	129	32	63	12	5	B	3.02	LNKT2007-ZR	
FMD03-125-B40-LN20-06	●			125	153	40	63	12	6	B	4.5		
FMD03-160-C40-LN20-08	●			160	187	40	63	12	8	C	6.9		
FMD03-160-C40-LN20-09	○			160	187	40	63	12	9	C	6.7		
FMD03-200-C60-LN20-10	●			200	227	60	70	12	10	C	10.5		
FMD03-250-C60-LN20-12	●			250	276	60	70	12	12	C	13.4		
FMD03-315-D60-LN20-15	○			315	339	60	80	12	15	D	26.2		
FMD03-125-B40-LN25-05	○			125	154	40	63	16	5	B	4.5		LNKT2510-ZR
FMD03-160-C40-LN25-06	●			160	189	40	63	16	6	C	6.9		
FMD03-200-C60-LN25-08	●			200	229	60	70	16	8	C	10.5		
FMD03-250-C60-LN25-10	●			250	278	60	70	16	10	C	16.7		
FMD03-315-D60-LN25-12	○ ○			315	346	60	80	16	12	D	27.3		
FMD03-400-D60-LN25-16	○ ○			400	427	60	80	16	16	D	47.1		

● Ex stock ○ On demand

\* With internal cooling

Spare parts

	Insert	LNKT2007-ZR	LNKT2510-ZR
	ØD	100- 315	125 -400
	Screw (insert)	I60M4×15 (3.4 Nm)	I60M5×17 (6.7 Nm)
	Screw (shim)	I60M3×7	I60M3.5×10.4
	Shim	LLN20R-ZR	LLN25R-ZR
	Wrench (shim)	WT09IS	WT15IS
	Wrench (insert)	WT15IS	
	Wrench (insert)		WT20IT



System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230



A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

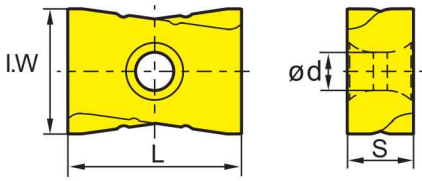

**E**

Index

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

LNKT	L	S	d
20 07	20	7.94	4.6
25 10	25	9.525	5.5

## Milling inserts

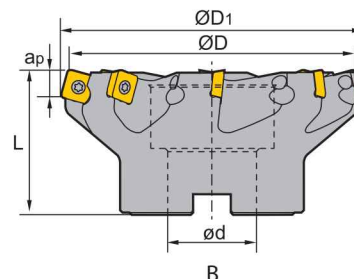
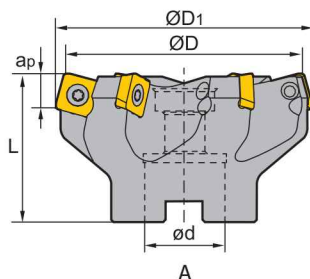
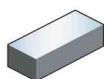
LN** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●								
	<b>M</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●								
	<b>K</b>					⊗	⊗	⊗								⊗								
	<b>N</b>							⊗								⊗								
	<b>S</b>			⊗	⊗			⊗	⊗	⊗	⊗	⊗	⊗											
	<b>H</b>																							
ISO	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	LNKT2007DN-ZR	17			●	●		○									●							
	LNKT2510-ZR	18				●		●									●							


● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

Face milling

FME02 Kr: 75°

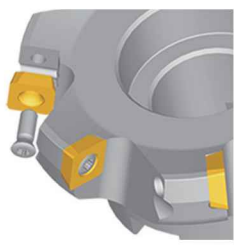




Article	*	Stock	Dimensions [mm]					Teeth	Coupling	kg	Inserts
			ØD	ØD <sub>1</sub>	ød	L	a <sub>p max</sub>				
FME02-050-A22-SP12-04	●		50	54	22	40	6	4	A	0.3	 SPKT1204 SPKW1204
FME02-063-A22-SP12-05	●		63	66	22	50	6	5	A	0.6	
FME02-080-A27-SP12-06	●		80	83	27	50	6	6	A	0.9	
FME02-100-B32-SP12-07	●		100	103	32	50	6	7	B	1.4	
FME02-125-B40-SP12-08	●		125	128	40	63	6	8	B	2.5	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts

Insert		SPKT1204 SPKW1204	
ØD		50-125	
	Screw (insert)	I60M5x13.2 (6.7 Nm)	
	Wrench (insert)	WT20IS	

A

Turning

B

Milling

C

Drilling

D

Technical  
Information

E

Index

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

SPKW	L	I.C	S	d
12 04	12.7	12.7	4.76	5.56

## Milling inserts

SP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>								
	<b>M</b>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>								
	<b>K</b>							<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>					<span style="color: red;">●</span>		<span style="color: red;">⊗</span>								
	<b>N</b>							<span style="color: green;">⊗</span>							<span style="color: green;">●</span>	<span style="color: green;">●</span>								
	<b>S</b>		<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>				<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>												
	<b>H</b>																							
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	SPKW1204EDFR																							
	SPKW1204EDSR																							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

SPKT	L	I.C	S	d
12 04	12.7	12.7	4.76	5.56

## Milling inserts

SP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>								
	<b>M</b>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>								
	<b>K</b>							<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>					<span style="color: red;">●</span>		<span style="color: red;">⊗</span>								
	<b>N</b>							<span style="color: green;">⊗</span>							<span style="color: green;">●</span>	<span style="color: green;">●</span>								
	<b>S</b>		<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>				<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>												
	<b>H</b>																							
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	SPKT1204EDR																							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

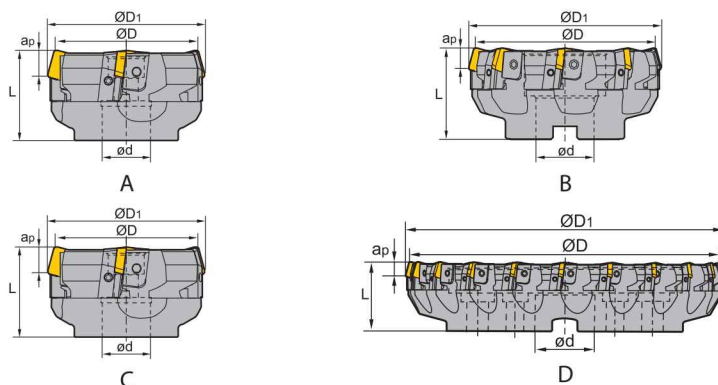
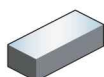
Grade selection > B24

Technical info > B527

Cutting data > B230

Face milling

FME03 Kr: 75°



Article	*	Stock		Dimensions [mm]					Teeth	Coupling	kg	Inserts	
		R	L	ØD	ØD <sub>1</sub>	ød	L	a <sub>p max</sub>					
FME03-080-A27-SP12-04		○		80	84	27	50	6	4	A	1.1	SPKN1203 SPKR1203 SPEX1203	
FME03-100-B32-SP12-06		●		100	104	32	50	6	6	B	1.9		
FME03-125-B40-SP12-08		○	○	125	129	40	63	6	8	B	3.5		
FME03-160-B40-SP12-10		●	○	160	164	40	63	6	10	B	5.7		
FME03-200-C60-SP12-12		○	○	200	203	60	63	6	12	C	8.2		
FME03-250-C60-SP12-16		○	○	250	253	60	63	6	16	C	13.8		
FME03-315-D60-SP12-20		○		315	318	60	70	6	20	D	23.5		
FME03-080-A27-SP15-04		○	○	80	84	27	50	8	4	A	1		SPKN1504 SPKR1504 SPEX1504
FME03-100-B27-SP15-06		○		100	104	27	50	8	6	B	1.8		
FME03-125-B40-SP15-08		●	○	125	129	40	63	8	8	B	3.3		
FME03-160-B40-SP15-10		○	○	160	164	40	63	8	10	B	5.4		
FME03-200-C60-SP15-12		○	○	200	204	60	63	8	12	C	7.9		
FME03-250-C60-SP15-16		○	○	250	253	60	63	8	16	C	13.6		
FME03-315-D60-SP15-20		○	○	315	318	60	70	8	20	D	23.1		

● Ex stock    ○ On demand

\* With internal cooling

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

**A**

Turning

**B**

Milling

**C**

Drilling


**D**

Technical Information

**E**

Index

Spare parts		SPKN1203 SPKR1203 SPEX1203	SPKN1203 SPKR1203 SPEX1203	SPKN1504 SPKR1504 SPEX1504
	Insert	80-100	125 - 315	80- 315
	ØD	80-100	125 - 315	80- 315
	Adjustable screw	LOM5×15.1	LOM5×15.1	LOM5×15.1
	Cassette (left)	LSP12L	LSP12L	LSP15L
	Cassette (right)	LSP12R	LSP12R	LSP15R
	Screw (wedge)	WM8×17	WM8×22	WM8×22
	Wedge (left)	W04L	W04L	W04L
	Wedge (right)	W04R	W04R	W04R
	Wrench (locator)	WT20T	WT20T	WT20T
	Wrench (wedge)	WT25T	WT25T	WT25T



## Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPKN	L	I.C	S
12 03	12.7	12.7	3.18
15 04	15.875	15.875	4.76

SP** milling insert		HC <sup>1</sup> (CVD)								HC <sup>1</sup> (PVD)				HT	HC <sup>2</sup>	HW									
ISO	be	bs	CVD Grades								PVD Grades				HT	HC <sup>2</sup>	HW								
			YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
			P	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			M	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			K	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			N	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			S	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			H	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			SPKN1203EDFL	1	1.4																				●
			SPKN1203EDFR	1	1.4	○					○														●
			SPKN1203EDSKL	1	1.4	●																			
			SPKN1203EDSKR	1	1.4	●					○						●								
			SPKN1203EDTKR	1	1.4				○								○								
			SPKN1504EDFL	1	1.4																				○
			SPKN1504EDFR	1	1.4																				○
			SPKN1504EDS32PR	1	1.4	○						○													
			SPKN1504EDSKL	1	1.4																				○
			SPKN1504EDSKR	1	1.4	●											●								
			SPKN1504EDTKR	1	1.4							○													

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

Grade selection > B24

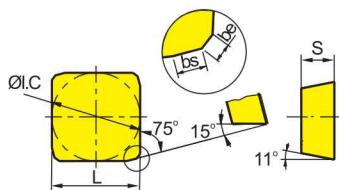
Technical info > B527



Cutting data > B230

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPKR	L	I.C	S
12 03	12.7	12.7	3.18
15 04	15.875	15.875	4.76

### Milling inserts



SP** milling insert		HC <sup>1</sup> (CVD)							HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
ISO		be	bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	SPKR1203EDL-GM	1	1.4				○																		
	SPKR1203EDR-GM	1	1.4				●																		
	SPKR1504EDR-GM	1	1.4			○								○											
	SPKR1203EDR	1	1.4	○																					

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B26

Grade selection > B24

Technical info > B527

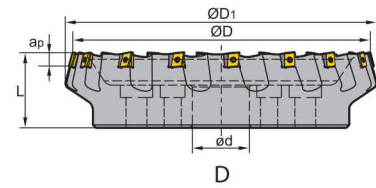
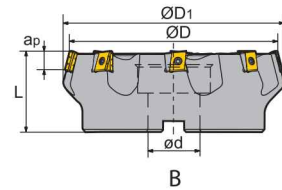
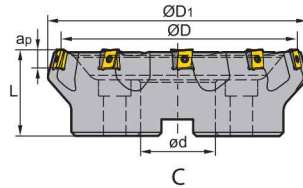
Cutting data > B230





## Face milling

FME04 Kr: 75°



Article	* Stock	Dimensions [mm]					Teeth	Coupling	kg	Inserts
		ØD	ØD <sub>1</sub>	ød	L	a <sub>p max</sub>				
FME04-125-B40-LN15-06	●	125	137	40	63	10	6	B	3.8	LNKT1506-ZR
FME04-200-C60-LN15-10	●	200	208	60	70	10	10	C	9.6	
FME04-250-C60-LN15-12	○	250	257	60	70	10	12	C	13.4	
FME04-315-D60-LN15-16	○	315	328	60	80	10	16	D	25.2	

● Ex stock    ○ On demand

\* With internal cooling

### Spare parts




	Insert	LNKT1506-ZR	
	ØD	125 - 315	
	Screw (insert)	I60M4x12 (3.4 Nm)	
	Screw (shim)	I60M3x7	
	Shim	LLN15-ZR	
	Wrench (shim)	WT09IS	
	Wrench (insert)	WT15IS	

System code > B26

Grade selection > B24

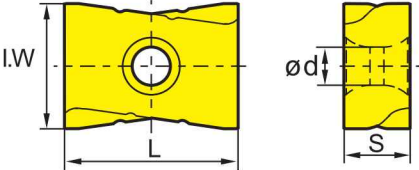














































Technical info > B527

Cutting data > B230

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

LNKT	L	S	d
15 06	15.875	6.35	4.6

### Milling inserts

LN** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>																							
	<b>M</b>																							
	<b>K</b>																							
	<b>N</b>																							
	<b>S</b>																							
	<b>H</b>																							
ISO	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151		YNG151C	YD101	YD201
	LNKT1506EN-ZR	14	●		○	●	●	●									○							

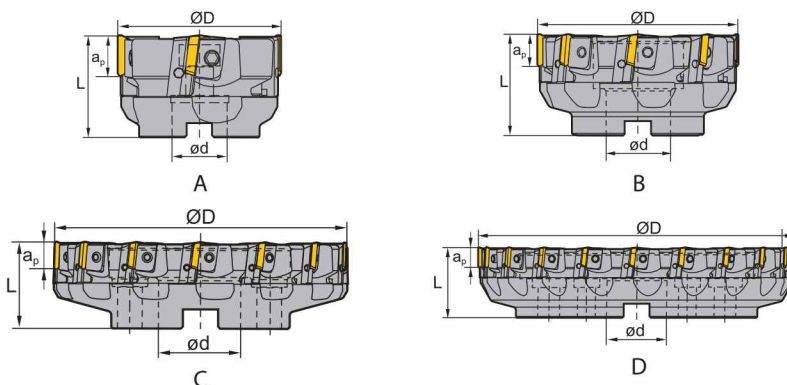
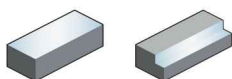
● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



## Face milling

FMP01 Kr: 90°



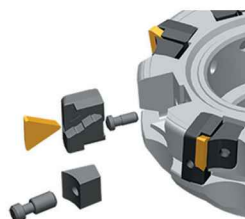
Article	*	Stock		Dimensions [mm]				Teeth	Coupling	kg	Inserts
		R	L	ØD	ød	L	ap max				
FMP01-080-A27-TP22-04	●			80	27	50	18	4	A	1.2	TPKN2204
FMP01-100-B32-TP22-06	●			100	32	50	18	6	B	1.7	
FMP01-125-B40-TP22-08	●	○		125	40	63	18	8	B	3.2	
FMP01-160-B40-TP22-10	●	○		160	40	63	18	10	B	5.1	
FMP01-200-C60-TP22-12	●	○		200	60	63	18	12	C	7.4	
FMP01-250-C60-TP22-16	○	○		250	60	63	18	16	C	12.3	
FMP01-315-D60-TP22-20	○	○		315	60	70	18	20	D	21.9	

● Ex stock    ○ On demand

\* With internal cooling

### Spare parts

	Insert	TPKN2204	
		80-100	125 - 315
	Adjustable screw	LOM5×15.1	LOM5×15.1
	Cassette (left)	LTP4L1	LTP4L
	Cassette (right)	LTP4R1	LTP4R
	Screw (wedge)	WM8×17	WM8×22
	Wedge (left)	W04L	W04L
	Wedge (right)	W04R	W04R
	Wrench (locator)	WT20T	WT20T
	Wrench (wedge)	WT25T	WT25T



System code > B26

Grade selection > B24


Technical info > B527

Cutting data > B230

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TPKN	L	I.C	S
22 04	22	12.7	4.76

**Milling inserts**

TP** milling insert				HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW												
ISO				be	bs	an	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	TPKN2204PDFR	1.4	0.7	11°											○														
	TPKN2204PDS32PR	1.4	0.7	11°													○		○										
	TPKN2204PDSKL	1.4	0.7	11°	○																								
	TPKN2204PDSKR	1.4	0.7	11°	●	●		●	●							○				●	●								
	TPKN2204PDTKR	1.4	0.7	11°											●														

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A**  
Turning

**B**  
Milling

**C**  
Drilling

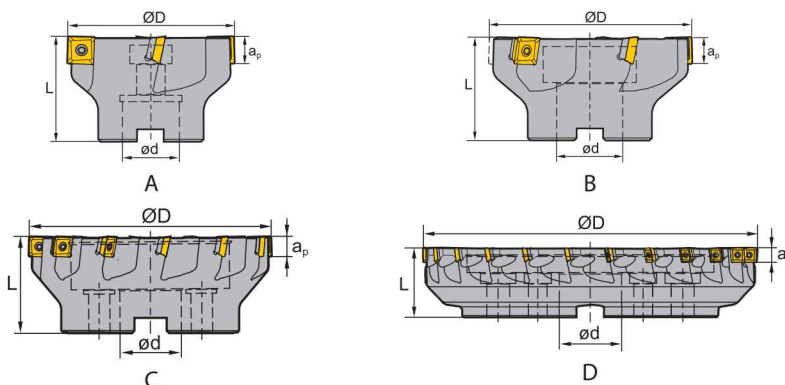
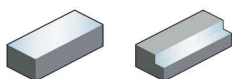
**D**  
Technical Information

**E**  
Index



## Face milling

FMP02 Kr: 90°



Article	*	Stock	Dimensions [mm]				Teeth	Coupling	kg	Inserts
			ØD	ød	L	a <sub>p max</sub>				
FMP02-050-A22-SE09-05		●	50	22	40	6.7	5	A	0.3	SEET09T3
FMP02-050-A22-SE09-05C	*	●	50	22	40	6.7	5	A	0.3	
FMP02-063-A22-SE09-06		●	63	22	40	6.7	6	A	0.5	
FMP02-063-A22-SE09-06C	*	●	63	22	40	6.7	6	A	0.5	
FMP02-080-A27-SE09-08		●	80	27	50	6.7	8	A	0.9	
FMP02-100-B32-SE09-08		○	100	32	50	6.7	8	B	1.7	
FMP02-100-B32-SE09-10		○	100	32	50	6.7	10	B	1.7	
FMP02-100-B32-SE09-10C	*	○	100	32	50	6.7	10	B	1.7	
FMP02-125-B40-SE09-12		●	125	40	63	6.7	12	B	2.6	
FMP02-125-B40-SE09-12C	*	○	125	40	63	6.7	12	B	2.6	
FMP02-050-A22-SE12-03		○	50	22	40	10.8	3	A	0.3	SEET1203
FMP02-050-A22-SE12-03C	*	○	50	22	40	10.8	3	A	0.3	
FMP02-050-A22-SE12-04		●	50	22	40	10.8	4	A	0.3	
FMP02-050-A22-SE12-04C	*	●	50	22	40	10.8	4	A	0.3	
FMP02-050-A22-SE12-05		●	50	22	40	10.8	5	A	0.2	
FMP02-050-A22-SE12-05C	*	○	50	22	40	10.8	5	A	0.2	
FMP02-063-A22-SE12-04		○	63	22	40	10.8	4	A	0.4	
FMP02-063-A22-SE12-05		●	63	22	40	10.8	5	A	0.4	
FMP02-063-A22-SE12-05C	*	●	63	22	40	10.8	5	A	0.4	
FMP02-063-A22-SE12-06		●	63	22	40	10.8	6	A	0.4	
FMP02-063-A22-SE12-06C	*	○	63	22	40	10.8	6	A	0.4	
FMP02-080-A27-SE12-04		○	80	27	50	10.8	4	A	0.9	
FMP02-080-A27-SE12-06		●	80	27	50	10.8	6	A	0.8	
FMP02-080-A27-SE12-06C	*	●	80	27	50	10.8	6	A	0.8	
FMP02-080-A27-SE12-08		●	80	27	50	10.8	8	A	0.8	
FMP02-080-A27-SE12-08C	*	○	80	27	50	10.8	8	A	0.8	
FMP02-100-B32-SE12-05		●	100	32	50	10.8	5	B	1.2	
FMP02-100-B32-SE12-07		●	100	32	50	10.8	7	B	1.2	
FMP02-100-B32-SE12-10		●	100	32	50	10.8	10	B	1.2	

● Ex stock    ○ On demand


\* With internal cooling

System code > B26

Grade selection > B24

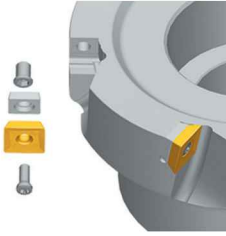





Technical info > B527

Cutting data > B230




Article	*	Stock	Dimensions [mm]				Teeth	Coupling	kg	Inserts 
			ØD	ød	L	a <sub>p</sub> max				
FMP02-100-B32-SE12-10C	*	○	100	32	50	10.8	10	B	1.2	SEET1203
FMP02-125-B40-SE12-06		○	125	40	63	10.8	6	B	3.1	
FMP02-125-B40-SE12-08		●	125	40	63	10.8	8	B	3	
FMP02-125-B40-SE12-08C	*	○	125	40	63	10.8	8	B	3	
FMP02-125-B40-SE12-12		●	125	40	63	10.8	12	B	2.9	
FMP02-160-C40-SE12-08		●	160	40	63	10.8	8	C	4.1	
FMP02-160-C40-SE12-12		●	160	40	63	10.8	12	C	3.9	
FMP02-250-C60-SE12-12		○	250	60	63	10.8	12	C	11.1	
FMP02-250-C60-SE12-18		●	250	60	63	10.8	18	C	10.9	
FMP02-315-D60-SE12-24		○	315	60	63	10.8	24	D	21.6	

● Ex stock ○ On demand

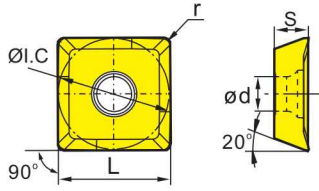

\* With internal cooling

Spare parts					
Insert	SEET09T3	SEET1203	SEET1203		
ØD	50-125	50	63-315		
 Screw (insert)	I60M3×7 (1.8 Nm)	I60M3.5×10 (2.7 Nm)	I60M3.5×12 (2.7 Nm)		
 Screw (shim)			SM5×7XA		
 Shim			S12BSX		
 Wrench (shim)			WH35L		
 Wrench (insert)	WT09IS	WT15IS	WT15IS		

### Milling inserts

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

SEET	L	I.C	S	d
09 T3	9.525	9.525	4.01	3.3
12 03	13.308	13.308	4.04	4.1

SE** milling insert		Material							
		HC <sup>1</sup> (CVD)			HC <sup>1</sup> (PVD)		HT	HC <sup>2</sup>	HW
	ISO	P	M	K	N	S	H		
	SEET09T308PER-APP	0.8	○						

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
HT Uncoated cermet  
HC<sup>2</sup> Coated cermet  
HW Uncoated carbide

**A**  
Turning  
  
**B**  
Milling  
  
**C**  
Drilling  
  
**D**  
Technical Information  
  
**E**  
Index

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SEET	L	I.C	S	d
<b>09 T3</b>	9.525	9.525	4.01	3.3
<b>12 03</b>	13.308	13.308	4.04	4.1

## Milling inserts

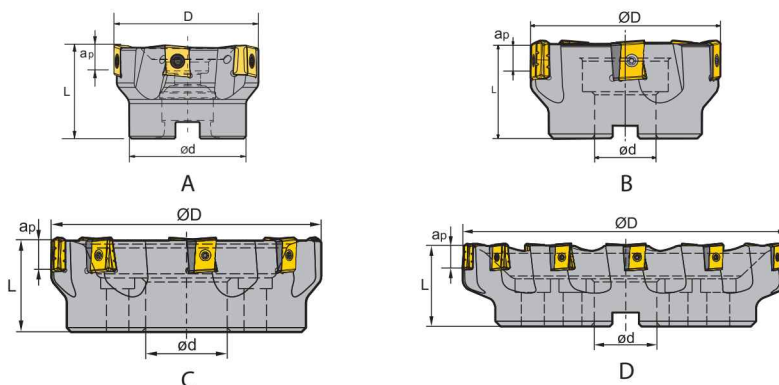
SE** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
		P	●	●	●	●	●	●	●	●	●	●	●	●	●	●								
		M	●	●	●	●	●	●	●	●	●	●	●	●	●	●								
		K							●								●							
		N							●							●	●							
		S		●	●				●	●	●	●	●											
		H																						
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	SEET09T308PER-APM	0.8					○										●							
	SEET09T308PER-APR	0.8					○										○							
	SEET120308PER-APF	0.8					○					○					●							
	SEET120308PER-APM	0.8					●					○					●							
	SEET120308PER-APR	0.8					●					○					●							
	SEET120308-LH	0.8									○	○												●
	SEET09T308PER-PF	0.8											○											
	SEET120308PER-PF	0.8	○																					
	SEET09T308PER-PM	0.8							○			○												
	SEET120308PER-PM	0.8	○				○	○	○	○		○	○					○						
	SEET09T308PER-PR	0.8							○									○						
	SEET120308PER-PR	0.8	○				○	○	○		○	○						○						


● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



Face milling



Article	*	Stock		Dimensions [mm]				Teeth	Coupling	kg	Inserts 
		R	L	ØD	ød	L	ap max				
FMP03-050-A22-LN12-04C	*	●		50	22	40	7	4	A	0.3	LNKT120608-ZR
FMP03-050-A22-LN12-05C	*	○		50	22	40	7	5	A	0.3	
FMP03-063-A22-LN12-05C	*	●		63	22	40	7	5	A	0.5	
FMP03-063-A27-LN12-05C	*	○		63	27	50	7	5	A	0.64	
FMP03-063-A22-LN12-06C	*	○		63	22	40	7	6	A	0.5	
FMP03-063-A27-LN12-06C	*	●		63	27	50	7	6	A	0.65	
FMP03-063-A27-LN12-07C	*	○		63	27	50	7	7	A	0.64	
FMP03-080-A27-LN12-06C	*	●		80	27	50	7	6	A	1	
FMP03-080-A27-LN12-07C	*	○		80	27	50	7	7	A	1	
FMP03-100-B32-LN12-06		○		100	32	50	7	6	B	1.47	
FMP03-125-B40-LN15-06		●		125	40	63	12	6	B	3.2	
FMP03-160-C40-LN15-08		●		160	40	63	12	8	C	5.1	
FMP03-160-C40-LN15-09		○		160	40	63	12	9	C		
FMP03-200-C60-LN15-10		●		200	60	70	12	10	C	7.5	
FMP03-250-C60-LN15-12		○		250	60	70	12	12	C	12.2	
FMP03-250-C60-LN15-13		○		250	60	70	12	13	C		
FMP03-315-D60-LN15-16		○		315	60	80	12	16	D	23.7	
FMP03-125-B40-LN20-06		○		125	40	63	16	6	B	3.3	
FMP03-160-C40-LN20-08		●		160	40	63	16	8	C	5.3	
FMP03-200-C60-LN20-10		●		200	60	70	16	10	C	8.8	
FMP03-200-C60-LN20-11		○		200	60	70	16	11	C		LNKT2007DN-ZR
FMP03-250-C60-LN20-12		●		250	60	70	16	12	C	14	
FMP03-315-D60-LN20-15		○		315	60	80	16	15	D	23.9	
FMP03-125-B40-LN25-05		○		125	40	63	20	5	B	3.3	
FMP03-160-C40-LN25-06		○ ○		160	40	63	20	6	C	5.1	
FMP03-200-C60-LN25-08		○		200	60	70	20	8	C	8.9	
FMP03-250-C60-LN25-10		● ○		250	60	70	20	10	C	12	LNKT2510-ZR
FMP03-315-D60-LN25-12		○ ○		315	60	80	20	12	D	21.9	

● Ex stock ○ On demand

\* With internal cooling

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230



A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index



**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

Spare parts

Insert	LNKT120608-ZR	LNKT1506EN-ZR	LNKT2007DN-ZR	LNKT2510-ZR
ØD	50-100	125 - 315	125 - 315	125 - 315
Screw (insert)	I60M4×12 (3.4 Nm)	I60M4×12 (3.4 Nm)	I60M4×15 (3.4 Nm)	I60M5×17 (6.7 Nm)
Screw (shim)		I60M3×7	I60M3×7	I60M3.5×10.4
Shim		LLN15-ZR	LLN20R-ZR	LLN25R-ZR
Wrench (shim)		WT09IS	WT09IS	WT15IS
Wrench (insert)	WT15IS	WT15IS	WT15IS	
Wrench (insert)				WT20IT



LNKT	L	S	d
12 06	12.7	6.65	4.4
15 06	15.875	6.35	4.6
20 07	20	7.94	4.6
25 10	25	9.525	5.5

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

**Milling inserts**

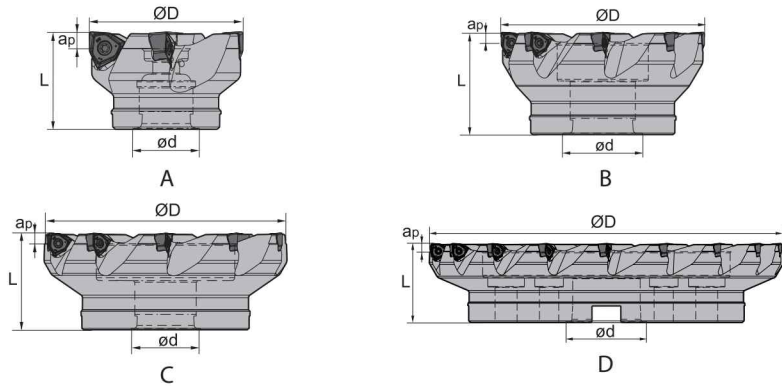
LN** milling insert	HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)				HT	HC <sup>2</sup>	HW											
	P	M	K	N	S	H																		
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗												
ISO	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151		YNG151C	YD101	YD201
	LNKT120608-ZR	12	●		●												●							
	LNKT1506EN-ZR	14		●		○	●	●	●								○							
	LNKT2007DN-ZR	17			●		●	○									●							
	LNKT2510-ZR	18					●	●									●							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

Face milling




FMP12 Kr: 90° 



Article	*	Stock	Dimensions [mm]			Teeth	Coupling	kg	Inserts	
			ØD	ød	ap <sub>max</sub>					
FMP12-050-A22-WN06-05C	*	○	50	22	5.7	5	A	0.55	WNHU0604	
FMP12-063-A22-WN06-06C	*	●	63	22	5.7	6	A	0.45		
FMP12-080-A27-WN06-07C	*	●	80	27	5.7	7	A	1		
FMP12-100-B32-WN06-09		●	100	32	5.7	9	A	1.4		
FMP12-100-B32-WN06-09C	*	●	100	32	5.7	9	A	1.4		
FMP12-125-B40-WN06-11C	*	○	125	40	5.7	11	B	3.4		
FMP12-160-C40-WN06-14		○	160	40	5.7	14	C	5.4		
FMP12-063-A22-WN08-04C	*	●	63	22	7.7	4	A	0.39		WNHU0806
FMP12-063-A22-WN08-05C	*	●	63	22	7.7	5	A	0.45		
FMP12-080-A27-WN08-05C	*	●	80	27	7.7	5	A	0.95		
FMP12-100-B32-WN08-06		●	100	32	7.7	6	B	1.32		
FMP12-100-B32-WN08-06C	*	●	100	32	7.7	6	B	1.32		
FMP12-125-B40-WN08-08C	*	○	125	40	7.7	8	B	3.3		
FMP12-160-C40-WN08-10		○	160	40	7.7	10	C	5.2		
FMP12-200-C60-WN08-12		○	200	60	7.7	12	C			
FMP12-250-C60-WN08-14		○	250	60	7.7	14	C			
FMP12-315-D60-WN08-18		○	315	60	7.7	18	D			

● Ex stock ○ On demand

\* With internal cooling

Spare parts			
	Insert	WNHU0604	WNHU0806
	ØD	50-315	50-315
	Screw (insert)	I60M3×9 (1.8 Nm)	I60M4×10 (3.4 Nm)
	Wrench (insert)	WT09IS	
	Wrench (insert)		WT20IT

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230



A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

WNHU	L	I.C	S	d
<b>06 04</b>	5.73	9.525	4.704	3.5
<b>08 06</b>	7.76	12.7	6.32	4.4

## Milling inserts

WN** negative insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW											
	<b>P</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗												
	<b>M</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗												
	<b>K</b>					⊗	⊗	⊗								⊗										
	<b>N</b>							⊗								⊗										
	<b>S</b>		⊗	⊗				⊗	⊗	⊗	⊗	⊗	⊗													
	<b>H</b>																									
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151		YNG151C	YD101	YD201	
	WNHU060404PNR-GM	0.4				○			○							○										
	WNHU060408PNR-GM	0.8				●			○	○						○										
	WNHU080608PNR-GM	0.8				●			●	●						●										
	WNHU080616PNR-GM	1.6				○			●	○																

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

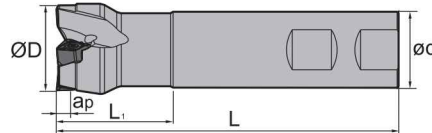
System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

Face milling



Article	*	Stock	Dimensions [mm]					Teeth	Coupling	kg	Inserts
			ØD	ød	L <sub>1</sub>	L	a <sub>p max</sub>				
FMP12-025-XP25-WN06-02C	*	○	25	25	30	100	5,7	2	XP	0.38	WNHU0604
FMP12-032-XP25-WN06-03C	*	○	32	25	40	120	5,7	3	XP	0.47	
FMP12-040-XP32-WN06-04C	*	○	40	32	40	140	5,7	4	XP	0.85	
FMP12-050-XP40-WN06-05C	*	○	50	40	40	169	5,7	5	XP	1.59	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts		
	Insert	WNHU0604
	ØD	25-50
	Screw (insert)	I60M3x9 (1.8Nm)
	Wrench (insert)	WT09IS

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- ✳ Normal machining conditions
- ✳ Unfavourable machining conditions

WNHU	L	I.C	S	d
06 04	5.73	9.525	4.704	3.5

## Milling inserts

WN** negative insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW									
	<b>P</b>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>											
	<b>M</b>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>											
	<b>K</b>					<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>						<span style="color: red;">●</span>		<span style="color: red;">●</span>									
	<b>N</b>							<span style="color: green;">●</span>							<span style="color: green;">●</span>	<span style="color: green;">●</span>									
	<b>S</b>		<span style="color: orange;">●</span>	<span style="color: orange;">●</span>				<span style="color: orange;">●</span>	<span style="color: orange;">●</span>	<span style="color: orange;">●</span>	<span style="color: orange;">●</span>	<span style="color: orange;">●</span>	<span style="color: orange;">●</span>												
	<b>H</b>																								
	ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	WNHU060404PNR-GM	0.4				○										○									
	WNHU060408PNR-GM	0.8				●			○	○						○									

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

# IMPORTANT INFORMATION

## Notes on using the FMWX series

**Please note the following:** The milling body is only equipped with two opposing inserts.

Select insert seat **1.1** in combination with **1.2** or insert seat **2.1** in combination with **2.2**.



Fig.: FMWX-063-A27-XE12-04C

### Cutting data

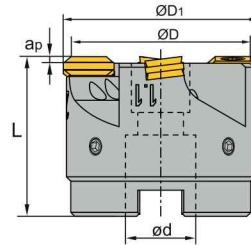
ISO group	Material	$v_c$ (m/min)	$F_n$ [mm/rev]	$a_p$ [mm]
<b>P</b>	Low-alloy steel	300–400	3,50–5,00	0,02–0,05
<b>M</b>	Stainless steels	280–300	3,50–5,00	0,02–0,05
<b>K</b>	Cast steel	300–400	3,50–5,00	0,02–0,05

## Face milling

FMWX



Screw Clamping



Article	*	Stock	Dimensions [mm]				Teeth	Coupling	kg	Inserts
			ØD <sub>1</sub>	ød	L	a <sub>p max</sub>				
FMWX-050-A22-XE12-04C	*	○	46	22	40	0.1	4	A	0.3	XEEC1209
FMWX-063-A27-XE12-04C	*	○	59	27	40	0.1	4	A	0.5	
FMWX-080-A27-XE12-04C	*	○	76	27	50	0.1	4	A	1	
FMWX-100-B32-XE12-06C	*	○	96	32	50	0.1	6	B	1.9	
FMWX-125-B40-XE12-06C	*	○	121	40	63	0.1	6	B	3.5	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts		
	<b>Insert</b>	<b>XEEC1209</b>
	<b>ØD</b>	<b>50-125</b>
	Screw (insert)	I60M4x10 (3.4 Nm)




System code > B26

Grade selection > B24

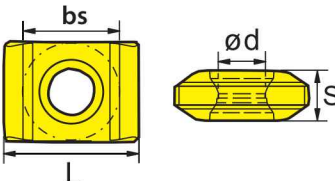

Technical info > B527

Cutting data > B230

XEEC  
12 09

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

**Milling inserts**

XE** positive insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
	<b>P</b>																							
	<b>M</b>																							
	<b>K</b>																							
	<b>N</b>																							
	<b>S</b>																							
	<b>H</b>																							
	ISO	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	XEEC120904						●																	

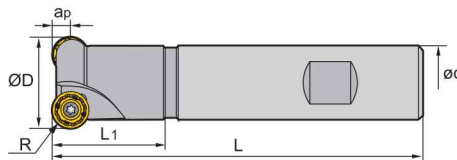
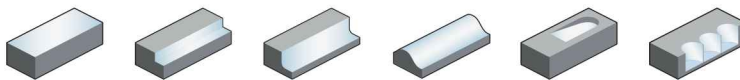
● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
HT Uncoated cermet  
HC<sup>2</sup> Coated cermet  
HW Uncoated carbide



## Face milling

FMR01

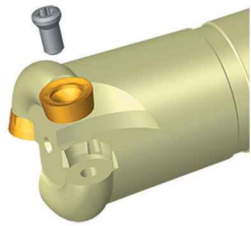


Article	*	Stock	Dimensions [mm]						Teeth	kg	Inserts
			R	ØD	ød	L <sub>1</sub>	L	a <sub>p max</sub>			
FMR01-025-XP20-RC10-02		○	5	25	20	30	100	5	2	0.2	RCKT10T3
FMR01-025-XP20-RC10-02C	*	○	5	25	20	30	100	5	2	0.2	
FMR01-032-XP25-RC10-02		●	5	32	25	35	120	5	2	0.5	
FMR01-032-XP25-RC10-02C	*	●	5	32	25	35	120	5	2	0.5	
FMR01-040-XP32-RC12-03		●	6	40	32	40	120	6	3	0.7	RCKT1204 RCGX1204
FMR01-040-XP32-RC12-03C	*	●	6	40	32	40	120	6	3	0.7	
FMR01-050-XP32-RC12-03		●	6	50	32	40	120	6	3	0.8	

● Ex stock    ○ On demand

\* With internal cooling

### Spare parts

	Insert	RCKT10T3	RCKT1204 RCGX1204	Image
		ØD	25-32	
	Screw (insert)	I60M4x8.4 (3.4 Nm)	I60M3.5x10 (2.7 Nm)	
	Wrench (insert)	WT15S	WT15S	

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

**Milling inserts**

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

RCKT	I.C	S	d
<b>10 T3</b>	10	3.97	4.4
<b>12 04</b>	12	4.76	4

RC** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>										
	<b>M</b>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>										
	<b>K</b>								<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>									
	<b>N</b>														<span style="color: green;">⊗</span>	<span style="color: green;">⊗</span>								
	<b>S</b>																							
	<b>H</b>																							
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	RCKT10T3MO-DM		○									○				●	○							
	RCKT1204MO-DM		○	○	○	●	○					○				●	○							
	RCKT1204MO-DR		○	○	○	●									●									
	RCKT1204MO-ER				●																			
	RCKT1204MO-NM											○												

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**Milling inserts**

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

RCGX	I.C	S	d
<b>12 04</b>	12	4.76	4

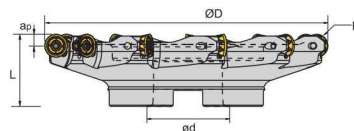
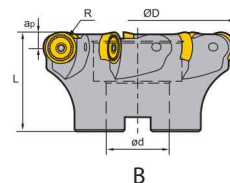
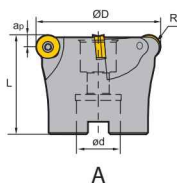
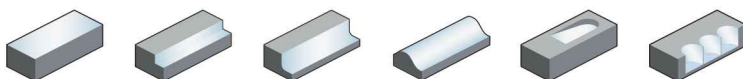
RC** positive insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>										
	<b>M</b>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>										
	<b>K</b>									<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>								
	<b>N</b>															<span style="color: green;">⊗</span>	<span style="color: green;">⊗</span>							
	<b>S</b>																							
	<b>H</b>																							
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	RCGX1204MO-LH																						●	

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

## Face milling

FMR02



C

Article	*	Stock	Dimensions [mm]					Teeth	Coupling	kg	Inserts
			R	ØD	ød	L	a <sub>p max</sub>				
FMR02-050-A22-RC12-05C	*	●	6	50	22	40	6	5	A	0.7	RCGX1204 RCKT1204 RCMW1204
FMR02-050-A22-RC12-06C	*	○	6	50	22	40	6	6	A	0.7	
FMR02-052-A22-RC12-05C	*	●	6	52	22	40	6	5	A	0.7	
FMR02-063-A22-RC12-04		●	6	63	22	40	6	4	A	0.7	
FMR02-063-A22-RC12-05C	*	●	6	63	22	40	6	5	A	0.7	
FMR02-063-A22-RC12-06		●	6	63	22	40	6	6	A	0.7	
FMR02-063-A22-RC12-06C	*	●	6	63	22	40	6	6	A	0.7	
FMR02-080-A27-RC12-07C	*	●	6	80	27	50	6	7	B	0.7	
FMR02-100-B32-RC12-08C	*	●	6	100	32	50	6	8	B	0.89	
FMR02-063-A22-RC16-04		●	8	63	22	40	8	4	A	0.7	
FMR02-063-A22-RC16-04C	*	○	8	63	22	40	8	4	A	0.7	
FMR02-063-A22-RC16-05C	*	○	8	63	22	40	8	5	A	0.7	
FMR02-066-A27-RC16-05C(FB)	*	●	8	66	27	50	8	5	A	0.5	
FMR02-080-B27-RC16-05		●	8	80	27	50	8	5	B	0.7	
FMR02-080-B27-RC16-07		●	8	80	27	50	8	7	B	0.7	
FMR02-100-B32-RC16-06		●	8	100	32	63	8	6	B	1.2	
FMR02-100-A32-RC16-06C	*	○	8	100	32	63	8	6	B	1.2	
FMR02-125-B40-RC16-07		●	8	125	40	63	8	7	B	2.5	
FMR02-125-B40-RC16-07C	*	○	8	125	40	63	8	7	B	2.5	
FMR02-160-B40-RC16-10(FB)		○	8	160	40	63	8	10	B	3.94	
FMR02-200-C60-RC16-12(FB)		●	8	200	60	63	8	12	C	5.4	
FMR02-080-A27-RC20-04		●	10	80	27	50	10	4	A	0.7	RCKT2006
FMR02-080-A27-RC20-04C(FB)	*	●	10	80	27	50	10	4	A	0.7	
FMR02-100-B32-RC20-05		●	10	100	32	63	10	5	B	1.2	
FMR02-100-B32-RC20-06		●	10	100	32	63	10	6	B	1.2	
FMR02-100-B32-RC20-06C	*	○	10	100	32	63	10	6	B	1.2	
FMR02-125-B32-RC20-05		○	10	125	32	63	10	5	B	1.2	
FMR02-125-B40-RC20-06		●	10	125	40	63	10	6	B	1.2	

● Ex stock ○ On demand

\* With internal cooling



System code > B26

Grade selection > B24

Technical info > B527





Cutting data > B230

# Indexable milling

Article	*	Stock	Dimensions [mm]					Teeth	Coupling		Inserts 
			R	ØD	ød	L	a <sub>p</sub> max				
FMR02-125-B40-RC20-07		●	10	125	40	63	10	7	B	2.2	RCKT2006
FMR02-125-B40-RC20-07C	*	○	10	125	40	63	10	7	B	2.2	
FMR02-160-B40-RC20-08		●	10	160	40	63	10	8	B	4.2	
FMR02-160-B40-RC20-08C	*	○	10	160	40	63	10	8	B	4.2	
FMR02-250-C60-RC20-10		●	10	250	60	63	10	10	C	8.49	
FMR02-250-C60-RC20-11		○	10	250	60	63	10	11	C	8.37	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts					
	Insert	<b>RCGX1204</b> <b>RCKT1204</b> <b>RCMW1204</b>	<b>RCKT1606</b>	<b>RCKT2006</b>	
	ØD	<b>50-100</b>	<b>63-200</b>	<b>80-250</b>	
	Screw (insert)	I60M3.5×10 (2.7 Nm)	I60M5×13 (6.7 Nm)	I43M6×16 (9.1 Nm)	
	Wrench (insert)	WT15IS			
	Wrench (insert)		WT20IT	WT25IT	

A

Turning

B

Milling

C

Drilling

D

Technical  
Information

E

Index

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

RCKT	I.C	S	d
12 04	12	4.76	4
16 06	16	6.35	5.56
20 06	20	6.35	6.55

## Milling inserts

RC** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW										
		P	M	K	N	S	H																		
		ISO	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
		RCKT1204MO-DM	○	○		○	●	○					○				●	○							
		RCKT1606MO-DM	○													●	●								
		RCKT2006MO-DM	○																						
		RCKT1204MO-DR	○	○		○	●									●									
		RCKT1606MO-DR	●	○	●		●	●									●								
		RCKT2006MO-DR	●	○	●		○	●				○						○							
		RCKT1204MO-ER				●																			
		RCKT1606MO-ER				●																			
		RCKT2006MO-ER				●																			
		RCKT1204MO-NM										○													
		RCKT1606MO-NM										○													

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

RCGX	I.C	S	d
12 04	12	4.76	4

**Milling inserts**

RC** positive insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>M</b>	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>K</b>							●								●								
	<b>N</b>							●							●	●								
	<b>S</b>		●		●			●	●	●	●	●	●											
	<b>H</b>																							
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	RCGX1204MO-LH																						●	

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B26

Grade selection > B24

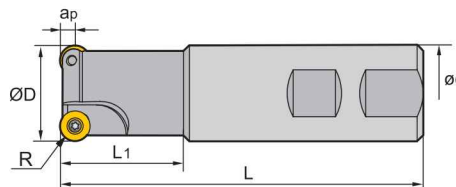
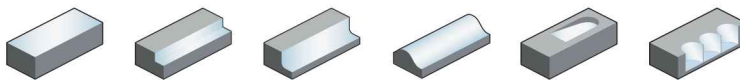
Technical info > B527

Cutting data > B230



## Face milling

FMR03



Article	* Stock	Dimensions [mm]							Teeth	kg	Inserts
		R	ØD	ød	L <sub>1</sub>	L	a <sub>p max</sub>				
FMR03-016-XP16-RD08-02	○	4	16	16	25	100	4	2	0.1		
FMR03-025-XP25-RD08-02	●	4	25	25	30	100	4	2	0.3	RD**0803	
FMR03-025-XP25-RD08-02C	* ○	4	25	25	30	100	4	2	0.3		
FMR03-032-XP32-RD10-02	●	5	32	32	40	120	5	2	0.7	RD**10T3	
FMR03-040-XP32-RD12-03	●	6	40	32	40	120	6	3	0.7		
FMR03-050-XP32-RD12-04	●	6	50	32	40	120	6	4	0.8	RD**1204	

● Ex stock    ○ On demand

\* With internal cooling

### Spare parts

Insert		RD**0803	RD**10T3	RD**1204	
ØD		16-25	32	40-50	
	Screw (insert)	I60M3×7 (1.8 Nm)	I60M4×10 (3.4 Nm)	I60M4×10 (3.4 Nm)	
	Wrench (insert)	WT09IP	WT15IP	WT15IP	

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

**Milling inserts**

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

RDKT
10 T3
12 04

RD** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>M</b>	●	●	●	●	●		●	●	●	●	●	●	●										
	<b>K</b>						●	●	●							●								
	<b>N</b>						●								●	●								
	<b>S</b>			●	●				●	●	●	●	●	●										
	<b>H</b>																							
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	RDKT10T3MO-MM																	○						
	RDKT1204MO-MM																	○						

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**Milling inserts**

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

RDKW	I.C	S	d
08 03	8	3.18	3.4
10 T3	10	3.97	4.4
12 04	12	4.76	4.4

RD** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>M</b>	●	●	●	●	●		●	●	●	●	●	●	●										
	<b>K</b>						●	●	●							●								
	<b>N</b>						●								●	●								
	<b>S</b>			●	●				●	●	●	●	●	●										
	<b>H</b>																							
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	RDKW0803MO						●																	
	RDKW10T3MO	●	○			○			●	○							○							
	RDKW1204MO	●			○	●			●	○				●	●	○								

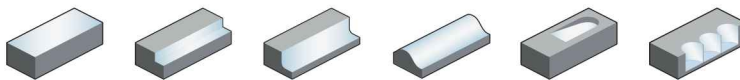
● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



## Face milling

FMR03

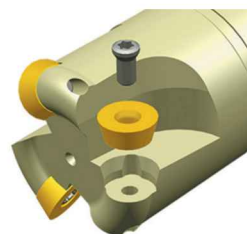


Article	*	Stock	Dimensions [mm]						Teeth	Inserts
			R	ØD	ød	L <sub>1</sub>	L	a <sub>p max</sub>		
FMR03-015-G16-XS-RD0702-02		●	3.5	15	16	40	88	3.5	2	RDKW0702
FMR03-015-G16-XS-RD0702-02C	*	○	3.5	15	16	40	88	3.5	2	
FMR03-015-G16-S-RD0702-02		●	3.5	15	16	60	108	3.5	2	
FMR03-015-G16-S-RD0702-02C	*	○	3.5	15	16	60	108	3.5	2	
FMR03-015-G20-M-RD0702-02		●	3.5	15	20	80	130	3.5	2	
FMR03-015-G20-M-RD0702-02C	*	○	3.5	15	20	80	130	3.5	2	
FMR03-015-G25-XL-RD0702-02C	*	○	3.5	15	25	120	176	3.5	2	RDKW1003
FMR03-020-G20-XS-RD1003-02C	*	○	5	20	20	40	90	5	2	
FMR03-020-G20-S-RD1003-02C	*	○	5	20	20	60	110	5	2	
FMR03-020-G25-M-RD1003-02C	*	○	5	20	25	80	136	5	2	
FMR03-020-G25-L-RD1003-02C	*	○	5	20	25	100	156	5	2	
FMR03-020-G25-XL-RD1003-02C	*	○	5	20	25	120	176	5	2	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts			
	Insert	RDKW0702	RDKW1003
	ØD	15	20
	Screw (insert)		I60M3.5x6.5TT (2.7Nm)
	Screw (insert)	I60M2.5x5.0 (1.0Nm)	
	Wrench (insert)		WT10IP
	Wrench (insert)	WT07P	



System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

**Milling inserts**

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

RDkW	I.C	S	d
07 02	7	2.38	2.7
10 03	10	3.18	3.9

RD** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●									
	<b>M</b>	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●									
	<b>K</b>																							
	<b>N</b>																							
	<b>S</b>		●●	●●					●●●●●●●●	●●●●●●●●	●●●●●●●●	●●●●●●●●												
	<b>H</b>																							
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	RDkW0702MO-1					●					○			●										
	RDkW0702MO-2									●														
	RDkW1003MO-1				○	●					○			●	●									
	RDkW1003MO-2									●														
	RDkW1003MO-3				●										●									

● Ex stock    ○ On demand

Important information on the cutting edge design can be found on page B102.

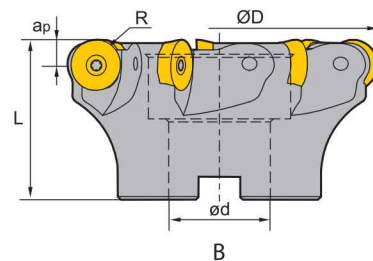
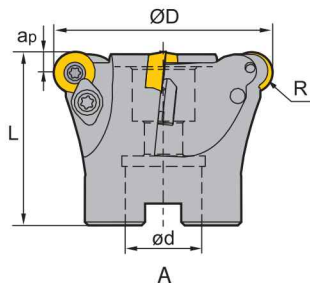
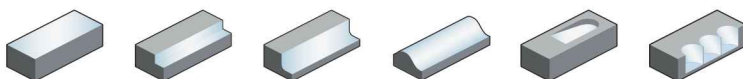
HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A** Turning  
**B** Milling  
**C** Drilling  
**D** Technical Information  
**E** Index



## Face milling

FMR04



Article	*	Stock	Dimensions [mm]					Teeth	Coupling	kg	Inserts
			R	ØD	ød	L	ap <sub>max</sub>				
FMR04-050-A22-RD12-03	●	●	6	50	22	40	6	3	A	0.3	RD**1204
FMR04-063-A22-RD12-04	●	●	6	63	22	50	6	4	A	0.5	
FMR04-080-B27-RD16-05	●	●	8	80	27	50	8	5	B	1.2	RD**1605
FMR04-100-B32-RD16-06	●	●	8	100	32	50	8	6	B	1	
FMR04-100-B32-RD20-06C	*	○	10	100	32	50	8	6	B	1	RD**2006
FMR04-125-B40-RD20-06	○	○	10	125	40	63	10	6	B	1.9	
FMR04-125-B40-RD20-06C	*	○	10	125	40	63	10	6	B	1.9	
FMR04-160-B40-RD20-07	○	○	10	160	40	63	10	7	B	3.7	

● Ex stock ○ On demand

\* With internal cooling

Spare parts		RD**1204	RD**1605	RD**2006
	Insert	50-63	80-100	100-160
	Clamp	WD-204	WD-207	
	Screw (clamp)	I60M4×10 (3.4 Nm)	I60M5×13 (6.7 Nm)	
	Screw (insert)	I60M3.5×10 (2.7 Nm)	I60M5×13 (6.7 Nm)	I43M6×16 (9.1 Nm)
	Wrench (clamp)	WT15IP		
	Wrench (clamp)		WT20IT	
	Wrench (insert)	WT15IP		
	Wrench (insert)		WT20IT	WT25IT



System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

RDKT  
12 04

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

**Milling inserts**

RD** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW								
	<b>P</b>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>										
	<b>M</b>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>										
	<b>K</b>							<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>			<span style="color: red;">⊗</span>								
	<b>N</b>							<span style="color: green;">⊗</span>							<span style="color: green;">⊗</span>	<span style="color: green;">⊗</span>							
	<b>S</b>		<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>				<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>										
	<b>H</b>																						
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	RDKT1204MO-MM																	○					

● Ex stock   ○ On demand

HC<sup>1</sup> Coated carbide  
HT Uncoated cermet  
HC<sup>2</sup> Coated cermet  
HW Uncoated carbide

A  
Turning

B  
Milling

C  
Drilling

D  
Technical Information

E  
Index

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

RDKW	I.C	S	d
12 04	12	4.76	4.4
16 05	16	5.56	5.5
20 06	20	6.35	6.5

**Milling inserts**

RD** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW								
	<b>P</b>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>										
	<b>M</b>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>										
	<b>K</b>							<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>			<span style="color: red;">⊗</span>								
	<b>N</b>							<span style="color: green;">⊗</span>							<span style="color: green;">⊗</span>	<span style="color: green;">⊗</span>							
	<b>S</b>		<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>				<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>										
	<b>H</b>																						
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	RDKW1204MO	●			○		●			●	○			●	●	○							
	RDKW1605MO											○	○				○						
	RDKW2006MO							○															
	RDKW2006MO-3														●								

● Ex stock   ○ On demand

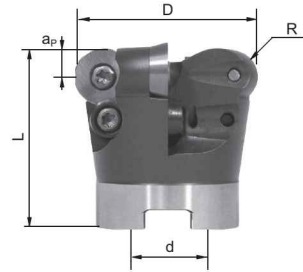
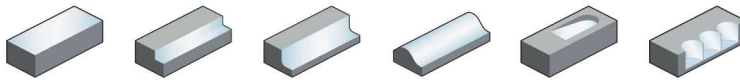
HC<sup>1</sup> Coated carbide  
HT Uncoated cermet  
HC<sup>2</sup> Coated cermet  
HW Uncoated carbide

Important information on the cutting edge design can be found on page B102.



## Face milling

FMR04



Article	*	Stock	Dimensions [mm]					Teeth	Inserts
			R	ØD	ød	L	a <sub>p</sub> max		
FMR04-042-A16-RD1003-06		○	5	42	16	44	5	6	RDKW1003
FMR04-042-A16-RD1003-06C	*	●	5	42	16	44	5	6	
FMR04-052-A22-RD1003-07		○	5	52	22	50	5	7	RDKW12T3
FMR04-052-A22-RD1003-07C	*	●	5	52	22	50	5	7	
FMR04-042-A16-RD12T3-05		○	6	42	16	42	6	5	RDKW12T3
FMR04-042-A16-RD12T3-05C	*	●	6	42	16	42	6	5	
FMR04-052-A22-RD12T3-05		○	6	52	22	50	6	5	RDKW1604
FMR04-052-A22-RD12T3-05C	*	●	6	52	22	50	6	5	
FMR04-066-A27-RD12T3-06		○	6	66	27	50	6	6	RDKW1604
FMR04-066-A27-RD12T3-06C	*	●	6	66	27	50	6	6	
FMR04-080-A27-RD12T3-07		○	6	80	27	50	6	7	RDKW1604
FMR04-080-A27-RD12T3-07C	*	●	6	80	27	50	6	7	
FMR04-052-A22-RD1604-04		○	8	52	22	50	8	4	RDKW1604
FMR04-052-A22-RD1604-04C	*	●	8	52	22	50	8	4	
FMR04-066-A27-RD1604-05		○	8	66	27	50	8	5	RDKW1604
FMR04-066-A27-RD1604-05C	*	●	8	66	27	50	8	5	
FMR04-080-A27-RD1604-06		○	8	80	27	52	8	6	RDKW1604
FMR04-080-A27-RD1604-06C	*	●	8	80	27	52	8	6	
FMR04-100-B32-RD1604-07		○	8	100	32	52	8	7	RDKW1604
FMR04-100-B32-RD1604-07C	*	●	8	100	32	52	8	7	
FMR04-125-B40-RD1604-08		○	8	125	40	52	8	8	RDKW1604
FMR04-160-B40-RD1604-09		○	8	160	40	52	8	9	
FMR04-160-B40-RD1604-09C	*	●	8	160	40	52	8	9	

● Ex stock ○ On demand

\* With internal cooling

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

Spare parts						
Insert	RDKW1003	RDKW12T3	RDKW12T3	RDKW1604	RDKW1604	
ØD	42-52	42	52-80	52	66-160	
	Clamp					WX16N
	Clamp			LOM3.5x7.1		
	Screw (clamp)					I60M4.5x10 (5.0Nm)
	Screw (insert)	I60M3.5x6.5TT (2.7Nm)				
	Screw (insert)		I60M3.5x7.7 (2.7 Nm)	I60M3.5x7.7 (2.7 Nm)	I60M4.5x10 (5.0 Nm)	I60M4.5x10 (5.0 Nm)
	Wrench (clamp)			WT15P		
	Wrench (clamp)					WT20T
	Wrench (insert)	WT10IP				
	Wrench (insert)		WT15P	WT15P		
	Wrench (insert)				WT20T	WT20T

### Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

RDKW	I.C	S	d
<b>10</b> 03	10	3.18	3.9
<b>12</b> T3	12	3.97	3.9
<b>16</b> 04	16	4.76	5.2

RD** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
		P	M	K	N	S	H	P	M	K	N	S	H											
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	RDKW1003MO-1				○	●						○			●	●								
	RDKW1003MO-2									●														
	RDKW1003MO-3				●										●									
	RDKW12T3MO-1					○	●					○			●	●								
	RDKW12T3MO-2										●				○									
	RDKW12T3MO-3				●										●									
	RDKW1604MO-1						●					○			●	●	●							
	RDKW1604MO-2											○												
	RDKW1604MO-3	○			●			●			○				●		●							

● Ex stock ○ On demand

Important information on the cutting edge design can be found on page B102.

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

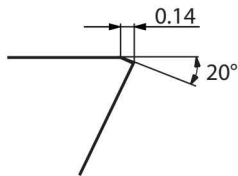
# IMPORTANT INFORMATION

## Cutting edge design RDKW

RDKW\*MO-1



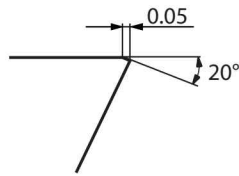
General machining



RDKW\*MO-2



Soft cutting geometry  
(Finishing)



RDKW\*MO-3



Roughing

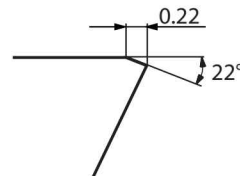
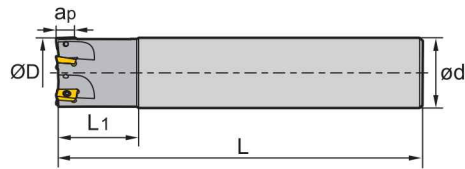


Fig.: FMR04-052-B22-RD12T3-05C

### Square shoulder milling

EMP01 Kr: 90°



Straight shank

Article	*	Stock	Dimensions [mm]					Teeth	kg	Inserts
			$\varnothing D$	$\varnothing d$	$L_1$	$L$	$a_{p \max}$			
EMP01-012-G12-AP07-02C	*	●	12	12	25	75	6.4	2	0.31	APKT0702
EMP01-014-G16-AP07-03C	*	●	14	16	25	85	6.4	3	0.61	
EMP01-016-G16-AP07-04C	*	●	16	16	30	90	6.4	4	0.75	
EMP01-012-G16-AP11-01		●	12	16	25	85	10.5	1	0.1	APKT11T3
EMP01-016-G16-AP11-02		●	16	16	25	90	10.5	2	0.1	
EMP01-016-G16-AP11-02C	*	○	16	16	25	90	10.5	2	0.1	
EMP01-020-G20-AP11-02		●	20	20	30	100	10.5	2	0.2	
EMP01-020-G20-AP11-02C	*	●	20	20	30	100	10.5	2	0.2	
EMP01-020-G20-AP11-03		○	20	20	30	100	10.5	3	0.2	
EMP01-020-G20-AP11-03C	*	●	20	20	30	100	10.5	3	0.2	
EMP01-025-G25-AP11-03		●	25	25	35	115	10.5	3	0.4	
EMP01-025-G25-AP11-03C	*	○	25	25	35	115	10.5	3	0.4	
EMP01-025-G25-AP11-04		●	25	25	35	115	10.5	4	0.4	
EMP01-025-G25-AP11-04C	*	●	25	25	35	115	10.5	4	0.4	
EMP01-032-G32-AP11-04		●	32	32	40	125	10.5	4	0.7	APKT1604
EMP01-025-G25-AP16-02		●	25	25	35	115	15.5	2	0.4	
EMP01-025-G25-AP16-02C	*	●	25	25	35	115	15.5	2	0.4	
EMP01-032-G32-AP16-03		●	32	32	40	125	15.5	3	0.7	
EMP01-032-G32-AP16-03C	*	●	32	32	40	125	15.5	3	0.7	
EMP01-040-G32-AP16-03		●	40	32	42	130	15.5	3	0.7	
EMP01-040-G32-AP16-03C	*	●	40	32	42	130	15.5	3	0.7	
EMP01-040-G32-AP16-04C	*	○	40	32	42	130	15.5	4	0.8	
EMP01-050-G32-AP16-05		●	50	32	45	135	15.5	5	1	
EMP01-063-G32-AP16-06		●	63	32	45	135	15.5	6	1.4	

● Ex stock    ○ On demand

\* With internal cooling

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230






# Indexable milling Square shoulder milling

## Spare parts

Insert	APKT0702	APKT11T3	APKT1604
Screw (insert)	I60M1.8x4 (0.5 Nm)		I60M4x8.4 (3.4 Nm)
Screw (insert)		I60M2.5x6.5T (1.0 Nm)	
Wrench (insert)	WT05IP	WT08IP	
Wrench (insert)			WT15S



## Milling inserts

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

APKT	L	S	d
07 02	4.26	2.38	2
11 T3	12.24	3.6	2.8
16 04	17.877	5.76	4.4

AP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW											
ISO		r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	APKT11T304-ALH	0.4	6.5									●													●	●
	APKT11T308-ALH	0.8	6.5									●													●	●
	APKT160408-ALH	0.8	9.33									●													●	●
	APKT11T304-APF	0.4	6.5														●									
	APKT11T308-APF	0.8	6.5													○	●	○								
	APKT160408-APF	0.8	9.33												○	●	○	○								
	APKT070204-APM	0.4	6.91														●									
	APKT11T304-APM	0.4	6.5				●		●								●									
	APKT11T308-APM	0.8	6.5				●		●					○		●	○									
	APKT11T312-APM	1.2	6.5				●		●							●										
	APKT11T316-APM	1.6	6.5				●		●							●										
	APKT11T320-APM	2	6.5				●		●							●										
	APKT160408-APM	0.8	9.33				●		●	●				○		●	○									
	APKT160416-APM	1.6	9.33				●		●							●										
	APKT160420-APM	2	9.33				●		●							●										
	APKT160424-APM	2.4	9.33				●		●							●										
	APKT160430-APM	3	9.33				●		●							●										
	APKT11T304-LH	0.4	6.5																						○	○
	APKT11T308-LH	0.8	6.5																						○	●
	APKT160408-LH	0.8	9.33																						○	○

● Ex stock   ○ On demand

HC<sup>1</sup> Coated carbide  
HT Uncoated cermet  
HC<sup>2</sup> Coated cermet  
HW Uncoated carbide

System code > B26

Grade selection > B24

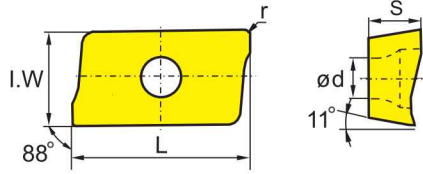
Technical info > B527

Cutting data > B230

APKT	L	S	d
<b>07 02</b>	4.26	2.38	2
<b>11 T3</b>	12.24	3.6	2.8
<b>16 04</b>	17.877	5.76	4.4

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

**Milling inserts**



AP** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW								
	P	M	K	N	S	H																		
ISO	r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
APKT11T308-NM																								
APKT11T312-NM																								
APKT11T304-PF	0.4	6.5																						
APKT11T308-PF	0.8	6.5																						
APKT11T316-PF	1.6	6.5																						
APKT160408-PF	0.8	9.33																						
APKT160430-PF	3	9.33																						
APKT11T304-PM	0.4	6.5																						
APKT11T308-PM	0.8	6.5																						
APKT11T312-PM	1.2	6.5																						
APKT11T316-PM	1.6	6.5																						
APKT160408-PM	0.8	9.33																						
APKT160416-PM	1.6	9.33																						
APKT11T304-PR	0.4	6.5																						
APKT11T316-PR	1.6	6.5																						
APKT11T3XR																								

● Ex stock    ○ On demand

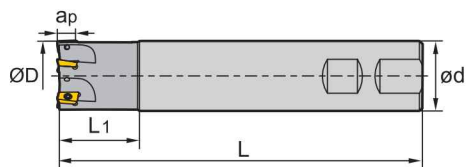
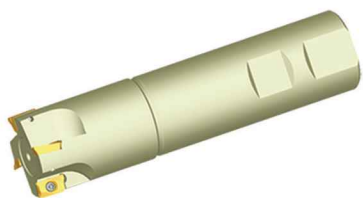
HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



**A** Turning  
**B** Milling  
**C** Drilling  
**D** Technical Information  
**E** Index

## Square shoulder milling

EMP01 Kr: 90°



Weldon shank

Article	*	Stock	Dimensions [mm]					Teeth	kg	Inserts
			ØD	ød	L <sub>1</sub>	L	a <sub>p max</sub>			
EMP01-020-XP20-AP07-05C	*	●	20	20	30	100	6.4	5	0.31	APKT0702
EMP01-025-XP25-AP07-07C	*	●	25	25	35	115	6.4	7	0.61	
EMP01-012-XP16-AP11-01		●	12	16	25	85	10.5	1	0.1	APKT11T3
EMP01-012-XP16-AP11-01C	*	○	12	16	25	85	10.5	1	0.1	
EMP01-016-XP16-AP11-02		●	16	16	25	90	10.5	2	0.1	
EMP01-016-XP16-AP11-02C	*	○	16	16	25	90	10.5	2	0.1	
EMP01-020-XP20-AP11-02		●	20	20	30	100	10.5	2	0.2	
EMP01-020-XP20-AP11-02C	*	○	20	20	30	100	10.5	2	0.2	
EMP01-020-XP20-AP11-03		●	20	20	30	100	10.5	3	0.2	
EMP01-020-XP20-AP11-03C	*	●	20	20	30	100	10.5	3	0.2	
EMP01-025-XP25-AP11-03		●	25	25	35	115	10.5	3	0.4	
EMP01-025-XP25-AP11-03C	*	●	25	25	35	115	10.5	3	0.4	
EMP01-025-XP25-AP11-04		●	25	25	35	115	10.5	4	0.4	APKT1604
EMP01-025-XP25-AP11-04C	*	○	25	25	35	115	10.5	4	0.4	
EMP01-032-XP32-AP11-04		●	32	32	40	125	10.5	4	0.7	
EMP01-032-XP32-AP11-04C	*	○	32	32	40	125	10.5	4	0.7	
EMP01-025-XP25-AP16-02		●	25	25	35	115	15.5	2	0.4	
EMP01-025-XP25-AP16-02C	*	○	25	25	35	115	15.5	2	0.4	
EMP01-032-XP32-AP16-03		●	32	32	40	125	15.5	3	0.7	
EMP01-032-XP32-AP16-03C	*	○	32	32	40	125	15.5	3	0.7	
EMP01-040-XP32-AP16-04		●	40	32	42	130	15.5	4	0.8	
EMP01-040-XP32-AP16-04C	*	○	40	32	42	130	15.5	4	0.8	
EMP01-050-XP32-AP16-05		●	50	32	45	135	15.5	5	1	APKT1604
EMP01-063-XP32-AP16-06		○	63	32	45	135	15.5	6	1.4	

● Ex stock    ○ On demand

\* With internal cooling

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

Spare parts				
	Insert	APKT0702	APKT11T3	APKT1604
	ØD	12-25	12-32	25-63
	Screw (insert)	I60M1.8x4 (0.5 Nm)		I60M4x8.4 (3.4 Nm)
	Screw (insert)		I60M2.5x6.5T (1.0Nm)	
	Wrench (insert)	WT05IP	WT08IP	
	Wrench (insert)			WT15S



**Milling inserts**

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

APKT	L	S	d
07 02	4.26	2.38	2
11 T3	12.24	3.6	2.8
16 04	17.877	5.76	4.4

AP** milling insert		HC <sup>1</sup> (CVD)										HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW							
ISO		r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	APKT11T304-ALH	0.4	6.5																							
	APKT11T308-ALH	0.8	6.5																							
	APKT160408-ALH	0.8	9.33																							
	APKT11T304-APF	0.4	6.5																							
	APKT11T308-APF	0.8	6.5																							
	APKT160408-APF	0.8	9.33																							
	APKT070204-APM	0.4	6.91																							
	APKT11T304-APM	0.4	6.5																							
	APKT11T308-APM	0.8	6.5																							
	APKT11T312-APM	1.2	6.5																							
	APKT11T316-APM	1.6	6.5																							
	APKT11T320-APM	2	6.5																							
	APKT160408-APM	0.8	9.33																							
	APKT160416-APM	1.6	9.33																							
	APKT160420-APM	2	9.33																							
	APKT160424-APM	2.4	9.33																							
	APKT160430-APM	3	9.33																							
	APKT11T304-LH	0.4	6.5																							
	APKT11T308-LH	0.8	6.5																							
	APKT160408-LH	0.8	9.33																							

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



A  
Turning  
 B  
Milling  
 C  
Drilling  
 D  
Technical Information  
 E  
Index

# Indexable milling Square shoulder milling

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information






**E**

Index

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

APKT	L	S	d
<b>07 02</b>	4.26	2.38	2
<b>11 T3</b>	12.24	3.6	2.8
<b>16 04</b>	17.877	5.76	4.4

## Milling inserts

AP** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW								
ISO	r	l.W	P	M	K	N	S	H																
			YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
																								
	0.4	6.5																						
	0.8	6.5																						
	1.6	6.5																						
	0.8	9.33																						
	3	9.33																						
	0.4	6.5																						
	0.8	6.5																						
	1.2	6.5																						
	1.6	6.5																						
	0.8	9.33																						
	1.6	9.33																						
	0.4	6.5																						
	1.6	6.5																						
																								

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

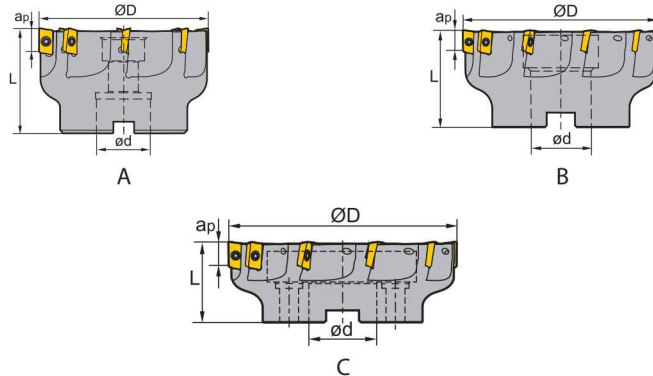
Grade selection > B24

Technical info > B527

Cutting data > B230

Square shoulder milling

EMP02 Kr: 90° 



Article	*	Stock	Dimensions [mm]				Teeth	Coupling	kg	Inserts
			ØD	ød	L	a <sub>p</sub> max				
EMP02-032-A16-AP07-08C	*	●	32	16	35	6.4	8	A	0.34	APKT0702
EMP02-040-A16-AP07-10C	*	●	40	16	40	6.4	10	A	0.4	
EMP02-050-A22-AP07-12C	*	●	50	22	40	6.4	12	A	0.6	
EMP02-040-A16-AP11-04C	*	●	40	16	40	11	4	A	0.237	
EMP02-040-A16-AP11-05C	*	●	40	16	40	11	5	A	0.177	
EMP02-040-A16-AP11-06C	*	●	40	16	40	11	6	A	0.234	
EMP02-050-A22-AP11-06		●	50	22	40	11	6	A	0.3	APKT11T3
EMP02-050-A22-AP11-06C	*	●	50	22	40	11	6	A	0.3	
EMP02-050-A22-AP11-07C	*	●	50	22	40	11	7	A	0.39	
EMP02-063-A22-AP11-08		●	63	22	40	11	8	A	0.6	
EMP02-063-A22-AP11-08C	*	●	63	22	40	11	8	A	0.6	
EMP02-063-A22-AP11-09C	*	●	63	22	40	11	9	A	0.54	
EMP02-080-A27-AP11-08		●	80	27	50	11	8	A	1.2	
EMP02-080-A27-AP11-08C	*	●	80	27	50	11	8	A	1.2	
EMP02-080-A27-AP11-10C	*	●	80	27	50	11	10	A	1.13	
EMP02-100-B32-AP11-10		●	100	32	50	11	10	B	1.7	
EMP02-100-B32-AP11-10C	*	○	100	32	50	11	10	B	1.7	
EMP02-125-B40-AP11-10		○	125	40	63	11	10	B	3.42	
EMP02-040-A16-AP16-03		○	40	16	40	15.5	3	A	0.17	APKT1604
EMP02-040-A16-AP16-04C	*	●	40	16	40	15.5	4	A	0.17	
EMP02-050-A22-AP16-05		●	50	22	40	15.5	5	A	0.3	
EMP02-050-A22-AP16-05C	*	●	50	22	40	15.5	5	A	0.3	
EMP02-063-A22-AP16-06		●	63	22	40	15.5	6	A	0.5	
EMP02-063-A22-AP16-06C	*	●	63	22	40	15.5	6	A	0.5	
EMP02-080-A27-AP16-06C	*	○	80	27	50	15.5	6	A	1.08	
EMP02-080-A27-AP16-07		●	80	27	50	15.5	7	A	1.1	
EMP02-080-A27-AP16-07C	*	●	80	27	50	15.5	7	A	1.1	
EMP02-100-B32-AP16-08		●	100	32	50	15.5	8	B	1.6	

● Ex stock ○ On demand

\* With internal cooling

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230



A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

# Indexable milling

A

Turning

B

Milling

C



Drilling

D

Technical Information

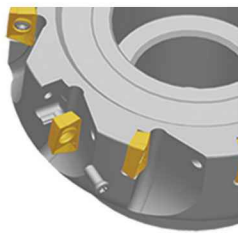



E

Index

Article	*	Stock	Dimensions [mm]				Teeth	Coupling		Inserts 
			ØD	ød	L	a <sub>p max</sub>				
EMP02-100-B32-AP16-08C	*	●	100	32	50	15.5	8	B	1.6	APKT1604
EMP02-125-B40-AP16-06C	*	○	125	40	63	15.5	6	B	3.18	
EMP02-125-B40-AP16-10		○	125	40	63	15.5	10	B	3.2	
EMP02-125-B40-AP16-10C	*	○	125	40	63	15.5	10	B	3.2	
EMP02-160-B40-AP16-07C	*	○	160	40	63	15.5	7	B	4.3	
EMP02-160-B40-AP16-10		○	160	40	63	15.5	10	B	6.3	
EMP02-160-B40-AP16-10C	*	○	160	40	63	15.5	10	B	6.3	
EMP02-200-C60-AP16-12		○	200	60	63	15.5	12	C	8.1	
EMP02-250-C60-AP16-12		○	250	60	63	15.5	12	C	11.2	

● Ex stock    ○ On demand

\* With internal cooling




Spare parts					
Insert	APKT11T3	APKT1604	APKT1604		
ØD	40-125	40-160	160-250		
Cassette			Locator-APKT16		
 Screw (insert)		I60M4×10 (3.4 Nm)	I60M4×10 (3.4 Nm)		
 Screw (insert)	I60M2.5×6.5T (1.0Nm)				
 Wrench (insert)	WT08IS	WT15IS	WT15IS		

System code > B26

Grade selection > B24

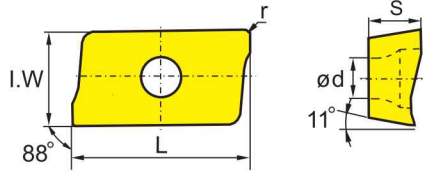
Technical info > B527








Cutting data > B230

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

APKT	L	S	d
07 02	4.26	2.38	2
11 T3	12.24	3.6	2.8
16 04	17.877	5.76	4.4

## Milling inserts



APKT** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW								
			P	M	K	N	S	H																
ISO	r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	0.4	6.5									●												●	●
APKT11T308-ALH	0.8	6.5									●												●	●
APKT160408-ALH	0.8	9.33									●												●	●
	0.4	6.5														●								
APKT11T308-APF	0.8	6.5												○		●		○						
APKT160408-APF	0.8	9.33												○		●	○	○						
APKT070204-APM	0.4	6.91														●								
APKT11T304-APM	0.4	6.5			●			●								●								
APKT11T308-APM	0.8	6.5			●			●						○		●		○						
APKT11T312-APM	1.2	6.5			●			●								●								
APKT11T316-APM	1.6	6.5			●			●								●								
	2	6.5			●			●								●								
APKT160408-APM	0.8	9.33			●			●	●					○		●		○						
APKT160416-APM	1.6	9.33			●			●								●								
APKT160420-APM	2	9.33			●			●								●								
APKT160424-APM	2.4	9.33			●			●								●								
APKT160430-APM	3	9.33			●											●								
	0.4	6.5																					○	○
APKT11T308-LH	0.8	6.5																					○	●
APKT160408-LH	0.8	9.33																					○	○
															●			●						
APKT11T312-NM															●			●						
	0.4	6.5	○	○							○	○						○						
APKT11T308-PF	0.8	6.5											○											
APKT11T316-PF	1.6	6.5											○											
APKT160408-PF	0.8	9.33	○					○					○						○					
APKT160430-PF	3	9.33	○																					
	0.4	6.5	○	○	○	○	○	○	○	○	○	○						○						
APKT11T308-PM	0.8	6.5	○	○	○	○	○	○	○	○	○	○						○	○					
APKT11T312-PM	1.2	6.5				○							○	○					○					
APKT11T316-PM	1.6	6.5				○							○	○					○					
APKT160408-PM	0.8	9.33	○	○	○	●	●	○	○	○	○	○						○	●					
APKT160416-PM	1.6	9.33	○										○											

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

A Turning  
 B Milling  
 C Drilling  
 D Technical Information  
 E Index



A

Turning

B

Milling

C

Drilling




D

Technical Information



E

Index

APKT	L	S	d
<b>07 02</b>	4.26	2.38	2
<b>11 T3</b>	12.24	3.6	2.8
<b>16 04</b>	17.877	5.76	4.4

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

## Milling inserts

AP** milling insert				HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW										
				P																								
				M																								
				K																								
				N																								
				S																								
				H																								
ISO				r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	APKT11T304-PR	0.4	6.5																									
	APKT11T316-PR	1.6	6.5																									
	APKT11T3XR																											

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

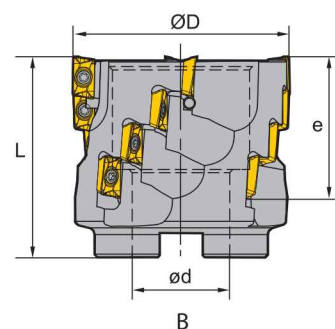
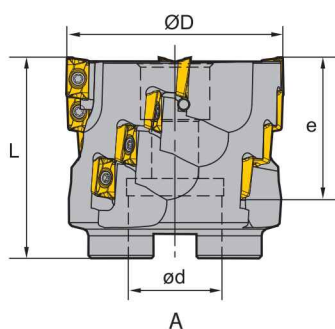
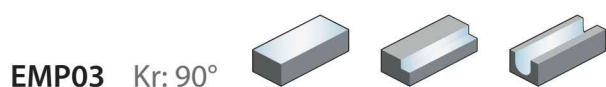
Grade selection > B24


Technical info > B527

Cutting data > B230



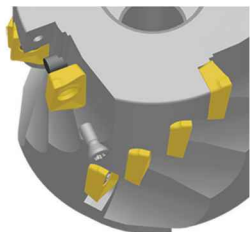


### Square shoulder milling



Article	*	Stock	Dimensions [mm]				Teeth	Coupling	No. of inserts	kg	Inserts
			ØD	e	ød	L					
EMP03-050-A22-AP11-04		●	50	39	22	58	4	A	16	0.5	 APKT11T3
EMP03-050-A22-AP11-04C	*	○	50	39	22	58	4	A	16	0.5	
EMP03-063-A27-AP11-04		●	63	39	27	58	4	A	16	0.9	
EMP03-063-A27-AP11-04C	*	○	63	39	27	58	4	A	16	0.9	
EMP03-080-B32-AP11-05		●	80	39	32	63	5	B	20	1.3	
EMP03-080-B32-AP11-05C	*	○	80	39	32	63	5	B	20	1.3	
EMP03-100-B40-AP11-06		●	100	39	40	63	6	B	24	2	
EMP03-100-B40-AP11-06C	*	○	100	39	40	63	6	B	24	2	

● Ex stock ○ On demand

\* With internal cooling

Spare parts			
	Insert ØD	APKT11T3 50-100	
	Screw (insert)	I60M2.5x6.5T (1.0Nm)	
	Wrench (insert)	WT08IS	

A

Turning

B

Milling

C

Drilling

D

Technical  
Information

E

Index

# Indexable milling Square shoulder milling

**A**

Turning

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

APKT	L	S	d
11 T3	12.24	3.6	2.8

## Milling inserts

AP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW			
		P	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●	
		M	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●
		K	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●
		N	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●
		S	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●
		H	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●

**B**

Milling

ISO	r	I.W	Milling Insert Grades																					
			YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
APKT11T304-ALH	0.4	6.5							●														●	●
APKT11T308-ALH	0.8	6.5							●														●	●
APKT11T304-APF	0.4	6.5														●								
APKT11T308-APF	0.8	6.5											○		●	○								
APKT11T304-APM	0.4	6.5				●		●							●									
APKT11T308-APM	0.8	6.5				●		●					○		●	○								
APKT11T312-APM	1.2	6.5				●		●							●									
APKT11T316-APM	1.6	6.5				●		●							●									
APKT11T320-APM	2	6.5				●		●							●									
APKT11T304-LH	0.4	6.5																				○	○	
APKT11T308-LH	0.8	6.5																				○	●	
APKT11T308-NM														●		●								
APKT11T312-NM														●		●								
APKT11T304-PF	0.4	6.5	○		○					○	○					○								
APKT11T308-PF	0.8	6.5									○													
APKT11T316-PF	1.6	6.5									○													
APKT11T304-PM	0.4	6.5	○	○	○	○	○			○	○					○								
APKT11T308-PM	0.8	6.5	○	○	○	○	●	○	○	○	○			○	○									
APKT11T312-PM	1.2	6.5				○				○	○					○								
APKT11T316-PM	1.6	6.5				○				○	○					○								
APKT11T304-PR	0.4	6.5						○								○								
APKT11T316-PR	1.6	6.5														○								
APKT11T3XR									●						●									

**C**

Drilling

**D**

Technical Information

**E**

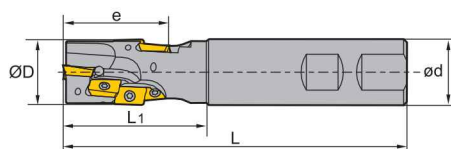
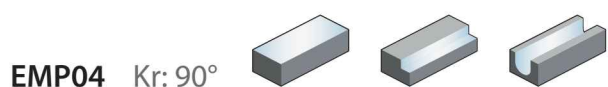
Index

● Ex stock    ○ On demand


HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



### Square shoulder milling



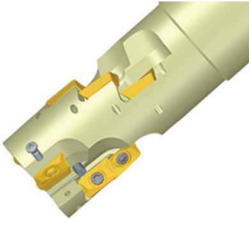


Weldon shank

Article	* Stock	Dimensions [mm]					Teeth	No. of inserts	kg	Inserts 
		ØD	e	ød	L <sub>1</sub>	L				
EMP04-020-XP20-AP11-01	●	20	29.4	20	45	120	1	3	0.3	APKT11T3
EMP04-025-XP25-AP11-02	●	25	38.9	25	55	130	2	8	0.4	
EMP04-032-XP32-AP11-02	●	32	48.5	32	65	140	2	10	0.7	
EMP04-040-XP40-AP11-02	●	40	58	40	75	150	2	14	1.3	

● Ex stock    ○ On demand

\* With internal cooling

#### Spare parts

Insert		APKT11T3	
ØD		20-40	
	Screw (insert)	I60M2.5x6.5T (1.0Nm)	
	Wrench (insert)	WT08IS	

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

# Indexable milling Square shoulder milling

A

Turning

B

Milling

C




Drilling

D

Technical Information

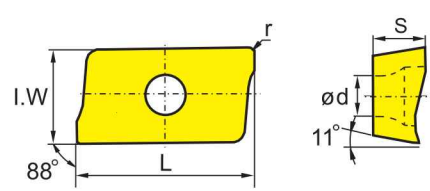










E

Index

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

APKT	L	S	d
11 T3	12.24	3.6	2.8

## Milling inserts

AP** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW														
	P	M	K	N	S	H	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201		
	ISO	r	I.W																											
		APKT11T304-ALH	0.4	6.5																										
		APKT11T308-ALH	0.8	6.5																										
		APKT11T304-APF	0.4	6.5																										
		APKT11T308-APF	0.8	6.5																										
	APKT11T304-APM	0.4	6.5																											
	APKT11T308-APM	0.8	6.5																											
	APKT11T312-APM	1.2	6.5																											
	APKT11T316-APM	1.6	6.5																											
	APKT11T320-APM	2	6.5																											
	APKT11T304-LH	0.4	6.5																											
	APKT11T308-LH	0.8	6.5																											
	APKT11T308-NM																													
	APKT11T312-NM																													
	APKT11T304-PF	0.4	6.5																											
	APKT11T308-PF	0.8	6.5																											
	APKT11T316-PF	1.6	6.5																											
	APKT11T304-PM	0.4	6.5																											
	APKT11T308-PM	0.8	6.5																											
	APKT11T312-PM	1.2	6.5																											
	APKT11T316-PM	1.6	6.5																											
	APKT11T304-PR	0.4	6.5																											
	APKT11T316-PR	1.6	6.5																											
	APKT11T3XR																													

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

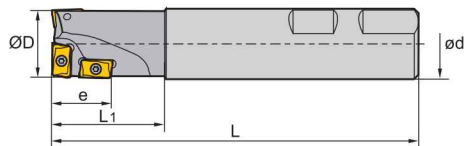
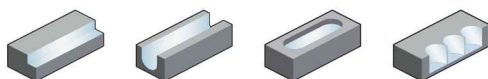
Grade selection > B24

Technical info > B527

Cutting data > B230

### Square shoulder milling

EMP05 Kr: 90°





Weldon shank

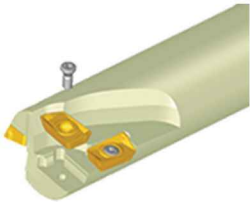
Article	* Stock	Dimensions [mm]					Teeth	kg	Inserts
		ØD	e	ød	L <sub>1</sub>	L			
EMP05-025-XP25-C	* ●	25	20	25	40	130	3	0.5	APMT1135

● Ex stock ○ On demand

\* With internal cooling

#### Spare parts

Insert		APMT1135
ØD		25
	Screw (insert)	I60M2.5x6.5T (1.0Nm)
	Wrench (insert)	WT08IP



System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

# Indexable milling Square shoulder milling

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

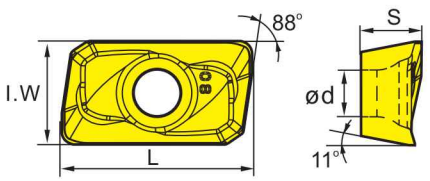

**E**

Index

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

APMT	L	S	d
11 35	11.25	3.5	2.8

## Milling inserts

AN** milling insert		HC <sup>1</sup> (CVD)							HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW								
	<b>P</b>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>							
	<b>M</b>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>							
	<b>K</b>								<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">●</span>			<span style="color: blue;">⊗</span>						
	<b>N</b>								<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">●</span>			<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>					
	<b>S</b>								<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">●</span>									
	<b>H</b>														<span style="color: blue;">●</span>									
ISO	r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	APMT1135PDR	0.8 6.2				○										●	○							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

Grade selection > B24

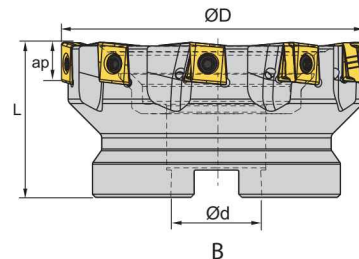
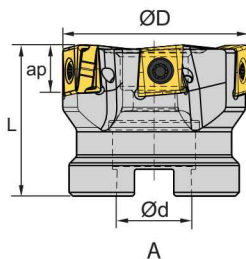
Technical info > B527



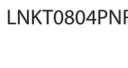
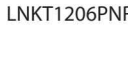
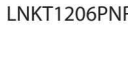
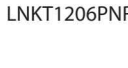
Cutting data > B230



### Square shoulder milling

EMP09 Kr: 90° 







Article	*	Stock	Dimensions [mm]				Teeth	Coupling		Inserts
			ØD	ød	L	a <sub>p</sub> max				
EMP09-040-A16-LN08-05C	*	●	40	16	40	8	5	A		
EMP09-050-A22-LN08-06C	*	●	50	22	40	8	6	A		
EMP09-063-A22-LN08-08C	*	●	63	22	40	8	8	A		
EMP09-080-A27-LN08-10C	*	○	80	27	50	8	10	A		
EMP09-040-A16-LN12-04C	*	●	40	16	40	11.5	4	A		0.19
EMP09-050-A22-LN12-05C	*	●	50	22	40	11.5	5	A		0.33
EMP09-063-A22-LN12-06C	*	●	63	22	40	11.5	6	A	0.53	
EMP09-080-A27-LN12-07C	*	●	80	27	50	11.5	7	A	1.18	
EMP09-100-B32-LN12-09C	*	●	100	32	50	11.5	9	B	1.62	
EMP09-125-B40-LN12-11C	*	●	125	40	63	11.5	11	B	3.25	
EMP09-080-A27-LN16-06C	*	●	80	27	50	15	6	A		
EMP09-100-B32-LN16-08C	*	●	100	32	50	15	8	B		
EMP09-125-B40-LN16-10C	*	●	125	40	63	15	10	B		
EMP09-160-B40-LN16-12C	*	●	160	40	63	15	12	B		
EMP09-200-C60-LN16-16		○	200	60	70	15	16	C		
EMP09-250-C60-LN16-12		○	250	60	70	15	12	C		
EMP09-315-D60-LN16-16		○	315	60	80	15	16	D		

● Ex stock ○ On demand

\* With internal cooling

#### Spare parts

	Insert	LNKT0804PNR	LNKT1206PNR	LNKT1607PNR
		ØD	40-80	40-125
	Screw (clamp)	I60M3×7 (1.8 Nm)	I60M4×12 (3.4 Nm)	
	Screw (insert)			I60M5×17 (6.7 Nm)
	Wrench	WT10IS	WT15IS	
	Wrench (insert)			WT20IS

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230



**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

LNKT	L	S
<b>08 04</b>	8.75	4.45
<b>12 06</b>	12.7	6.75
<b>16 07</b>	16.05	7.35

## Milling inserts

LN** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
	<b>P</b>		●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>M</b>		●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>K</b>															●									
	<b>N</b>															●									
	<b>S</b>																								
	<b>H</b>																								
ISO		W	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	LNKT080404PNR-GL	8.5	0.4								●							●	●						
	LNKT120608PNR-GL	13	0.8								●							●	●						
	LNKT160708PNR-GL	15	0.8								●							●	●						
	LNKT080404PNR-GM	8.5	0.4				●											●		●					
	LNKT120608PNR-GM	13	0.8				●				●							●		●					
	LNKT160708PNR-GM	15	0.8				●		○									●		●					

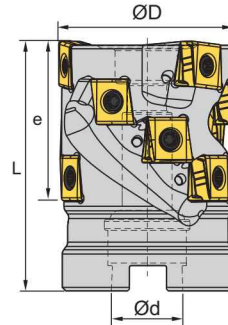
● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



### Square shoulder milling

EMP09 Kr: 90° 





Article	*	Stock	Dimensions [mm]				Teeth row	Teeth	Coupling	kg	Inserts
			ØD	e	ød	L					
EMP09-040x43-A16-LN12-02C	*	○	40	43	16	70	2	8	A	0.4	LNKT1206PNR
EMP09-050x43-A22-LN12-03C	*	●	50	43	22	70	3	12	A	0.64	
EMP09-063x53-A27-LN12-04C	*	●	63	53	27	80	4	20	A	1.31	
EMP09-080x53-A27-LN12-05C	*	○	80	53	27	80	5	25	A	2.33	
EMP09-080x53-A32-LN12-05C	*	○	80	54.6	32	80	5	25	A	2.33	
EMP09-080x74-A32-LN12-05C	*	○	80	74	32	100	5	35	A		

● Ex stock    ○ On demand

\* With internal cooling

#### Spare parts

	Insert	LNKT1206PNR
	ØD	40-80
	Screw (clamp)	I60M4x12 (3.4Nm)
	Wrench	WT15IS

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

# Indexable milling Square shoulder milling

**A**

Turning

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

LNKT	L	S
12 06	12.7	6.75

## Milling inserts

LN** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW
	<b>P</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	<b>M</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	<b>K</b>							●						●		●
	<b>N</b>							●								●
	<b>S</b>			●	●			●	●	●	●	●	●			
	<b>H</b>															

**B**

Milling

ISO		W	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	LNKT120608PNR-GL	13	0.8								●							●		●					
	LNKT120608PNR-GM	13	0.8				●			●								●							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B26

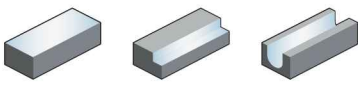
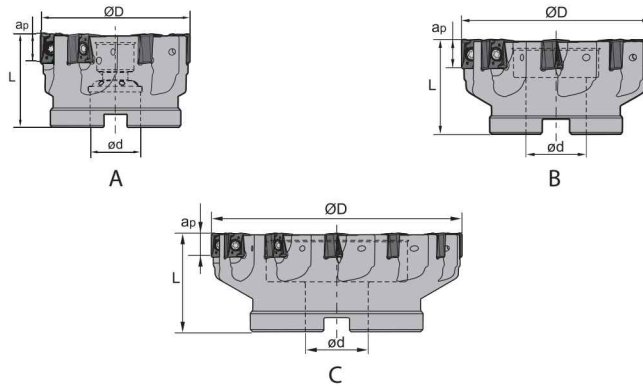
Grade selection > B24

Technical info > B527

Cutting data > B230

Square shoulder milling

EMP13 Kr: 90°

Article	*	Stock	Dimensions [mm]				Teeth	Coupling	kg	Inserts	
			ØD	ød	L	ap max					
EMP13-040-A16-AN11-04C	*	○	40	16	40	11.2	4	A	0.45	ANGX1105	
EMP13-050-A22-AN11-06C	*	●	50	22	40	11.2	6	A	0.3		
EMP13-063-A22-AN11-06	*	○	63	22	40	11.2	6	A	0.49		
EMP13-063-A22-AN11-07C	*	●	63	22	40	11.2	7	A	0.49		
EMP13-080-A27-AN11-07	*	○	80	27	50	11.2	7	A	1.18		
EMP13-080-A27-AN11-09C	*	●	80	27	50	11.2	9	A	1.18		
EMP13-100-B32-AN11-12		●	100	32	50	11.2	12	B	1.46		
EMP13-100-B32-AN11-12C	*	○	100	32	50	11.2	12	B	1.46		
EMP13-125-B40-AN11-14		●	125	40	63	11.2	14	B	2.92		
EMP13-125-B40-AN11-14C	*	○	125	40	63	11.2	14	B	2.92		
EMP13-160-C40-AN11-16		●	160	40	63	11.2	16	C	4.3		
EMP13-050-A22-AN15-04C	*	●	50	22	40	14.5	4	A	0.26		ANGX1506
EMP13-060-A22-AN15-05C	*	○	60	22	40	14.5	5	A	0.53		
EMP13-063-A22-AN15-05C	*	●	63	22	40	14.5	5	A	0.53		
EMP13-080-A27-AN15-06C	*	●	80	27	50	14.5	6	A	1.23		
EMP13-100-B32-AN15-08		●	100	32	50	14.5	8	B	1.52		
EMP13-100-B32-AN15-08C	*	○	100	32	50	14.5	8	B	1.52		
EMP13-125-B40-AN15-10		●	125	40	63	14.5	10	B	3.05		
EMP13-125-B40-AN15-10C	*	○	125	40	63	14.5	10	B	3.05		
EMP13-160-C40-AN15-12		●	160	40	63	14.5	12	C	4.46		
EMP13-200-C60-AN15-16		○	200	60	63	14.5	16	C	6.26		

● Ex stock ○ On demand

\* With internal cooling

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230




# Indexable milling Square shoulder milling

A

Turning

Spare parts			
Insert	ANGX1105	ANGX1506	
ØD	40-160	50-200	
	Screw (clamp)		I60M4×12 (3.4Nm)
	Screw (insert)	I60M3×9 (1.8 Nm)	I60M4×12 (3.4 Nm)
	Wrench		WT15IS
	Wrench (insert)	WT09IS	WT15IS



B

Milling

## Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

ANGX	L	S	d
11 05	11.85	5.7	3.5
15 06	15.43	7.3	4.4

C

Drilling

AN** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW										
ISO		W	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	ANGX110504PNR-GM	8.4	0.4				●																			
	ANGX110508PNR-GM	8.4	0.8	●			●																			
	ANGX110520PNR-GM	8.4	2				●																			
	ANGX150608PNR-GM	11	0.8	○			●																			
	ANGX150616PNR-GM	11	1.6				●																			
	ANGX150620PNR-GM	11	2								●															
	ANGX110504PNR-LH	8.4	0.4																						●	
	ANGX150608PNR-LH	11	0.8																						●	

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

D

Technical Information

E

Index

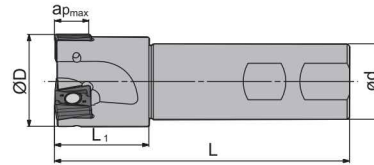
System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

Square shoulder milling



Weldon shank

Article	*	Stock	Dimensions [mm]					Teeth	kg	Inserts
			ØD	ød	L <sub>1</sub>	L	a <sub>p max</sub>			
EMP13-025-XP25-AN11-02C	*	●	25	25	32	100	11.2	2	0.31	ANGX1105
EMP13-032-XP32-AN11-03C	*	●	32	32	40	115	11.2	3	0.61	
EMP13-040-XP32-AN11-04C	*	●	40	32	40	125	11.2	4	0.75	
EMP13-032-XP32-AN15-02C	*	●	32	32	40	125	11.2	2	0.66	ANGX1506
EMP13-040-XP32-AN15-03C	*	●	40	32	40	125	11.2	3	0.76	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts

Insert		ANGX1105	ANGX1506	
ØD		25-40	25-40	
	Screw (insert)	I60M3×9 (1.8 Nm)	I60M4×12 (3.4 Nm)	
	Wrench (insert)	WT09IS	WT15IS	

# Indexable milling Square shoulder milling

A

Turning

B

Milling

C




Drilling

D

Technical Information

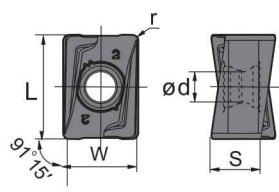
E


Index

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

ANGX	L	S	d
11 05	11.85	5.7	3.5
15 06	15.43	7.3	4.4

## Milling inserts



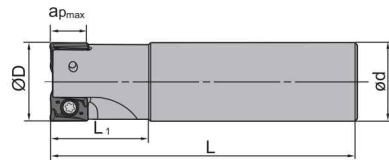
AN** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW											
	ISO	W	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
		ANGX110504PNR-GM	8.4	0.4				●			●							●	●							
		ANGX110508PNR-GM	8.4	0.8	●			●			●	●						●	●							
		ANGX110520PNR-GM	8.4	2				●			●							●								
		ANGX150608PNR-GM	11	0.8	○			●			●	●						●	●							
		ANGX150616PNR-GM	11	1.6				●			●							●								
	ANGX150620PNR-GM	11	2							●	●						●									
	ANGX110504PNR-LH	8.4	0.4																						●	
	ANGX150608PNR-LH	11	0.8																						●	

● Ex stock    ○ On demand



HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



Square shoulder milling






Straight shank

Article	*	Stock	Dimensions [mm]						Teeth	kg	Inserts
			ØD	e	ød	L <sub>1</sub>	L	a <sub>p max</sub>			
EMP13-025-G25-AN11-02C	*	●	25	11.2	25	32	100	11.2	2	0.31	 ANGX1105
EMP13-032-G32-AN11-03C	*	●	32	11.2	32	40	115	11.2	3	0.61	
EMP13-040-G32-AN11-04C	*	●	40	11.2	32	40	125	11.2	4	0.75	
EMP13-032-G32-AN15-02C	*	●	32	14.5	32	40	125	14.5	2	0.66	 ANGX1506
EMP13-040-G32-AN15-03C	*	●	40	14.5	32	40	125	14.5	3	0.76	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts

Insert		ANGX1105	ANGX1506	
ØD		25-40	25-40	
	Screw (insert)	I60M3×9 (1.8 Nm)	I60M4×12 (3.4 Nm)	
	Wrench (insert)	WT09IS	WT15IS	



# Indexable milling Square shoulder milling

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

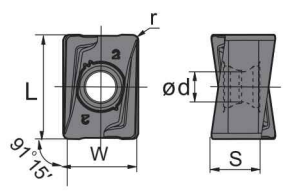
**E**

Index

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

ANGX	L	S	d
11 05	11.85	5.7	3.5
15 06	15.43	7.3	4.4

## Milling inserts



AN** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW												
ISO	W	r	P	M	K	N	S	H																			
			YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201			
			ANGX110504PNR-GM	8.4	0.4				●		●							●	●								
			ANGX110508PNR-GM	8.4	0.8	●			●		●	●						●	●								
			ANGX110520PNR-GM	8.4	2				●		●							●									
			ANGX150608PNR-GM	11	0.8	○			●		●	●						●	●								
ANGX150616PNR-GM	11	1.6				●		●							●												
ANGX150620PNR-GM	11	2						●	●						●												
ANGX110504PNR-LH	8.4	0.4																						●			
ANGX150608PNR-LH	11	0.8																						●			

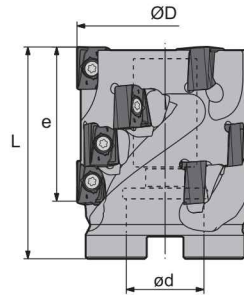
● Ex stock    ○ On demand


HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



**Square shoulder milling**

EMP13 Kr: 90° 






Article	*	Stock	Dimensions [mm]				Teeth	No. of inserts	kg	Inserts 
			ØD	e	ød	L				
EMP13-050x43-A22-AN11-03	●		50	43	22	60	3	12	0.52	ANGX1105
EMP13-063x64-A27-AN11-04	○		63	64	27	80	4	24	1.15	
EMP13-063x53-A27-AN15-03	○		63	53	27	75	3	12	1.14	ANGX1506
EMP13-080x53-A32-AN15-04	●		80	53	32	75	4	16	1.82	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts

	Insert ØD	ANGX1105	ANGX1506	
		50-63	63-80	
 Screw (insert)		I60M3×9 (1.8 Nm)	I60M4×12 (3.4 Nm)	
 Wrench (insert)		WT09IS	WT15IS	

# Indexable milling Square shoulder milling

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

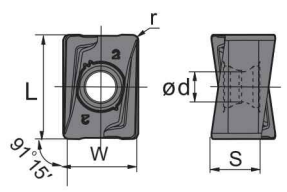
**E**

Index



- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

ANGX	L	S	d
11 05	11.85	5.7	3.5
15 06	15.43	7.3	4.4

## Milling inserts



AN** milling insert	HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW	
<b>P</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●	
<b>M</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●	
<b>K</b>							⊗						●			⊗
<b>N</b>							⊗									⊗
<b>S</b>							⊗	⊗								
<b>H</b>																

ISO	W	r	Milling insert grades																						
			YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
 ANGX110504PNR-GM	8.4	0.4				●		●							●	●									
ANGX110508PNR-GM	8.4	0.8	●			●		●	●						●	●									
ANGX110520PNR-GM	8.4	2				●			●						●										
 ANGX150608PNR-GM	11	0.8	○			●		●	●						●	●									
ANGX150616PNR-GM	11	1.6				●		●							●										
ANGX150620PNR-GM	11	2							●	●					●										
ANGX110504PNR-LH	8.4	0.4																						●	
ANGX150608PNR-LH	11	0.8																						●	

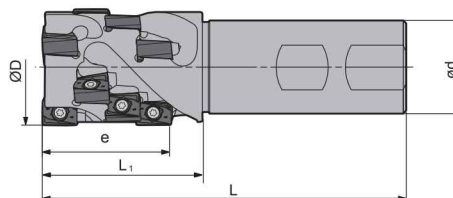
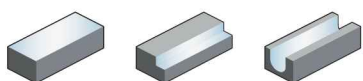
● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



### Square shoulder milling

EMP13 Kr: 90°



Weldon shank

Article	* Stock	Dimensions [mm]					Teeth	No. of inserts	kg	Inserts
		ØD	e	ød	L <sub>1</sub>	L				
EMP13-032x43-XP32-AN11-02	○	32	43	32	48	115	2	8	0.61	ANGX1105
EMP13-040x43-XP32-AN11-03	○	40	43	32	55	125	3	12	0.79	
EMP13-040x40-XP32-AN15-02	○	40	40	32	55	115	2	6	0.79	ANGX1506
EMP13-050x53-XP40-AN15-02	○	50	53	40	70	145	2	8	1.53	

● Ex stock    ○ On demand

\* With internal cooling

#### Spare parts

	Insert ØD	ANGX1105	ANGX1506	
		32-40	40-50	
Screw (insert)		I60M3x9 (1.8 Nm)	I60M4x12 (3.4 Nm)	
Wrench (insert)		WT09IS	WT15IS	

A

Turning

B

Milling

C

Drilling

D

Technical  
Information

E

Index

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

# Indexable milling Square shoulder milling

A

Turning

B

Milling

C

Drilling

D

Technical Information

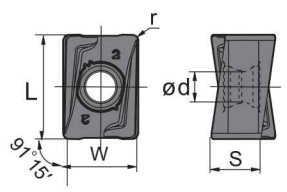
E

Index

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

ANGX	L	S	d
11 05	11.85	5.7	3.5
15 06	15.43	7.3	4.4

## Milling inserts



AN** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW												
ISO	W	r	P	M	K	N	S	H																			
			YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201			
			ANGX110504PNR-GM	8.4	0.4				●																		
			ANGX110508PNR-GM	8.4	0.8	●			●																		
			ANGX110520PNR-GM	8.4	2				●																		
			ANGX150608PNR-GM	11	0.8	○			●																		
ANGX150616PNR-GM	11	1.6				●																					
ANGX150620PNR-GM	11	2																									
ANGX110504PNR-LH	8.4	0.4																						●			
ANGX150608PNR-LH	11	0.8																						●			

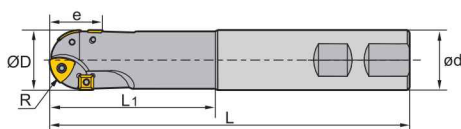
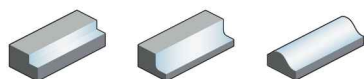
● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



Profile milling

BMR01



Weldon shank

Article	* Stock	Dimensions [mm]							Teeth		kg	Inserts
		R	ØD	e	ød	L <sub>1</sub>	L	ZDET	SPMT			
BMR01-020-XP20-S	○	10	20	20	20	50	125	2	2	0.3	ZDET08T2 & SPMT0603	
BMR01-020-XP20-M	○	10	20	20	20	75	150	2	2	0.3		
BMR01-020-XP20-L	○	10	20	20	20	100	200	2	2	0.4		
BMR01-025-XP25-S	○	12.5	25	23	25	70	150	2	2	0.5	ZDET1103 & SPMT0603	
BMR01-025-XP25-M	○	12.5	25	23	25	95	175	2	2	0.6		
BMR01-025-XP25-L	○	12.5	25	23	25	100	200	2	2	0.7		
BMR01-032-XP32-S	○	16	32	31	32	85	175	2	2	0.9	ZDET13T2 & SDMT0903	
BMR01-032-XP32-M	○	16	32	31	32	100	200	2	2	1.1		
BMR01-032-XP32-L	○	16	32	31	32	150	250	2	2	1.4		
BMR01-040-XP40-S	○	20	40	41	40	85	175	3	2	1.4	ZPNT2204 & SPMT1204	
BMR01-040-XP40-M	○	20	40	41	40	100	200	3	2	1.7		
BMR01-040-XP40-L	○	20	40	41	40	150	250	3	2	2.1		
BMR01-050-XP40-S	○	25	50	45	40	100	200	3	2	1.8		
BMR01-050-XP40-M	○	25	50	45	40	100	300	3	2	2.8		
BMR01-063-XP40-S	○	31.5	63	52	40	100	200	4	2	3		

● Ex stock ○ On demand

\* With internal cooling

Spare parts

	Insert	ZDET08T2 & SPMT0603	ZDET1103 & SPMT0603	ZDET13T2 & SDMT0903	ZPNT2204 & SPMT1204	
	ØD	20	25	32	40-63	
	Screw (insert)	I43M2.5×5.7 (1.0 Nm)	I43M2.5×5.7 (1.0 Nm)	I43M4×8 (3.4 Nm)	I43M5×11 (6.7 Nm)	
	Wrench (insert)	WT07IP	WT07IP			
	Wrench (insert)			WT15IS	WT20IS	

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

ZDET	L	I.C	S	d
<b>08 T2</b>	8.4	6.75	2.78	2.8
<b>11 03</b>	10.6	8.5	3.18	2.8
<b>13 T3</b>	13.2	10.5	3.97	4.4
<b>22 04</b>	16.1	12.7	4.76	5.56

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

## Milling inserts

ZD** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
		P	M	K	N	S	H	P	M	K	N	S	H											
	ISO	R	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	ZDET13T3CYP16-PM	16				○							○											
	ZDET08T2CYP10	10				○																		
	ZDET1103CYP12.5	12.5				○																		
	ZPNT2204CY(R20)	20				○																		
	ZPNT2204CY(R25)	25				●																		
	ZPNT2204CY(R31)	31.5				○																		

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



**Milling inserts**

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPMT	L	I.C	S	d
06 03	6.35	6.35	3.18	2.8
12 04	12.7	12.7	4.76	5.5

SP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>M</b>	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>K</b>							●								●								
	<b>N</b>							●								●								
	<b>S</b>			●	●			●	●	●	●	●	●											
	<b>H</b>																							
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	SPMT060304-KT		○																					
	SPMT060304	0.4				●												○						
	SPMT120408	0.8	○	○	○		●	○										○						

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**Milling inserts**

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SDMT	L	I.C	S	d
09 03	9.525	9.525	3.18	4.4

SD** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>M</b>	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>K</b>							●								●								
	<b>N</b>							●								●								
	<b>S</b>			●	●			●	●	●	●	●	●											
	<b>H</b>																							
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	SDMT090308	0.8				●																		

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

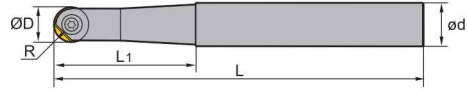
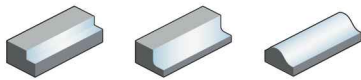
**E**

Index



## Profile milling

BMR02



Article	*	Stock	Dimensions [mm]					kg	Inserts
			R	ØD	ød	L <sub>1</sub>	L		
BMR02-012-G16-S	●		6	12	16	40	110	0.1	ROHX1203
BMR02-012-G16-M	●		6	12	16	50	130	0.2	
BMR02-012-G16-L	●		6	12	16	50	160	0.2	
BMR02-016-G20-S	●		8	16	20	45	140	0.3	ROHX1604
BMR02-016-G20-M	●		8	16	20	65	170	0.3	
BMR02-016-G20-L	●		8	16	20	65	200	0.4	
BMR02-020-G25-S	●		10	20	25	60	160	0.5	ROHX2005
BMR02-020-G25-M	●		10	20	25	80	200	0.6	
BMR02-020-G25-L	●		10	20	25	80	240	0.8	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts		ROHX1203	ROHX1604	ROHX2005	
Insert	ØD	12	16	20	
 Screw (insert)		I70M4×10TT (3.4 Nm)	I70M5×12TT (6.7 Nm)	I70M5×16TT (6.7 Nm)	
 Wrench (insert)		WT15IS	WT20IS	WT20IS	




System code > B26

Grade selection > B24

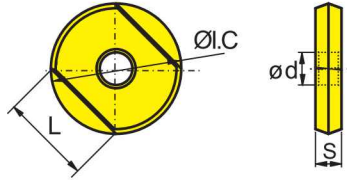
Technical info > B527


Cutting data > B230

ROHX	L	I.C	S	d
12 03	8.5	12	3	4
16 04	11.3	16	4	5
20 05	14.1	20	5	5

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

**Milling inserts**



RO** positive insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)				HT	HC <sup>2</sup>	HW										
 ROHX1604 ROHX1203 ROHX2005	ISO	P																						
		M																						
		K																						
		N																						
		S																						
		H																						
			YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B26

Grade selection > B24

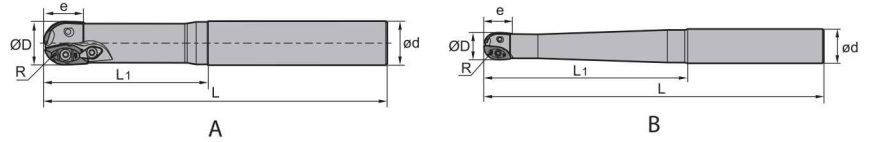
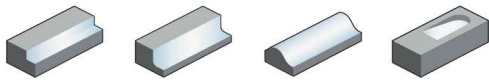
Technical info > B527

Cutting data > B230



## Profile milling

BMR03



Straight shank

Article	* Stock	Dimensions [mm]							Teeth	Coupling	kg	Inserts
		R	ØD	e	ød	L <sub>1</sub>	L					
BMR03-016-G20-S	●	8	16	16	20	70	150	2	B	0.3	XPHT16	
BMR03-016-G20-M	●	8	16	16	20	80	180	2	B	0.4		
BMR03-020-G25-S	●	10	20	20	25	80	180	2	B	0.5	XPHT20	
BMR03-020-G25-M	●	10	20	20	25	100	200	2	B	0.6		
BMR03-020-G25-L	●	10	20	20	25	150	250	2	B	0.7	XPHT25	
BMR03-020-G25-XL	○	10	20	20	25	110	300	2	B	1		
BMR03-025-G25-S	●	12.5	25	25	25	80	180	2	B	0.6	XPHT25	
BMR03-025-G25-M	●	12.5	25	25	25	100	200	2	B	0.7		
BMR03-025-G25-L	○	12.5	25	25	25	110	250	2	B	0.8	XPHT30	
BMR03-025-G25-XL	○	12.5	25	25	25	120	300	2	B	1		
BMR03-030-G32-S	○	15	30	30	32	120	200	2	A	1	XPHT30	
BMR03-030-G32-M	●	15	30	30	32	150	250	2	A	1.3		
BMR03-030-G32-L	○	15	30	30	32	200	300	2	A	1.6	XPHT32	
BMR03-032-G32-S	●	16	32	32	32	120	200	2	A	1.1		
BMR03-032-G32-M	●	16	32	32	32	150	250	2	A	1.4	XPHT32	
BMR03-032-G32-L	●	16	32	32	32	200	300	2	A	1.6		
BMR03-032-G32-XL	○	16	32	32	32	200	350	2	A	2	XPHT40	
BMR03-040-G40-S	○	20	40	40	40	120	200	2	A	1.6		
BMR03-040-G40-M	○	20	40	40	40	150	250	2	A	2	XPHT40	
BMR03-040-G40-L	●	20	40	40	40	200	300	2	A	2.5		

● Ex stock    ○ On demand

\* With internal cooling

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

Spare parts		XPHT16	XPHT20	XPHT25	XPHT30	XPHT32	XPHT40
Insert	ØD	16	20	25	30	32	40
	Clamp						CBH5R1
	Clamp				WD-208	WD-208	
	Screw (clamp)				I60M5×13 (6.7 Nm)	I60M5×13 (6.7 Nm)	I43M6×16 (9.1 Nm)
	Screw (insert)	I60M2.5×6.5 (1.0 Nm)		I60M4×10 (3.4 Nm)	I60M5×13 (6.7 Nm)	I60M5×13 (6.7 Nm)	I43M6×16 (9.1 Nm)
	Screw (insert)		I60M3.5×08TT (2.7 Nm)				
	Wrench (clamp)				WT20IT	WT20IT	WT25IT
	Wrench (insert)		WT10IP				
	Wrench (insert)				WT20IT	WT20IT	WT25IT
	Wrench (insert)	WT07P					
	Wrench (insert)			WT15S			



XPHT	L	S	d
16	16	3.18	3.1
20	20	3.97	4
25	25	4.76	4.7
30	30	6.35	5.8
32	32	6.35	5.8
40	40	7.94	6.8

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

### Milling inserts

XP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)				HT	HC <sup>2</sup>	HW												
		P	M	K	N	S	H																			
	ISO	R	α	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	XPHT16R0803-GM	8	9																							
	XPHT20R10T3-GM	10	9																							
	XPHT25R1204-GM	12.5	9																							
	XPHT30R1506-GM	15	11																							
	XPHT32R1606-GM	16	9																							
	XPHT40R2007-GM	20	9																							

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230



A

Turning

B

Milling

C

Drilling

D

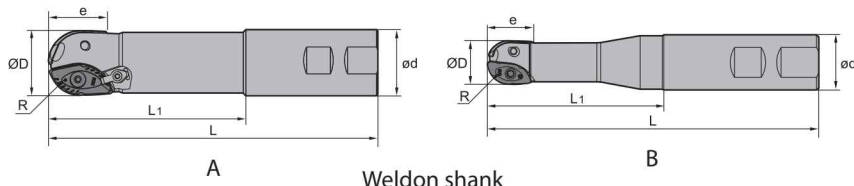
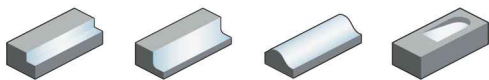
Technical Information

E

Index

## Profile milling

BMR03



Article	* Stock	Dimensions [mm]							Teeth	Coupling	kg	Inserts
		R	ØD	e	ød	L <sub>1</sub>	L					
BMR03-016-XP20-M	●	8	16	16	20	60	111	2	B	0.2	XPHT16	
BMR03-020-XP25-M	●	10	20	20	25	70	127	2	B	0.3	XPHT20	
BMR03-020-XP25-L	●	10	20	20	25	80	150	2	B	0.4	XPHT25	
BMR03-025-XP25-M	●	12.5	25	25	25	80	137	2	B	0.4	XPHT25	
BMR03-025-XP25-L	●	12.5	25	25	25	100	200	2	B	0.6	XPHT30	
BMR03-030-XP32-M	●	15	30	30	32	100	161	2	A	0.8	XPHT30	
BMR03-030-XP32-L	●	15	30	30	32	150	250	2	A	1.3	XPHT32	
BMR03-032-XP32-M	●	16	32	32	32	100	161	2	A	0.8	XPHT32	
BMR03-032-XP32-L	○	16	32	32	32	120	250	2	A	1.3	XPHT40	
BMR03-040-XP40-M	○	20	40	40	40	100	175	2	A	1.3	XPHT40	
BMR03-040-XP40-L	●	20	40	40	40	120	250	2	A	2	XPHT50	
BMR03-050-XP50-M	○	25	50	50	50	100	200	2	A	2.5	XPHT50	
BMR03-050-XP50-L	○	25	50	50	50	150	250	2	A	3.1		

● Ex stock    ○ On demand

\* With internal cooling

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

Spare parts		XPHT16	XPHT20	XPHT25	XPHT30	XPHT32	XPHT40	XPHT50
Insert	ØD	16	20	25	30	32	40	50
	Clamp						CBH5R1	CBH5R1
	Clamp				WD-208	WD-208		
	Screw (clamp)				I60M5×13 (6.7 Nm)	I60M5×13 (6.7 Nm)	I43M6×16 (9.1 Nm)	I43M6×16 (9.1 Nm)
	Screw (insert)	I60M2.5×6.5 (1.0 Nm)		I60M4×10 (3.4 Nm)	I60M5×13 (6.7 Nm)	I60M5×13 (6.7 Nm)	I43M6×16 (9.1 Nm)	I43M8×21 (16.2 Nm)
	Screw (insert)		I60M3.5×8TT (2.7 Nm)					
	Wrench (clamp)				WT20IT	WT20IT	WT25IT	WT25IT
	Wrench (insert)		WT10IP					
	Wrench (insert)				WT20IT	WT20IT	WT25IT	WT30IT
	Wrench (insert)	WT07P						
	Wrench (insert)			WT15S				



XPHT	L	S	d
16	16	3.18	3.1
20	20	3.97	4
25	25	4.76	4.7
30	30	6.35	5.8
32	32	6.35	5.8
40	40	7.94	6.8
50	50	7.94	9.2

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

**Milling inserts**

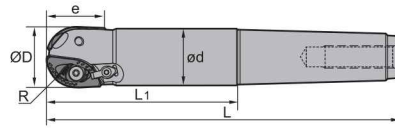
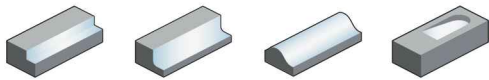
XP** milling insert			HC <sup>1</sup> (CVD)					HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
ISO	R	α	P	M	K	N	S	H	P	M	K	N	S	H										
			YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
			XPHT16R0803-GM	XPHT20R10T3-GM	XPHT25R1204-GM	XPHT30R1506-GM	XPHT32R1606-GM	XPHT40R2007-GM	XPHT50R2507-GM															

● Ex stock ○ On demand

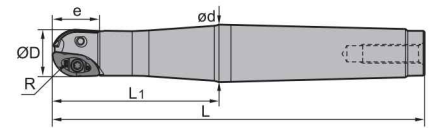
HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

## Profile milling

BMR03



A



B

Morse taper shank

Article	* Stock	Dimensions [mm]							Teeth	Coupling	kg	Inserts
		R	ØD	e	ød	L <sub>1</sub>	L					
BMR03-020-MT3-M	○	10	20	20	18.7	70	156	2	B	0.4	XPHT20	
BMR03-020-MT3-L	○	10	20	20	18.7	100	186	2	B	0.4		
BMR03-025-MT3-M	○	12.5	25	25	23.5	70	156	2	B	0.4	XPHT25	
BMR03-025-MT3-L	○	12.5	25	25	23.5	100	186	2	B	0.4		
BMR03-030-MT4-M	○	15	30	30	28.2	70	189	2	A	0.8	XPHT30	
BMR03-030-MT4-L	○	15	30	30	28.2	120	229	2	A	1		
BMR03-032-MT4-M	○	16	32	32	29.2	70	179	2	A	0.9	XPHT32	
BMR03-032-MT4-L	●	16	32	32	29.2	100	209	2	A	0.9		
BMR03-040-MT5-L	○	20	40	40	36.9	90	226	2	A	1.8	XPHT40	
BMR03-050-MT5-M	●	25	50	50	46.8	100	236	2	A	2.2		
BMR03-050-MT5-L	○	25	50	50	46.8	150	286	2	A	2.9	XPHT50	

● Ex stock    ○ On demand

\* With internal cooling

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

Spare parts							
Insert	XPHT20	XPHT25	XPHT30	XPHT32	XPHT40	XPHT50	
ØD	20	25	30	32	40	50	
	Clamp					CBH5R1	CBH5R1
	Clamp			WD-208	WD-208		
	Screw (clamp)			I60M5×13 (6.7 Nm)	I60M5×13 (6.7 Nm)	I43M6×16 (9.1 Nm)	I43M6×16 (9.1 Nm)
	Screw (insert)		I60M4×10 (3.4 Nm)	I60M5×13 (6.7 Nm)	I60M5×13 (6.7 Nm)	I43M6×16 (9.1 Nm)	I43M8×21 (16.2 Nm)
	Screw (insert)	I60M3.5×08TT (2.7 Nm)					
	Wrench (clamp)			WT20IT	WT20IT	WT25IT	WT25IT
	Wrench (insert)	WT10IP					
	Wrench (insert)			WT20IT	WT20IT	WT25IT	WT30IT
	Wrench (insert)		WT15S				



XPHT	L	S	d
20	20	3.97	4
25	25	4.76	4.7
30	30	6.35	5.8
32	32	6.35	5.8
40	40	7.94	6.8
50	50	7.94	9.2

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

### Milling inserts

XP** milling insert		HC <sup>1</sup> (CVD)					HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW											
		P	M	K	N	S	H	P	M	K	N	S	H												
	ISO	R	α	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	XPHT20R10T3-GM	10	9																						
	XPHT25R1204-GM	12.5	9																						
	XPHT30R1506-GM	15	11																						
	XPHT32R1606-GM	16	9																						
	XPHT40R2007-GM	20	9																						
	XPHT50R2507-GM	25	9																						

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

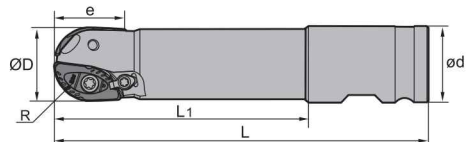
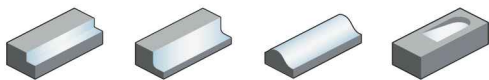


A Turning  
 B Milling  
 C Drilling  
 D Technical Information  
 E Index



## Profile milling

BMR03



Compound shank

Article	* Stock	Dimensions [mm]							Teeth	kg	Inserts
		R	ØD	e	ød	L <sub>1</sub>	L				
BMR03-040-XPX-M	○	20	40	40	50.8	170	250	2	1.3	XPHT40	
BMR03-040-XPX-L	○	20	40	40	50.8	220	300	2	3.1		
BMR03-040-XPX-XL	○	20	40	40	50.8	270	350	2	3.5		
BMR03-050-XPX-M	○	25	50	50	50.8	170	250	2	3.1	XPHT50	
BMR03-050-XPX-L	○	25	50	50	50.8	200	300	2	3.8		
BMR03-050-XPX-XL	○	25	50	50	50.8	270	350	2	4.4		

● Ex stock    ○ On demand

\* With internal cooling

### Spare parts

	Insert	XPHT40	XPHT50
	ØD	40	50
	Clamp	CBH5R1	CBH5R1
	Screw (clamp)	I43M6×16 (9.1 Nm)	I43M6×16 (9.1 Nm)
	Screw (insert)	I43M6×16 (9.1 Nm)	I43M8×21 (16.2 Nm)
	Wrench (clamp)	WT25IT	WT25IT
	Wrench (insert)	WT25IT	WT30IT



- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

XPHT	L	S	d
<b>40</b>	40	7.94	6.8
<b>50</b>	50	7.94	9.2

**Milling inserts**

XP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>M</b>	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>K</b>					●	●	●								●								
	<b>N</b>						●								●	●								
	<b>S</b>		●	●				●	●	●	●	●	●											
	<b>H</b>																							
ISO	R	α	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	XPHT40R2007-GM	20	9															●						
	XPHT50R2507-GM	25	9															●						

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B26

Grade selection > B24

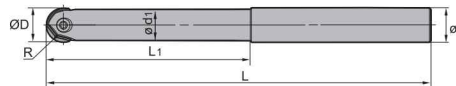
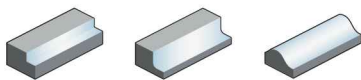
Technical info > B527

Cutting data > B230



## Profile milling

BMR04



Straight shank

Article	*	Stock	Dimensions [mm]						kg	Inserts
			R	ØD	ød	Ød1	L <sub>1</sub>	L		
BMR04-012-G12-M	●	●	6	12	12	11	35	125	0.1	ZOHX12
BMR04-012-G12-L	●	●	6	12	12	11	45	150	0.1	
BMR04-016-G16-M	●	●	8	16	16	14	40	150	0.2	ZOHX16
BMR04-016-G16-L	●	●	8	16	16	14	55	180	0.3	
BMR04-020-G20-M	●	●	10	20	20	18	65	180	0.4	ZOHX20
BMR04-020-G20-L	●	●	10	20	20	18	100	250	0.6	
BMR04-025-G25-M	●	●	12.5	25	25	23	70	200	0.7	ZOHX25
BMR04-025-G25-L	●	●	12.5	25	25	23	100	250	0.9	
BMR04-030-G32-M	●	●	15	30	32	27	80	250	1.2	ZOHX30
BMR04-030-G32-L	●	●	15	30	32	27	110	300	1.5	
BMR04-032-G32-M	●	●	16	32	32	29	80	250	1.4	ZOHX32
BMR04-032-G32-L	●	●	16	32	32	29	110	300	1.7	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts		ZOHX12	ZOHX16	ZOHX20	ZOHX25	ZOHX30	ZOHX32
Insert	ØD	12	16	20	25	30	32
Screw (insert)		I70M4×10TT (3.4 Nm)	I70M5×12TT (6.7 Nm)	I70M5×16TT (6.7 Nm)	I70M6×20TT (9.1 Nm)	I70M8×25TT (16.2 Nm)	I70M8×25TT (16.2 Nm)
Wrench (insert)		WT15IP	WT20IP	WT20IP	WT20IP		
Wrench (insert)						WT30IT	WT30IT



System code > B26

Grade selection > B24

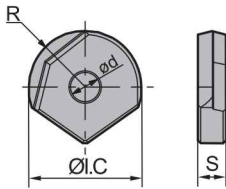


Technical info > B527

Cutting data > B230

ZOXX	I.C	S	d
<b>12</b>	12	1.5	4
<b>16</b>	16	4	5
<b>20</b>	20	5	5
<b>25</b>	25	6	6
<b>30</b>	30	7	8
<b>32</b>	32	7	8

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

**Milling inserts**

ZO** milling insert		HC <sup>1</sup> (CVD)							HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW								
	<b>P</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗									
	<b>M</b>	⊗	⊗	⊗	⊗	⊗			⊗	⊗	⊗	⊗	⊗	⊗	⊗									
	<b>K</b>									⊗														
	<b>N</b>															⊗	⊗							
	<b>S</b>			⊗	⊗						⊗	⊗	⊗	⊗	⊗									
	<b>H</b>																							
ISO	R	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	ZOXX1203-GF	6																						
	ZOXX1604-GF	8																						
	ZOXX2005-GF	10																						
	ZOXX2506-GF	12.5																						
	ZOXX3007-GF	15																						
	ZOXX3207-GF	16																						
		ZOXX1203-GM	6																					
ZOXX1604-GM		8																						
ZOXX2005-GM		10																						
ZOXX2506-GM		12.5																						
ZOXX3007-GM		15																						
ZOXX3207-GM		16																						

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230



A

Turning

B

Milling

C

Drilling

D

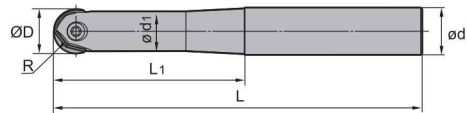
Technical Information

E

Index

## Profile milling

### BMR04



Straight shank

Article	* Stock	Dimensions [mm]							kg	Inserts
		R	ØD	ød	Ød1	L <sub>1</sub>	L			
BMR04-012-G16-M	●	6	12	16	11	50	125	0.2	ZOHX12	
BMR04-012-G16-L	●	6	12	16	11	70	150	0.2		
BMR04-016-G20-M	●	8	16	20	14	60	150	0.3	ZOHX16	
BMR04-016-G20-L	●	8	16	20	14	80	180	0.3		
BMR04-020-G25-M	●	10	20	25	18	75	180	0.6	ZOHX20	
BMR04-020-G25-L	●	10	20	25	18	95	200	0.6		
BMR04-025-G32-M	●	12.5	25	32	23	90	200	1	ZOHX25	
BMR04-025-G32-L	●	12.5	25	32	23	110	250	1.3		
BMR04-030-G40-M	●	15	30	40	27	110	250	2	ZOHX30	
BMR04-032-G40-L	●	16	32	40	29	125	300	2.4		

● Ex stock    ○ On demand

\* With internal cooling

Spare parts		ZOHX12	ZOHX16	ZOHX20	ZOHX25	ZOHX30	ZOHX32	
Insert	ØD	12	16	20	25	30	32	
Screw (insert)		I70M4×10TT (3.4 Nm)	I70M5×12TT (6.7 Nm)	I70M5×16TT (6.7 Nm)	I70M6×20TT (9.1 Nm)	I70M8×25TT (16.2 Nm)	I70M8×25TT (16.2 Nm)	
Wrench (insert)		WT15IP	WT20IP	WT20IP	WT20IP			
Wrench (insert)						WT30IT	WT30IT	

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

ZOXX	I.C	S	d
<b>12</b>	12	1.5	4
<b>16</b>	16	4	5
<b>20</b>	20	5	5
<b>25</b>	25	6	6
<b>30</b>	30	7	8
<b>32</b>	32	7	8

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

**Milling inserts**

ZO** milling insert		HC <sup>1</sup> (CVD)							HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
ISO		R	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201		
	<b>P</b>		⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●		
	<b>M</b>		⊗	⊗	⊗	⊗	⊗														●	●	●		
	<b>K</b>								⊗	⊗	⊗										●				⊗
	<b>N</b>										⊗													⊗	⊗
	<b>S</b>				⊗		⊗					⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗						
	<b>H</b>																								
	ZOXX1203-GF	6																		●					
	ZOXX1604-GF	8																		●					
	ZOXX2005-GF	10																		●					
	ZOXX2506-GF	12.5																		○					
	ZOXX3007-GF	15																		●					
	ZOXX3207-GF	16																		●					
	ZOXX1203-GM	6																		●					
ZOXX1604-GM	8																		●						
ZOXX2005-GM	10																		●						
ZOXX2506-GM	12.5																		○						
ZOXX3007-GM	15																		●						
ZOXX3207-GM	16																		●						

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



A Turning  
 B Milling  
 C Drilling  
 D Technical Information  
 E Index

## Notes

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

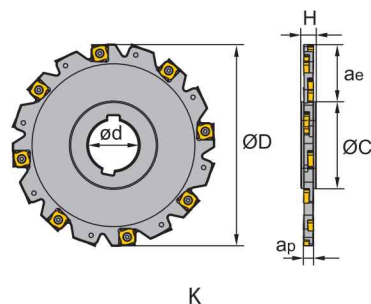
Technical  
Information

**E**

Index

Notes section containing horizontal dotted lines for writing.

Slot milling



Article	* Stock	Dimensions [mm]							Coupling	kg	Inserts
		ØD	ød	Øc	H	ap	ae max				
SMP01-100x4-K27-SN12-10	○	100	27	45	12	4	25	K	0.2	XSEQ1202	
SMP01-125x4-K40-SN12-12	○	125	40	56	12	4	32	K	0.3		
SMP01-160x4-K40-SN12-16	●	160	40	67	12	4	44	K	0.5	XSEQ1203	
SMP01-100x5-K27-SN12-10	○	100	27	45	12	5	25	K	0.2		
SMP01-125x5-K40-SN12-12	○	125	40	56	12	5	32	K	0.3	XSEQ1204	
SMP01-160x5-K40-SN12-16	○	160	40	67	12	5	44	K	0.6		
SMP01-100x7-K27-SN12-10	○	100	27	45	12	7	25	K	0.3	XSEQ1204	
SMP01-125x7-K40-SN12-12	○	125	40	56	12	7	32	K	0.4		
SMP01-160x7-K40-SN12-16	○	160	40	67	12	7	44	K	0.8	XSEQ1204	
SMP01-200x7-K50-SN12-18	○	200	50	71	12	7	62	K	1.2		
SMP01-250x7-K50-SN12-24	○	250	50	71	12	7	87	K	1.9	XSEQ12T3	
SMP01-100x6-K27-SN12-10	○	100	27	45	12	6	25	K	0.3		
SMP01-125x6-K40-SN12-12	○	125	40	56	12	6	32	K	0.4	XSEQ12T3	
SMP01-160x6-K40-SN12-16	○	160	40	67	12	6	44	K	0.7		
SMP01-200x6-K50-SN12-18	○	200	50	71	12	6	62	K	1.1	XSEQ12T3	
SMP01-250x6-K50-SN12-24	○	250	50	71	12	6	87	K	1.7		
SMP01-315x6-K50-SN12-32	○	315	50	72	11.15	6	119.6	K	2.9	XSEQ12T4	
SMP01-100x8-K27-SN12-10	○	100	27	45	12	8	25	K	0.3		
SMP01-125x8-K40-SN12-12	○	125	40	56	12	8	32	K	0.5	XSEQ12T4	
SMP01-160x8-K40-SN12-16	○	160	40	67	12	8	44	K	0.9		
SMP01-200x8-K50-SN12-18	○	200	50	71	12	8	62	K	1.4	XSEQ12T4	
SMP01-250x8-K50-SN12-24	○	250	50	71	12	8	87	K	2.2		

● Ex stock ○ On demand

\* With internal cooling

System code > B26

Grade selection > B24

Technical info > B527

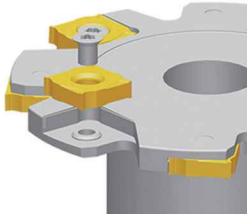
Cutting data > B230








# Indexable milling Slot milling

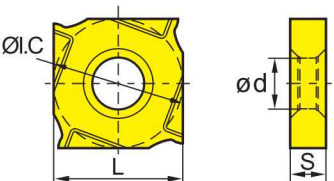




























## Spare parts

	Insert	XSEQ1202	XSEQ1203	XSEQ1204	XSEQ12T3	XSEQ12T4	
	ØD	63-160	63-160	63-250	63-360	63-250	
	Screw (insert)	I91M4×3.2X (3.4 Nm)	I91M4×3.2X (3.4 Nm)	I91M4×6.1X (3.4 Nm)	I91M4×5.1X (3.4 Nm)	I91M4×7.1X (3.4 Nm)	
	Wrench (insert)	WT08IP	WT08IP	WT08IP	WT08IP	WT08IP	

XSEQ	L	I.C	S	d
12 02	12.7	12.7	2.3	5
12 03	12.7	12.7	3	5
12 T3	12.7	12.7	3.5	5
12 04	12.7	12.7	4	5
12 T4	12.7	12.7	4.5	5

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

## Milling inserts

XS** milling insert	HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)				HT	HC <sup>2</sup>	HW															
	P	M	K	N	S	H	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
																												
ISO																												
	XSEQ1202																											
	XSEQ1203	○	●																									
	XSEQ1204																											
	XSEQ12T3		●																									○
	XSEQ12T4																											

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

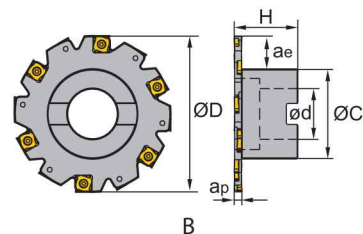
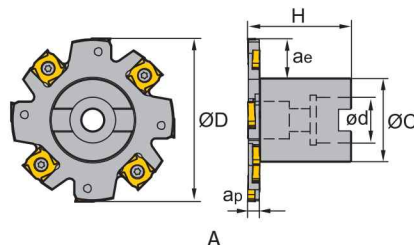
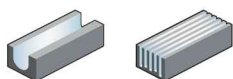
Grade selection > B24

Technical info > B527

Cutting data > B230

Slot milling

SMP01 Kr: 90°



Article	* Stock	Dimensions [mm]							Teeth	Coupling	kg	Inserts
		ØD	ød	Øc	H	ap	ae,max					
SMP01-063x4-A22-SN12-06	○	63	22	32	40	4	14	6	A	0.2	XSEQ1202	
SMP01-080x4-A22-SN12-08	○	80	22	40	40	4	18	8	A	0.4		
SMP01-100x4-A27-SN12-10	○	100	27	48	50	4	23	10	A	0.6		
SMP01-063x5-A22-SN12-06	○	63	22	32	40	5	14	6	A	0.2	XSEQ1203	
SMP01-080x5-A22-SN12-08	○	80	22	40	40	5	18	8	A	0.4		
SMP01-100x5-A27-SN12-10	○	100	27	48	50	5	23	10	A	0.7		
SMP01-063x7-A22-SN12-06	○	63	22	32	40	7	14	6	A	0.2	XSEQ1204	
SMP01-080x7-A22-SN12-08	○	80	22	40	40	7	18	8	A	0.5		
SMP01-100x7-A27-SN12-10	○	100	27	48	50	7	23	10	A	0.7		
SMP01-125x7-B40-SN12-12	○	125	40	72	50	7	23	12	B	1.1	XSEQ1204	
SMP01-160x7-B40-SN12-16	○	160	40	70	60	7	41	16	B	1.4		
SMP01-063x6-A22-SN12-06	○	63	22	32	40	6	14	6	A	0.2		
SMP01-080x6-A22-SN12-08	○	80	22	40	40	6	18	8	A	0.5	XSEQ12T3	
SMP01-100x6-A27-SN12-10	○	100	27	48	50	6	23	10	A	0.7		
SMP01-125x6-B40-SN12-12	○	125	40	72	50	6	23	12	B	1		
SMP01-160x6-B40-SN12-16	○	160	40	70	60	6	41	16	B	1.3	XSEQ12T4	
SMP01-063x8-A22-SN12-06	○	63	22	32	40	8	14	6	A	0.2		
SMP01-080x8-A22-SN12-08	○	80	22	40	40	8	18	8	A	0.5		
SMP01-100x8-A27-SN12-10	○	100	27	48	50	8	23	10	A	0.8	XSEQ12T4	
SMP01-125x8-B40-SN12-12	○	125	40	72	50	8	23	12	B	1.1		
SMP01-160x8-B40-SN12-16	○	160	40	70	60	8	41	16	B	1.5		

● Ex stock ○ On demand

\* With internal cooling

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230



# Indexable milling Slot milling

A

Turning

Spare parts							
Insert	XSEQ1202	XSEQ1203	XSEQ1204	XSEQ12T3	XSEQ12T4		
ØD	63-160	63-160	63-250	63-250	63-250		
Screw (insert)	I91M4×3.2X (3.4 Nm)	I91M4×3.2X (3.4 Nm)	I91M4×6.1X (3.4 Nm)	I91M4×5.1X (3.4 Nm)	I91M4×7.1X (3.4 Nm)		
Wrench (insert)	WT08IP	WT08IP	WT08IP	WT08IP	WT08IP		

B

Milling

XSEQ	L	I.C	S	d
12 02	12.7	12.7	2.3	5
12 03	12.7	12.7	3	5
12 T3	12.7	12.7	3.5	5
12 04	12.7	12.7	4	5
12 T4	12.7	12.7	4.5	5

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

## Milling inserts

XS** milling insert 	HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)				HT	HC <sup>2</sup>	HW										
	P	M	K	N	S	H																	
ISO	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	XSEQ1202															○							
	XSEQ1203	○	●													●							
	XSEQ1204															●							
	XSEQ12T3		●													●						○	
	XSEQ12T4															●							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

C

Drilling

D

Technical Information

E

Index

System code > B26

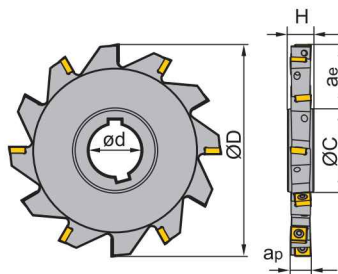
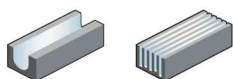
Grade selection > B24

Technical info > B527

Cutting data > B230

## Slot milling

SMP03 Kr: 90°



K

Article	* Stock	Dimensions [mm]							Teeth	Coupling	kg	Inserts
		ØD	ød	Øc	H	ap	ae,max					
SMP03-080x8-K27-MP06-10	○	80	27	44	12	8	17.6	10	K	0.2	MPHT0603	
SMP03-100x8-K32-MP06-14	○	100	32	49	12	8	25.1	14	K	0.3		
SMP03-100x10-K32-MP06-14	○	100	32	49	14	10	25.1	14	K	0.4		
SMP03-125x10-K40-MP06-16	○	125	40	57	14	10	33.6	16	K	0.6	MPHT0803	
SMP03-125x12-K40-MP08-12	○	125	40	58.3	16	12	32.6	12	K	0.7		
SMP03-160x12-K40-MP08-14	○	160	40	64.3	16	12	31.5	14	K	1.3	MPHT1204	
SMP03-160x16-K40-MP12-12	○	160	40	64.6	20	16	47.6	12	K	1.6		
SMP03-160x18-K40-MP12-12	○	160	40	65.3	24	18	47.3	12	K	1.9		
SMP03-160x20-K40-MP12-12	○	160	40	65.3	26	20	47.3	12	K	2.1		
SMP03-200x16-K50-MP12-14	○	200	50	74.6	20	16	62.6	14	K	2.5		
SMP03-200x18-K50-MP12-14	○	200	50	75.3	24	18	62.3	14	K	2.9		
SMP03-200x20-K50-MP12-14	○	200	50	75.3	26	20	62.3	14	K	3.3		

● Ex stock ○ On demand

\* With internal cooling

Spare parts					
	Insert	MPHT0603	MPHT0803	MPHT1204	
	ØD	80-125	125-160	160-200	
	Screw (insert)	I60M2.5x6.5 (1.0 Nm)	I60M3x7 (1.8 Nm)	I60M5x13 (6.7 Nm)	
	Wrench (insert)	WT07IP	WT09IP		
	Wrench (insert)			WT20IS	

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

**A**

Turning

**B**

Milling

**C**




Drilling

**D**

Technical Information

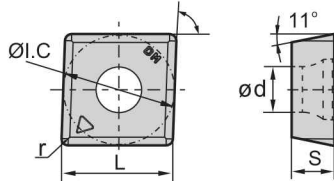

**E**

Index

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

MPHT	L	I.C	S	d
<b>06 03</b>	6.35	6.35	3.18	2.8
<b>08 03</b>	8.3	8.3	3.18	3.4
<b>12 04</b>	12.7	12.7	4.76	5.56

## Milling inserts

MP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
	<b>P</b>																							
	<b>M</b>																							
	<b>K</b>																							
	<b>N</b>																							
	<b>S</b>																							
	<b>H</b>																							
ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	MPHT060304-DM	0.4	●			●											●							
	MPHT080305-DM	0.5	●			○											●							
	MPHT120408-DM	0.8	●			○		●									●							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

Grade selection > B24

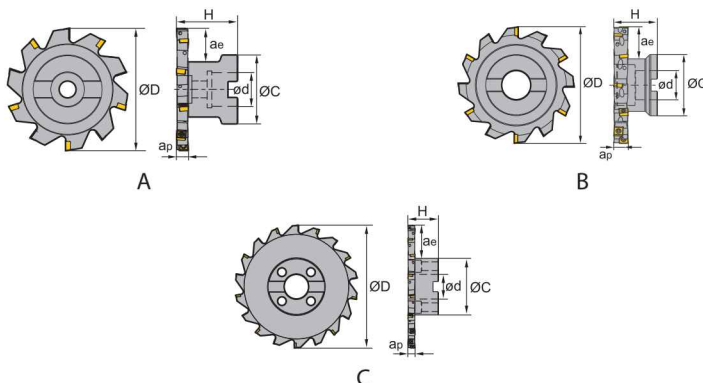
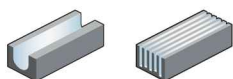
Technical info > B527

Cutting data > B230



### Slot milling

SMP03 Kr: 90°



Article	* Stock	Dimensions [mm]							Teeth	Coupling	kg	Inserts
		ØD	ød	Øc	H	ap	ae,max					
SMP03-080x8-A22-MP06-10	○	80	22	45	40	8	21	10	A	0.4	MPHT0603	
SMP03-100x8-B27-MP06-14	○	100	27	55	40	8	24.5	14	B	0.6		
SMP03-100x10-B27-MP06-14	●	100	27	55	40	10	24.5	14	B	0.7		
SMP03-125x10-B32-MP06-16	○	125	32	65	45	10	33.3	16	B	1.1	MPHT0803	
SMP03-125x12-B32-MP08-12	○	125	32	65	45	12	33	12	B	1.4		
SMP03-160x12-B40-MP08-14	○	160	40	80	50	12	44	14	B	1.9		
SMP03-200x12-C40-MP08-18	○	200	40	92	50	12	52	18	C	3.2	MPHT1204	
SMP03-125x16-B32-MP12-10	○	125	32	65	50	16	33	10	B	2.3		
SMP03-160x16-B40-MP12-12	○	160	40	80	60	16	45	12	B	2.3		
SMP03-160x18-B40-MP12-12	○	160	40	80	60	18	45	12	B	2.4	MPHT1204	
SMP03-200x16-C40-MP12-14	○	200	40	92	50	16	52	14	C	3.6		
SMP03-200x18-C40-MP12-14	○	200	40	92	50	18	52	14	C	3.9		
SMP03-200x20-C40-MP12-14	○	200	40	92	50	20	52	14	C	4.2		

● Ex stock    ○ On demand

\* With internal cooling

#### Spare parts

	Insert	MPHT0603	MPHT0803	MPHT1204	
	ØD	80-125	125-200	125-200	
	Screw (insert)	I60M2.5x6.5 (1.0 Nm)	I60M3x7 (1.8 Nm)	I60M5x13 (6.7 Nm)	
	Wrench (insert)	WT07IP	WT09IP		
	Wrench (insert)			WT20IS	

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230



**A**

Turning

**B**

Milling

**C**




Drilling

**D**

Technical Information

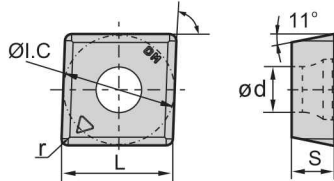

**E**

Index

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

MPHT	L	I.C	S	d
<b>06 03</b>	6.35	6.35	3.18	2.8
<b>08 03</b>	8.3	8.3	3.18	3.4
<b>12 04</b>	12.7	12.7	4.76	5.56

## Milling inserts

MP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
	<b>P</b>																							
	<b>M</b>																							
	<b>K</b>																							
	<b>N</b>																							
	<b>S</b>																							
	<b>H</b>																							
ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	MPHT060304-DM	0.4	●			●											●							
	MPHT080305-DM	0.5	●			○											●							
	MPHT120408-DM	0.8	●			○		●									●							

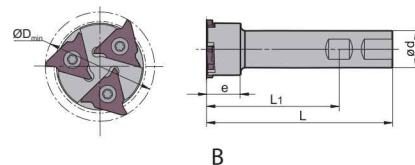
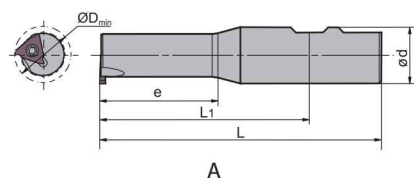
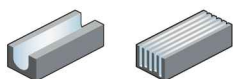
● Ex stock    ○ On demand


HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



Slot milling

SMP05 Kr: 90°






Article	*	Stock	Dimensions [mm]					Teeth	Coupling	Inserts
			e	ØDmin	ød	L <sub>1</sub>	L			
SMP05-025x3.0-XP25-QC16-01	●		40	25	25	89	125	1	A	
SMP05-039x3.0-XP25-QC16-03	●		23	39	25	89	125	3	B	
SMP05-044x4.8-XP25-QC22-03	●		23	44	25	89	125	3	B	

● Ex stock ○ On demand

\* With internal cooling

Spare parts

		QC16L	QC16L	QC22L	
		25	39	44	
	Screw (insert)	I60M3.5×10 (2.7 Nm)	I60M3.5×10 (2.7 Nm)	I60M5×13 (6.7 Nm)	
	Wrench (insert)	WT15IP	WT15IP	WT20IP	

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230





# Indexable milling Slot milling

## Milling inserts

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

QC16	I.C	d
<b>16</b>	9.525	4.4
<b>22</b>	12.7	5.5

QC** turning/milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW
	<b>P</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	
	<b>M</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	
	<b>K</b>															
	<b>N</b>															
	<b>S</b>															
	<b>H</b>															

ISO	S <sub>±0.025</sub>	La <sub>max</sub>	R/C	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
				QC16L075-R01	0.75	2	0.1													○						
QC16L095-R01	0.95	2	0.1														○									
QC16L100-R01	1	2	0.1														○									
QC16L110-R01	1.1	2	0.1											○			●									
QC16L120-R01	1.2	2	0.1														○									
QC16L125-R02	1.25	2	0.2														●									
QC16L130-R02	1.3	2	0.2														○									
QC16L145-R02	1.45	2	0.2														●									
QC16L150-R02	1.5	2	0.2														○									
QC16L160-R02	1.6	2	0.2														●									
QC16L165-R02	1.65	2	0.2														○									
QC16L170-R02	1.7	2	0.2														○									
QC16L175-R02	1.75	2	0.2														○									
QC16L185-R02	1.85	2.5	0.2														○									
QC16L200-R02	2	2.5	0.2														●									
QC16L210-R02	2.1	2.5	0.2														○									
QC16L210-R05	2.1	2.5	0.5														○									
QC16L220-R02	2.2	2.5	0.2														○									
QC16L250-R02	2.5	2.5	0.2														●									
QC16L300-R02	3	3	0.2														●									

● Ex stock    ○ On demand


HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



**Milling inserts**

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

QC16	I.C	d
<b>16</b>	9.525	4.4
<b>22</b>	12.7	5.5

QC** turning/milling insert				HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW
				P	M	K	N	S	H									
				YBC302						YBC301								
				YBC401						YBM253								
				YBM251						YBM351								
				YBD152						YBD252								
				YBG101						YBG102								
				YBG202						YBG212								
				YBG203						YBG205								
				YB9320						YBG302								
				YBS303						YBG252								
				YNG151						YNG151C								
				YD101						YD201								
	QC22L100-R02	1	2	0.2														
	QC22L125-R02	1.25	2	0.2														
	QC22L145-R02	1.45	2	0.2														
	QC22L150-R02	1.5	3.5	0.2														
	QC22L175-R02	1.75	3.5	0.2														
	QC22L185-R02	1.85	3.5	0.2														
	QC22L200-R02	2	3.5	0.2														
	QC22L230-R02	2.3	3.5	0.2														
	QC22L250-R03	2.5	4	0.3														
	QC22L265-R03	2.65	4	0.3														
	QC22L280-R03	2.8	4	0.3														
	QC22L300-R03	3	4	0.3														
	QC22L320-R03	3.2	4	0.3														
	QC22L330-R03	3.3	4	0.3														
	QC22L350-R03	3.5	5	0.3														
	QC22L400-R04	4	5	0.4														
	QC22L430-R04	4.3	5	0.4														
	QC22L450-R04	4.5	5	0.4														
	QC22L480-R04	4.8	5	0.4														

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A** Turning  
**B** Milling  
**C** Drilling  
**D** Technical Information  
**E** Index



## Notes

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

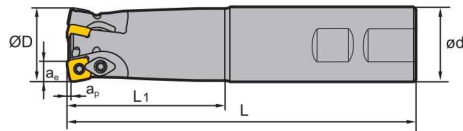
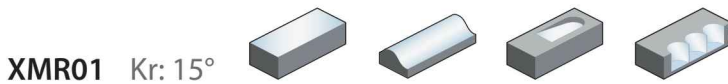
Technical  
Information

**E**

Index

Notes section containing horizontal dotted lines for writing.

High feed milling



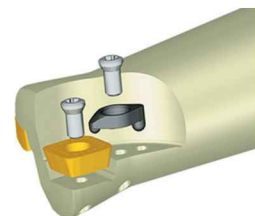
S type insert, Weldon shank

Article	*	Stock	Dimensions [mm]						Teeth	kg	Inserts
			ØD	ød	ap	ae	L <sub>1</sub>	L			
XMR01-020-XP20-SD06-04C	*	○	20	20	0.8	5.8	50	130	4	0.24	SDMT06T2
XMR01-025-XP25-SD06-03C	*	○	25	25	0.8	5.8	60	140	3	0.46	
XMR01-025-XP25-SD06-05C	*	○	25	25	0.8	5.8	60	140	5	0.44	
XMR01-032-XP32-SD06-06C	*	○	32	32	0.8	5.8	70	150	6		SDMT09T3
XMR01-025-XP25-SD09-02		○	25	25	1.4	8.8	60	140	2	0.5	
XMR01-032-XP32-SD09-03C	*	○	32	32	1.4	8.8	70	150	3	0.8	
XMR01-035-XP32-SD09-03		○	35	32	1.4	8.8	70	150	3	0.8	SDMT1204
XMR01-040-XP40-SD12-03		○	40	40	1.8	11.7	70	150	3	1.3	
XMR01-040-XP40-SD12-03C	*	○	40	40	1.8	11.7	70	150	3	1.2	
XMR01-040-XP40-SD15-02		○	40	40	2.2	14	70	200	2	1.6	SDMT1505

● Ex stock ○ On demand

\* With internal cooling

Spare parts		Insert	SDMT06T2	SDMT09T3	SDMT1204	SDMT1505
		ØD	20-63	25-63	32-100	40-160
	Clamp			WD-204	WD-204	WD-208
	Screw (clamp)			I60M4×8.4 (3.4 Nm)	I60M4×8.4 (3.4 Nm)	I60M5×13 (6.7 Nm)
	Screw (insert)	I60M2.2×5.5 (0.8 Nm)			I60M4×8.4 (3.4 Nm)	I60M5×13 (6.7 Nm)
	Screw (insert)			I60M3.5×08TT (2.7 Nm)		
	Wrench (clamp)			WT15IP	WT15IP	WT20IP
	Wrench (insert)		WT07IP	WT10IP	WT15IP	WT20IP



A

Turning

B

Milling

C

Drilling




D

Technical Information




E

Index

SDMT	L	I.C	S	d
06 T2	6.35	6.35	2.58	5.5
09 T3	9.525	9.525	3.97	4
12 04	12.7	12.7	4.76	4.4
15 05	15.875	15.875	5.56	5.5

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

## Milling inserts

SD** milling insert		HC <sup>1</sup> (CVD)								HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW								
		P	M	K	N	S	H																		
ISO		r	α	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	SDMT06T208-DM	0.8	15					○						○											
	SDMT09T312-DM	1.2	15	●				●						○	○				●						
	SDMT120412-DM	1.2	15	●				●		●				○	○										
	SDMT150520-DM	2	15												○										
	SDMT09T312-NM						●								○	●				●					
	SDMT120412-NM						●								○	●		●		●					
	SDMT06T208-PM	0.8	15	●			●									○	●			○					
	SDMT09T312-PM	1.2	15				●			○				○		●									
	SDMT120412-PM	1.2	15				●							○		●									
	SDMT150520-PM	2	15				○									○									

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

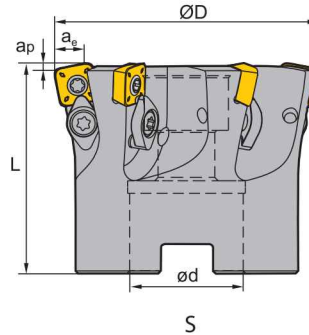
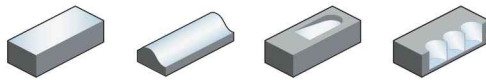
Grade selection > B24

Technical info > B527

Cutting data > B230

High feed milling

XMR01 Kr: 15°



Article	*	Stock	Dimensions [mm]					Teeth	Coupling	kg	Inserts
			ØD	ød	ap	ae	L				
XMR01-040-A16-SD06-07C	*	○	40	16	0.8	5.8	40	7	A	0.178	SDMT06T2
XMR01-050-A22-SD06-07C	*	○	50	22	0.8	5.8	40	7	A	0.36	
XMR01-050-A22-SD06-08C	*	○	50	22	0.8	5.8	40	8	A	0.36	
XMR01-063-A22-SD06-10C	*	○	63	22	0.8	5.8	40	10	A	0.53	
XMR01-063-A27-SD06-10C	*	○	63	27	0.8	5.8	50	10	A	0.57	
XMR01-040-A16-SD09-04		○	40	16	1.4	8.8	40	4	A	0.182	SDMT09T3
XMR01-040-A16-SD09-04C	*	○	40	16	1.4	8.8	40	4	A	0.182	
XMR01-040-A16-SD09-05		○	40	16	1.4	8.8	40	5	A	0.181	
XMR01-050-A22-SD09-04C	*	●	50	22	1.4	8.8	40	4	A	0.3	
XMR01-050-A22-SD09-05C	*	○	50	22	1.4	8.8	40	5	A	0.3	
XMR01-063-A22-SD09-06C	*	●	63	22	1.4	8.8	40	6	A	0.5	
XMR01-063-A27-SD09-06C	*	○	63	27	1.4	8.8	50	6	A	0.6	
XMR01-063-A22-SD09-07C	*	●	63	22	1.4	8.8	40	7	A	0.44	
XMR01-063-A27-SD09-07C	*	○	63	27	1.4	8.8	50	7	A		
XMR01-050-A22-SD12-03C	*	○	50	22	1.8	11.7	40	3	A		
XMR01-050-A22-SD12-04C	*	●	50	22	1.8	11.7	40	4	A		
XMR01-052-A22-SD12-04C	*	○	52	22	1.8	11.7	40	4	A		
XMR01-052-A22-SD12-05C	*	○	52	22	1.8	11.7	40	5	A		
XMR01-063-A22-SD12-05C	*	●	63	22	1.8	11.7	40	5	A	0.5	
XMR01-063-A27-SD12-05C	*	●	63	27	1.8	11.7	50	5	A	0.6	
XMR01-063-A22-SD12-06C	*	●	63	22	1.8	11.7	50	6	A	0.55	
XMR01-066-A27-SD12-05C	*	○	66	27	1.8	11.7	50	5	A	0.56	
XMR01-080-A27-SD12-05C	*	●	80	27	1.8	11.7	63	5	A	0.9	
XMR01-080-A27-SD12-06C	*	●	80	27	1.8	11.7	50	6	A	0.9	
XMR01-080-A27-SD12-07C	*	●	80	27	1.8	11.7	50	7	A	0.93	
XMR01-080-A27-SD12-08C	*	●	80	27	1.8	11.7	50	8	A	0.92	
XMR01-100-B32-SD12-06		●	100	32	1.8	11.7	50	6	B	1.8	
XMR01-100-B32-SD12-06C	*	●	100	32	1.8	11.7	50	6	B	1.8	

● Ex stock ○ On demand

\* With internal cooling

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230



A

Turning

B

Milling

C

Drilling

D

Technical Information


E

Index

# Indexable milling

A

Turning







Article	*	Stock	Dimensions [mm]					Teeth	Coupling		Inserts
			ØD	ød	a <sub>p</sub>	ae	L				
XMR01-100-B32-SD12-07C	*	●	100	32	1.8	11.7	50	7	B		
XMR01-125-B40-SD12-08C	*	●	125	40	1.8	11.7	63	8	B		SDMT1204
XMR01-125-B40-SD12-09C	*	●	125	40	1.8	11.7	63	9	B		
XMR01-063-A22-SD15-04C	*	○	63	22	2.2	14	40	4	A		
XMR01-100-B32-SD15-07		○	100	32	2.2	14	50	7	B	1.2	SDMT1505
XMR01-125-B40-SD15-09		○	125	40	2.2	14	63	9	B	2.9	

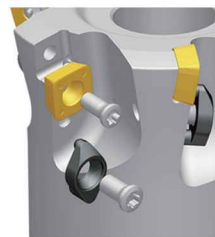
● Ex stock    ○ On demand

\* With internal cooling

B

Milling

Spare parts					
	Insert	SDMT06T2	SDMT09T3	SDMT1204	SDMT1505
	ØD	20-63	25-63	32-160	40-160
	Clamp		WD-204	WD-204	WD-208
	Screw (clamp)		I60M4×8.4 (3.4 Nm)	I60M4×8.4 (3.4 Nm)	I60M5×13 (6.7 Nm)
	Screw (insert)	I60M2.2×5.5 (0.8 Nm)		I60M4×8.4 (3.4 Nm)	I60M5×13 (6.7 Nm)
	Screw (insert)		I60M3.5×08TT (2.7 Nm)		
	Wrench (clamp)		WT15IP	WT15IP	WT20IP
	Wrench (insert)	WT07IP	WT10IP	WT15IP	WT20IP



C

Drilling

D

Technical Information

E

Index

System code > B26

Grade selection > B24




Technical info > B527

Cutting data > B230

SDMT	L	I.C	S	d
06 T2	6.35	6.35	2.58	5.5
09 T3	9.525	9.525	3.97	4
12 04	12.7	12.7	4.76	4.4
15 05	15.875	15.875	5.56	5.5

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

**Milling inserts**

SD** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW											
			P	M	K	N	S	H																			
ISO			r	α	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	SDMT06T208-DM	0.8	15						○																		
	SDMT09T312-DM	1.2	15	●					●		○				○						●						
	SDMT120412-DM	1.2	15	●					●		●				○	○											
	SDMT150520-DM	2	15													○											
	SDMT09T312-NM							●								○	●				●						
	SDMT120412-NM							●								○	●	●	●		●						
	SDMT06T208-PM	0.8	15	●			●										○	●			○						
	SDMT09T312-PM	1.2	15				●				○				○		●	●									
	SDMT120412-PM	1.2	15				●								○		●	●									
	SDMT150520-PM	2	15				○										○										

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

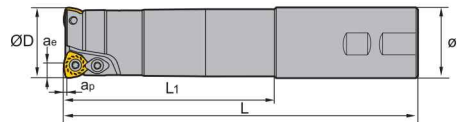
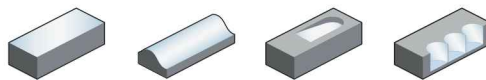
Index





## High feed milling

XMR01 Kr: 11°-22°



W type insert, Weldon shank

Article	*	Stock	Dimensions [mm]						Teeth	kg	Inserts
			ØD	ød	ap	ae	L <sub>1</sub>	L			
XMR01-020-XP20-WP05-02C-M	*	○	20	20	1.5	3.8	50	130	2	0.2	WPGT0503
XMR01-020-XP20-WP05-02-L		○	20	20	1.5	3.8	100	180	2	0.3	
XMR01-020-XP20-WP05-02-XL		○	20	20	1.5	3.8	130	250	2	0.8	
XMR01-025-XP25-WP06-02C-M	*	○	25	25	1.5	4.35	60	140	2	0.4	WPGT0604
XMR01-025-XP25-WP06-02-L		○	25	25	1.5	4.35	120	200	2	0.6	
XMR01-025-XP25-WP06-02-XL		○	25	25	1.5	4.35	180	300	2	1	
XMR01-032-XP32-WP06-03C-M	*	○	32	32	1.5	4.35	70	150	3	0.8	
XMR01-032-XP32-WP06-03-L		○	32	32	1.5	4.35	120	200	3	1	
XMR01-032-XP32-WP06-03-XL		○	32	32	1.5	4.35	180	300	3	1.6	
XMR01-040-XP32-WP06-03C-M	*	○	40	32	1.5	4.35	50	150	3	0.9	WPGT0604
XMR01-040-XP32-WP06-03-XL		○	40	32	1.5	4.35	50	300	3	1.8	

● Ex stock ○ On demand

\* With internal cooling

Variable lead angle (lead angle ist hier dependent on size of inserts)  
lead angle: WPGT05: 16°; WPGT06: 22°; WPGT08: 11°; WPGT09: 21°

Spare parts			
	Insert	WPGT0503	WPGT0604
	ØD	20	25-40
	Screw (insert)	I60M3.5×6.5 (2.7 Nm)	I60M4×8.4 (3.4 Nm)
	Wrench (insert)	WT10IP	WT15IP






System code > B26

Grade selection > B24

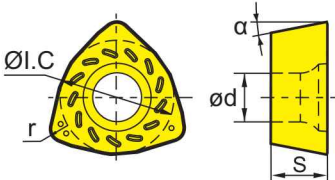


Technical info > B527

Cutting data > B230

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

WPGT	I.C	S	d
05 03	7.94	3.5	4
06 04	9.525	4.2	4.4

**Milling inserts**

WP** positive insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>																								
	<b>M</b>																								
	<b>K</b>																								
	<b>N</b>																								
	<b>S</b>																								
	<b>H</b>																								
ISO	r		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	WPGT050315ZSR-PM	1.5																							
	WPGT060415ZSR-PM	1.5																							
	WPGT050315ZSR	1.5																							
	WPGT060415ZSR	1.5																							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index



## High feed milling

A

Turning

B

Milling

C

Drilling

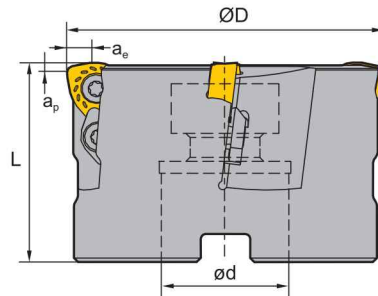
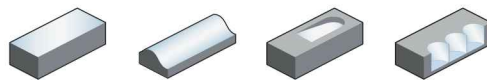
D

Technical Information

E

Index

XMR01 Kr: 11°-22°



W type insert, Arbor mounting

Article	*	Stock	Dimensions [mm]					Teeth	Coupling	kg	Inserts
			ØD	ød	ap	ae	L				
XMR01-050-A22-WP06-04		●	50	22	1.5	4.35	50	4	A	0.4	WPGT0604
XMR01-050-A22-WP06-04C	*	●	50	22	1.5	4.35	50	4	A	0.4	
XMR01-050-A22-WP08-03		○	50	22	1.5	5.66	50	3	A	0.4	WPGT0806
XMR01-063-A27-WP08-04		●	63	27	1.5	5.66	50	4	A	0.7	
XMR01-063-A22-WP08-04C	*	●	63	22	1.5	5.66	50	4	A	0.7	
XMR01-063-A27-WP08-04C	*	○	63	27	1.5	5.66	50	4	A	0.7	
XMR01-080-A27-WP08-05C	*	●	80	27	1.5	5.66	63	5	A	1.5	
XMR01-100-B32-WP08-06		●	100	32	1.5	5.66	63	6	B	2.2	
XMR01-125-B40-WP08-07		●	125	40	1.5	5.66	63	7	B	3.5	WPGT0907
XMR01-160-B40-WP08-08		○	160	40	1.5	5.66	63	8	B	6	
XMR01-063-A22-WP09-03C	*	○	63	22	3	6.8	50	3	A	0.7	
XMR01-080-A27-WP09-04C	*	○	80	27	3	6.8	63	4	A	1.4	
XMR01-100-B32-WP09-05		○	100	32	3	6.8	63	5	B	2.1	WPGT0907
XMR01-125-B40-WP09-06		○	125	40	3	6.8	63	6	B	3.7	
XMR01-160-B40-WP09-07		○	160	40	3	6.8	63	7	B	6.3	

● Ex stock    ○ On demand

\* With internal cooling

Variable lead angle (lead angle ist hier dependent on size of inserts)  
lead angle: WPGT05: 16°; WPGT06: 22°; WPGT08: 11°; WPGT09: 21°

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

Spare parts		WPGT0604	WPGT0806	WPGT0907
Insert	ØD	50	50-160	3-160
	Clamp		WD-208	WD-208
	Screw (clamp)		I60M5×13 (6.7 Nm)	I60M5×13 (6.7 Nm)
	Screw (insert)	I60M4×8.4 (3.4 Nm)	I60M5×13 (6.7 Nm)	I60M5×13 (6.7 Nm)
	Wrench (clamp)		WT20IT	WT20IT
	Wrench (insert)	WT15IS		
	Wrench (insert)		WT20IT	WT20IT



**Milling inserts**

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

WPGT	I.C	S	d
06 04	9.525	4.2	4.4
08 06	12.85	6.35	5.5
09 07	15	7	5.5

WP** positive insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW										
	<b>P</b>																								
	<b>M</b>																								
	<b>K</b>																								
	<b>N</b>																								
	<b>S</b>																								
	<b>H</b>																								
ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151		YNG151C	YD101	YD201	
	WPGT060415ZSR-PM	1.5	●											●	●			●							
	WPGT080615ZSR-PM	1.5	●											●	●			●							
	WPGT090725ZSR-PM	2.5													●										
	WPGT060415ZSR	1.5	●			●						●	●												
	WPGT080615ZSR	1.5	●			●						●	●												
	WPGT090725ZSR	2.5				●						○	●												

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

## Notes

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

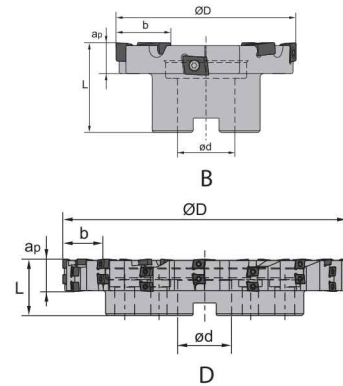
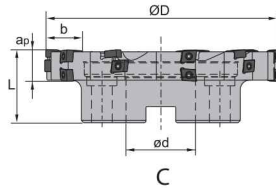
Technical  
Information


**E**

Index

**Bore milling**



**XMP01** Kr: 90° 




Article	* Stock	Dimensions [mm]					Teeth	Coupling	kg	Inserts 
		ØD	ød	b	ap	L				
XMP01-080*18-B27-CNE1210-08	●	80	27	18	15	50	8	B	0.67	CNE12
XMP01-100*18-B32-CNE1210-08	●	100	32	18	20	50	8	B	0.99	
XMP01-125*27-B40-CNE1210-15	●	125	40	27	22.5	63	15	B	2.46	
XMP01-160*27-C40-CNE1210-18	●	160	40	27	25	63	18	C	3.7	
XMP01-200*27-C60-CNE1210-21	●	200	60	27	31.5	63	21	C	5.46	
XMP01-250*36-C60-CNE1210-32	●	250	40	36	56.5	63	32	C	9.79	
XMP01-315*36-D60-CNE1210-42	●	315	60	36	47.5	63	42	D	17.65	
XMP01-400*36-D60-CNE1210-52	●	400	60	36	36	63	52	D	27.36	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts		
	Insert ØD	CNE12 80-400
	Screw (insert)	I60M4x12 (3.4Nm)
	Wrench (insert)	WT15IP



System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230



A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

**A**

Turning

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

CNE	L	S	d
12	12.8	6.35	4.4

## Milling inserts

CN** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW	
	<b>P</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	
	<b>M</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	
	<b>K</b>															
	<b>N</b>															
	<b>S</b>															
	<b>H</b>															

**B**

Milling

ISO		R/C	W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	CNE121006A	0.4	10				●																		
	CNE121006B	0.6	10				○			●															

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B26

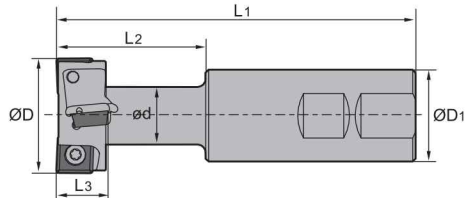
Grade selection > B24

Technical info > B527


Cutting data > B230

**T-slot milling**

**TMP01** Kr: 90°







Weldon shank

Article	* Stock	Dimensions [mm]						Teeth	No. of inserts	T-slot specification	Inserts 
		ØD	ØD <sub>1</sub>	ød	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>				
TMP01-021-XP25-MP06-01	●	21	25	10	100	32	9	1	2	12	MPHT0603
TMP01-025-XP25-MP06-01	●	25	25	12	100	35	11	1	2	14	
TMP01-032-XP32-MP08-02	●	32	32	15	110	45	14	2	4	18	MPHT0803
TMP01-040-XP32-MP12-02C	* ●	40	32	19	125	55	18	2	4	22	MPHT1204
TMP01-050-XP40-MP12-02C	* ●	50	40	25	140	65	22	2	4	28	
TMP01-060-XP50-MP12-02	●	60	50	32	160	80	28	2	6	36	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts					
Insert	MPHT0603	MPHT0803	MPHT1204		
ØD	21-25	32	40-60		
 Screw (insert)	I60M2.5×5.5 (1.0 Nm)	I60M3×7 (1.8 Nm)	I60M5×10 (6.7 Nm)		
 Wrench (insert)	WT07IP	WT09IP			
 Wrench (insert)			WT20IT		

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230



A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index



**A**

Turning

**B**

Milling

**C**




Drilling

**D**

Technical Information

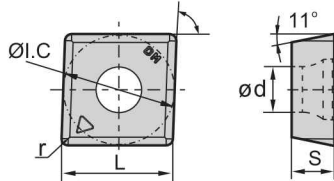

**E**

Index

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

MPHT	L	I.C	S	d
<b>06</b> 03	6.35	6.35	3.18	2.8
<b>08</b> 03	8.3	8.3	3.18	3.4
<b>12</b> 04	12.7	12.7	4.76	5.56

## Milling inserts

MP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
	<b>P</b>																							
	<b>M</b>																							
	<b>K</b>																							
	<b>N</b>																							
	<b>S</b>																							
	<b>H</b>																							
ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	MPHT060304-DM	0.4	●			●											●							
	MPHT080305-DM	0.5	●			○											●							
	MPHT120408-DM	0.8	●			○		●									●							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

Grade selection > B24

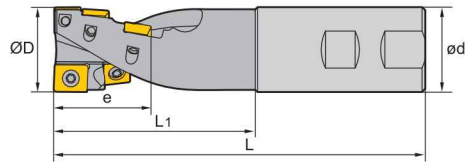
Technical info > B527

Cutting data > B230




Helical milling

HMP01 Kr: 90° 






Weldon shank

Article	* Stock	Dimensions [mm]						Teeth row	Teeth		Shanktype	Inserts 
		ØD	e	ød	L <sub>1</sub>	L	APKT		SPMT			
HMP01-040x55-XP40-SP12-02	●	40	55	40	95	175	2	1	5	Weldon	APKT1504 & SPMT1204	
HMP01-050x55-XP40-SP12-04	●	50	55	40	95	175	4	2	10	Weldon		

● Ex stock ○ On demand

\* With internal cooling

Spare parts

	Insert	APKT1504 & SPMT1204	APKT1504 & SPMT1204	
	ØD	40	50	
 Screw (insert)		I60M5×10 (6.7 Nm)	I60M5×13 (6.7 Nm)	
 Wrench (insert)		WT20T	WT20T	

# Indexable milling Helical milling

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

APKT	L	S	d
15 04	16.33	4.76	5.4

## Milling inserts

AP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>M</b>	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>K</b>							●							●									
	<b>N</b>							●							●	●								
	<b>S</b>		●	●				●	●	●	●	●	●											
	<b>H</b>																							
ISO	r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	APKT150412-PM	1.2	12.7			●												●						

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPMT	L	I.C	S	d
12 04	12.7	12.7	4.76	5.5

## Milling inserts

SP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW								
	<b>P</b>	●	●	●	●	●	●	●	●	●	●	●	●	●									
	<b>M</b>	●	●	●	●	●	●	●	●	●	●	●	●	●									
	<b>K</b>							●							●								
	<b>N</b>							●							●	●							
	<b>S</b>		●	●				●	●	●	●	●	●										
	<b>H</b>																						
ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	SPMT120408-PM	0.8			●												●						

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

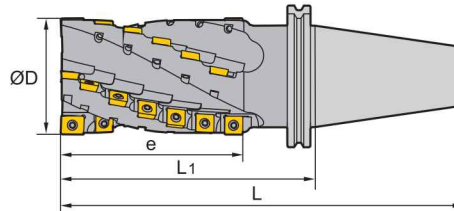
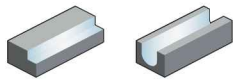
Grade selection > B24


Technical info > B527

Cutting data > B230

**Helical milling**




**HMP01** Kr: 90°



Article	* Stock	Dimensions [mm]				Teeth row	Teeth		Shanktype	Inserts
		ØD	e	L <sub>1</sub>	L		APKT	SPMT		
HMP01-050x84-BT50-SP12-04	○	50	84	145	246.8	4	2	16	BT	 APKT1504 & SPMT1204
HMP01-050x84-JT50-SP12-04	○	50	84	145	246.75	4	2	16	JT	
HMP01-063x74-BT50-SP12-04	○	63	74	135	236.8	4	2	14	BT	
HMP01-063x74-JT50-SP12-04	○	63	74	135	236.75	4	2	14	JT	
HMP01-063x104-BT50-SP12-04	○	63	104	165	266.8	4	2	20	BT	
HMP01-063x104-JT50-SP12-04	●	63	104	165	266.75	4	2	20	JT	
HMP01-063x134-BT50-SP12-04	○	63	134	195	296.8	4	2	26	BT	
HMP01-063x134-JT50-SP12-04	○	63	134	195	296.75	4	2	26	JT	
HMP01-080x104-BT50-SP12-04	○	80	104	165	266.8	4	2	20	BT	
HMP01-080x104-JT50-SP12-04	○	80	104	165	266.75	4	2	20	JT	
HMP01-080x144-BT50-SP12-04	○	80	144	205	306.8	4	2	28	BT	
HMP01-080x144-JT50-SP12-04	○	80	144	205	306.75	4	2	28	JT	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts		
Insert	APKT1504 & SPMT1204	
ØD	50-80	
 Screw (insert)	I60M5x10 (6.7 Nm)	
 Wrench (insert)	WT20IS	

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

# Indexable milling Helical milling

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

APKT	L	S	d
15 04	16.33	4.76	5.4

## Milling inserts

AP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
	<b>P</b>	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>M</b>	●	●	●	●	●		●	●	●	●	●	●	●										
	<b>K</b>						●	●	●					●		●								
	<b>N</b>							●							●	●								
	<b>S</b>			●	●				●	●	●	●	●											
	<b>H</b>																							
ISO	r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	APKT150412-PM	1.2	12.7			●												●						

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPMT	L	I.C	S	d
12 04	12.7	12.7	4.76	5.5

## Milling inserts

SP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW								
	<b>P</b>	●	●	●	●	●	●	●	●	●	●	●	●	●									
	<b>M</b>	●	●	●	●	●		●	●	●	●	●	●	●									
	<b>K</b>						●	●	●					●		●							
	<b>N</b>							●							●	●							
	<b>S</b>			●	●				●	●	●	●	●										
	<b>H</b>																						
ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	SPMT120408-PM	0.8			●												●						

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

Grade selection > B24

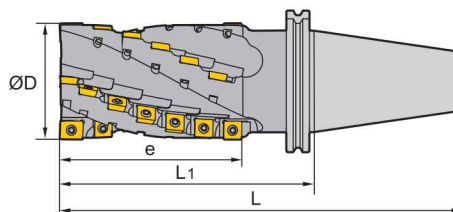
Technical info > B527


Cutting data > B230



## Helical milling






HMP01 EC Kr: 90° 

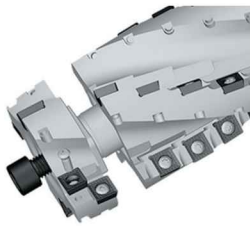


Article	* Stock	Dimensions [mm]				Teeth row	Teeth		Shanktype	Inserts 
		ØD	e	L <sub>1</sub>	L		APKT	SPMT		
HMP01-050x84EC-BT50-SP12-04	○	50	84	145	246.8	4	2	16	BT	APKT1504 & SPMT1204
HMP01-050x84EC-JT50-SP12-04	●	50	84	145	246.75	4	2	16	JT	
HMP01-063x74EC-BT50-SP12-04	○	63	74	135	236.8	4	2	14	BT	
HMP01-063x74EC-JT50-SP12-04	○	63	74	135	236.75	4	2	14	JT	
HMP01-063x104EC-BT50-SP12-04	○	63	104	165	266.8	4	2	20	BT	
HMP01-063x104EC-JT50-SP12-04	○	63	104	165	266.75	4	2	20	JT	
HMP01-063x134EC-BT50-SP12-04	○	63	134	195	296.8	4	2	26	BT	
HMP01-063x134EC-JT50-SP12-04	●	63	134	195	296.75	4	2	26	JT	
HMP01-080x104EC-BT50-SP12-04	○	80	104	165	266.8	4	2	20	BT	
HMP01-080x104EC-JT50-SP12-04	○	80	104	165	266.75	4	2	20	JT	
HMP01-080x144EC-BT50-SP12-04	○	80	144	205	306.8	4	2	28	BT	
HMP01-080x144EC-JT50-SP12-04	○	80	144	205	306.75	4	2	28	JT	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts		APKT1504 & SPMT1204	APKT1504 & SPMT1204	APKT1504 & SPMT1204
Insert	ØD	50	63	80
 Indexable head		050EC	063EC	080EC
 Screw (head)		M10×50 (16.6 Nm)	M10×50 (16.6 Nm)	M12×55 (25.2 Nm)
 Screw (insert)		I60M5×13 (6.7 Nm)	I60M5×13 (6.7 Nm)	I60M5×13 (6.7 Nm)
 Wrench (head)		WH80L	WH80L	WH100L
 Wrench (insert)		WT20IS	WT20IS	WT20IS



System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

# Indexable milling Helical milling

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

APKT	L	S	d
15 04	16.33	4.76	5.4

## Milling inserts

AP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW										
		P	M	K	N	S	H																		
		●	●	●	●	●	●		●	●	●	●	●	●											
ISO		r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	APKT150412-PM	1.2	12.7				●												●						

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

SPMT	L	I.C	S	d
12 04	12.7	12.7	4.76	5.5

## Milling inserts

SP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW										
		P	M	K	N	S	H																		
		●	●	●	●	●	●		●	●	●	●	●	●	●										
ISO		r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	SPMT120408-PM	0.8					●												●						

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

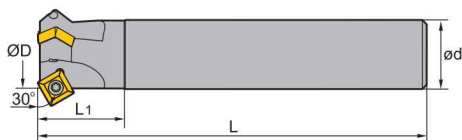
Grade selection > B24

Technical info > B527


Cutting data > B230

### Chamfer milling

CMZ01 Kr: 30° 



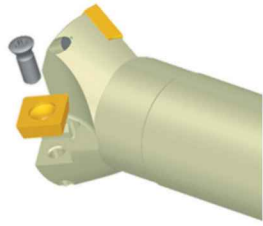


Straight shank

Article	*	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ød	L <sub>1</sub>	L			
CMZ01-012-G20-SP12-01		●	12	20	40	100	1	0.2	 SPMT1204
CMZ01-025-G25-SP12-02		●	25	25	40	120	2	0.8	
CMZ01-032-G32-SP12-03		●	32	32	40	180	3	1.1	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts

Insert		SPMT1204	
ØD		12-32	
	Screw (insert)	I43M5×11 (6.7Nm)	
	Wrench (insert)	WT20IS	

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230



**A**

Turning

**B**

Milling

**C**




Drilling

**D**

Technical Information

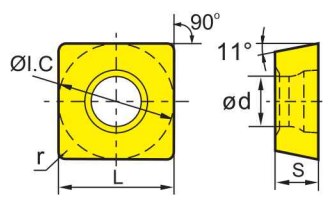


**E**

Index

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

SPMT	L	I.C	S	d
12 04	12.7	12.7	4.76	5.5

## Milling inserts

SP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW									
	<b>P</b>																								
	<b>M</b>																								
	<b>K</b>																								
	<b>N</b>																								
	<b>S</b>																								
	<b>H</b>																								
	ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151		YNG151C	YD101	YD201
	SPMT120408-HT-1	0.8												○											
	SPMT120408	0.8	○	●	○		●	○										○							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

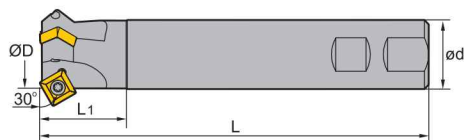
Grade selection > B24

Technical info > B527


Cutting data > B230

### Chamfer milling

CMZ01 Kr: 30° 



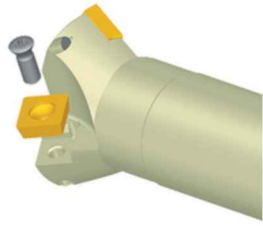


Weldon shank

Article	*	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ød	L <sub>1</sub>	L			
CMZ01-025-XP25-SP12-02		●	25	25	40	120	2	0.6	 SPMT1204
CMZ01-032-XP32-SP12-03		●	32	32	40	180	3	1	
CMZ01-012-XP20-SP12-01		●	12	20	40	100	1	0.2	

● Ex stock    ○ On demand

\* With internal cooling

#### Spare parts

Insert		SPMT1204	
ØD		12-32	
	Screw (insert)	M3M5x11 (6.7Nm)	
	Wrench (insert)	WT20IS	

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPMT	L	I.C	S	d
12 04	12.7	12.7	4.76	5.5

## Milling inserts

SP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW									
	<b>P</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>M</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>K</b>					●	●	●								●									
	<b>N</b>							●								●									
	<b>S</b>		●	●				●	●	●	●	●	●												
	<b>H</b>																								
	ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151		YNG151C	YD101	YD201
	SPMT120408-HT-1	0.8											○												
	SPMT120408	0.8	○	●	○		●	○										○							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

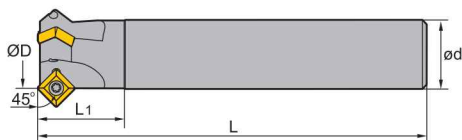
Grade selection > B24

Technical info > B527


Cutting data > B230

### Chamfer milling

**CMA01** Kr: 45° 



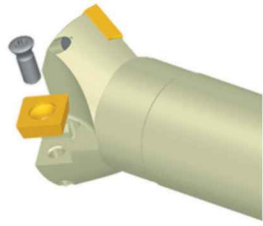


Straight shank

Article	*	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ød	L <sub>1</sub>	L			
CMA01-012-G20-SP12-01		●	12	20	40	100	1	0.2	 SPMT1204
CMA01-025-G25-SP12-02		●	25	25	40	120	2	0.8	
CMA01-032-G32-SP12-03		●	32	32	40	180	3	1.1	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts

Insert		SPMT1204	
ØD		12-32	
	Screw (insert)	M3M5x11 (6.7Nm)	
	Wrench (insert)	WT20IS	

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPMT	L	I.C	S	d
12 04	12.7	12.7	4.76	5.5

## Milling inserts

SP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW									
	<b>P</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>M</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>K</b>					●	●	●								●									
	<b>N</b>							●								●									
	<b>S</b>		●	●				●	●	●	●	●	●												
	<b>H</b>																								
	ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151		YNG151C	YD101	YD201
	SPMT120408-HT-1	0.8											○												
	SPMT120408	0.8	○	●	○		●	○										○							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

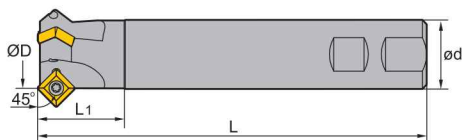
Grade selection > B24

Technical info > B527


Cutting data > B230

### Chamfer milling

**CMA01** Kr: 45° 



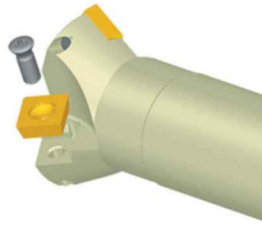


Weldon shank

Article	*	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ød	L <sub>1</sub>	L			
CMA01-012-XP20-SP12-01		●	12	20	40	100	1	0.2	 SPMT1204
CMA01-025-XP25-SP12-02		●	25	25	40	120	2	0.6	
CMA01-032-XP32-SP12-03		●	32	32	40	100	3	1	

● Ex stock    ○ On demand

\* With internal cooling

#### Spare parts

Insert		SPMT1204	
ØD		12-32	
	Screw (insert)	M3M5x11 (6.7Nm)	
	Wrench (insert)	WT20IS	

A

Turning

B

Milling

C

Drilling

D

Technical  
Information

E

Index

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- ● Normal machining conditions
- ● ● Unfavourable machining conditions

SPMT	L	I.C	S	d
12 04	12.7	12.7	4.76	5.5

## Milling inserts

SP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW									
	<b>P</b>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>											
	<b>M</b>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>											
	<b>K</b>					<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>		<span style="color: red;">●</span>									
	<b>N</b>							<span style="color: green;">●</span>								<span style="color: green;">●</span>	<span style="color: green;">●</span>								
	<b>S</b>		<span style="color: orange;">●</span>	<span style="color: orange;">●</span>				<span style="color: orange;">●</span>	<span style="color: orange;">●</span>	<span style="color: orange;">●</span>	<span style="color: orange;">●</span>	<span style="color: orange;">●</span>	<span style="color: orange;">●</span>	<span style="color: orange;">●</span>											
	<b>H</b>																								
	ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151		YNG151C	YD101	YD201
	SPMT120408-HT-1	0.8												○											
	SPMT120408	0.8	○	●	○		●	○										○							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

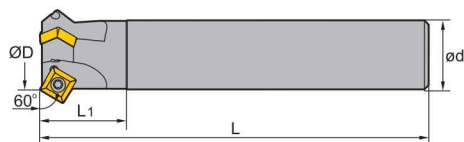
Grade selection > B24

Technical info > B527


Cutting data > B230

### Chamfer milling

**CMD01** Kr: 60° 



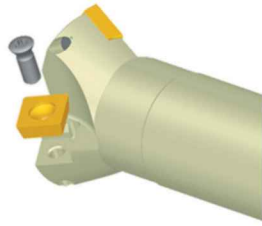


Straight shank

Article	*	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ød	L <sub>1</sub>	L			
CMD01-012-G20-SP12-01		●	12	20	40	100	1	0.2	 SPMT1204
CMD01-025-G25-SP12-02		●	25	25	40	120	2	0.8	
CMD01-036-G32-SP12-03		●	36	32	40	180	3	1	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts

Insert		SPMT1204	
ØD		12-36	
	Screw (insert)	I43M5×11 (6.7Nm)	
	Wrench (insert)	WT20IS	

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230



**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- ● Normal machining conditions
- ● ● Unfavourable machining conditions

SPMT	L	I.C	S	d
12 04	12.7	12.7	4.76	5.5

## Milling inserts

SP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW									
	<b>P</b>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>											
	<b>M</b>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>											
	<b>K</b>					<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>					<span style="color: red;">●</span>			<span style="color: red;">●</span>									
	<b>N</b>							<span style="color: green;">●</span>								<span style="color: green;">●</span>	<span style="color: green;">●</span>								
	<b>S</b>		<span style="color: orange;">●</span>	<span style="color: orange;">●</span>				<span style="color: orange;">●</span>	<span style="color: orange;">●</span>	<span style="color: orange;">●</span>	<span style="color: orange;">●</span>	<span style="color: orange;">●</span>	<span style="color: orange;">●</span>												
	<b>H</b>																								
	ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151		YNG151C	YD101	YD201
	SPMT120408-HT-1	0.8											○												
	SPMT120408	0.8	○	●	○		●	○										○							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

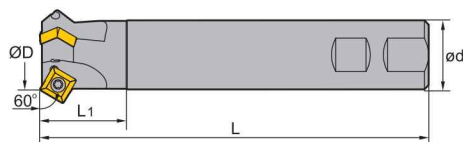
Grade selection > B24

Technical info > B527


Cutting data > B230

### Chamfer milling

**CMD01** Kr: 60° 



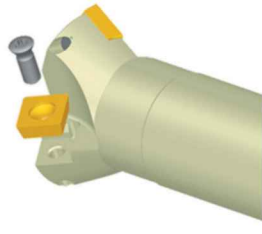


Weldon shank

Article	*	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ød	L <sub>1</sub>	L			
CMD01-012-XP20-SP12-01		●	12	20	40	100	1	0.2	 SPMT1204
CMD01-025-XP25-SP12-02		●	25	25	40	120	2	0.6	
CMD01-036-XP32-SP12-03		●	36	32	40	180	3	1	

● Ex stock    ○ On demand

\* With internal cooling

#### Spare parts

Insert		SPMT1204	
ØD		12-36	
	Screw (insert)	I43M5×11 (6.7Nm)	
	Wrench (insert)	WT20IS	

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPMT	L	I.C	S	d
12 04	12.7	12.7	4.76	5.5

## Milling inserts

SP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW									
	<b>P</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>M</b>	●	●	●	●	●		●	●	●	●	●	●	●											
	<b>K</b>					●	●	●								●									
	<b>N</b>							●							●	●									
	<b>S</b>		●	●				●	●	●	●	●	●												
	<b>H</b>																								
	ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151		YNG151C	YD101	YD201
	SPMT120408-HT-1	0.8											○												
	SPMT120408	0.8	○	●	○		●	○										○							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

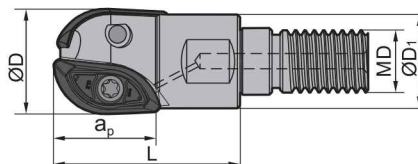
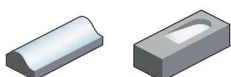
Grade selection > B24

Technical info > B527

Cutting data > B230

**Profile milling**

QCH - XPHT



Article	*	Stock	Dimensions [mm]					Teeth	kg	Inserts
			ØD	ØD <sub>1</sub>	a <sub>p</sub>	L	MD			
QCH-16-XPHT16-M10	●		16	17	16	28	10	2	0.036	XPHT16
QCH-20-XPHT20-M12	○		20	19	20	30	12	2	0.051	XPHT20
QCH-25-XPHT25-M12	●		25	24	25	35	12	2	0.071	XPHT25
QCH-30-XPHT30-M16	●		30	29	30	45	16	2	0.14	XPHT30
QCH-32-XPHT32-M16	●		32	30	32	45	16	2	0.162	XPHT32

● Ex stock    ○ On demand

\* With internal cooling

Spare parts							
Insert	XPHT16	XPHT20	XPHT25	XPHT30	XPHT32		
ØD	16	20	25	30	32		
Screw (insert)	I60M2.5×6.5 (1.0 Nm)		I60M4×10 (3.4 Nm)	I60M5×13.2 (6.7 Nm)	I60M5×13.2 (6.7 Nm)		
Screw (insert)		I60M3.5×8TT (2.7 Nm)					
Wrench (insert)		WT10IP					
Wrench (insert)				WT20IT	WT20IT		
Wrench (insert)	WT07P						
Wrench (insert)			WT15S				

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

XPHT	L	S	d
<b>16</b>	16	3.18	3.1
<b>20</b>	20	3.97	4
<b>25</b>	25	4.76	4.7
<b>30</b>	30	6.35	5.8
<b>32</b>	32	6.35	5.8

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

## Milling inserts

XP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW										
		P	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●									
		M	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●									
		K													●			●								
		N							●									●	●							
		S		●	●				●	●	●	●	●	●												
		H																								
ISO		R	α	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	XPHT16R0803-GM	8	9																●							
	XPHT20R10T3-GM	10	9																	●						
	XPHT25R1204-GM	12.5	9																	●						
	XPHT30R1506-GM	15	11																	●						
	XPHT32R1606-GM	16	9																	●						

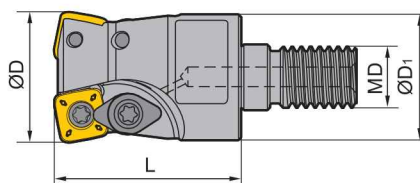
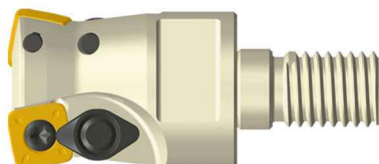
● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



### High-feed mills

QCH - SDMT Kr: 15°



Article	*	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ØD <sub>1</sub>	L	MD			
QCH-20-SDMT06-M10-03		●	20	19	30	10	3	0.058	SDMT06T2
QCH-25-SDMT06-M12-04		●	25	24	35	12	4	0.097	
QCH-32-SDMT06-M16-05		○	32	30	45	16	5	0.183	
QCH-25-SDMT09-M12-02		○	25	24	35	12	2	0.088	SDMT09T3
QCH-30-SDMT09-M16-03		●	30	29	45	16	3	0.176	
QCH-35-SDMT09-M16-03		○	35	30	45	16	3	0.216	
QCH-32-SDMT12-M16-02		●	32	30	45	16	2	0.175	SDMT1204
QCH-35-SDMT12-M16-02		○	35	30	45	16	2	0.2	
QCH-40-SDMT12-M16-03		○	40	30	45	16	3	0.3	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts				
	Insert	SDMT06T2	SDMT09T3	SDMT1204
	ØD	20-35	25-35	32-40
	Clamp		WD-204	WD-204
	Screw (clamp)			I60M4x8.4 (3.4 Nm)
	Screw (clamp)		I60M3.5x08TT (2.7 Nm)	
	Screw (insert)	I60M2.2x5.5 (0.8 Nm)	I60M4x8.4 (3.4 Nm)	I60M4x8.4 (3.4 Nm)
	Wrench (clamp)		WT10IP	WT15IP
	Wrench (insert)	WT07IP	WT15IP	WT15IP



**A**

Turning

**B**

Milling

**C**




Drilling

**D**

Technical Information

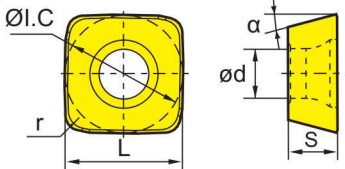



**E**

Index

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

SDMT	L	I.C	S	d
<b>06</b> T2	6.35	6.35	2.58	5.5
<b>09</b> T3	9.525	9.525	3.97	4
<b>12</b> 04	12.7	12.7	4.76	4.4

## Milling inserts

SD** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW									
		P																							
		M																							
		K																							
		N																							
		S																							
		H																							
ISO		r	α	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	SDMT06T208-DM	0.8	15																						
	SDMT09T312-DM	1.2	15	●				●					○	○					●						
	SDMT120412-DM	1.2	15	●				●		●				○	○										
	SDMT09T312-NM						●								○	●				●					
	SDMT120412-NM						●								○	●		●		●					
	SDMT06T208-PM	0.8	15	●			●									○	●			○					
	SDMT09T312-PM	1.2	15				●						○			●									
	SDMT120412-PM	1.2	15				●						○			●									

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

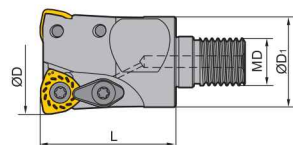
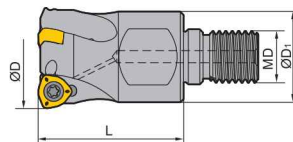
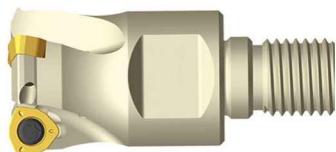
System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

### High-feed mills



Article	*	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ØD <sub>1</sub>	L	MD			
QCH-20-WPGT05-M10-02		○	20	18	30	10	2	0.056	WPGT0503
QCH-25-WPGT06-M12-02		○	25	21	35	12	2	0.097	
QCH-32-WPGT06-M16-03		●	32	29	43	16	3	0.185	
QCH-35-WPGT06-M16-03		●	35	30	45	16	3	0.201	WPGT0604
QCH-42-WPGT06-M16-04		○	42	29	43	16	4		
QCH-35-WPGT08-M16-02		●	35	30	45	16	2	0.196	WPGT0806

● Ex stock ○ On demand

\* With internal cooling

Variable lead angle (lead angle ist hier dependent on size of inserts)  
lead angle: WPGT05: 16°; WPGT06: 22°; WPGT08: 11°; WPGT09: 21°

Spare parts					
Insert	WPGT0503	WPGT0604	WPGT0806		
ØD	20	25-42	35		
Clamp			WD-208		
Screw (clamp)			I60M5×13 (6.7 Nm)		
Screw (insert)		I60M4×8.4 (3.4 Nm)	I60M5×13 (6.7 Nm)		
Screw (insert)	I60M3.5×08TT (2.7 Nm)				
Wrench (clamp)			WT20IT		
Wrench (insert)			WT20IT		
Wrench (insert)	WT10P	WT15P			



**A**

Turning

**B**

Milling

**C**

Drilling




**D**

Technical Information

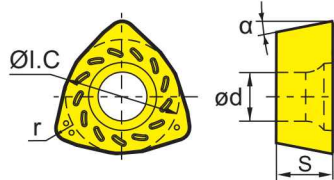


**E**

Index

WPGT	I.C	S	d
<b>05</b> 03	7.94	3.5	4
<b>06</b> 04	9.525	4.2	4.4
<b>08</b> 06	12.85	6.35	5.5

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

## Milling inserts

WP** positive insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
	<b>P</b>																							
	<b>M</b>																							
	<b>K</b>																							
	<b>N</b>																							
	<b>S</b>																							
	<b>H</b>																							
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	WPGT050315ZSR-PM	1.5																						
	WPGT060415ZSR-PM	1.5																						
	WPGT080615ZSR-PM	1.5																						
	WPGT050315ZSR	1.5																						
	WPGT060415ZSR	1.5																						
	WPGT080615ZSR	1.5																						

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

Grade selection > B24

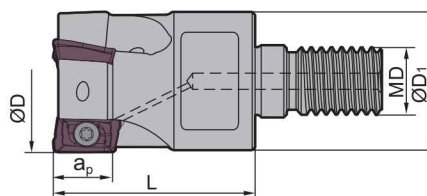
Technical info > B527

Cutting data > B230



QCH series

QCH - APKT Kr: 90°

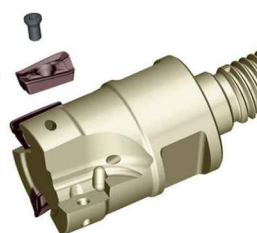


Article	*	Stock	Dimensions [mm]					Teeth	kg	Inserts
			ØD	ØD <sub>1</sub>	a <sub>p</sub>	L	MD			
QCH-16-APKT11-M8-02		●	16	12.5	10.5	25	8	2	0.028	APKT11T3
QCH-20-APKT11-M10-03		●	20	18	10.5	30	10	3	0.059	
QCH-25-APKT11-M12-04		●	25	21	10.5	35	12	4	0.104	
QCH-32-APKT11-M16-05		●	32	29	10.5	43	16	5		
QCH-40-APKT11-M16-06		●	40	29	10.5	43	16	6		
QCH-25-APKT16-M12-02		○	25	21	10.5	38	12	2	0.09	
QCH-32-APKT16-M16-03		●	32	29	10.5	46	16	3		
QCH-40-APKT16-M16-04		○	40	29	10.5	46	16	4		

● Ex stock ○ On demand

\* With internal cooling

Spare parts			
	Insert	APKT11T3	APKT1604
	ØD	16-40	25-40
	Screw (insert)		I60M4x8,4 (3.4Nm)
	Screw (insert)	I60M2.5x6.5T (1.0Nm)	
	Wrench (insert)	WT08IP	WT15IP



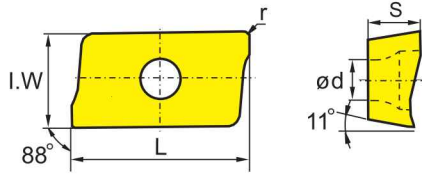
**A**

Turning

## Milling inserts

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

APKT	L	S	d
11 T3	12.24	3.6	2.8
16 04	17.877	5.76	4.4



**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

APKT** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
			P	M	K	N	S	H																	
ISO	r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	APKT11T304-ALH	0.4	6.5								●													●	●
	APKT11T308-ALH	0.8	6.5								●													●	●
	APKT160408-ALH	0.8	9.33								●													●	●
	APKT11T304-APF	0.4	6.5														●								
	APKT11T308-APF	0.8	6.5														○	●	○						
	APKT160408-APF	0.8	9.33														○	●	○	○					
	APKT11T304-APM	0.4	6.5				●		●									●							
	APKT11T308-APM	0.8	6.5				●		●								○	●	○						
	APKT11T312-APM	1.2	6.5				●		●									●							
	APKT11T316-APM	1.6	6.5				●		●									●							
	APKT11T320-APM	2	6.5				●		●									●							
	APKT160408-APM	0.8	9.33				●		●	●							○	●	○						
	APKT160416-APM	1.6	9.33				●		●									●							
	APKT160420-APM	2	9.33				●		●									●							
	APKT160424-APM	2.4	9.33				●		●									●							
	APKT160430-APM	3	9.33				●		●									●							
	APKT11T304-LH	0.4	6.5																					○	○
	APKT11T308-LH	0.8	6.5																					○	●
	APKT160408-LH	0.8	9.33																					○	○
	APKT11T308-NM																	●		●					
	APKT11T312-NM																	●		●					
	APKT11T304-PF	0.4	6.5				○		○				○	○						○					
	APKT11T308-PF	0.8	6.5																						
	APKT11T316-PF	1.6	6.5																						
	APKT160408-PF	0.8	9.33				○		○																
	APKT160430-PF	3	9.33				○																		
	APKT11T304-PM	0.4	6.5				○	○	○				○	○											
	APKT11T308-PM	0.8	6.5				○	○	○	○	●	○	○					○	○						
	APKT11T312-PM	1.2	6.5																						
	APKT11T316-PM	1.6	6.5																						
	APKT160408-PM	0.8	9.33				○	○	○	●	○	○						○	○	●					
	APKT160416-PM	1.6	9.33				○																		

● Ex stock   ○ On demand



HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



**Milling inserts**

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

APKT	L	S	d
<b>11 T3</b>	12.24	3.6	2.8
<b>16 04</b>	17.877	5.76	4.4

AP** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW											
ISO			r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	APKT11T304-PR	0.4	6.5						○											○							
	APKT11T316-PR	1.6	6.5																	○							
	APKT11T3XR									●										●							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B26

Grade selection > B24

Technical info > B527

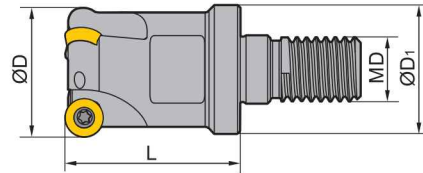
Cutting data > B230



# Indexable milling QCH series

## QCH series

QCH - RD



Article	*	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ØD <sub>1</sub>	L	MD			
QCH-16-RD07-M8-02		●	16	15	25	8	2	0.027	
QCH-20-RD07-M10-03		○	20	18	30	10	3	0.058	RDKW0702
QCH-25-RD07-M12-03		○	25	21	35	12	3	0.093	
QCH-20-RD10-M10-02		○	20	19	30	10	2	0.054	
QCH-25-RD10-M12-02		○	25	24	35	12	2	0.097	RDKW10T3
QCH-32-RD10-M16-03		○	32	30	45	16	3	0.183	
QCH-32-RD16-M16-02		○	32	30	45	16	2	0.156	RDKW1605

● Ex stock    ○ On demand

\* With internal cooling

Spare parts		RDKW0702	RDKW10T3	RDKW1605	
Insert	ØD	16-25	20-32	32	
Screw (insert)		I60M2.5×5.0 (1.0 Nm)	I60M4×8 (3.4 Nm)	I60M5×13 (6.7 Nm)	
Wrench (insert)		WT08IP	WT15IP		
Wrench (insert)				WT20IT	

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

RDKT  
10 T3

### Milling inserts

RD** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW								
	<b>P</b>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>									
	<b>M</b>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>									
	<b>K</b>							<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>								
	<b>N</b>							<span style="color: green;">⊗</span>	<span style="color: green;">⊗</span>	<span style="color: green;">⊗</span>	<span style="color: green;">⊗</span>	<span style="color: green;">⊗</span>	<span style="color: green;">⊗</span>	<span style="color: green;">⊗</span>	<span style="color: green;">⊗</span>								
	<b>S</b>							<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>								
	<b>H</b>																						
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	<b>RDKT10T3MO-MM</b>																	○					

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
HT Uncoated cermet  
HC<sup>2</sup> Coated cermet  
HW Uncoated carbide

A  
Turning

B  
Milling

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

RDKW	I.C	S	d
07 02	7	2.38	2.7
10 T3	10	3.97	4.4
16 05	16	5.56	5.5

### Milling inserts

RD** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW								
	<b>P</b>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>	<span style="color: blue;">⊗</span>									
	<b>M</b>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>	<span style="color: yellow;">⊗</span>									
	<b>K</b>							<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>	<span style="color: red;">⊗</span>								
	<b>N</b>							<span style="color: green;">⊗</span>	<span style="color: green;">⊗</span>	<span style="color: green;">⊗</span>	<span style="color: green;">⊗</span>	<span style="color: green;">⊗</span>	<span style="color: green;">⊗</span>	<span style="color: green;">⊗</span>	<span style="color: green;">⊗</span>								
	<b>S</b>							<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>	<span style="color: orange;">⊗</span>								
	<b>H</b>																						
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	<b>RDKW10T3MO</b>	●	○							●	○						○						
	<b>RDKW1605MO</b>					○						○	○				○						
	<b>RDKW0702MO-1</b>					●					○			●									
	<b>RDKW0702MO-2</b>									●													

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
HT Uncoated cermet  
HC<sup>2</sup> Coated cermet  
HW Uncoated carbide

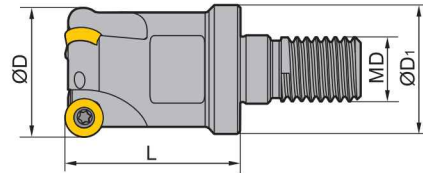
C  
Drilling

D  
Technical Information

E  
Index

## QCH series

### QCH - RD



Article	*	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ØD <sub>1</sub>	L	MD			
QCH-15-RDKW0702-M8-02		●	15	12.5	23	8	2	RDKW0702	
QCH-15-RDKW0702-M8-03		●	15	12.5	23	8	3		
QCH-20-RDKW0702-M10-04		●	20	18	30	10	4		
QCH-25-RDKW0702-M12-05		●	25	21	35	12	5	RDKW1003	
QCH-20-RDKW1003-M10-02		●	20	18	30	10	2		
QCH-25-RDKW1003-M12-02		●	25	21	35	12	2		
QCH-25-RDKW1003-M12-03		●	25	21	35	12	3	RDKW1003	
QCH-30-RDKW1003-M16-04		●	30	29	43	16	4		
QCH-35-RDKW1003-M16-04		●	35	29	43	16	4		
QCH-42-RDKW1003-M16-05		●	42	29	43	16	5	RDKW12T3	
QCH-24-RDKW12T3-M12-02		●	24	21	35	12	2		
QCH-35-RDKW12T3-M16-03		●	35	29	43	16	3		
QCH-42-RDKW12T3-M16-04		●	42	29	43	16	4	RDKW1604	
QCH-32-RDKW1604-M16-02		●	32	29	43	16	2		

● Ex stock    ○ On demand

\* With internal cooling

Spare parts					
	Insert	RDKW0702	RDKW1003	RDKW12T3	RDKW1604
	ØD	15-25	20-42	24-42	32
	Clamp				WX16N
	Screw (clamp)				I60M4.5×10 (5.0 Nm)
	Screw (clamp)			LOM3.5×7.1	
	Screw (insert)	I60M2.5×5.0 (1.0 Nm)	I60M3.5×7.7 (2.7 Nm)	I60M3.5×7.7 (2.7 Nm)	I60M4.5×10 (5.0 Nm)
	Wrench (insert)	WT07P	WT15P	WT15P	
	Wrench (insert)				WT20T




System code > B26

Grade selection > B24

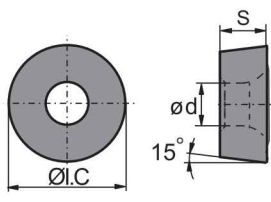

Technical info > B527

Cutting data > B230

RDKW	I.C	S	d
<b>07 02</b>	7	2.38	2.7
<b>10 03</b>	10	3.18	3.9
<b>12 T3</b>	12	3.97	3.9
<b>16 04</b>	16	4.76	5.2

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

**Milling inserts**

RD** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
		<b>P</b>	<b>M</b>	<b>K</b>	<b>N</b>	<b>S</b>	<b>H</b>	<b>P</b>	<b>M</b>	<b>K</b>	<b>N</b>	<b>S</b>	<b>H</b>											
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	RDKW0702MO-1						●					○			●									
	RDKW0702MO-2									●														
	RDKW1003MO-1				○	●						○			●	●								
	RDKW1003MO-2									●														
	RDKW1003MO-3			●											●									
	RDKW12T3MO-1				○	●						○			●	●								
	RDKW12T3MO-2									●						○								
	RDKW12T3MO-3			●											●									
	RDKW1604MO-1						●					○			●	●	●							
	RDKW1604MO-2										○													
RDKW1604MO-3		○		●				●		○				●		●								

● Ex stock   ○ On demand

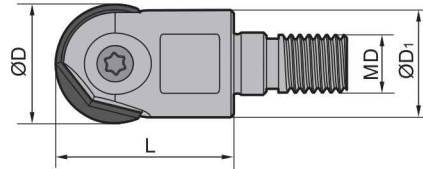
HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



# Indexable milling QCH series

## QCH series

### QCH - ZOHX



Article	*	Stock	Dimensions [mm]				kg	Inserts
			ØD	ØD <sub>1</sub>	L	MD		
QCH-16-ZOHX16-M8	●	●	16	15	28	8	0.029	ZOHX16
QCH-20-ZOHX20-M10	●	●	20	19	30	10	0.048	ZOHX20
QCH-25-ZOHX25-M12	●	●	25	24	35	12	0.087	ZOHX25
QCH-30-ZOHX30-M16	●	●	30	29	45	16	0.17	ZOHX30
QCH-32-ZOHX32-M16	●	●	32	30	45	16	0.18	ZOHX32

● Ex stock    ○ On demand

\* With internal cooling

Spare parts		ZOHX16	ZOHX20	ZOHX25	ZOHX30	ZOHX32	
Insert	ØD	16	20	25	30	32	
Screw (insert)		I70M5×12TT (6.7 Nm)	I70M5×16TT (6.7 Nm)	I70M6×20TT (9.1 Nm)	I70M8×25TT (16.2 Nm)	I70M8×25TT (16.2 Nm)	
Wrench (insert)		WT20IP	WT20IP	WT20IP			
Wrench (insert)					WT30IT	WT30IT	




System code > B26

Grade selection > B24

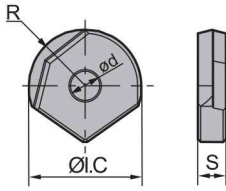


Technical info > B527

Cutting data > B230

ZOXX	I.C	S	d
<b>16</b>	16	4	5
<b>20</b>	20	5	5
<b>25</b>	25	6	6
<b>30</b>	30	7	8
<b>32</b>	32	7	8

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

**Milling inserts**

ZO** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW										
	<b>P</b>																								
	<b>M</b>																								
	<b>K</b>																								
	<b>N</b>																								
	<b>S</b>																								
	<b>H</b>																								
ISO	R	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201		
	ZOXX1604-GF	8																							
	ZOXX2005-GF	10																							
	ZOXX2506-GF	12.5																							
	ZOXX3007-GF	15																							
	ZOXX3207-GF	16																							
	ZOXX1604-GM	8																							
	ZOXX2005-GM	10																							
	ZOXX2506-GM	12.5																							
	ZOXX3007-GM	15																							
	ZOXX3207-GM	16																							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B26

Grade selection > B24

Technical info > B527

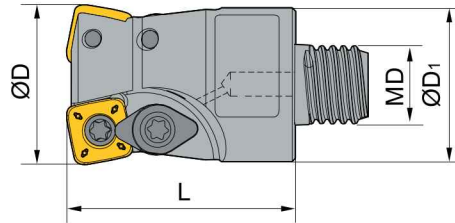
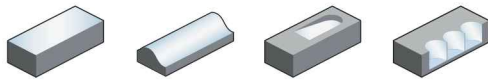
Cutting data > B230



# Indexable milling QCH series

## QCH series

QCH-SDMT-Q



Article	*	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ØD <sub>1</sub>	L	MD			
QCH-25-SDMT09-Q14-02	*	○	25	24	35	14	2	0.088	SDMT09T3
QCH-35-SDMT09-Q18-03	*	○	35	30	45	18	3	0.216	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts		
	Insert	SDMT09T3
	ØD	25-35
	Clamp	WD-204
	Screw (clamp)	I60M4x8.4 (3.4 Nm)
	Screw (insert)	I60M3.5x08TT (2.7 Nm)
	Wrench (insert)	WT10IP

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

A

Turning

B

Milling

C




Drilling

D

Technical Information

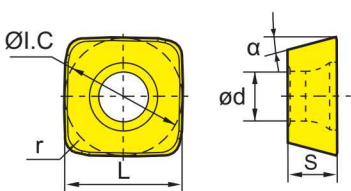



E

Index

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

SDMT	L	I.C	S	d
09 T3	9.525	9.525	3.97	4

**Milling inserts**

SD** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW											
			P	M	K	N	S	H																			
	ISO		r	α	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	SDMT09T312-DM	1.2	15	●					●		○			○	○						●						
	SDMT09T312-NM							●							○	●					●						
	SDMT09T312-PM	1.2	15					●			○			○		●											

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

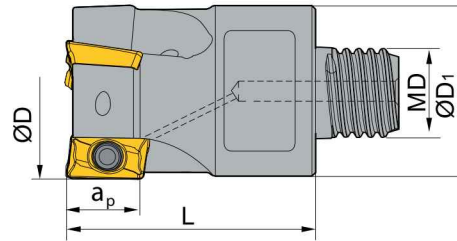
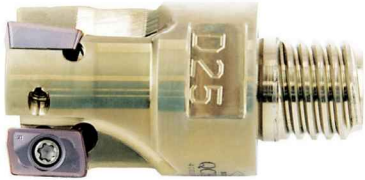
Index




# Indexable milling QCH series

## QCH series

QCH-APKT-Q Kr: 90°





Article	*	Stock	Dimensions [mm]					Teeth	kg	Inserts
			ØD	ØD <sub>1</sub>	a <sub>p</sub>	L	MD			
QCH-16-APKT11-Q10-02	*	●	16	15.2	10.5	28	10	2	0.028	 APKT11T3
QCH-20-APKT11-Q12-02	*	○	20	19	10.5	30	12	2	0.059	
QCH-25-APKT11-Q14-03	*	●	25	24	10.5	35	14	3	0.104	

● Ex stock    ○ On demand

\* With internal cooling

### Spare parts

Insert		APKT11T3
ØD		16-25
	Screw (insert)	I60M2.5x5.5 (1.0Nm)
	Wrench (insert)	WT07IP

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

A

Turning

B

Milling

C

Drilling

D

Technical Information

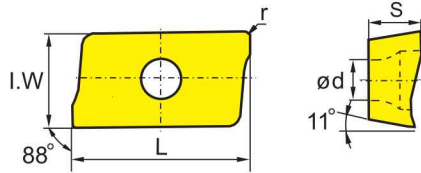
E

Index

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

APKT	L	S	d
11 T3	12.24	3.6	2.8

**Milling inserts**



APKT** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW								
ISO	r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	0.4	6.5									●													
APKT11T308-ALH	0.8	6.5									●													● ●
	0.4	6.5														●								
APKT11T308-APF	0.8	6.5												○		●		○						
	0.4	6.5				●		●								●								
APKT11T308-APM	0.8	6.5				●		●					○			●		○						
APKT11T312-APM	1.2	6.5				●		●								●								
APKT11T316-APM	1.6	6.5				●		●								●								
APKT11T320-APM	2	6.5				●		●								●								
	0.4	6.5																					○ ○	
APKT11T308-LH	0.8	6.5																					○ ●	
															●				●					
APKT11T312-NM															●				●					
	0.4	6.5	○		○						○ ○					○								
APKT11T308-PF	0.8	6.5										○												
APKT11T316-PF	1.6	6.5										○												
	0.4	6.5	○ ○ ○ ○		○ ○						○ ○					○								
APKT11T308-PM	0.8	6.5	○ ○		○ ○	●	○ ○				○ ○				○		○							
APKT11T312-PM	1.2	6.5				○						○ ○				○								
APKT11T316-PM	1.6	6.5				○						○ ○				○								
	0.4	6.5					○									○								
APKT11T316-PR	1.6	6.5														○								
										●						●								

● Ex stock    ○ On demand

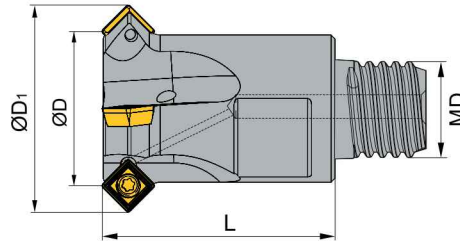
HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



**A** Turning  
**B** Milling  
**C** Drilling  
**D** Technical Information  
**E** Index

## QCH series



QCH-SPGT-Q



Article	*	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ØD <sub>1</sub>	L	MD			
QCH-16-SPGT05-Q10-45-03	*	○	16	22.6	25	10	3	0.032	SPGT0502
QCH-20-SPGT05-Q12-45-04	*	○	20	26.6	30	12	4	0.644	

● Ex stock    ○ On demand

\* With internal cooling

Spare parts		
	<b>Insert</b>	<b>SPGT0502</b>
	<b>ØD</b>	<b>16-20</b>
	Screw (insert)	I60M2×4.3 (0.5 Nm)
	Wrench (insert)	WT06IP

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

A

Turning

B

Milling

C




Drilling

D

Technical Information



E

Index

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

SPGT  
05 02

**Milling inserts**

SP** drilling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW									
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	SPGT050204-EM																							
	SPGT050204-PM																							

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
HT Uncoated cermet  
HC<sup>2</sup> Coated cermet  
HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B26

Grade selection > B24

Technical info > B527

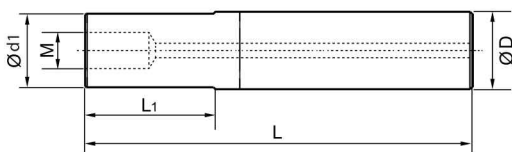
Cutting data > B230





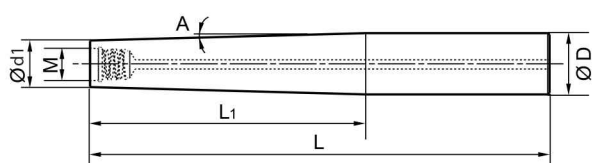
## Indexable heads shanks

Solid carbide shank, stepped, Q thread




Article	Dimensions [mm]				Thread (M)	Stock
	D	d1	L	L1		
G12-QCH-Q08-80C	12	11,5	80	30	Q8	●
G12-QCH-Q08-100C	12	11,5	100	50	Q8	●
G12-QCH-Q08-120C	12	11,5	120	70	Q8	●
G16-QCH-Q10-90C	16	15,2	90	40	Q10	●
G16-QCH-Q10-120C	16	15,2	120	70	Q10	●
G16-QCH-Q10-150C	16	15,2	150	100	Q10	●
G20-QCH-Q12-100C	20	19	100	40	Q12	●
G20-QCH-Q12-140C	20	19	140	80	Q12	●
G20-QCH-Q12-180C	20	19	180	120	Q12	●
G25-QCH-Q14-120C	25	24	120	50	Q14	●
G25-QCH-Q14-170C	25	24	170	100	Q14	●
G25-QCH-Q14-220C	25	24	220	150	Q14	●
G32-QCH-Q18-140C	32	30	140	70	Q18	●
G32-QCH-Q18-200C	32	30	200	130	Q18	●
G32-QCH-Q18-260C	32	30	260	190	Q18	●
G32-QCH-Q18-320C	32	30	320	250	Q18	●

Solid carbide shank, tapered, Q thread



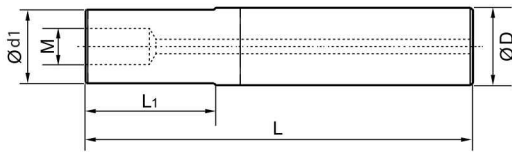
Article	Dimensions [mm]				Thread (M)	Angle (A)	Stock
	D	d1	L	L1			
G16-QCH-Q08-140C-ZJ90	16	11,5	140	90	Q8	1,0	●
G20-QCH-Q10-200C-ZJ140	20	15,2	200	140	Q8	0,8	●
G25-QCH-Q12-250C-ZJ180	25	19	250	180	Q8	0,8	●
G32-QCH-Q14-270C-ZJ200	32	30	270	200	Q10	0,8	●

### Spare parts

	Thread	Q8 / Q10	Q12 / Q14	Q18
	Wrench	QCH-10×13	QCH-16×20	QCH-26

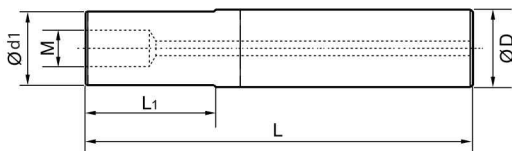
## Indexable heads shanks

Steel shank, stepped, Q thread



Article	Dimensions [mm]				Thread (M)	Stock
	D	d1	L	L1		
G12-QCH-Q08-65S	12	11,5	65	19	Q08	●
G16-QCH-Q10-100S	16	15,2	100	42	Q10	●
G20-QCH-Q12-110S	20	19	110	54	Q12	●

Solid carbide shank, stepped, metric thread



Article	Dimensions [mm]				Thread (M)	Stock
	D	d1	L	L1		
G16-QCH-M8-90C-125	16	12,5	90	35	M8	○
G16-QCH-M8-110C-125	16	12,5	110	55	M8	○
G16-QCH-M8-130C-125	16	12,5	130	75	M8	○
G16-QCH-M8-90C	16	15	90	35	M8	○
G16-QCH-M8-110C	16	15	110	55	M8	○
G16-QCH-M8-130C	16	15	130	75	M8	○
G16-QCH-M8-170C	16	15	170	115	M8	○
G16-QCH-M8-200C	16	15	200	145	M8	○
G20-QCH-M10-87C	20	18,5	87	30	M10	○
G20-QCH-M10-107C	20	18,5	107	50	M10	○
G20-QCH-M10-127C	20	18,5	127	70	M10	○
G20-QCH-M10-167C	20	18,5	167	110	M10	○
G20-QCH-M10-197C	20	18,5	197	140	M10	○
G25-QCH-M12-128C	25	23	128	65	M12	○
G25-QCH-M12-148C	25	23	148	85	M12	○
G25-QCH-M12-168C	25	23	168	105	M12	○
G25-QCH-M12-198C	25	23	198	135	M12	○
G25-QCH-M12-228C	25	23	228	165	M12	○
G32-QCH-M16-161C	32	29	161	95	M16	○
G32-QCH-M16-211C	32	29	211	145	M16	○
G32-QCH-M16-281C	32	29	281	215	M16	○
G32-QCH-M16-311C	32	29	311	245	M16	○
G32-QCH-M16-361C	32	29	361	295	M16	○

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

HNGX	L	I.C	S
09 05	9.16	15.875	5.56

## Milling inserts

HN** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW							
	<b>P</b>		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							
	<b>M</b>		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							
	<b>K</b>								●								●							
	<b>N</b>								●							●	●							
	<b>S</b>			●	●				●	●	●	●	●	●										
	<b>H</b>																							
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	<b>HNGX090530-HDR</b>	3							○	○														
	<b>HNGX090516-MR</b>	1.6							●															
	<b>HNGX090520-MR</b>	2							●															

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

LNE3	L	I.W	S
2.53	15.875	4.76	9.525

**Milling inserts**

LN** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
	<b>P</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●								
	<b>M</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●								
	<b>K</b>							⊗								⊗								
	<b>N</b>							⊗							⊗	⊗								
	<b>S</b>		⊗		⊗			⊗	⊗	⊗	⊗	⊗	⊗											
	<b>H</b>																							
	ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	<b>LNE32.534</b>	1.6					○	○	○															

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A** Turning  
**B** Milling  
**C** Drilling  
**D** Technical Information  
**E** Index



**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

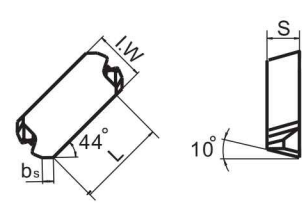

**E**

Index

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

LNCX	L	I.W	S
18 06	24	10	6.4

## Milling inserts

LN** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
	<b>P</b>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>										
	<b>M</b>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>										
	<b>K</b>							<span style="color: red;">●</span>						<span style="color: red;">●</span>		<span style="color: red;">●</span>								
	<b>N</b>							<span style="color: green;">●</span>							<span style="color: green;">●</span>	<span style="color: green;">●</span>								
	<b>S</b>		<span style="color: orange;">●</span>	<span style="color: orange;">●</span>				<span style="color: orange;">●</span>	<span style="color: orange;">●</span>	<span style="color: orange;">●</span>	<span style="color: orange;">●</span>	<span style="color: orange;">●</span>	<span style="color: orange;">●</span>			<span style="color: orange;">●</span>								
	<b>H</b>																							
ISO	bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	<b>LNCX1806AZT11L</b>	2.0							○															
	<b>LNCX1806AZT11R</b>	2.0							○															

● Ex stock    ○ On demand

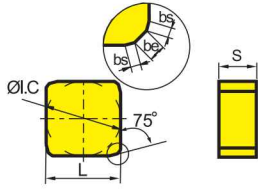
HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

SNKN	L	I.C	S
12 04	12.7	12.7	4.76
15 04	15.875	15.875	4.76

**Milling inserts**



SN** milling insert			HC <sup>1</sup> (CVD)							HC <sup>1</sup> (PVD)					HT	HC <sup>2</sup>	HW													
ISO	bs	be	P	M	K	N	S	H	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
<b>SNKN1204ENN</b>	1.5	0.9	●						●				●																	
<b>SNKN1504ENN</b>	1.5	0.9	○																											

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index



# Indexable milling General milling inserts

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

SPCN	L	I.C	S
12 03	12.7	12.7	1.4
15 04	15.875	15.875	1.4

## Milling inserts

SP** milling insert		HC <sup>1</sup> (CVD)							HC <sup>1</sup> (PVD)							HT	HC <sup>2</sup>	HW																																
		P	⊗	⊗	⊗	⊗	⊗	⊗	⊗	M	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	K	⊗	⊗	⊗	⊗	⊗	⊗	⊗	N	⊗	⊗	⊗	⊗	⊗	⊗	⊗	S	⊗	⊗	⊗	⊗	⊗	⊗	⊗	H	⊗	⊗	⊗	⊗	⊗	⊗	⊗
	ISO	bs	be	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201																									
		<b>SPCN1203EDSKR</b>	3.2	1.0	●																																													
		<b>SPCN1504EDSKR</b>	4.8	1.0	●																																													

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

SPMR	L	I.C	S
09 03	9.525	9.525	3.18
12 03	12.7	12.7	3.18

**Milling inserts**

SP** milling insert		HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
	<b>P</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●								
	<b>M</b>	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	●	●	●								
	<b>K</b>															⊗								
	<b>N</b>															⊗								
	<b>S</b>			⊗	⊗					⊗	⊗	⊗	⊗	⊗										
	<b>H</b>																							
	ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	<b>SPMR090304</b>	0.4					○																	
	<b>SPMR090308</b>	0.8					○																	
	<b>SPMR120304</b>	0.4					●																	
	<b>SPMR120308</b>	0.8					●	○																
	<b>SPMR120312</b>	1.2						○																

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index





**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPMT	L	I.C	S	d
06 03	6.35	6.35	3.18	2.8
09 T3	9.525	9.525	3.97	4.4
12 04	12.7	12.7	4.76	5.5

## Milling inserts

SP** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
	<b>P</b>		●	●	●	●	●	●	●	●	●	●	●	●	●	●									
	<b>M</b>		●	●	●	●	●	●	●	●	●	●	●	●	●	●									
	<b>K</b>								●								●								
	<b>N</b>								●							●	●								
	<b>S</b>			●	●				●	●	●	●	●	●			●								
	<b>H</b>																								
	ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
HT-1	<b>SPMT120408-HT-1</b>	0.8												○											
HT	<b>SPMT09T308-HT</b>	0.8				●		●					○												
KT	<b>SPMT060304-KT</b>	0.4												○											

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

Grade selection > B24

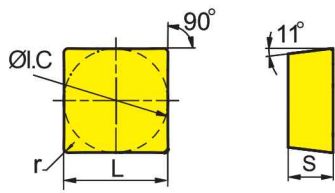
Technical info > B527


Cutting data > B230

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SP**	L	I.C	S
12 03	12.7	12.7	3.18
15 04	15.875	15.875	4.76

**Milling inserts**



SP** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW								
	<b>P</b>		●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>M</b>		●	●	●	●	●	●	●	●	●	●	●	●	●										
	<b>K</b>								●								●								
	<b>N</b>								●								●								
	<b>S</b>			●	●				●	●	●	●	●	●											
	<b>H</b>																								
	ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201	
	<b>SPGN120304</b>	0.4											○												
	<b>SPGN120308</b>	0.8											○												
	<b>SPUN120308</b>	0.8					●	○																	○
	<b>SPUN120312</b>	1.2					●																		
	<b>SPUN150408</b>	0.8																							○
	<b>SPUN150412</b>	1.2																							○

● Ex stock    ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index



# Indexable milling

General milling inserts

A

Turning

B

Milling

C




Drilling

D

Technical Information

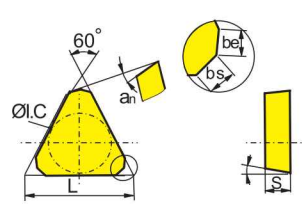




























































































































































E


Index

-  Ideal machining conditions
-  Normal machining conditions
-  Unfavourable machining conditions

TPKN	L	I.C	S
16 03	16.5	9.525	3.18

## Milling inserts

TP** milling insert				HC <sup>1</sup> (CVD)								HC <sup>1</sup> (PVD)								HT	HC <sup>2</sup>	HW					
	<b>P</b>																										
	<b>M</b>																										
	<b>K</b>																										
	<b>N</b>																										
	<b>S</b>																										
	<b>H</b>																										

ISO	bs	be	an	HC <sup>1</sup> (CVD)								HC <sup>1</sup> (PVD)								HT	HC <sup>2</sup>	HW														
				YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201											
	<b>TPKN1603PDTKR</b>	1.0	1.2	11																																
	<b>TPKN1603PPER</b>	1.0	1.2	11	●																															
	<b>TPKN1603PPFR</b>	1.0	1.2	11																																

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide

System code > B26

Grade selection > B24

Technical info > B527

Cutting data > B230

TP**	L	I.C	S
11 03	11	6.35	3.18
16 03	16.5	9.525	3.18
22 04	22	12.7	4.76

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

**Milling inserts**

TP** milling insert			HC <sup>1</sup> (CVD)						HC <sup>1</sup> (PVD)						HT	HC <sup>2</sup>	HW									
	<b>P</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	●											
	<b>M</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	●											
	<b>K</b>					●	●	●	●	●	●	●	●	●	●											
	<b>N</b>							●							●	●										
	<b>S</b>			●	●			●	●	●	●	●	●	●												
	<b>H</b>																									
	ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YB9320	YBG302	YBS303	YBG252	YNG151		YNG151C	YD101	YD201	
	<b>TPMR110304</b>	0.4				●																				
	<b>TPMR110308</b>	0.8				●																				
	<b>TPMR160304</b>	0.4				●																				
	<b>TPMR160308</b>	0.8				●	●	○																		
	<b>TPMR160312</b>	1.2					○																			
	<b>TPMR220412</b>	1.2				●																				
	<b>TPUN110304</b>	0.4				●																				
	<b>TPUN110308</b>	0.8				●																				
	<b>TPUN160304</b>	0.4				●																			○	
	<b>TPUN160308</b>	0.8				●	○								○										○	
	<b>TPUN160312</b>	1.2				●																				
	<b>TPUN220408</b>	0.8				●																				
<b>TPUN220412</b>	1.2					○																				

● Ex stock ○ On demand

HC<sup>1</sup> Coated carbide  
 HT Uncoated cermet  
 HC<sup>2</sup> Coated cermet  
 HW Uncoated carbide



**A** Turning  
**B** Milling  
**C** Drilling  
**D** Technical Information  
**E** Index





## Guide for recommended cutting data – indexable milling

### Indexable milling – group 1 (FMA07/11/12, FMD02, EMP09/13)

Material group	Composition / structure / heat treatment	Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ (m/min)								
				HC (CVD)								
				YBC302		YBC401		YBD152		YBD252		
				$a_p / D$		$a_p / D$		$a_p / D$		$a_p / D$		
1/1   3/4		1/5		1/1   3/4		1/5		1/1   3/4		1/5		
P Unalloyed steel	ca. 0,15 % C	annealed	125	1	260	300	225	260				
	ca. 0,45 % C	annealed	190	2	225	255	195	225				
	ca. 0,45 % C	tempered	250	3	210	240	180	210				
	ca. 0,75 % C	annealed	270	4	185	210	160	185				
	ca. 0,75 % C	tempered	300	5	170	195	150	170				
P Low-alloyed steel		annealed	180	6	225	255	195	225				
		tempered	275	7	185	210	160	185				
		tempered	300	8	170	195	150	170				
		tempered	350	9	145	165	125	145				
P High-alloyed steel and high-alloyed tool steel		annealed	200	10	130	150	115	130				
		hardened and tempered	325	11	95	105	80	95				
M Stainless steel	ferritic/martensitic	annealed	200	12								
	martensitic	tempered	240	13								
	austenitic	quench hardened	180	14								
	austenitic-ferritic		230	15								
K Grey cast iron	perlitic/ferritic		180	16				370	430	320	370	
	perlitic (martensitic)		260	17				220	255	190	220	
K Cast iron with spheroidal graphite	ferritic		160	18				255	295	220	255	
	perlitic		250	19				170	200	145	170	
K Malleable cast iron	ferritic		130	20				305	355	265	305	
	perlitic		230	21				205	240	175	205	
N Aluminium wrought alloys	cannot be hardened		60	22								
	hardenable	hardened	100	23								
	≤ 12 % Si, cannot be hardened		75	24								
	≤ 12 % Si, hardenable	hardened	90	25								
N Cast aluminium alloys	> 12 % Si, cannot be hardened		130	26								
	machining steel, PB > 1%		110	27								
	CuZn, CuSnZn		90	28								
S Copper and copper alloys (bronze/brass)	CuSn, Pb-free copper, electrolytic copper		100	29								
	S Heat-resistant alloys	Fe-based alloys	annealed	200	30							
			hardened	280	31							
		Ni or Co base	annealed	250	32							
hardened			350	33								
S Titanium alloys	cast	320	34									
	pure titanium		R <sub>m</sub> 400	35								
H Hardened steel	α and β alloys	hardened	R <sub>m</sub> 1050	36								
	hardened and tempered		55 HRC	37								
H Hard cast iron	hardened and tempered		60 HRC	38								
	cast		400	39								
H Hardened cast iron	hardened and tempered		55 HRC	40								
X Non-metallic materials	Thermoplasts			41								
	Thermosetting plastics			42								
	Plastic, glass-fibre reinforced GFRP			43								
	Plastic, carbon fibre reinforced CFRP			44								
	Graphite			45								
	Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.

The values have to be adapted in individual cases.

Feed rate recommendations on page B248

For examples of material for cutting tool groups view page D22.

**Recommend feed rate**

**Indexable milling – group1 (FMA07/11/12, FMD02, EMP09/13)**

5	Material group	Feed rate per cutting edge [mm]																		
		EMP09			EMP13			EMP13			FMA07			FMA07			FMA11			
		LNKT12			ANGX15			ANGX15			ONHU06			ONHU08			SNEG12			
		Application																		
		F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	
<b>P</b>	Unalloyed steel		0,25	0,50		0,23		0,25		0,19	0,23		0,19	0,23		0,20	0,23		0,20	0,23
	Low-alloyed steel		0,23	0,47		0,22		0,23		0,17	0,22		0,17	0,22		0,19	0,21		0,19	0,21
	High-alloyed steel and high-alloyed tool steel		0,22	0,44		0,20		0,22		0,16	0,20		0,16	0,20		0,18	0,20		0,18	0,20
<b>M</b>	Stainless steel		0,18	0,35												0,14	0,16			
	Grey cast iron		0,28	0,55		0,26		0,28		0,20	0,26		0,20	0,26		0,22	0,25		0,22	0,25
<b>K</b>	Cast iron with spheroidal graphite		0,25	0,50		0,23		0,25		0,19	0,23		0,19	0,23		0,20	0,23		0,20	0,23
	Malleable cast iron		0,25	0,50		0,23		0,25		0,19	0,23		0,19	0,23		0,20	0,23		0,20	0,23
<b>N</b>	Aluminium wrought alloys					0,20		0,21												
	Aluminium-Gusslegierungen					0,20		0,21												
	Copper and copper alloys(bronze/brass)					0,18		0,19												
<b>S</b>	Heat-resistant alloys																			
	Titanium alloys																			
<b>H</b>	Hardened steel																			
	Hard cast iron																			
	Hardened cast iron																			
<b>X</b>	Non-metallic materials																			

1. Select the appropriate product family/cutting data group.
2. Select the used grade.
3. Determine the immersion.
4. Select the used material and read the cutting speed.
5. Please have a look at the detached feed rate recommendations.
6. Select the used tool, the machining mode and the used material.

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index



## Indexable milling – group 1 (FMA07/11/12, FMD02, FMP12, EMP09/13)

	Material group	Composition / structure / heat treatment	Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]								
					HC (CVD)								
					YBC302		YBC401		YBD152		YBD252		
					$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		
					1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	
A Turning	P Unalloyed steel	approx. 0,15 % C	annealed	125	1	260	300	225	260				
		approx. 0,45 % C	annealed	190	2	225	255	195	225				
		approx. 0,45 % C	tempered	250	3	210	240	180	210				
		approx. 0,75 % C	annealed	270	4	185	210	160	185				
		approx. 0,75 % C	tempered	300	5	170	195	150	170				
B Milling	P Low-alloyed steel		annealed	180	6	225	255	195	225				
			tempered	275	7	185	210	160	185				
			tempered	300	8	170	195	150	170				
			tempered	350	9	145	165	125	145				
		High-alloyed steel and high-alloyed tool steel		annealed	200	10	130	150	115	130			
			hardened and tempered	325	11	95	105	80	95				
C Drilling	M Stainless steel	ferritic/martensitic	annealed	200	12								
			martensitic	tempered	240	13							
			austenitic	quench hardened	180	14							
			austenitic-ferritic		230	15							
		K Grey cast iron		perlitic/ferritic	180	16				370	430	320	370
			perlitic (martensitic)	260	17				220	255	190	220	
	K Cast iron with spheroidal graphite		ferritic	160	18				255	295	220	255	
			perlitic	250	19				170	200	145	170	
	K Malleable cast iron		ferritic	130	20				305	355	265	305	
			perlitic	230	21				205	240	175	205	
D Technical Information	N Aluminium wrought alloys		cannot be hardened	60	22								
			hardenable	hardened	100	23							
	N Cast aluminium alloys		$\leq 12\% \text{ Si}$ , cannot be hardened		75	24							
			$\leq 12\% \text{ Si}$ , hardenable	hardened	90	25							
			$> 12\% \text{ Si}$ , cannot be hardened		130	26							
	N Copper and copper alloys (bronze/brass)		machining steel, PB > 1%		110	27							
			CuZn, CuSnZn		90	28							
		CuSn, Pb-free copper, electrolytic copper		100	29								
S Heat-resistant alloys	Fe-based alloys		annealed	200	30								
			hardened	280	31								
			annealed	250	32								
			hardened	350	33								
		Ni or Co bass		cast	320	34							
S Titanium alloys		pure titanium		$R_m$ 400	35								
		$\alpha$ and $\beta$ alloys	hardened	$R_m$ 1050	36								
H Hardened steel			hardened and tempered	55 HRC	37								
			hardened and tempered	60 HRC	38								
		Hard cast iron	cast	400	39								
	H Hardened cast iron		hardened and tempered	55 HRC	40								
E Index	X Non-metallic materials		Thermoplasts		41								
			Thermosetting plastics		42								
			Plastic, glass-fibre reinforced GFRP		43								
			Plastic, carbon fibre reinforced CFRP		44								
			Graphite		45								
			Wood		46								

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 Feed rate recommendations on page B254.  
 For examples of material for cutting tool groups view page D11.

Starting values for cutting speed $v_c$ [m/min]															
HC (CVD)		HC (PVD)										HW			
YBM253		YBG102		YB9320		YBG205		YBG252		YBG302		YD101		YD201	
$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$	
1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5
260	300	270	315	245	285	235	275	230	265	225	260				
225	255	230	270	210	245	200	235	200	230	195	225				
210	240	220	255	200	230	190	220	185	215	180	210				
185	210	190	225	175	200	165	195	165	190	160	185				
170	195	180	205	160	190	155	180	150	175	150	170				
225	255	230	270	210	245	200	235	200	230	195	225				
185	210	190	225	175	200	165	195	165	190	160	185				
170	195	180	205	160	190	155	180	150	175	150	170				
145	165	150	175	135	160	130	155	130	150	125	145				
130	150	135	160	125	145	120	140	115	135	115	130				
95	105	95	115	90	100	85	100	85	95	80	95				
130	150	135	160	125	145	120	140	115	135	115	130				
110	130	115	135	105	120	100	120	100	115	95	110				
140	160	145	170	130	155	125	150	125	145	120	140				
110	130	115	135	105	120	100	120	100	115	95	110				
		300	345	270	315	260	300	255	295	250	290				
		180	205	160	190	155	180	150	175	150	170				
		205	240	185	215	180	210	175	200	170	195				
		135	160	125	145	120	140	115	135	115	130				
		245	285	225	260	215	250	210	240	205	235				
		165	190	150	175	145	165	140	160	135	160				
												1505	1735	1450	1670
												1225	1420	1180	1370
												540	620	515	600
												435	505	420	485
												220	255	215	250
												170	195	160	190
												210	245	205	235
												385	445	370	430

HC Coated carbide  
 HT Uncoated carbide, main component (TiC) o. (TiN), cermet  
 HC<sub>1</sub> Coated cermet  
 HW Uncoated carbide, main component (WC)

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

## Indexable milling – group 2 (FMA01/02/03/04, FME01/02, FMP01/02, EMP01/02/03/04)

	Material group	Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]								
						HC (CVD)								
						YBC302		YBC401		YBD152		YBD252		
						$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		
						1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	
<b>A</b> Turning	Unalloyed steel	approx. 0,15 % C	annealed	125	1	245	285	210	245					
		approx. 0,45 % C	annealed	190	2	210	245	180	210					
		approx. 0,45 % C	tempered	250	3	200	230	170	200					
		approx. 0,75 % C	annealed	270	4	175	200	150	175					
		approx. 0,75 % C	tempered	300	5	160	190	140	160					
<b>B</b> Milling	Low-alloyed steel		annealed	180	6	210	245	180	210					
			tempered	275	7	175	200	150	175					
			tempered	300	8	160	190	140	160					
			tempered	350	9	135	160	120	135					
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	125	145	105	125					
		hardened and tempered	325	11	90	100	75	90						
<b>M</b>	Stainless steel	ferritic/martensitic	annealed	200	12									
			martensitic	tempered	240	13								
			austenitic	quench hardened	180	14								
			austenitic-ferritic		230	15								
<b>K</b>	Grey cast iron	perlitic/ferritic		180	16					315	365	270	315	
			perlitic (martensitic)		260	17				185	215	160	190	
	Cast iron with spheroidal graphite	ferritic		160	18					215	250	185	215	
			perlitic		250	19				145	170	125	145	
	Malleable cast iron	ferritic		130	20					260	300	225	260	
		perlitic		230	21				175	205	150	175		
<b>N</b> Drilling	Aluminium wrought alloys	cannot be hardened		60	22									
		hardenable	hardened	100	23									
	Cast aluminium alloys	$\leq 12\% \text{ Si}$ , cannot be hardened			75	24								
		$\leq 12\% \text{ Si}$ , hardenable	hardened		90	25								
		$> 12\% \text{ Si}$ , cannot be hardened			130	26								
	Copper and copper alloys (bronze/brass)	machining steel, PB > 1%			110	27								
CuZn, CuSnZn			90	28										
	CuSn, Pb-free copper, electrolytic copper			100	29									
<b>S</b>	Heat-resistant alloys	Fe-based alloys	annealed		200	30								
				hardened		280	31							
		Ni or Co base	annealed		250	32								
				hardened		350	33							
			cast		320	34								
Titanium alloys	pure titanium			R <sub>m</sub> 400	35									
	$\alpha$ and $\beta$ alloys			hardened	R <sub>m</sub> 1050	36								
<b>H</b> Technical Information	Hardened steel				55 HRC	37								
					hardened and tempered	60 HRC	38							
	Hard cast iron				cast	400	39							
	Hardened cast iron				hardened and tempered	55 HRC	40							
<b>X</b>	Non-metallic materials	Thermoplasts				41								
		Thermosetting plastics				42								
		Plastic, glass-fibre reinforced GFRP				43								
		Plastic, carbon fibre reinforced CFRP				44								
		Graphite				45								
		Wood				46								

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 Feed rate recommendations on page B254.  
 For examples of material for cutting tool groups view page D11.

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

Starting values for cutting speed $v_c$ [m/min]																					
HC (CVD)		HC (PVD)														HW				HT	
YBM253		YBG101		YBG102		YBG152		YB9320		YBG205		YBG252		YBG302		YD101		YD201		YNG151	
$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$	
1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5
245	285			255	295	240	280	230	265	220	255	215	250	210	245					270	315
210	245			220	255	205	240	200	230	190	220	185	215	180	210					235	270
200	230			205	240	195	225	185	215	180	205	175	200	170	200					220	255
175	200			180	210	170	200	165	190	155	180	155	175	150	175					195	220
160	190			170	195	160	185	150	175	145	170	140	165	140	160					180	210
210	245			220	255	205	240	200	230	190	220	185	215	180	210					235	270
175	200			180	210	170	200	165	190	155	180	155	175	150	175					195	220
160	190			170	195	160	185	150	175	145	170	140	165	140	160					180	210
135	160			145	165	135	155	130	150	125	145	120	140	120	135					150	180
125	145			130	150	120	140	115	135	110	130	110	125	105	125					140	160
90	100			90	105	85	100	85	95	80	90	80	90	75	90					100	110
125	145			130	150	120	140	115	135	110	130	110	125	105	125					135	160
105	120			110	125	105	120	100	115	95	110	95	105	90	105					115	135
130	155			140	160	130	150	125	145	120	140	115	135	115	130					145	170
105	120			110	125	105	120	100	115	95	110	95	105	90	105					115	135
				285	330	265	305	255	295	245	285	240	280	235	275						
				170	195	160	185	150	175	145	170	140	165	140	160						
				195	225	180	210	175	200	165	195	165	190	160	185						
				130	150	120	140	115	135	110	130	110	125	105	125						
				230	270	220	255	210	240	200	230	195	225	190	225						
				155	180	145	170	140	160	135	155	130	150	130	150						
		1505	1735													1205	1390	1040	1200		
		1225	1420													980	1140	850	980		
		540	620													435	500	375	435		
		435	505													350	405	300	350		
		220	255													180	205	155	180		
		170	195													140	160	120	140		
		210	245													170	200	150	170		
		385	445													310	360	265	310		
				75	85	70	80	65	75	65	75	65	75	60	70						
				50	55	50	55	45	50	45	50	45	50	40	45						
				60	70	55	65	55	65	50	55	50	55	50	55						
				35	40	35	40	30	35	30	35	30	35	30	35						
				45	50	45	50	40	45	40	45	40	45	40	45						
				75	85	70	80	65	75	65	75	65	75	60	70						
				75	85	70	80	65	75	65	75	65	75	60	70						

HC Coated carbide  
 HT Uncoated carbide, main component (TiC) o. (TiN), cermet  
 HC<sub>1</sub> Coated cermet  
 HW Uncoated carbide, main component (WC)

**A**  
Turning  
**B**  
Milling  
**C**  
Drilling  
**D**  
Technical Information  
**E**  
Index



## Indexable milling – group 2 (FMA01/02/03/04, FME01/02, FMP01/02, EMP01/02/03/04)

	Material group	Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed vc [m/min]				
						HC1				
						YNG151C				
						ae / D				
						1/1   3/4	1/5			
A Turning	P Unalloyed steel	approx. 0,15 % C	annealed	125	1	285	335			
		approx. 0,45 % C	annealed	190	2	250	285			
		approx. 0,45 % C	tempered	250	3	235	270			
		approx. 0,75 % C	annealed	270	4	205	235			
		approx. 0,75 % C	tempered	300	5	190	225			
	B Milling	P Low-alloyed steel		annealed	180	6	250	285		
				tempered	275	7	205	235		
				tempered	300	8	190	225		
				tempered	350	9	160	190		
	C Drilling	M Stainless steel	ferritic/martensitic	annealed	200	12	145	170		
martensitic			tempered	240	13	120	145			
K Cast iron with spheroidal graphite		austenitic	quench hardened	180	14	155	180			
		austenitic-ferritic		230	15	120	145			
		N Aluminium wrought alloys	perlitic/ferritic		180	16				
			perlitic (martensitic)		260	17				
		N Cast aluminium alloys	ferritic		160	18				
			perlitic		250	19				
N Copper and copper alloys (bronze/brass)			ferritic		130	20				
			perlitic		230	21				
D Technical Information	N Aluminium wrought alloys	cannot be hardened		60	22					
		hardenable	hardened	100	23					
	N Cast aluminium alloys	≤ 12% Si, cannot be hardened			75	24				
		≤ 12% Si, hardenable	hardened		90	25				
		> 12% Si, cannot be hardened			130	26				
	S Heat-resistant alloys	machining steel, PB> 1%			110	27				
		CuZn, CuSnZn			90	28				
		CuSn, Pb-free copper, electrolytic copper			100	29				
		S Titanium alloys	Fe-based alloys	annealed		200	30			
	Ni or Co bass		hardened		280	31				
annealed				250	32					
hardened				350	33					
H Hardened steel	cast			320	34					
	pure titanium			R <sub>m</sub> 400	35					
	α and β alloys	hardened		R <sub>m</sub> 1050	36					
	hardened and tempered			55 HRC	37					
H Hard cast iron	hardened and tempered			60 HRC	38					
	cast			400	39					
	hardened and tempered			55 HRC	40					
E Index	X Non-metallic materials	Thermoplasts			41					
		Thermosetting plastics			42					
		Plastic, glass-fibre reinforced GFRP			43					
		Plastic, carbon fibre reinforced CFRP			44					
		Graphite			45					
		Wood			46					

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 Feed rate recommendations on page B254.  
 For examples of material for cutting tool groups view page D11.



## Indexable milling – group 3 (FMR01/02/03/04)

	Material group	Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]					
						HC (CVD)					
						YBC302			YBC401		
						$a_e / D$			$a_e / D$		
	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20					
<b>P</b>	Unalloyed steel	approx. 0,15 % C	annealed	125	1	260	300	390	225	260	340
		approx. 0,45 % C	annealed	190	2	225	255	335	195	225	295
		approx. 0,45 % C	tempered	250	3	210	240	315	180	210	275
		approx. 0,75 % C	annealed	270	4	185	210	275	160	185	245
		approx. 0,75 % C	tempered	300	5	170	195	255	150	170	225
	Low-alloyed steel		annealed	180	6	225	255	335	195	225	295
			tempered	275	7	185	210	275	160	185	245
			tempered	300	8	170	195	255	150	170	225
		tempered	350	9	145	165	215	125	145	190	
High-alloyed steel and high-alloyed tool steel		annealed	200	10	130	150	195	115	130	170	
		hardened and tempered	325	11	95	105	140	80	95	125	
<b>M</b>	Stainless steel	ferritic/martensitic	annealed	200	12						
			martensitic	tempered	240	13					
			austenitic	quench hardened	180	14					
			austenitic-ferritic		230	15					
<b>K</b>	Grey cast iron	perlitic/ferritic		180	16						
			perlitic (martensitic)		260	17					
	Cast iron with spheroidal graphite	ferritic		160	18						
			perlitic		250	19					
	Malleable cast iron	ferritic		130	20						
			perlitic		230	21					
<b>N</b>	Aluminium wrought alloys	cannot be hardened		60	22						
		hardenable	hardened	100	23						
	Cast aluminium alloys	$\leq 12\% \text{ Si}$ , cannot be hardened		75	24						
		$\leq 12\% \text{ Si}$ , hardenable	hardened	90	25						
		$> 12\% \text{ Si}$ , cannot be hardened		130	26						
	Copper and copper alloys (bronze/brass)	machining steel, PB > 1%		110	27						
		CuZn, CuSnZn		90	28						
CuSn, Pb-free copper, electrolytic copper		100	29								
<b>S</b>	Heat-resistant alloys	Fe-based alloys	annealed	200	30						
				hardened	280	31					
		Ni or Co base	annealed	250	32						
				hardened	350	33					
		cast	320	34							
Titanium alloys	pure titanium		$R_m$ 400	35							
	$\alpha$ and $\beta$ alloys	hardened	$R_m$ 1050	36							
<b>H</b>	Hardened steel		hardened and tempered	55 HRC	37						
			hardened and tempered	60 HRC	38						
	Hard cast iron		cast	400	39						
	Hardened cast iron		hardened and tempered	55 HRC	40						
<b>X</b>	Non-metallic materials	Thermoplasts			41						
		Thermosetting plastics			42						
		Plastic, glass-fibre reinforced GFRP			43						
		Plastic, carbon fibre reinforced CFRP			44						
		Graphite			45						
		Wood			46						

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 Feed rate recommendations on page B254.  
 For examples of material for cutting tool groups view page D11.

Starting values for cutting speed $v_c$ [m/min]																						
HC (CVD)									HC (PVD)													
YBD152			YBD252			YBM253			YBG102			YBG152			YB9320			YBG205				
$a_e / D$			$a_e / D$			$a_e / D$			$a_e / D$			$a_e / D$			$a_e / D$			$a_e / D$				
1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20		
								260	300	390	270	315	410	255	295	385	245	285	375	235	275	360
								225	255	335	230	270	355	220	255	335	210	245	320	200	235	310
								210	240	315	220	255	335	205	240	315	200	230	300	190	220	290
								185	210	275	190	225	295	180	210	275	175	200	260	165	195	255
								170	195	255	180	205	270	170	195	255	160	190	250	155	180	235
								225	255	335	230	270	355	220	255	335	210	245	320	200	235	310
								185	210	275	190	225	295	180	210	275	175	200	260	165	195	255
								170	195	255	180	205	270	170	195	255	160	190	250	155	180	235
								145	165	215	150	175	230	145	165	215	135	160	210	130	155	205
								130	150	195	135	160	210	130	150	195	125	145	190	120	140	185
								95	105	140	95	115	150	90	105	140	90	100	130	85	100	130
								130	150	195	135	160	205	130	150	195	125	145	190	120	140	180
								110	130	165	115	135	175	110	125	165	105	120	160	100	120	155
								140	160	210	145	170	220	140	160	205	130	155	200	125	150	195
								110	130	165	115	135	175	110	125	165	105	120	160	100	120	155
	345	400	520	300	345	450					300	345	450	285	330	430	270	315	410	260	300	390
	210	245	320	180	205	270					180	205	270	170	195	255	160	190	250	155	180	235
	240	280	365	205	240	315					205	240	315	195	225	295	185	215	280	180	210	275
	160	185	245	135	160	210					135	160	210	130	150	195	125	145	190	120	140	185
	285	330	430	245	285	375					245	285	375	230	270	355	225	260	340	215	250	325
	190	220	290	165	190	250					165	190	250	155	180	235	150	175	230	145	165	215

HC Coated carbide  
 HT Uncoated carbide, main component (TiC) o. (TiN), cermet  
 HC<sub>1</sub> Coated cermet  
 HW Uncoated carbide, main component (WC)

**A**  
Turning  
**B**  
Milling  
**C**  
Drilling  
**D**  
Technical Information  
**E**  
Index





## Indexable milling – group 3 (FMR01/02/03/04)

	Material group	Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]					
						HC (PVD)					
						YBG212			YBG252		
						$a_e / D$			$a_e / D$		
	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20					
<b>A</b> Turning	Unalloyed steel	approx. 0,15 % C	annealed	125	1	240	280	365	230	265	345
		approx. 0,45 % C	annealed	190	2	205	240	315	200	230	300
		approx. 0,45 % C	tempered	250	3	195	225	295	185	215	280
		approx. 0,75 % C	annealed	270	4	170	200	260	165	190	250
		approx. 0,75 % C	tempered	300	5	160	185	245	150	175	230
<b>B</b> Milling	Low-alloyed steel		annealed	180	6	205	240	315	200	230	300
			tempered	275	7	170	200	260	165	190	250
			tempered	300	8	160	185	245	150	175	230
			tempered	350	9	135	155	205	130	150	195
	High-alloyed steel and high-alloyed tool steel	annealed	200	10	120	140	185	115	135	180	
	hardened and tempered	325	11	85	100	130	85	95	125		
<b>C</b> Drilling	Stainless steel	ferritic/martensitic	annealed	200	12	120	140	185	115	135	175
		martensitic	tempered	240	13	105	120	155	100	115	145
		austenitic	quench hardened	180	14	130	150	195	125	145	185
		austenitic-ferritic		230	15	105	120	155	100	115	145
<b>D</b> Technical Information	Grey cast iron	perlite/ferritic		180	16	265	305	400	255	295	385
		perlite (martensitic)		260	17	160	185	245	150	175	230
	Cast iron with spheroidal graphite	ferritic		160	18	180	210	275	175	200	260
		perlite		250	19	120	140	185	115	135	180
Malleable cast iron	ferritic		130	20	220	255	335	210	240	315	
	perlite		230	21	145	170	225	140	160	210	
<b>E</b> Index	Aluminium wrought alloys	cannot be hardened		60	22						
		hardenable	hardened	100	23						
	Cast aluminium alloys	$\leq 12\% \text{ Si}$ , cannot be hardened		75	24						
		$\leq 12\% \text{ Si}$ , hardenable	hardened	90	25						
		$> 12\% \text{ Si}$ , cannot be hardened		130	26						
	Copper and copper alloys (bronze/brass)	machining steel, PB > 1%		110	27						
CuZn, CuSnZn		90	28								
CuSn, Pb-free copper, electrolytic copper		100	29								
<b>F</b> Index	Heat-resistant alloys	Fe-based alloys	annealed	200	30						
			hardened	280	31						
		Ni or Co base	annealed	250	32						
			hardened	350	33						
			cast	320	34						
Titanium alloys	pure titanium		$R_m$ 400	35							
	$\alpha$ and $\beta$ alloys		hardened	$R_m$ 1050	36						
<b>G</b> Index	Hardened steel	hardened and tempered		55 HRC	37						
		hardened and tempered		60 HRC	38						
		cast		400	39						
<b>H</b> Index	Hardened cast iron	hardened and tempered		55 HRC	40						
		Thermoplasts			41						
		Thermosetting plastics			42						
		Plastic, glass-fibre reinforced GFRP			43						
<b>I</b> Index	Non-metallic materials	Plastic, carbon fibre reinforced CFRP			44						
		Graphite			45						
		Wood			46						

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 Feed rate recommendations on page B254.  
 For examples of material for cutting tool groups view page D11.



## Indexable milling – group 4 (BMR01/02/03/04, TMP01, CMZ01, CMA01, CMD01)

	Material group	Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]					
						HC (CVD)					
						YBC302			YBC401		
						$a_e / D$			$a_e / D$		
	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20					
<b>P</b>	Unalloyed steel	approx. 0,15 % C	annealed	125	1	235	275	360	200	230	300
		approx. 0,45 % C	annealed	190	2	200	235	310	170	200	260
		approx. 0,45 % C	tempered	250	3	190	220	290	160	185	245
		approx. 0,75 % C	annealed	270	4	165	195	255	140	165	215
		approx. 0,75 % C	tempered	300	5	155	180	235	130	150	195
	Low-alloyed steel		annealed	180	6	200	235	310	170	200	260
			tempered	275	7	165	195	255	140	165	215
			tempered	300	8	155	180	235	130	150	195
		tempered	350	9	130	155	205	110	130	170	
High-alloyed steel and high-alloyed tool steel		annealed	200	10	120	140	185	100	115	150	
		hardened and tempered	325	11	85	100	130	70	85	115	
<b>M</b>	Stainless steel	ferritic/martensitic	annealed	200	12						
		martensitic	tempered	240	13						
		austenitic	quench hardened	180	14						
		austenitic-ferritic		230	15						
<b>K</b>	Grey cast iron	perlitic/ferritic		180	16						
		perlitic (martensitic)		260	17						
	Cast iron with spheroidal graphite	ferritic		160	18						
		perlitic		250	19						
	Malleable cast iron	ferritic		130	20						
		perlitic		230	21						
<b>N</b>	Aluminium wrought alloys	cannot be hardened		60	22						
		hardenable	hardened	100	23						
	Cast aluminium alloys	$\leq 12\% \text{ Si}$ , cannot be hardened		75	24						
		$\leq 12\% \text{ Si}$ , hardenable	hardened	90	25						
		$> 12\% \text{ Si}$ , cannot be hardened		130	26						
	Copper and copper alloys (bronze/brass)	machining steel, PB > 1%		110	27						
		CuZn, CuSnZn		90	28						
CuSn, Pb-free copper, electrolytic copper		100	29								
<b>S</b>	Heat-resistant alloys	Fe-based alloys	annealed	200	30						
			hardened	280	31						
		Ni or Co base	annealed	250	32						
			hardened	350	33						
		cast	320	34							
Titanium alloys	pure titanium		$R_m$ 400	35							
	$\alpha$ and $\beta$ alloys	hardened	$R_m$ 1050	36							
<b>H</b>	Hardened steel		hardened and tempered	55 HRC	37						
			hardened and tempered	60 HRC	38						
	Hard cast iron		cast	400	39						
	Hardened cast iron		hardened and tempered	55 HRC	40						
<b>X</b>	Non-metallic materials	Thermoplasts			41						
		Thermosetting plastics			42						
		Plastic, glass-fibre reinforced GFRP			43						
		Plastic, carbon fibre reinforced CFRP			44						
		Graphite			45						
		Wood			46						

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 Feed rate recommendations on page B254.  
 For examples of material for cutting tool groups view page D11.

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

Starting values for cutting speed $v_c$ [m/min]																						
HC (CVD)									HC (PVD)													
YBD152			YBD252			YBM253			YBG102			YBG152			YB9320			YBG205				
$a_e / D$			$a_e / D$			$a_e / D$			$a_e / D$			$a_e / D$			$a_e / D$			$a_e / D$				
1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20		
								235	275	360	245	285	375	230	265	345	220	255	335	210	245	320
								200	235	310	210	245	320	200	230	300	190	220	290	180	210	275
								190	220	290	200	230	300	185	215	280	180	205	270	170	200	260
								165	195	255	175	200	260	165	190	250	155	180	235	150	175	230
								155	180	235	160	190	250	150	175	230	145	170	225	140	160	210
								200	235	310	210	245	320	200	230	300	190	220	290	180	210	275
								165	195	255	175	200	260	165	190	250	155	180	235	150	175	230
								155	180	235	160	190	250	150	175	230	145	170	225	140	160	210
								130	155	205	135	160	210	130	150	195	125	145	190	120	135	180
								120	140	185	125	145	190	115	135	180	110	130	170	105	125	165
								85	100	130	90	100	130	85	95	125	80	90	120	75	90	120
								120	140	180	125	145	190	115	135	175	110	130	170	105	125	160
								100	120	155	105	120	160	100	115	145	95	110	145	90	105	135
								125	150	195	130	155	200	125	145	185	120	140	180	115	130	170
								100	120	155	105	120	160	100	115	145	95	110	145	90	105	135
	300	345	450	260	300	390					270	315	410	255	295	385	245	285	375	235	275	360
	180	210	275	155	180	235					160	190	250	150	175	230	145	170	225	140	160	210
	210	245	320	180	210	275					185	215	280	175	200	260	165	195	255	160	185	245
	140	165	215	120	140	185					125	145	190	115	135	180	110	130	170	105	125	165
	250	290	380	215	250	325					225	260	340	210	240	315	200	230	300	190	225	295
	170	200	260	145	165	215					150	175	230	140	160	210	135	155	205	130	150	195

HC Coated carbide  
 HT Uncoated carbide, main component (TiC) o. (TiN), cermet  
 HC<sub>1</sub> Coated cermet  
 HW Uncoated carbide, main component (WC)

**A**  
Turning  
**B**  
Milling  
**C**  
Drilling  
**D**  
Technical Information  
**E**  
Index



## Indexable milling – group 4 (BMR01/02/03/04, TMP01, CMZ01, CMA01, CMD01)

	Material group	Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]						
						HC (PVD)						
						YBG212			YBG252			
						$a_e / D$			$a_e / D$			
	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20						
<b>P</b>	Unalloyed steel	approx. 0,15 % C	annealed	125	1	215	250	325	205	240	315	
		approx. 0,45 % C	annealed	190	2	185	215	280	175	205	270	
		approx. 0,45 % C	tempered	250	3	175	200	260	165	195	255	
		approx. 0,75 % C	annealed	270	4	155	175	230	145	170	225	
		approx. 0,75 % C	tempered	300	5	140	165	215	135	160	210	
	Low-alloyed steel		annealed	180	6	185	215	280	175	205	270	
			tempered	275	7	155	175	230	145	170	225	
			tempered	300	8	140	165	215	135	160	210	
		tempered	350	9	120	140	185	115	135	180		
High-alloyed steel and high-alloyed tool steel		annealed	200	10	110	125	165	105	120	160		
		hardened and tempered	325	11	80	90	120	75	85	115		
<b>M</b>	Stainless steel	ferritic/martensitic	annealed	200	12	110	125	165	105	120	160	
			martensitic	tempered	240	13	95	105	140	90	105	135
			austenitic	quench hardened	180	14	115	135	175	110	130	170
			austenitic-ferritic		230	15	95	105	140	90	105	135
<b>K</b>	Grey cast iron	perlitic/ferritic		180	16	240	280	365	230	265	345	
			perlitic (martensitic)	260	17	140	165	215	135	160	210	
	Cast iron with spheroidal graphite	ferritic		160	18	165	190	250	155	180	235	
			perlitic	250	19	110	125	165	105	120	160	
	Malleable cast iron	ferritic		130	20	195	225	295	185	220	290	
			perlitic	230	21	130	150	195	125	145	190	
<b>N</b>	Aluminium wrought alloys	cannot be hardened		60	22							
		hardenable	hardened	100	23							
	Cast aluminium alloys	$\leq 12\% \text{ Si}$ , cannot be hardened		75	24							
		$\leq 12\% \text{ Si}$ , hardenable	hardened	90	25							
		$> 12\% \text{ Si}$ , cannot be hardened		130	26							
	Copper and copper alloys (bronze/brass)	machining steel, PB > 1%		110	27							
		CuZn, CuSnZn		90	28							
		CuSn, Pb-free copper, electrolytic copper		100	29							
<b>S</b>	Heat-resistant alloys	Fe-based alloys	annealed	200	30							
			hardened	280	31							
		Ni or Co base	annealed	250	32							
			hardened	350	33							
		cast	320	34								
	Titanium alloys	pure titanium		$R_m$ 400	35							
$\alpha$ and $\beta$ alloys		hardened	$R_m$ 1050	36								
<b>H</b>	Hardened steel	hardened and tempered		55 HRC	37							
		hardened and tempered		60 HRC	38							
	Hard cast iron	cast		400	39							
	Hardened cast iron	hardened and tempered		55 HRC	40							
<b>X</b>	Non-metallic materials	Thermoplasts			41							
		Thermosetting plastics			42							
		Plastic, glass-fibre reinforced GFRP			43							
		Plastic, carbon fibre reinforced CFRP			44							
		Graphite			45							
		Wood			46							

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 Feed rate recommendations on page B254.  
 For examples of material for cutting tool groups view page D11.



## Indexable milling – group 5 (SMP01/03/05)

	Material group	Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]			
						HC (CVD)		HC (PVD)	
						YBC302	YBM253	YBG101	YB9320
		$a_e / D$	$a_e / D$	$a_e / D$	$a_e / D$				
		1/4	1/4	1/4	1/4				
<b>P</b>	Unalloyed steel	approx. 0,15 % C	annealed	125	1	165	180	190	175
		approx. 0,45 % C	annealed	190	2	145	155	165	150
		approx. 0,45 % C	tempered	250	3	135	145	155	140
		approx. 0,75 % C	annealed	270	4	120	130	135	125
		approx. 0,75 % C	tempered	300	5	110	120	125	115
<b>P</b>	Low-alloyed steel		annealed	180	6	145	155	165	150
			tempered	275	7	120	130	135	125
			tempered	300	8	110	120	125	115
			tempered	350	9	95	100	105	100
<b>P</b>	High-alloyed steel and high-alloyed tool steel		annealed	200	10	85	90	95	90
			hardened and tempered	325	11	60	65	70	65
<b>M</b>	Stainless steel	ferritic/martensitic	annealed	200	12		90	95	90
			tempered	240	13		80	80	75
		austenitic	quench hardened	180	14		100	105	95
				230	15		80	80	75
<b>K</b>	Grey cast iron	perlitic/ferritic		180	16			215	190
			perlitic (martensitic)	260	17			125	115
	Cast iron with spheroidal graphite	ferritic		160	18			145	135
			perlitic	250	19			95	90
<b>K</b>	Malleable cast iron	ferritic		130	20			175	160
			perlitic	230	21			115	105
<b>N</b>	Aluminium wrought alloys	cannot be hardened		60	22				
		hardenable	hardened	100	23				
	Cast aluminium alloys	$\leq 12\% \text{ Si}$ , cannot be hardened		75	24				
		$\leq 12\% \text{ Si}$ , hardenable	hardened	90	25				
		$> 12\% \text{ Si}$ , cannot be hardened		130	26				
	Copper and copper alloys (bronze/brass)	machining steel, PB > 1%		110	27				
CuZn, CuSnZn		90	28						
CuSn, Pb-free copper, electrolytic copper		100	29						
<b>S</b>	Heat-resistant alloys	Fe-based alloys	annealed	200	30				
			hardened	280	31				
		Ni or Co bass	annealed	250	32				
			hardened	350	33				
		cast	320	34					
Titanium alloys	pure titanium		$R_m$ 400	35					
	$\alpha$ and $\beta$ alloys		hardened	$R_m$ 1050	36				
<b>H</b>	Hardened steel	hardened and tempered		55 HRC	37				
		hardened and tempered		60 HRC	38				
	Hard cast iron	cast		400	39				
<b>X</b>	Non-metallic materials	hardened and tempered		55 HRC	40				
		Thermoplasts			41				
		Thermosetting plastics			42				
		Plastic, glass-fibre reinforced GFRP			43				
Plastic, carbon fibre reinforced CFRP			44						
Graphite			45						
Wood			46						

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 Feed rate recommendations on page B254.  
 For examples of material for cutting tool groups view page D11.

**A**  
 Turning  
**B**  
 Milling  
**C**  
 Drilling  
**D**  
 Technical Information  
**E**  
 Index





## Indexable milling – group 6 (FMD03, FME04, FMP03, HMP01)

	Material group	Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]									
						HC (CVD)									
						YBC302		YBC401		YBD152		YBD252			
						$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$			
						1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5		
<b>A</b> Turning	<b>P</b> Unalloyed steel	approx. 0,15 % C	annealed	125	1	200	230	170	200						
		approx. 0,45 % C	annealed	190	2	170	200	145	170						
		approx. 0,45 % C	tempered	250	3	160	185	140	160						
		approx. 0,75 % C	annealed	270	4	140	165	120	140						
		approx. 0,75 % C	tempered	300	5	130	150	115	130						
	<b>B</b> Milling	<b>P</b> Low-alloyed steel		annealed	180	6	170	200	145	170					
				tempered	275	7	140	165	120	140					
				tempered	300	8	130	150	115	130					
			tempered	350	9	110	130	95	110						
<b>C</b> Drilling	<b>P</b> High-alloyed steel and high-alloyed tool steel		annealed	200	10	100	115	85	100						
			hardened and tempered	325	11	70	85	60	70						
<b>D</b> Technical Information	<b>M</b> Stainless steel	ferritic/martensitic	annealed	200	12										
			martensitic	tempered	240	13									
			austenitic	quench hardened	180	14									
			austenitic-ferritic		230	15									
<b>E</b> Index	<b>K</b> Grey cast iron	perlitic/ferritic		180	16					255	295	220	255		
			perlitic (martensitic)	260	17					150	175	130	150		
	<b>K</b> Cast iron with spheroidal graphite	ferritic		160	18					175	205	150	175		
			perlitic	250	19					115	135	100	115		
	<b>K</b> Malleable cast iron	ferritic		130	20					210	245	180	210		
			perlitic	230	21					140	165	120	140		
<b>F</b> Index	<b>N</b> Aluminium wrought alloys	cannot be hardened		60	22										
		hardenable	hardened	100	23										
	<b>N</b> Cast aluminium alloys	$\leq 12\% \text{ Si}$ , cannot be hardened		75	24										
		$\leq 12\% \text{ Si}$ , hardenable	hardened	90	25										
		$> 12\% \text{ Si}$ , cannot be hardened		130	26										
	<b>N</b> Copper and copper alloys (bronze/brass)	machining steel, PB > 1%		110	27										
CuZn, CuSnZn		90	28												
CuSn, Pb-free copper, electrolytic copper		100	29												
<b>S</b> Heat-resistant alloys	<b>S</b> Fe-based alloys	annealed		200	30										
			hardened	280	31										
			annealed	250	32										
			hardened	350	33										
		Ni or Co bass	cast	320	34										
<b>S</b> Titanium alloys	pure titanium		$R_m$ 400	35											
	$\alpha$ and $\beta$ alloys		hardened	$R_m$ 1050	36										
<b>H</b> Hardened steel			hardened and tempered	55 HRC	37										
			hardened and tempered	60 HRC	38										
	Hard cast iron		cast	400	39										
<b>H</b> Hardened cast iron			hardened and tempered	55 HRC	40										
	<b>X</b> Non-metallic materials	Thermoplasts			41										
		Thermosetting plastics			42										
		Plastic, glass-fibre reinforced GFRP			43										
Plastic, carbon fibre reinforced CFRP			44												
Graphite			45												
Wood			46												

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 Feed rate recommendations on page B254.  
 For examples of material for cutting tool groups view page D11.

Starting values for cutting speed $v_c$ [m/min]																
HC (CVD)		HC (PVD)														
YBM253		YBG102		YBG152		YB9320		YBG205		YBG212		YBG252		YBG302		
$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		
1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	1/1   3/4	1/5	
200	230	205	240	195	225	190	220	185	215	185	215	180	210	175	205	
170	200	175	205	170	195	165	190	160	185	160	185	155	180	150	175	
160	185	165	195	160	180	155	180	150	175	150	175	145	170	140	165	
140	165	145	170	140	160	135	155	130	155	130	155	130	150	125	145	
130	150	135	160	130	150	125	145	125	140	125	140	120	140	115	135	
170	200	175	205	170	195	165	190	160	185	160	185	155	180	150	175	
140	165	145	170	140	160	135	155	130	155	130	155	130	150	125	145	
130	150	135	160	130	150	125	145	125	140	125	140	120	140	115	135	
110	130	115	135	110	125	105	125	105	120	105	120	100	120	100	115	
100	115	105	120	100	115	95	110	95	110	95	110	90	105	90	105	
70	85	75	85	70	80	70	80	65	80	65	80	65	75	65	75	
100	115	105	120	100	115	95	110	95	110	95	110	90	105	90	105	
85	100	90	105	85	95	80	95	80	95	80	95	80	90	75	90	
110	125	110	130	105	120	105	120	100	115	100	115	100	115	95	110	
85	100	90	105	85	95	80	95	80	95	80	95	80	90	75	90	
		230	265	215	250	210	245	205	240	205	240	200	230	195	225	
		135	160	130	150	125	145	125	140	125	140	120	140	115	135	
		155	180	150	170	145	165	140	165	140	165	135	160	135	155	
		105	120	100	115	95	110	95	110	95	110	90	105	90	105	
		185	220	180	205	175	200	170	195	170	195	165	190	160	185	
		125	145	120	135	115	135	115	130	115	130	110	130	105	125	

HC Coated carbide  
 HT Uncoated carbide, main component (TiC) o. (TiN), cermet  
 HC<sub>1</sub> Coated cermet  
 HW Uncoated carbide, main component (WC)

**A**  
Turning  
**B**  
Milling  
**C**  
Drilling  
**D**  
Technical Information  
**E**  
Index



## Indexable milling – group 7 (XMR01, XMP01)

	Material group	Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]								
						HC (CVD)								
						YBC302			YBD152					
						$a_e / D$			$a_e / D$					
						1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20			
<b>P</b>	Unalloyed steel	approx. 0,15 % C	annealed	125	1	260	300	390						
		approx. 0,45 % C	annealed	190	2	225	255	335						
		approx. 0,45 % C	tempered	250	3	210	240	315						
		approx. 0,75 % C	annealed	270	4	185	210	275						
		approx. 0,75 % C	tempered	300	5	170	195	255						
	Low-alloyed steel		annealed	180	6	225	255	335						
			tempered	275	7	185	210	275						
			tempered	300	8	170	195	255						
			tempered	350	9	145	165	215						
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	130	150	195						
		hardened and tempered	325	11	95	105	140							
<b>M</b>	Stainless steel	ferritic/martensitic	annealed	200	12									
		martensitic	tempered	240	13									
		austenitic	quench hardened	180	14									
		austenitic-ferritic		230	15									
<b>K</b>	Grey cast iron	perlitic/ferritic		180	16				335	390	510			
		perlitic (martensitic)		260	17				200	230	300			
	Cast iron with spheroidal graphite	ferritic		160	18				225	260	340			
		perlitic		250	19				150	175	230			
	Malleable cast iron	ferritic		130	20				275	320	420			
		perlitic		230	21				185	215	280			
<b>N</b>	Aluminium wrought alloys	cannot be hardened		60	22									
		hardenable	hardened	100	23									
	Cast aluminium alloys	$\leq 12\% \text{ Si}$ , cannot be hardened		75	24									
		$\leq 12\% \text{ Si}$ , hardenable	hardened	90	25									
		$> 12\% \text{ Si}$ , cannot be hardened		130	26									
	Copper and copper alloys (bronze/brass)	machining steel, PB > 1%		110	27									
		CuZn, CuSnZn		90	28									
CuSn, Pb-free copper, electrolytic copper		100	29											
<b>S</b>	Heat-resistant alloys	Fe-based alloys	annealed	200	30									
			hardened	280	31									
		Ni or Co base	annealed	250	32									
			hardened	350	33									
		cast	320	34										
Titanium alloys	pure titanium		$R_m$ 400	35										
	$\alpha$ and $\beta$ alloys	hardened		$R_m$ 1050	36									
<b>H</b>	Hardened steel		hardened and tempered	55 HRC	37									
			hardened and tempered	60 HRC	38									
	Hard cast iron		cast	400	39									
	Hardened cast iron		hardened and tempered	55 HRC	40									
<b>X</b>	Non-metallic materials	Thermoplasts			41									
		Thermosetting plastics			42									
		Plastic, glass-fibre reinforced GFRP			43									
		Plastic, carbon fibre reinforced CFRP			44									
		Graphite			45									
		Wood			46									

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 Feed rate recommendations on page B254.  
 For examples of material for cutting tool groups view page D11.

Starting values for cutting speed $v_c$ [m/min]																					
HC (CVD)									HC (PVD)												
YBD252			YBM253			YBG102			YBG152			YB9320			YBG205			YBG212			
$a_e / D$			$a_e / D$			$a_e / D$			$a_e / D$			$a_e / D$			$a_e / D$			$a_e / D$			
1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20	
			260	300	390	270	315	410	255	295	385	245	285	375	235	275	360	240	280	365	
			225	255	335	230	270	355	220	255	335	210	245	320	200	235	310	205	240	315	
			210	240	315	220	255	335	205	240	315	200	230	300	190	220	290	195	225	295	
			185	210	275	190	225	295	180	210	275	175	200	260	165	195	255	170	200	260	
			170	195	255	180	205	270	170	195	255	160	190	250	155	180	235	160	185	245	
			225	255	335	230	270	355	220	255	335	210	245	320	200	235	310	205	240	315	
			185	210	275	190	225	295	180	210	275	175	200	260	165	195	255	170	200	260	
			170	195	255	180	205	270	170	195	255	160	190	250	155	180	235	160	185	245	
			145	165	215	150	175	230	145	165	215	135	160	210	130	155	205	135	155	205	
			130	150	195	135	160	210	130	150	195	125	145	190	120	140	185	120	140	185	
			95	105	140	95	115	150	90	105	140	90	100	130	85	100	130	85	100	130	
			130	150	195	135	160	205	130	150	195	125	145	190	120	140	180	120	140	185	
			110	130	165	115	135	175	110	125	165	105	120	160	100	120	155	105	120	155	
			140	160	210	145	170	220	140	160	205	130	155	200	125	150	195	130	150	195	
			110	130	165	115	135	175	110	125	165	105	120	160	100	120	155	105	120	155	
	290	335	440				300	345	450	285	330	430	270	315	410	260	300	390	265	305	400
	170	195	255				180	205	270	170	195	255	160	190	250	155	180	235	160	185	245
	195	225	295				205	240	315	195	225	295	185	215	280	180	210	275	180	210	275
	130	150	195				135	160	210	130	150	195	125	145	190	120	140	185	120	140	185
	235	270	355				245	285	375	230	270	355	225	260	340	215	250	325	220	255	335
	160	180	235				165	190	250	155	180	235	150	175	230	145	165	215	145	170	225

HC Coated carbide  
 HT Uncoated carbide, main component (TiC) o. (TiN), cermet  
 HC<sub>1</sub> Coated cermet  
 HW Uncoated carbide, main component (WC)

**A**  
Turning  
**B**  
Milling  
**C**  
Drilling  
**D**  
Technical Information  
**E**  
Index



## Indexable milling – group 7 (XMR01, XMP01)

	Material group	Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]						
						HC (PVD)						
						YBG252			YBG302			
						$a_e / D$			$a_e / D$			
	1/1   3/4	1/5	1/20	1/1   3/4	1/5	1/20						
A Turning	P Unalloyed steel	approx. 0,15 % C	annealed	125	1	230	265	345	225	260	340	
		approx. 0,45 % C	annealed	190	2	200	230	300	195	225	295	
		approx. 0,45 % C	tempered	250	3	185	215	280	180	210	275	
		approx. 0,75 % C	annealed	270	4	165	190	250	160	185	245	
		approx. 0,75 % C	tempered	300	5	150	175	230	150	170	225	
	B Milling	P Low-alloyed steel		annealed	180	6	200	230	300	195	225	295
				tempered	275	7	165	190	250	160	185	245
				tempered	300	8	150	175	230	150	170	225
			tempered	350	9	130	150	195	125	145	190	
C Drilling	P High-alloyed steel and high-alloyed tool steel		annealed	200	10	115	135	180	115	130	170	
			hardened and tempered	325	11	85	95	125	80	95	125	
D Technical Information	M Stainless steel	ferritic/martensitic	annealed	200	12	115	135	175	115	130	170	
			martensitic	tempered	240	13	100	115	145	95	110	145
			austenitic	quench hardened	180	14	125	145	185	120	140	185
			austenitic-ferritic		230	15	100	115	145	95	110	145
E Index	K Cast iron with spheroidal graphite	perlitic/ferritic		180	16	255	295	385	250	290	380	
			perlitic (martensitic)	260	17	150	175	230	150	170	225	
	K Malleable cast iron	ferritic		160	18	175	200	260	170	195	255	
			perlitic	250	19	115	135	180	115	130	170	
F Index	N Aluminium wrought alloys	cannot be hardened		60	22							
		hardenable	hardened	100	23							
	N Cast aluminium alloys	$\leq 12\% \text{ Si}$ , cannot be hardened		75	24							
		$\leq 12\% \text{ Si}$ , hardenable	hardened	90	25							
		$> 12\% \text{ Si}$ , cannot be hardened		130	26							
	N Copper and copper alloys (bronze/brass)	machining steel, PB > 1%		110	27							
		CuZn, CuSnZn		90	28							
		CuSn, Pb-free copper, electrolytic copper		100	29							
S Heat-resistant alloys	Fe-based alloys	annealed	200	30								
		hardened	280	31								
		annealed	250	32								
		hardened	350	33								
	Ni or Co base	hardened	320	34								
cast												
Titanium alloys	pure titanium		$R_m$ 400	35								
	$\alpha$ and $\beta$ alloys	hardened	$R_m$ 1050	36								
H Hardened steel		hardened and tempered	55 HRC	37								
		hardened and tempered	60 HRC	38								
		cast	400	39								
H Hardened cast iron		cast	400	39								
		hardened and tempered	55 HRC	40								
X Non-metallic materials		Thermoplasts		41								
		Thermosetting plastics		42								
		Plastic, glass-fibre reinforced GFRP		43								
		Plastic, carbon fibre reinforced CFRP		44								
		Graphite		45								
		Wood		46								

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 Feed rate recommendations on page B254.  
 For examples of material for cutting tool groups view page D11.



## Recommended feed rate

### Indexable milling – group1 (FMA07/11/12, FMD02, EMP09/13)

Material group	Feed rate per cutting edge [mm]																		
	EMP09			EMP09			EMP13			EMP13			FMA07			FMA07			
	LNKT08/12			LNKT16			ANGX11			ANGX15			ONHU06			ONHU08			
	Application																		
	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	
<b>P</b> Unalloyed steel		0,25	0,50		0,28	0,55		0,23			0,25			0,19	0,23		0,19	0,23	
	Low-alloyed steel		0,23	0,47		0,26	0,51		0,22			0,23			0,17	0,22		0,17	0,22
	High-alloyed steel and high-alloyed tool steel		0,22	0,44		0,24	0,48		0,20			0,22			0,16	0,20		0,16	0,20
<b>M</b> Stainless steel		0,18	0,35		0,19	0,39		0,16			0,18								
<b>K</b> Grey cast iron		0,28	0,55		0,30	0,61		0,26			0,28			0,20	0,26		0,20	0,26	
	Cast iron with spheroidal graphite		0,25	0,50		0,28	0,55		0,23			0,25			0,19	0,23		0,19	0,23
	Malleable cast iron		0,25	0,50		0,28	0,55		0,23			0,25			0,19	0,23		0,19	0,23
<b>N</b> Aluminum wrought alloys								0,20			0,21								
	Aluminum cast alloys								0,20			0,21							
	Copper and copper alloys (bronze/brass)								0,18			0,19							
<b>S</b> Heat-resistant alloys																			
	Titanium alloys																		
<b>H</b> Hardened steel																			
	Hard cast iron																		
	Hardened cast iron																		
<b>X</b> Non-metallic materials																			

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

### Indexable milling – group1 (FMA07/11/12, FMD02, EMP09/13)

Material group	Feed rate per cutting edge [mm]																		
	FMP12																		
	WNHU08																		
	Application																		
	F	M	R																
<b>P</b> Unalloyed steel		0,25																	
	Low-alloyed steel		0,23																
	High-alloyed steel and high-alloyed tool steel		0,22																
<b>M</b> Stainless steel		0,18																	
<b>K</b> Grey cast iron		0,28																	
	Cast iron with spheroidal graphite		0,25																
	Malleable cast iron		0,25																
<b>N</b> Aluminium wrought alloys																			
	Aluminum cast alloys																		
	Copper and copper alloys (bronze/brass)																		
<b>S</b> Heat-resistant alloys																			
	Titanium alloys																		
<b>H</b> Hardened steel																			
	Hard cast iron																		
	Hardened cast iron																		
<b>X</b> Non-metallic materials																			

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

Feed rate per cutting edge [mm]																										
FMA11			FMA11			FMA11			FMA12			FMA12			FMD02			FMD02			FMP12					
SNEG12			SNEG15			SNEG19			ONHU06			ONHU08			PNEG11			HNEX09			WNHU06					
Application																										
F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R
	0,20	0,23		0,22	0,25			0,29	0,19	0,23			0,23		0,15	0,20	0,30					0,23				
	0,19	0,21		0,20	0,24			0,27	0,17	0,22			0,22		0,14	0,19	0,28					0,22				
	0,18	0,20		0,19	0,22			0,26	0,16	0,20			0,20		0,13	0,18	0,26					0,20				
	0,14	0,16		0,15	0,18			0,20					0,16									0,16				
	0,22	0,25		0,24	0,28			0,32	0,20	0,26			0,26		0,17	0,22	0,33	0,17	0,22	0,33		0,26				
	0,20	0,23		0,22	0,25			0,29	0,19	0,23			0,23		0,15	0,20	0,30	0,15	0,20	0,30		0,23				
	0,20	0,23		0,22	0,25			0,29	0,19	0,23			0,23		0,15	0,20	0,30	0,15	0,20	0,30		0,23				

F Finishing  
M Medium machining  
R Roughing


F Finishing  
M Medium machining  
R Roughing

**A**  
Turning  
**B**  
Milling  
**C**  
Drilling  
**D**  
Technical Information  
**E**  
Index





## Recommended feed rate

### Indexable milling – group 2 (FMA01/02/03/04, FME01/02, FMP01/02, EMP01/02/03/04)

Material group		Feed rate per cutting edge [mm]																	
		FMA01   FMA02			FMA03			FMA03			FMA04			FMA04			FMA04		
		SEET12			SEKN12			SEKN15			OFKT05			OFKR07			ODHT06		
		Application																	
		F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R
<b>P</b>	Unalloyed steel	0,15	0,20	0,25		0,18			0,20		0,20	0,25		0,20	0,25		0,20	0,25	
	Low-alloyed steel	0,14	0,19	0,23		0,17			0,19		0,19	0,23		0,19	0,23		0,19	0,23	
	High-alloyed steel and high-alloyed tool steel	0,13	0,18	0,22		0,16			0,18		0,18	0,22		0,18	0,22		0,18	0,22	
<b>M</b>	Stainless steel	0,11	0,14	0,18		0,13			0,14		0,14	0,18		0,14	0,18		0,14	0,18	
<b>K</b>	Grey cast iron	0,17	0,22	0,28		0,20			0,22		0,22	0,28		0,22	0,28		0,22	0,28	
	Cast iron with spheroidal graphite	0,15	0,20	0,25		0,18			0,20		0,20	0,25		0,20	0,25		0,20	0,25	
	Malleable cast iron	0,15	0,20	0,25		0,18			0,20		0,20	0,25		0,20	0,25		0,20	0,25	
<b>N</b>	Aluminium wrought alloys	0,13	0,17	0,21							0,17	0,21		0,17	0,21		0,17	0,21	
	Aluminum cast alloys	0,13	0,17	0,21							0,17	0,21		0,17	0,21		0,17	0,21	
	Copper and copper alloys (bronze/brass)	0,11	0,15	0,19							0,15	0,19		0,15	0,19		0,15	0,19	
<b>S</b>	Heat-resistant alloys	0,11	0,14	0,18							0,14	0,18		0,14	0,18		0,14	0,18	
	Titanium alloys	0,11	0,14	0,18							0,14	0,18		0,14	0,18		0,14	0,18	
<b>H</b>	Hardened steel																		
	Hard cast iron																		
	Hardened cast iron																		
<b>X</b>	Non-metallic materials																		

Note: The given cutting values are guide values, which were determined under ideal conditions. The values have to be adapted in individual cases.

### Indexable milling – group 3 (FMR01/02/03/04) Face milling

Material group		Feed rate per cutting edge [mm]																	
		FMR01			FMR01			FMR02			FMR02			FMR02			FMR03		
		RCKT10			RC*12			RC*12			RCKT16			RCKT20			RDKW07		
		Application																	
		F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R
<b>P</b>	Unalloyed steel		0,20	0,25		0,20	0,25		0,20	0,25		0,23	0,29		0,26	0,33		0,17	
	Low-alloyed steel		0,19	0,23		0,19	0,23		0,19	0,23		0,21	0,27		0,25	0,31		0,16	
	High-alloyed steel and high-alloyed tool steel		0,18	0,22		0,18	0,22		0,18	0,22		0,20	0,25		0,23	0,29		0,15	
<b>M</b>	Stainless steel		0,14	0,18		0,14	0,18		0,14	0,18		0,16	0,20		0,19	0,23		0,12	
<b>K</b>	Grey cast iron		0,22	0,28		0,22	0,28		0,22	0,28		0,25	0,32		0,29	0,36		0,19	
	Cast iron with spheroidal graphite		0,20	0,25		0,20	0,25		0,20	0,25		0,23	0,29		0,26	0,33		0,17	
	Malleable cast iron		0,20	0,25		0,20	0,25		0,20	0,25		0,23	0,29		0,26	0,33		0,17	
<b>N</b>	Aluminium wrought alloys					0,17	0,21		0,17	0,21									
	Aluminum cast alloys					0,17	0,21		0,17	0,21									
	Copper and copper alloys (bronze/brass)					0,15	0,19		0,15	0,19									
<b>S</b>	Heat-resistant alloys																		
	Titanium alloys																		
<b>H</b>	Hardened steel																		
	Hard cast iron																		
	Hardened cast iron																		
<b>X</b>	Non-metallic materials																		

Note: The given cutting values are guide values, which were determined under ideal conditions. The values have to be adapted in individual cases.

**A**

Turning

Feed rate per cutting edge [mm]																										
FME02			FME03			FME03			FMP01			FMP02			EMP01   EMP02			EMP01   EMP02			EMP03   EMP04					
SPK*12			SPK*12			SPK*15			TPKN22			SEET12			APKT11			APKT16			APKT11					
Application																										
F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R
0,20			0,19			0,20			0,20			0,15	0,20	0,25	0,10	0,15	0,20	0,12	0,17	0,23	0,10	0,20	0,25			
0,19			0,17			0,19			0,19			0,14	0,19	0,23	0,09	0,14	0,19	0,11	0,16	0,21	0,09	0,19	0,23			
0,18			0,16			0,18			0,18			0,13	0,18	0,22	0,09	0,13	0,18	0,10	0,15	0,20	0,09	0,18	0,22			
0,14			0,13			0,14			0,14			0,11	0,14	0,18	0,07	0,11	0,14	0,08	0,12	0,16	0,07	0,14	0,18			
0,22			0,20			0,22			0,22			0,17	0,22	0,28	0,11	0,17	0,22	0,13	0,19	0,25	0,11	0,22	0,28			
0,20			0,19			0,20			0,20			0,15	0,20	0,25	0,10	0,15	0,20	0,12	0,17	0,23	0,10	0,20	0,25			
0,20			0,19			0,20			0,20			0,15	0,20	0,25	0,10	0,15	0,20	0,12	0,17	0,23	0,10	0,20	0,25			
												0,13	0,17	0,21	0,09	0,13	0,17	0,10	0,15	0,20	0,09	0,17	0,21			
												0,13	0,17	0,21	0,09	0,13	0,17	0,10	0,15	0,20	0,09	0,17	0,21			
												0,11	0,15	0,19	0,08	0,11	0,15	0,09	0,13	0,18	0,08	0,15	0,19			

F Finishing  
M Medium machining  
R Roughing

**B**

Milling

Feed rate per cutting edge [mm]														
FMR03			FMR03			FMR04			FMR04			FMR04		
RDKW08			RD*10			RD*12			RDKW16			RDKW20		
Application														
F	M	R	F	M	R	F	M	R	F	M	R	F	M	R
0,17			0,20			0,15	0,20	0,25	0,17	0,23	0,29	0,2	0,26	0,33
0,16			0,19			0,14	0,19	0,23	0,16	0,21	0,27	0,19	0,25	0,31
0,15			0,18			0,13	0,18	0,22	0,15	0,20	0,25	0,18	0,23	0,29
0,12			0,14			0,11	0,14	0,18	0,12	0,16	0,20	0,14	0,19	0,23
0,19			0,22			0,17	0,22	0,28	0,19	0,25	0,32	0,22	0,29	0,36
0,17			0,20			0,15	0,20	0,25	0,17	0,23	0,29	0,20	0,26	0,33
0,17			0,20			0,15	0,20	0,25	0,17	0,23	0,29	0,20	0,26	0,33
			0,17			0,13	0,17	0,21						
			0,17			0,13	0,17	0,21						
			0,15			0,11	0,15	0,19						

F Finishing  
M Medium machining  
R Roughing

**C**

Drilling

**D**

Technical Information

**E**

Index

## Recommended feed rate

### Indexable milling – group 3 (FMR01/02/03/04) Circular milling

Material group	Feed rate per cutting edge [mm]								
	FMR01	FMR01	FMR02	FMR02	FMR02	FMR03			
	RCKT10	RC*12	RC*12	RCKT16	RCKT20	RDKW07			
	Tool diameter [mm]								
	25-32	40-50	50-100	63-125	160-200	80-125	160-250	15	
<b>P</b>	Unalloyed steel	0,12	0,16	0,18	0,24	0,32	0,26	0,35	0,07
	Low-alloyed steel	0,11	0,14	0,16	0,21	0,28	0,23	0,31	0,06
	High-alloyed steel and high-alloyed tool steel	0,10	0,13	0,14	0,19	0,26	0,21	0,28	0,06
<b>M</b>	Stainless steel	0,07	0,09	0,10	0,14	0,18	0,15	0,20	0,04
<b>K</b>	Grey cast iron	0,11	0,14	0,16	0,22	0,29	0,23	0,32	0,06
	Cast iron with spheroidal graphite	0,10	0,13	0,14	0,19	0,26	0,21	0,28	0,06
	Malleable cast iron	0,10	0,13	0,14	0,19	0,26	0,21	0,28	0,06
<b>N</b>	Aluminium wrought alloys								
	Aluminum cast alloys								
	Copper and copper alloys (bronze/brass)								
<b>S</b>	Heat-resistant alloys								
	Titanium alloys								
<b>H</b>	Hardened steel								
	Hard cast iron								
	Hardened cast iron								
<b>X</b>	Non-metallic materials								

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

### Indexable milling – group 4 (BMR01/02/03/04, TMP01, CMZ01, CMA01, CMD01)

Material group	Feed rate per cutting edge [mm]									
	BMR01	BMR01	BMR01	BMR01	BMR02	BMR02	BMR02	BMR03	BMR03	
	ZD*08 / SP*06	ZD*11 / SP*06	ZD*13 / SP*09	ZP*22 / SP*12	ROHX12	ROHX16	ROHX20	-	-	
	Tool diameter [mm]									
	20	25	32	40-63	12	16	20	16	20	
<b>P</b>	Unalloyed steel	0,14	0,21	0,26	0,32	0,10	0,13	0,14	0,13	0,14
	Low-alloyed steel	0,10	0,15	0,18	0,22	0,07	0,09	0,10	0,09	0,10
	High-alloyed steel and high-alloyed tool steel	0,09	0,14	0,17	0,21	0,07	0,08	0,09	0,08	0,09
<b>M</b>	Stainless steel	0,08	0,12	0,14	0,18	0,06	0,07	0,08	0,07	0,08
<b>K</b>	Grey cast iron	0,18	0,27	0,34	0,42	0,13	0,17	0,18	0,17	0,18
	Cast iron with spheroidal graphite	0,13	0,20	0,25	0,30	0,10	0,12	0,13	0,12	0,13
	Malleable cast iron	0,14	0,21	0,26	0,32	0,10	0,13	0,14	0,13	0,14
<b>N</b>	Aluminum wrought alloys									
	Aluminum cast alloys									
	Copper and copper alloys (bronze/brass)									
<b>S</b>	Heat-resistant alloys									
	Titanium alloys									
<b>H</b>	Hardened steel									
	Hard cast iron									
	Hardened cast iron									
<b>X</b>	Non-metallic materials									

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

**A**

Turning

Feed rate per cutting edge [mm]						
FMR03	FMR03	FMR04	FMR04	FMR04		
RDKW08	RD*10	RD*12	RDKW16	RDKW20		
Tool diameter [mm]						
16-25	32	50-63	80-100	125-160		
0,07	0,12	0,17	0,24	0,30		
0,06	0,11	0,15	0,21	0,26		
0,06	0,10	0,14	0,19	0,24		
0,04	0,07	0,10	0,14	0,17		
0,06	0,11	0,15	0,22	0,27		
0,06	0,10	0,14	0,19	0,24		
0,06	0,10	0,14	0,19	0,24		
	0,10	0,11				
	0,10	0,11				
	0,10	0,11				

**B**

Milling

**C**

Drilling

Feed rate per cutting edge [mm]												
BMR03	BMR03	BMR03	BMR04	BMR04	BMR04	BMR04	BMR04	BMR04	CMZ01	CMA01	CMD01	
-	-	-	ZOHX12	ZOHX16	ZOHX20	ZOHX25	ZOHX30		SPMT12	SPMT12	SPMT12	
Tool diameter [mm]												
25	30-32	40-50	12	16	20	25	30		12-32	12-32	12-36	
0,21	0,26	0,30	0,10	0,13	0,14	0,16	0,17		0,23	0,23	0,23	
0,15	0,18	0,21	0,07	0,09	0,10	0,11	0,12		0,16	0,16	0,16	
0,14	0,17	0,20	0,07	0,08	0,09	0,10	0,11		0,15	0,15	0,15	
0,12	0,14	0,17	0,06	0,07	0,08	0,09	0,09		0,13	0,13	0,13	
0,27	0,34	0,39	0,13	0,17	0,18	0,21	0,22		0,30	0,30	0,30	
0,20	0,25	0,29	0,10	0,12	0,13	0,15	0,16		0,22	0,22	0,22	
0,21	0,26	0,30	0,10	0,13	0,14	0,16	0,17		0,23	0,23	0,23	

**D**

Technical  
Information

**E**

Index

## Recommended feed rate

### Indexable milling – group 5 (SMP01/03/05)

Material group		Feed rate per cutting edge [mm]								
		SMP01	SMP01	SMP01	SMP01	SMP01	SMP03	SMP03	SMP03	SMP05
		XSEQ1202	XSEQ1203	XSEQ12T3	XSEQ1204	XSEQ12T4	MPHT06	MPHT08	MPHT12	QC16
		Tool diameter [mm]								
		63-100	63-100	63-160	63-160	63-160	80-125	125-200	120-200	25-39
<b>P</b>	Unalloyed steel	0,12	0,12	0,13	0,13	0,14	0,14	0,15	0,16	0,08
	Low-alloyed steel	0,11	0,11	0,12	0,12	0,13	0,13	0,14	0,15	0,08
	High-alloyed steel and high-alloyed tool steel	0,10	0,10	0,11	0,11	0,12	0,12	0,13	0,14	0,07
<b>M</b>	Stainless steel	0,10	0,10	0,11	0,11	0,12	0,12	0,13	0,14	0,07
<b>K</b>	Grey cast iron	0,11	0,11	0,12	0,12	0,13	0,13	0,14	0,15	0,08
	Cast iron with spheroidal graphite	0,11	0,11	0,12	0,12	0,13	0,13	0,14	0,15	0,07
	Malleable cast iron	0,11	0,11	0,12	0,12	0,13	0,13	0,14	0,15	0,07
<b>N</b>	Aluminium wrought alloys									
	Aluminum cast alloys									
	Copper and copper alloys (bronze/brass)									
<b>S</b>	Heat-resistant alloys									
	Titanium alloys									
<b>H</b>	Hardened steel									
	Hard cast iron									
	Hardened cast iron									
<b>X</b>	Non-metallic materials									

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

### Indexable milling – group 6 (FMD03, FME04, FMP03, HMP01)

Material group		Feed rate per cutting edge [mm]																	
		FMD03			FMD03			FME04			FMP03			FMP03			FMP03		
		LNKT20			LNKT25			LNKT15			LNKT12			LNKT15			LNKT20		
		Application																	
		F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R
<b>P</b>	Unalloyed steel			0,50			0,50			0,45			0,45			0,45			0,50
	Low-alloyed steel			0,47			0,47			0,42			0,42			0,42			0,47
	High-alloyed steel and high-alloyed tool steel			0,44			0,44			0,40			0,40			0,40			0,44
<b>M</b>	Stainless steel			0,45			0,45			0,40			0,40			0,40			0,45
<b>K</b>	Grey cast iron			0,55			0,55			0,50			0,50			0,50			0,55
	Cast iron with spheroidal graphite			0,50			0,50			0,45			0,45			0,45			0,50
	Malleable cast iron			0,50			0,50			0,45			0,45			0,45			0,50
<b>N</b>	Aluminium wrought alloys																		
	Aluminum cast alloys																		
	Copper and copper alloys (bronze/brass)																		
<b>S</b>	Heat-resistant alloys																		
	Titanium alloys																		
<b>H</b>	Hardened steel																		
	Hard cast iron																		
	Hardened cast iron																		
<b>X</b>	Non-metallic materials																		

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

		Feed rate per cutting edge [mm]
	SMP05	
	QC22	
		Tool diameter [mm]
	44	
	0,08	
	0,08	
	0,07	
	0,07	
	0,08	
	0,07	
	0,07	

							Feed rate per cutting edge [mm]
	FMP03			HMP01			
	LNKT25			SPMT-APKT			
							Application
	F	M	R	F	M	R	
			0,55		0,25		
			0,51		0,23		
			0,48		0,22		
			0,47		0,15		
			0,61		0,28		
			0,55		0,25		
			0,55		0,25		

F Finishing  
M Medium machining  
R Roughing

**A**  
Turning  
**B**  
Milling  
**C**  
Drilling  
**D**  
Technical Information  
**E**  
Index



## Recommended feed rate

### Indexable milling – group7 (XMR01, XMP01, QCH)

Material group	Feed rate per cutting edge [mm]									
	XMR01 face milling			XMR01 plunge milling			XMR01 circular milling			
	SDMT/WPGT			SDMT/WPGT			SDMT/WPGT			
	Tool diameter [mm]									
	20-25	30-50	63-160	20-25	30-50	63-160	20-25	30-50	63-160	
<b>P</b>	Unalloyed steel	1,00	1,20	2,00	0,20	0,25	0,30	0,80	0,96	1,40
	Low-alloyed steel	0,93	1,12	1,86	0,19	0,23	0,28	0,74	0,89	1,30
	High-alloyed steel and high-alloyed tool steel	0,70	0,84	1,40	0,18	0,22	0,26	0,70	0,84	1,23
<b>M</b>	Stainless steel	0,50	0,60	1,00	0,14	0,18	0,21	0,56	0,67	0,98
<b>K</b>	Grey cast iron	0,90	1,08	1,80	0,22	0,28	0,33	0,88	1,06	1,54
	Cast iron with spheroidal graphite	0,90	1,08	1,80	0,20	0,25	0,30	0,80	0,96	1,40
	Malleable cast iron	1,00	1,20	2,00	0,20	0,25	0,30	0,80	0,96	1,40
<b>N</b>	Aluminium wrought alloys									
	Aluminum cast alloys									
	Copper and copper alloys (bronze/brass)									
<b>S</b>	Heat-resistant alloys									
	Titanium alloys									
<b>H</b>	Hardened steel									
	Hard cast iron									
	Hardened cast iron									
<b>X</b>	Non-metallic materials									

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

Feed rate per cutting edge [mm]								
	XMP01	QCH	QCH	QCH	QCH	QCH	QCH	
	CNE	ZOHX	RD*	APKT	WPGT	SDMT	XPHT	
Tool diameter [mm]								
	80-400	16-32	15-32	16-40	20-42	20-40	16-32	
	0,20	0,20	0,20	0,15	1,00	1,00	0,20	
	0,20	0,19	0,19	0,14	0,93	0,93	0,19	
	0,20	0,18	0,18	0,13	0,70	0,70	0,18	
	0,20	0,14	0,14	0,11	0,50	0,50	0,14	
	0,20	0,22	0,22	0,17	0,90	0,90	0,22	
	0,20	0,20	0,20	0,15	0,90	0,90	0,20	
	0,20	0,20	0,20	0,15	1,00	1,00	0,20	
				0,13				
				0,13				
				0,11				

- A
- Turning
- B
- Milling
- C
- Drilling
- D
- Technical Information
- E
- Index



# ARBIDE MILLING

## SOLID CARBIDE MILLING



## Solid carbide milling

Product overview	B266-B275
Grade overview	B276-B277
System code – DIN-ISO series	B278
System code – JIS series	B279
System code – QCH series	B280-B282
GM series	B283-B338
PM series	B339-B360
PM Micro series	B361-B370
EPM series	B371-B386
VPM series	B387-B388
HM series	B389-B410
NM series	B411-B416
AL series	B417-B428
ALG/ALP series	B429-B438
TM series	B439-B454
HPC series	B455-B460
UM series	B461-B470
UMC series	B471-B472
VSM series	B473-B476
Deburring cutters – FM series	B477-B480
QCH series	B481-B491
Recommended cutting data	B492-B526
Technical information	B537-B540
Special tools	B541

# B

A

Turning

B

Milling

C

Drilling








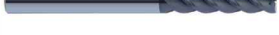













D

Technical  
Information

E

Index

## High performance milling

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
PM-2E		2	1.0-20.0	✓	✓	✓			✓	End mills	B339
PM-2EL		2	3.0-20.0	✓	✓	✓			✓	End mills	B340
PM-4E-G		4	1.0-20.0	✓	✓	✓			✓	End mills	B341
PM-4EL-G		4	3.0-20.0	✓	✓	✓			✓	End mills	B342
PM-4EX-G		4	3.0-20.0	✓	✓	✓			✓	End mills	B343
PM-4E		4	1.0-20.0	✓	✓	✓			✓	End mills	B344
PM-4EL		4	3.0-20.0	✓	✓	✓			✓	End mills	B345
PM-6E		6	6.0-20.0	✓	✓	✓			✓	End mills	B346
PM-6EL		6	6.0-20.0	✓	✓	✓			✓	End mills	B347
PM-2B		2	1.0-20.0	✓	✓	✓			✓	Ball nose cutters	B348
PM-2BL		2	2.0-20.0	✓	✓	✓			✓	Ball nose cutters	B349
PM-2BFP		2	1.0-20.0	✓	✓	✓			✓	Ball nose cutters	B350
PM-2BC		2	0.5-4.0	✓	✓	✓			✓	Ball nose cutter with conical neck	B351
PM-4B		4	3.0-20.0	✓	✓	✓			✓	Ball nose cutters	B354
PM-4BL		4	3.0-20.0	✓	✓	✓			✓	Ball nose cutters	B355
PM-2R		2	1.0-12.0	✓	✓	✓			✓	Torus mills	B356
PM-4H		4	3.0-12.0	✓	✓	✓			✓	High-feed mills	B357
PM-4HL		4	4.0-12.0	✓	✓	✓			✓	High-feed mills	B358
PM-4R		4	3.0-12.0	✓	✓	✓			✓	Torus mills	B359
PM-4RL		4	6.0-16.0	✓	✓	✓			✓	Torus mills	B360
PM-2EP		2	0.5-5.0	✓	✓	✓			✓	End mills	B362

✓ Very suitable    ✓ Suitable

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

## High performance milling

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
PM-2ES		2	0.3-3.0	✓	✓	✓			✓	End mills	B361
PM-2BS		2	0.3-3.0	✓	✓	✓			✓	Ball nose cutters	B364
PM-2BP		2	0.5-5.0	✓	✓	✓			✓	Ball nose cutters	B365
PM-2RP		2	0.5-5.0	✓	✓	✓			✓	Torus mills	B367
EPM-2E		2	3.0-20.0	✓	✓	✓			✓	End mills	B371
EPM-2E-W		2	3.0-20.0	✓	✓	✓			✓	End mills	B372
EPM-2EL		2	3.0-20.0	✓	✓	✓			✓	End mills	B373
EPM-2EL-W		2	3.0-20.0	✓	✓	✓			✓	End mills	B374
EPM-4E		4	3.0-20.0	✓	✓	✓			✓	End mills	B375
EPM-4E-W		4	3.0-20.0	✓	✓	✓			✓	End mills	B376
EPM-4EL		4	3.0-20.0	✓	✓	✓			✓	End mills	B377
EPM-4EL-W		4	3.0-20.0	✓	✓	✓			✓	End mills	B378
EPM-2B		2	3.0-20.0	✓	✓	✓			✓	Ball nose cutters	B379
EPM-2B-W		2	3.0-20.0	✓	✓	✓			✓	Ball nose cutters	B380
EPM-2BL		2	3.0-20.0	✓	✓	✓			✓	Ball nose cutters	B381
EPM-2BL-W		2	3.0-20.0	✓	✓	✓			✓	Ball nose cutters	B382
EPM-4B		4	3.0-20.0	✓	✓	✓			✓	Ball nose cutters	B383
EPM-4B-W		4	3.0-20.0	✓	✓	✓			✓	Ball nose cutters	B384
EPM-4BL		4	3.0-20.0	✓	✓	✓			✓	Ball nose cutters	B385
EPM-4BL-W		4	3.0-20.0	✓	✓	✓			✓	Ball nose cutters	B386
VPM-4E		4	3.0-20.0	✓	✓	✓			✓	End mills	B387

✓ Very suitable    ✓ Suitable

A

Turning

B

Milling

C

Drilling





D

Technical  
Information

E

Index

## High performance milling

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
TM-4B		2	6.0-20.0		✓			✓		Ball nose cutters	B439
TM-4BL		2	6.0-20.0		✓			✓		Ball nose cutters	B440
TM-4BP		2	6.0-20.0		✓			✓		Ball nose cutters	B441
TM-5B		2	6.0-20.0		✓			✓		Ball nose cutters	B442
TM-5BL		2	6.0-20.0		✓			✓		Ball nose cutters	B443
TM-5BP		2	6.0-20.0		✓			✓		Ball nose cutters	B444
TM-4R		2	6.0-25.0		✓			✓		Torus mills	B445
TM-4RP		2	8.0-25.0		✓			✓		Torus mills	B447
TM-5R		2	6.0-10.0		✓			✓		Torus mills	B449
TM-7R		2	12.0-21.0		✓			✓		Torus mills	B450
TM-9R		2	25.0		✓			✓		Torus mills	B451
TM-5RP		2	8.0-10.0		✓			✓		Torus mills	B452
TM-7RP		2	12.0-20.0		✓			✓		Torus mills	B453
TM-9RP		2	25.0		✓			✓		Torus mills	B454

✓ Very suitable    ✓ Suitable

## General machining

5501R302GM		2	3.0-20.0	✓	✓	✓				End mills	B283
5601R302GM		2	3.0-20.0	✓	✓	✓				End mills	B284
5502R302GM		2	1.0-20.0	✓	✓	✓				End mills	B285
5602R302GM		2	2.0-20.0	✓	✓	✓				End mills	B286
GM-2E		2	1.0-20.0	✓	✓	✓				End mills	B287
GM-2EL		2	3.0-20.0	✓	✓	✓				End mills	B288

✓ Very suitable    ✓ Suitable

## General machining

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
GM-2EX		2	3.0-20.0	✓	✓	✓				End mills	B289
GM-2EFP		2	6.0-16.0	✓	✓	✓				End mills	B290
GM-2F		2	1.0-20.0	✓	✓	✓				End mills	B291
GM-2FL		2	3.0-20.0	✓	✓	✓				End mills	B292
GM-2EP		2	0.5-5.0	✓	✓	✓				Mini end mills	B293
GM-2ES		2	0.3-3.0	✓	✓	✓				Mini end mills	B295
GM-3E		3	1.0-20.0	✓	✓	✓				End mills	B296
GM-3EL		3	3.0-20.0	✓	✓	✓				End mills	B297
5501R303GM		3	3.0-20.0	✓	✓	✓				End mills	B298
5601R303GM		3	3.0-20.0	✓	✓	✓				End mills	B299
5502R303GM		3	3.0-20.0	✓	✓	✓				End mills	B300
5602R303GM		3	3.0-20.0	✓	✓	✓				End mills	B301
5502R453GM		3	3.0-20.0	✓	✓	✓				End mills	B302
5602R453GM		3	3.0-20.0	✓	✓	✓				End mills	B303
GM-4F-G		4	1.0-20.0	✓	✓	✓				End mills	B304
GM-4EL-G		4	3.0-20.0	✓	✓	✓				End mills	B305
GM-4FL-G		4	3.0-16.0	✓	✓	✓				End mills	B306
GM-4EX-G		4	3.0-20.0	✓	✓	✓				End mills	B307
GM-4E		4	1.0-20.0	✓	✓	✓				End mills	B308
GM-4E-G		4	1.0-20.0	✓	✓	✓				End mills	B309
GM-4EL		4	3.0-20.0	✓	✓	✓				End mills	B310

✓ Very suitable    ✓ Suitable

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

## General machining

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
GM-4EFP		4	6.0-20.0	✓	✓	✓				End mills	B311
5501R304GF		4	3.0-20.0	✓	✓	✓				End mills	B312
5601R304GF		4	3.0-20.0	✓	✓	✓				End mills	B313
5502R304GF		4	3.0-20.0	✓	✓	✓				End mills	B314
5602R304GF		4	3.0-20.0	✓	✓	✓				End mills	B315
5508R454GM		4	3.0-20.0	✓	✓	✓				End mills	B316
5602R454GM		4	3.0-20.0	✓	✓	✓				End mills	B317
5589R45MGFR		6-10	6.0-12.0	✓	✓	✓				End mills	B318
GM-6E		6	6.0-20.0	✓	✓	✓				End mills	B319
GM-6EL		6	6.0-20.0	✓	✓	✓				End mills	B320
5565R302GF		2	3.0-20.0	✓	✓	✓				Ball nose cutters	B321
5665R202GM		2	3.0-20.0	✓	✓	✓				Ball nose cutters	B322
5566R302GF		2	3.0-12.0	✓	✓	✓				Ball nose cutters	B323
GM-2B		2	1.0-20.0	✓	✓	✓				Ball nose cutters	B324
GM-2BL		2	2.0-20.0	✓	✓	✓				Ball nose cutters	B325
GM-2BFP		2	1.0-20.0	✓	✓	✓				Ball nose cutters	B326
GM-2BS		2	0.3-3.0	✓	✓	✓				Mini ball nose cutters	B327
GM-2BP		2	0.5-5.0	✓	✓	✓				Mini ball nose cutters	B328
GM-4B		4	3.0-20.0	✓	✓	✓				Ball nose cutters	B330
GM-4BL		4	3.0-20.0	✓	✓	✓				Ball nose cutters	B331
GM-2R		2	1.0-12.0	✓	✓	✓				Torus mills	B332

✓ Very suitable    ✓ Suitable

A

Turning

B

Milling

C

Drilling







D

Technical Information

E



Index

## General machining

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
GM-4R		4	3.0-12.0	✓	✓	✓				Torus mills	B333
GM-4RL		4	6.0-16.0	✓	✓	✓				Torus mills	B334
5602R303GR		3	6.0-8.0	✓	✓	✓				Rippers	B335
5602R304GR		4	10.0-20.0	✓	✓	✓				Rippers	B336
5602R305GR		5	25.0	✓	✓	✓				Rippers	B337
GM-4W		4	6.0-20.0	✓	✓	✓				Rippers	B338

✓ Very suitable    ✓ Suitable

## Machining high hardness steel

HM-2E		2	1.0-20.0						✓	End mills	B389
HM-2EFP		2	6.0-20.0						✓	End mills	B390
HM-2EP		2	0.5-5.0						✓	Mini end mills	B391
HM-2ES		2	0.3-3.0						✓	Mini end mills	B393
HM-4E		4	1.0-20.0						✓	End mills	B394
HM-4EL		4	3.0-20.0						✓	End mills	B395
HM-4EFP		4	6.0-20.0						✓	End mills	B396
5502R55MHH		4-8	3.0-20.0						✓	End mills	B397
HM-6E		6	6.0-20.0						✓	End mills	B398
HM-6EL		6	6.0-20.0						✓	End mills	B399
HM-2B		2	1.0-20.0						✓	Ball nose cutters	B400
HM-2BL		2	2.0-20.0						✓	Ball nose cutters	B401
HM-2BFP		2	1.0-20.0						✓	Ball nose cutters	B402
HM-2BS		2	0.3-3.0						✓	Mini ball nose cutters	B403

✓ Very suitable    ✓ Suitable

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

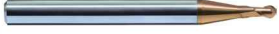





Index



**A**

Turning

## Machining high hardness steel

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
HM-2BP		2	0.5-5.0						✓	Mini ball nose cutters	B404
HM-4B		4	3.0-20.0						✓	Ball nose cutters	B406
HM-4BL		4	3.0-20.0						✓	Ball nose cutters	B407
HM-4R		4	3.0-12.0						✓	Torus mills	B408
HM-4RF		4	6.0-12.0						✓	Torus mills	B409
HM-4RP		4	6.0-16.0						✓	Torus mills	B410

✓ Very suitable    ✓ Suitable

**B**

Milling

## Copper and copper alloys

5502R402NM		2	3.0-20.0				✓			End mills	B411
NM-2E		2	1.0-12.0				✓			End mills	B412
NM-2EP		2	0.5-5.0				✓			Mini end mills	B413
NM-4E		4	3.0-12.0				✓			End mills	B414
NM-2B		2	1.0-12.0				✓			Ball nose cutters	B415
NM-2BP		2	0.5-5.0				✓			Mini ball nose cutters	B416

✓ Very suitable    ✓ Suitable

**C**

Drilling

## Aluminium and aluminium alloys

AL-2E		2	1.0-20.0				✓			End mills	B417
AL-2EL		2	3.0-20.0				✓			End mills	B418
AL-3E		3	1.0-20.0				✓			End mills	B419
AL-3EL		3	3.0-20.0				✓			End mills	B420
AL-3W		3	6.0-20.0				✓			Rippers	B421
5565R302NH		2	3.0-16.0				✓			Ball nose cutters	B422
5566R302NH		2	3.0-16.0				✓			Ball nose cutters	B423

✓ Very suitable    ✓ Suitable















**D**

Technical Information

**E**

Index

## Aluminium and aluminium alloys

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
AL-2B		2	2.0-12.0				✓			Ball nose cutters	B424
AL-2R-AIR		2	6.0-20.0				✓			High performance torus mills	B425
AL-2RL-AIR		2	6.0-20.0				✓			High performance torus mills	B426
AL-3R-AIR		3	12.0-20.0				✓			High performance torus mills	B427
AL-3RL-AIR		3	12.0-20.0				✓			High performance torus mills	B428
ALG-2E		2	1.0-20.0				✓			End mills	B429
ALG-3E		3	1.0-20.0				✓			End mills	B430
ALG-3E-W		3	3.0-20.0				✓			End mills	B431
ALP-3E		3	1.0-20.0				✓			End mills	B432
ALP-3E-W		3	3.0-20.0				✓			End mills	B433
ALP-4E		4	3.0-20.0				✓			End mills	B434
ALP-4E-W		4	3.0-20.0				✓			End mills	B435
ALG-2R		2	6.0-25.0				✓			Torus mills	B436
ALG-2R-W		2	6.0-25.0				✓			Torus mills	B437

✓ Very suitable    ✓ Suitable

## HPC with unequal helix angle

5501R38414GM		4	4.0-20.0	✓	✓	✓			✓	End mills	B455
5502R38414GM		4	4.0-20.0	✓	✓	✓			✓	End mills	B456
5601R38414GM		4	4.0-20.0	✓	✓	✓			✓	End mills	B457
5602R38414GM		4	4.0-20.0	✓	✓	✓			✓	End mills	B458
5502R38414GM-R		4	4.0-20.0	✓	✓	✓			✓	Torus mills	B459
5602R38414GM-R		4	4.0-20.0	✓	✓	✓			✓	Torus mills	B460

✓ Very suitable    ✓ Suitable

A

Turning

B

Milling

C

Drilling




D

Technical Information

E





Index

## HPC with unequal helix angle

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
UM-4E		4	4.0-20.0	✓	✓	✓			✓	End mills	B461
UM-4E-W		4	4.0-20.0	✓	✓	✓			✓	End mills	B462
UM-4EL		4	4.0-20.0	✓	✓	✓			✓	End mills	B463
UM-4EL-W		4	4.0-20.0	✓	✓	✓			✓	End mills	B464
UM-4ELP-W		4	4.0-20.0	✓	✓	✓			✓	End mills	B465
UM-4EFP		4	6.0-20.0	✓	✓	✓			✓	End mills	B466
UM-4R		4	4.0-20.0	✓	✓	✓			✓	Torus mills	B467
UM-4RL		4	6.0-16.0	✓	✓	✓			✓	Torus mills	B468
UM-4RFP		4	6.0-16.0	✓	✓	✓			✓	Torus mills	B469
UM-5EP-W		5	6.0-25.0	✓	✓	✓			✓	End mills	B470
UMC-4E		4	6.0-20.0	✓	✓	✓			✓	End mills	B471
UMC-4E-W		4	6.0-20.0	✓	✓	✓			✓	End mills	B472
VSM-4E		4	4.0-20.0	✓	✓			✓		End mills	B473
VSM-4E-C		4	10.0-20.0	✓	✓			✓		End mills	B474
VSM-4R		4	4.0-20.0	✓	✓			✓		Torus mills	B475

✓ Very suitable    ✓ Suitable

## Deburring cutter

5501/5601		3-4	0.2-0.7	✓	✓	✓	✓			Deburring cutters	B477
5501/5601		3-4	0.2-0.7	✓	✓	✓	✓			Deburring cutters	B478
5501/5601		3-4	0.2-0.7	✓	✓	✓	✓			Deburring cutters	B479
5601		4	5.2-10.0	✓	✓	✓	✓			Deburring cutters	B480

✓ Very suitable    ✓ Suitable

A  
Turning








B  
Milling

C  
Drilling

D  
Technical Information

E  
Index

**QCH series**

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
PM-2B		2	12.0-32.0	✓	✓	✓			✓	Ball nose cutters	B481
PM-4B		4	12.0-32.0	✓	✓	✓			✓	Ball nose cutters	B482
PM-4E		4	12.0-32.0	✓	✓	✓			✓	End mills	B483
PM-4R		4	12.0-32.0	✓	✓	✓			✓	Torus mills	B484
HMX-2B		2	12.0-32.0						✓	Ball nose cutters	B486
HMX-4B		4	12.0-32.0						✓	Ball nose cutters	B487
HMX-4E		4	12.0-32.0						✓	End mills	B488
HMX-4R		4	12.0-32.0						✓	Torus mills	B489
VPM-4E		4	12.0-25.0	✓	✓	✓			✓	End mills	B485

✓ Very suitable    ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

A

Turning

## Coated cemented carbide PVD

Grade	Grade description
-------	-------------------

**KMD401** PVD coated carbide substrate for high performance milling application of non-ferrous metals, CFRP and GFRP and organic materials. The DLC layer has very good wear protection and high thermal stability.

B

Milling

**KMG303** PVD coated carbide substrate for universal milling application of steel (up to HRC<=48), stainless steel and cast iron.

**KMG405** PVD coated carbide substrate for high performance milling application of steel (up to HRC <55), stainless steel, super alloy material and cast iron. High wear resistance and toughness for a wide application field.

C

Drilling

**KMG406** PVD coated carbide substrate for entry into high performance machining. Universal range of application for steel and cast materials up to 55 HRC as well as stainless steel.

**KMG555** PVD coated carbide substrate for hard milling application of steel (HRC 55–68), highest wear resistance and toughness for best cutting result.

D

Technical Information

**KMG309** PVD coated carbide substrate for non ferrous materials. High wear resistance even in abrasive materials.

## Uncoated cemented carbide

Grade	Grade description
-------	-------------------

**YK30F** Uncoated K30 carbide substrate for steel, stainless steel, cast iron and non ferrous materials.

E

Index

**Uncoated cemented carbide**

Grade	Grade description
<b>YK40F</b>	Uncoated K20–K30/N20–N30 carbide substrate for cast iron and non ferrous materials.

**A**

Turning

**B**

Milling

**C**

Drilling

**D**Technical  
Information**E**

Index

**5 5 0 1 R 30 2 GM R05 0800**

**1 2 3 4 5 6 7 8 9 10**

**A**

Turning

Type	
Code	Description
5	Milling cutter

Shank type	
Code	Description
1	Shank
5	DIN 6535 HA
6	Weldon shank DIN 6535 HB
7	Whistle Notch DIN 6535 HE
9	Morse taper shank

**B**

Milling

**1**

**2**

Cutting edge type	
Code	Description
0	Square shoulder mill
6	Ball nose cutter
8	Torus mill

Tool length	
Code	Description
1	DIN 6527 K
2	DIN 6527 L
5	Factory standard ZCC-A
6	Factory standard ZCC-B
8	DIN 6528
9	Factory standard ZCC-D

**C**

Drilling

**3**

**4**

Rotation direction	
Code	Description
R	Right
L	Left

Helix angle	
Code	Description
20	20°
30	30°
3841	38°/41°
45	45°
55	55°
60	60°

Number of teeth	
Code	Description
2	2
...	
M	Indicated when different diameters have a different number of teeth

**D**

**5**

**6**

**7**

Technical Information

Application	
Code	Description
GM	Semi-finishing
GF	Finishing
HM	Hard machining
MHH	High-speed hard machining
NH	High-performance machining of heat-resistant alloys

Radius [mm]	
Code	Description
R03	0,3
R15	1,5
R30	3,0
...	

Diameter [mm]	
Code	Description
0100	1,0
0800	8,0
2000	20,0
...	

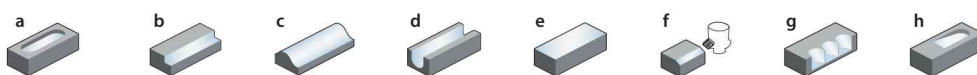
**8**

**9**

**10**

**E**

Index



a Groove milling  
g Plunge milling  
b Square shoulder milling  
h Circular milling/Ramping  
c Profile milling  
d Slot milling  
e Face milling  
f Chamfer milling

# GM – 2 E L P – D12 R0.5 – M08

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

Application	
Code	Description
GR	General roughing
GM	Semi-finishing
GF	Finishing
PM	High-performance machining
EPM	«Ecoline» – High-performance machining
VPM	Full-slot applications
HM	Hard machining
NM	General machining of non-ferrous metals
AL	General machining of Al and Al alloys
ALP	High-performance machining of Al and Al alloys
ALG	General machining of Al and Al alloys
UM	HSC/HPC machining
UMC	HSC machining with chip splitter geometry
VSM	General machining of heat-resistant alloys
TM	General machining of heat-resistant alloys

Number of teeth  
**2**

Cutting edge type	
Code	Description
E	Square shoulder mill with protective chamfer
F	Square shoulder mill with sharp cutting edges
B	Ball nose cutter
R	Torus mill
W	Ripper
H	High-feed mill

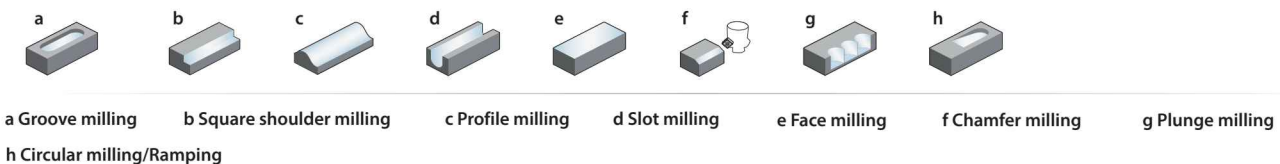
Cutting edge length	
Code	Description
L	Long
X	Extra long
F	Short

Type	
Code	Description
S	Mini diameter
P	Ground neck
C	Conical neck

Diameter [mm]	
Code	Description
D3.0	3,0
D20.0	20,0
...	

Radius [mm]	
Code	Description
R0.5	0,5
R3.0	3,0
...	

Features	
Code	Description
G	Spiral angle 30°
M	Neck length [mm]
S	Thin shank
AIR	For aerospace industry





## Q 08 – PM – 2 B – D12 R0.5

1

2

3

4

5

6

7

Thread type

### Thread diameter [mm]

Code	Description
08	8,0
10	10,0
12	12,0
14	14,0
18	18,0

### Application

Code	Description
PM	High-performance machining
HMX	Hard machining

1

2

3

Number of teeth

### Cutting edge type

Code	Description
E	Square shoulder mill with protective chamfer
B	Ball nose cutter
R	Torus mill

### Diameter [mm]

Code	Description
D3.0	3,0
D8.0	8,0
D20.0	20,0

4

5

6

### Radius [mm]

Code	Description
R0.5	0,5
R1.0	1,5
R3.0	3,0
...	

7



a Groove milling

b Square shoulder milling

c Profile milling

d Slot milling

e Face milling

f Chamfer milling

g Plunge milling

h Circular milling/Ramping

# G 25 – QCH – Q 12 – 250 C – (ZJ) (115)

1

2

3

4

5

6

7

8

9

Clamping form	
Code	Description
<b>G</b>	Cylindrical
<b>XP</b>	Weldon

1

Clamping diameter [mm]	
Code	Description
<b>12</b>	12
<b>16</b>	16
<b>20</b>	20
<b>25</b>	25
<b>32</b>	32

2

Series [mm]	
Code	Description
<b>QCH</b>	Indexable head system

3

Thread type	
Code	Description
<b>M</b>	Metric
<b>Q</b>	Q thread

4

Thread size [mm]	
Code	Description
<b>8</b>	8
<b>10</b>	10
<b>12</b>	12
<b>14</b>	14
...	

5

Total length [mm]	
Code	Description
<b>85</b>	85
<b>150</b>	150
<b>200</b>	200
...	

6

Material	
Code	Description
<b>C</b>	Solid carbide
<b>S</b>	Steel

7

Shank	
Code	Description
<b>ZJ</b>	Conical
–	Cylindrically stepped

8

Taper length [mm]	
Code	Description
<b>90</b>	90
<b>115</b>	115
...	

9

A

Turning

B

Milling

C

Drilling

D

Technical  
Information

E

Index

## Notes

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical  
Information

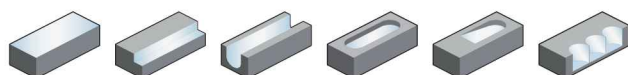
**E**

Index

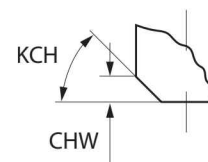
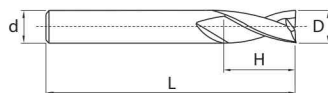
Notes section containing horizontal dotted lines for writing.

**End mill** **Semi-finishing**

**5501R302GM**



- Type of shank DIN 6535HA
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5501R302GM-0300		3	6	4	50	0	0	2	●	○
5501R302GM-0400		4	6	5	54	0	0	2	●	○
5501R302GM-0500		5	6	6	54	0	0	2	●	○
5501R302GM-0600		6	6	7	54	45	0.1	2	●	○
5501R302GM-0800		8	8	9	58	45	0.1	2	●	○
5501R302GM-1000		10	10	11	66	45	0.1	2	●	○
5501R302GM-1200		12	12	12	73	45	0.1	2	●	○
5501R302GM-1400		14	14	14	75	45	0.15	2	●	○
5501R302GM-1600		16	16	16	82	45	0.15	2	●	○
5501R302GM-1800		18	18	18	84	45	0.15	2	●	○
5501R302GM-2000		20	20	20	92	45	0.15	2	●	○

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

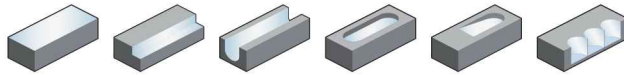
Nonstandard order > B541



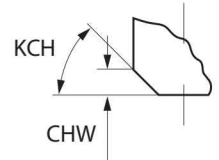
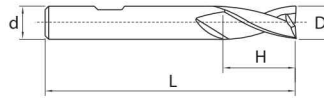
**A**

## End mill Semi-finishing

### 5601R302GM



- Type of shank: DIN 6535HB
- Centre cutting
- Helix angle 30°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	H	L	KCH	CHW		KMG303
5601R302GM-0300		3	6	4	50	0	0	2	●
5601R302GM-0400		4	6	5	54	0	0	2	●
5601R302GM-0500		5	6	6	54	0	0	2	●
5601R302GM-0600		6	6	7	54	45	0.1	2	●
5601R302GM-0800		8	8	9	58	45	0.1	2	●
5601R302GM-1000		10	10	11	66	45	0.1	2	●
5601R302GM-1200		12	12	12	73	45	0.1	2	●
5601R302GM-1400		14	14	14	75	45	0.15	2	●
5601R302GM-1600		16	16	16	82	45	0.15	2	●
5601R302GM-1800		18	18	18	84	45	0.15	2	●
5601R302GM-2000		20	20	20	92	45	0.15	2	●

● Ex stock   ○ On demand

\* With internal cooling

Milling

**C**

### Application field

P	M	K	N	S	H
✓	✓	✓			

- ✓ Very suitable
- ✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

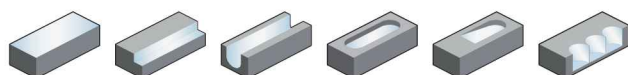
System code > B278

Cutting data > B492

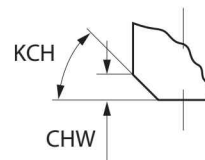
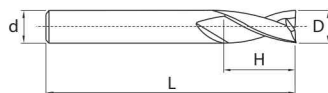
Nonstandard order > B541

**End mill long cutting edge**      **Semi-finishing**

**5502R302GM**



- Type of shank DIN 6535HA
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5502R302GM-0100		1	3	2	38	0	0	2	●	○
5502R302GM-0150		1.5	3	3	38	0	0	2	●	○
5502R302GM-0200		2	6	6	57	0	0	2	●	○
5502R302GM-0250		2.5	6	7	57	0	0	2	●	○
5502R302GM-0280		2.8	6	7	57	0	0	2	●	○
5502R302GM-0300		3	6	7	57	0	0	2	●	○
5502R302GM-0350		3.5	6	7	57	0	0	2	●	○
5502R302GM-0380		3.8	6	8	57	0	0	2	●	○
5502R302GM-0400		4	6	8	57	0	0	2	●	○
5502R302GM-0450		4.5	6	8	57	0	0	2	●	○
5502R302GM-0480		4.8	6	8	57	0	0	2	●	○
5502R302GM-0500		5	6	10	57	0	0	2	●	○
5502R302GM-0550		5.5	6	10	57	0	0	2	●	○
5502R302GM-0575		5.75	6	10	57	0	0	2	●	○
5502R302GM-0600		6	6	10	57	45	0.1	2	●	○
5502R302GM-0675		6.75	8	13	63	45	0.1	2	○	○
5502R302GM-0700		7	8	13	63	45	0.1	2	●	○
5502R302GM-0750		7.5	8	16	63	45	0.1	2	●	○
5502R302GM-0775		7.75	8	16	63	45	0.1	2	●	○
5502R302GM-0800		8	8	16	63	45	0.1	2	●	○
5502R302GM-0870		8.7	10	16	72	45	0.1	2	●	○
5502R302GM-0900		9	10	16	72	45	0.1	2	●	○
5502R302GM-0950		9.5	10	16	72	45	0.1	2	○	○
5502R302GM-1000		10	10	19	72	45	0.1	2	●	○
5502R302GM-1100		11	12	22	83	45	0.1	2	●	○
5502R302GM-1170		11.7	12	22	83	45	0.1	2	●	○
5502R302GM-1200		12	12	22	83	45	0.1	2	●	○
5502R302GM-1370		13.7	14	22	83	45	0.1	2	●	○
5502R302GM-1400		14	14	22	83	45	0.15	2	●	○
5502R302GM-1500		15	16	26	92	45	0.15	2	●	○
5502R302GM-1570		15.7	16	26	92	45	0.15	2	●	○
5502R302GM-1600		16	16	26	92	45	0.15	2	●	○
5502R302GM-1700		17	18	26	92	45	0.15	2	○	○
5502R302GM-1800		18	18	26	92	45	0.15	2	●	○
5502R302GM-2000		20	20	32	104	45	0.15	2	●	○

● Ex stock    ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

- ✓ Very suitable
- ✓ Suitable

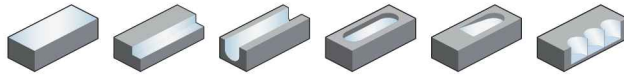
System code > B278      Cutting data > B492      Nonstandard order > B541



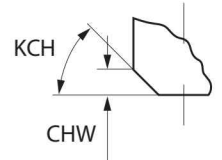
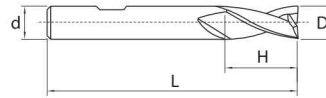
**A**

## End mill long cutting edge Semi-finishing

### 5602R302GM



- Type of shank: DIN 6535HB
- Centre cutting
- Helix angle 30°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade KMG303
		D	d (h6)	H	L	KCH	CHW		
5602R302GM-0200		2	6	6	57	0	0	2	●
5602R302GM-0250		2.5	6	7	57	0	0	2	●
5602R302GM-0280		2.8	6	7	57	0	0	2	●
5602R302GM-0300		3	6	7	57	0	0	2	●
5602R302GM-0350		3.5	6	7	57	0	0	2	●
5602R302GM-0380		3.8	6	8	57	0	0	2	●
5602R302GM-0400		4	6	8	57	0	0	2	●
5602R302GM-0450		4.5	6	8	57	0	0	2	●
5602R302GM-0480		4.8	6	8	57	0	0	2	●
5602R302GM-0500		5	6	10	57	0	0	2	●
5602R302GM-0550		5.5	6	10	57	0	0	2	●
5602R302GM-0575		5.75	6	10	57	0	0	2	●
5602R302GM-0600		6	6	10	57	45	0.1	2	●
5602R302GM-0675		6.75	8	13	63	45	0.1	2	○
5602R302GM-0700		7	8	13	63	45	0.1	2	●
5602R302GM-0750		7.5	8	16	63	45	0.1	2	●
5602R302GM-0775		7.75	8	16	63	45	0.1	2	○
5602R302GM-0800		8	8	16	63	45	0.1	2	●
5602R302GM-0870		8.7	10	16	72	45	0.1	2	●
5602R302GM-0900		9	10	16	72	45	0.1	2	●
5602R302GM-1000		10	10	19	72	45	0.1	2	●
5602R302GM-1170		11.7	12	22	83	45	0.1	2	●
5602R302GM-1200		12	12	22	83	45	0.1	2	●
5602R302GM-1370		13.7	14	22	83	45	0.1	2	●
5602R302GM-1400		14	14	22	83	45	0.15	2	●
5602R302GM-1570		15.7	16	26	92	45	0.15	2	●
5602R302GM-1600		16	16	26	92	45	0.15	2	●
5602R302GM-1800		18	18	26	92	45	0.15	2	●
5602R302GM-2000		20	20	32	104	45	0.15	2	●

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

#### Application field

P	M	K	N	S	H
✓	✓	✓			

- ✓ Very suitable
- ✓ Suitable

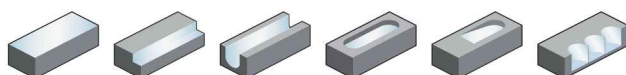
System code > B278

Cutting data > B492

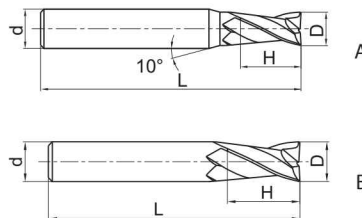
Nonstandard order > B541

**End mill** **Semi-finishing**

**GM-2E**



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-2E-D1.0S		1	4	3	50	2	A	●
GM-2E-D1.5S		1.5	4	4	50	2	A	●
GM-2E-D2.0S		2	4	6	50	2	A	●
GM-2E-D2.5S		2.5	4	8	50	2	A	●
GM-2E-D3.0S		3	4	8	50	2	A	●
GM-2E-D4.0S		4	4	11	50	2	B	●
GM-2E-D1.0		1	6	3	50	2	A	●
GM-2E-D1.5		1.5	6	4	50	2	A	●
GM-2E-D2.0		2	6	6	50	2	A	●
GM-2E-D2.5		2.5	6	8	50	2	A	●
GM-2E-D3.0		3	6	8	50	2	A	●
GM-2E-D3.5		3.5	6	10	50	2	A	●
GM-2E-D4.0		4	6	11	50	2	A	●
GM-2E-D4.5		4.5	6	11	50	2	A	●
GM-2E-D5.0		5	6	13	50	2	A	●
GM-2E-D5.5		5.5	6	16	50	2	A	●
GM-2E-D6.0		6	6	16	50	2	B	●
GM-2E-D7.0		7	8	20	60	2	A	●
GM-2E-D8.0		8	8	20	60	2	B	●
GM-2E-D9.0		9	10	22	75	2	A	●
GM-2E-D10.0		10	10	25	75	2	B	●
GM-2E-D11.0		11	12	26	75	2	A	●
GM-2E-D12.0		12	12	30	75	2	B	●
GM-2E-D14.0		14	14	32	75	2	B	●
GM-2E-D16.0		16	16	45	100	2	B	●
GM-2E-D18.0		18	18	45	100	2	B	●
GM-2E-D20.0		20	20	45	100	2	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541

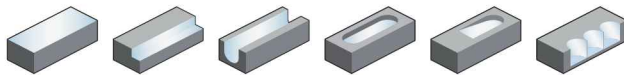




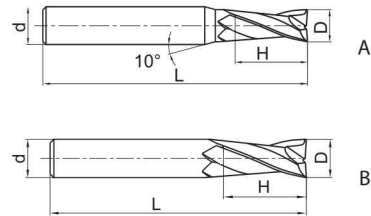
**A**

## End mill long cutting edge Semi-finishing

**GM-2EL**



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Milling

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-2EL-D3.0	*	3	6	12	75	2	A	●
GM-2EL-D4.0		4	6	15	75	2	A	●
GM-2EL-D5.0		5	6	20	75	2	A	●
GM-2EL-D6.0		6	6	20	75	2	B	●
GM-2EL-D8.0		8	8	25	100	2	B	●
GM-2EL-D10.0		10	10	30	100	2	B	●
GM-2EL-D12.0		12	12	35	100	2	B	●
GM-2EL-D14.0		14	14	40	100	2	B	●
GM-2EL-D16.0		16	16	50	150	2	B	●
GM-2EL-D20.0		20	20	55	150	2	B	●

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

### Application field

P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

**D**

Technical Information

**E**

Index

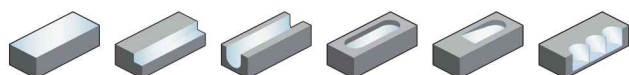
System code > B278

Cutting data > B492

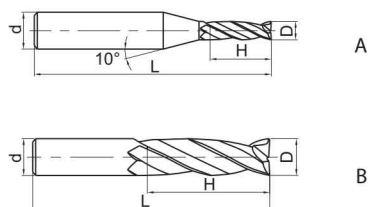
Nonstandard order > B541

End mill extra long cutting edge **Semi-finishing**

**GM-2EX**



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-2EX-D3.0		3	6	20	75	2	A	●
GM-2EX-D4.0		4	6	25	75	2	A	●
GM-2EX-D5.0		5	6	30	75	2	A	●
GM-2EX-D6.0		6	6	30	75	2	B	○
GM-2EX-D8.0		8	8	40	100	2	B	○
GM-2EX-D10.0		10	10	50	110	2	B	○
GM-2EX-D12.0		12	12	50	110	2	B	○
GM-2EX-D16.0		16	16	70	150	2	B	○
GM-2EX-D20.0		20	20	75	150	2	B	○

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

- ✓ Very suitable
- ✓ Suitable

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

System code > B278

Cutting data > B492

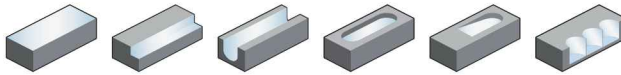
Nonstandard order > B541



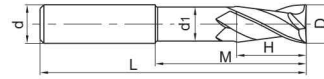
**A**

## End mill short cutting edge Semi-finishing

**GM-2EFP**



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d <sub>1</sub>	H	M	L		KMG303
GM-2EFP-D6.0		6	6	5.8	9	30	75	2	○
GM-2EFP-D8.0		8	8	7.8	12	40	100	2	○
GM-2EFP-D10.0		10	10	9.6	15	50	100	2	○
GM-2EFP-D12.0		12	12	11.5	18	50	100	2	○
GM-2EFP-D16.0		16	16	15.5	24	50	150	2	○

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

### Application field

P	M	K	N	S	H
✓	✓	✓			

- ✓ Very suitable
- ✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

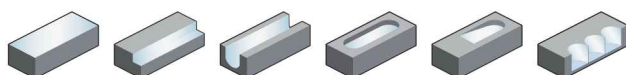
System code > B278

Cutting data > B492

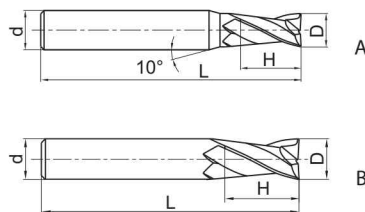
Nonstandard order > B541

End mill **Semi-finishing**

GM-2F



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-2F-D1.0		1	6	3	50	2	A	○
GM-2F-D1.5		1.5	6	4	50	2	A	○
GM-2F-D2.0		2	6	6	50	2	A	○
GM-2F-D2.5		2.5	6	8	50	2	A	○
GM-2F-D3.0		3	6	8	50	2	A	●
GM-2F-D3.5		3.5	6	10	50	2	A	○
GM-2F-D4.0		4	6	11	50	2	A	●
GM-2F-D4.5		4.5	6	11	50	2	A	●
GM-2F-D5.0		5	6	13	50	2	A	●
GM-2F-D5.5		5.5	6	16	50	2	A	○
GM-2F-D6.0		6	6	16	50	2	B	●
GM-2F-D7.0		7	8	20	60	2	A	●
GM-2F-D8.0		8	8	20	60	2	B	●
GM-2F-D9.0		9	10	22	75	2	A	○
GM-2F-D10.0		10	10	25	75	2	B	○
GM-2F-D11.0		11	12	26	75	2	A	○
GM-2F-D12.0		12	12	30	75	2	B	●
GM-2F-D14.0		14	14	32	75	2	B	○
GM-2F-D16.0		16	16	45	100	2	B	○
GM-2F-D18.0		18	18	45	100	2	B	○
GM-2F-D20.0		20	20	45	100	2	B	○

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

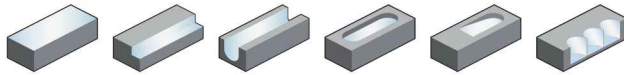
Nonstandard order > B541



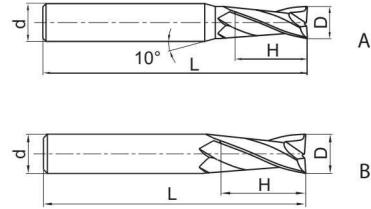
**A**

## End mill long cutting edge Semi-finishing

**GM-2FL**



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Milling

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-2FL-D3.0		3	6	12	75	2	A	○
GM-2FL-D4.0		4	6	15	75	2	A	○
GM-2FL-D5.0		5	6	20	75	2	A	○
GM-2FL-D6.0		6	6	20	75	2	B	○
GM-2FL-D8.0		8	8	25	100	2	B	○
GM-2FL-D10.0		10	10	30	100	2	B	○
GM-2FL-D12.0		12	12	35	100	2	B	○
GM-2FL-D14.0		14	14	40	100	2	B	○
GM-2FL-D16.0		16	16	50	150	2	B	○
GM-2FL-D20.0		20	20	55	150	2	B	○

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

### Application field

P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

**D**

Technical Information

**E**

Index

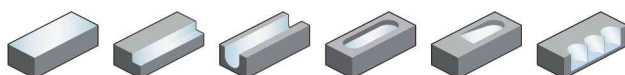
System code > B278

Cutting data > B492

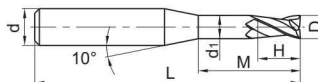
Nonstandard order > B541

End mill **Semi-finishing**

GM-2EP



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d <sub>1</sub>	H	M	L		KMG303
GM-2EP-D0.5-M04		0.5	4	0.45	0.7	4	50	2	●
GM-2EP-D0.5-M06		0.5	4	0.45	0.7	6	50	2	●
GM-2EP-D0.5-M08		0.5	4	0.45	0.7	8	50	2	●
GM-2EP-D0.8-M04		0.8	4	0.75	1.2	4	50	2	●
GM-2EP-D0.8-M06		0.8	4	0.75	1.2	6	50	2	●
GM-2EP-D0.8-M08		0.8	4	0.75	1.2	8	50	2	●
GM-2EP-D0.8-M10		0.8	4	0.75	1.2	10	50	2	●
GM-2EP-D1.0-M04		1	4	0.95	1.5	4	50	2	●
GM-2EP-D1.0-M06		1	4	0.95	1.5	6	50	2	●
GM-2EP-D1.0-M08		1	4	0.95	1.5	8	50	2	●
GM-2EP-D1.0-M10		1	4	0.95	1.5	10	50	2	●
GM-2EP-D1.0-M12		1	4	0.95	1.5	12	50	2	●
GM-2EP-D1.0-M14		1	4	0.95	1.5	14	50	2	●
GM-2EP-D1.2-M06		1.2	4	1.15	1.8	6	50	2	●
GM-2EP-D1.2-M08		1.2	4	1.15	1.8	8	50	2	●
GM-2EP-D1.2-M10		1.2	4	1.15	1.8	10	50	2	●
GM-2EP-D1.2-M12		1.2	4	1.15	1.8	12	50	2	○
GM-2EP-D1.5-M06		1.5	4	1.45	2.3	6	50	2	●
GM-2EP-D1.5-M08		1.5	4	1.45	2.3	8	50	2	●
GM-2EP-D1.5-M10		1.5	4	1.45	2.3	10	50	2	●
GM-2EP-D1.5-M12		1.5	4	1.45	2.3	12	50	2	●
GM-2EP-D1.5-M14		1.5	4	1.45	2.3	14	50	2	●
GM-2EP-D2.0-M06		2	4	1.95	3	6	50	2	●
GM-2EP-D2.0-M08		2	4	1.95	3	8	50	2	●
GM-2EP-D2.0-M10		2	4	1.95	3	10	50	2	●
GM-2EP-D2.0-M12		2	4	1.95	3	12	50	2	●
GM-2EP-D2.0-M14		2	4	1.95	3	14	50	2	●
GM-2EP-D2.0-M16		2	4	1.95	3	16	50	2	●
GM-2EP-D2.5-M08		2.5	4	2.4	3.7	8	50	2	●
GM-2EP-D2.5-M10		2.5	4	2.4	3.7	10	50	2	●
GM-2EP-D2.5-M12		2.5	4	2.4	3.7	12	50	2	●
GM-2EP-D2.5-M14		2.5	4	2.4	3.7	14	50	2	●
GM-2EP-D2.5-M16		2.5	4	2.4	3.7	16	60	2	●
GM-2EP-D2.5-M18		2.5	4	2.4	3.7	18	60	2	●
GM-2EP-D2.5-M20		2.5	4	2.4	3.7	20	60	2	●
GM-2EP-D3.0-M06		3	6	2.85	4.5	6	50	2	●
GM-2EP-D3.0-M08		3	6	2.85	4.5	8	50	2	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

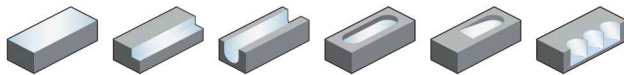
Nonstandard order > B541



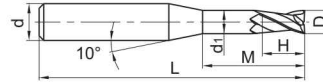
**A**

## End mill Semi-finishing

### GM-2EP



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d <sub>1</sub>	H	M	L		KMG303
GM-2EP-D3.0-M10		3	6	2.85	4.5	10	50	2	●
GM-2EP-D3.0-M12		3	6	2.85	4.5	12	50	2	●
GM-2EP-D3.0-M14		3	6	2.85	4.5	14	60	2	●
GM-2EP-D3.0-M16		3	6	2.85	4.5	16	60	2	●
GM-2EP-D3.0-M18		3	6	2.85	4.5	18	60	2	●
GM-2EP-D3.0-M20		3	6	2.85	4.5	20	60	2	●
GM-2EP-D4.0-M12		4	6	3.85	6	12	50	2	●
GM-2EP-D4.0-M14		4	6	3.85	6	14	60	2	●
GM-2EP-D4.0-M16		4	6	3.85	6	16	60	2	●
GM-2EP-D4.0-M20		4	6	3.85	6	20	60	2	●
GM-2EP-D4.0-M25		4	6	3.85	6	25	60	2	●
GM-2EP-D5.0-M16		5	6	4.85	7.5	16	60	2	●
GM-2EP-D5.0-M25		5	6	4.85	7.5	25	70	2	●

● Ex stock   ○ On demand

\* With internal cooling

Milling

**C**

### Application field

P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

System code > B278

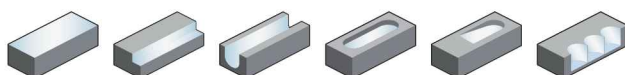
Cutting data > B492

Nonstandard order > B541

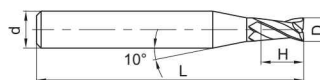
Schaftfräser

Semi-finishing

GM-2ES



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		KMG303
GM-2ES-D0.3		0.3	4	0.6	50	2	●
GM-2ES-D0.4		0.4	4	0.8	50	2	●
GM-2ES-D0.5		0.5	4	1	50	2	●
GM-2ES-D0.6		0.6	4	1.2	50	2	●
GM-2ES-D0.7		0.7	4	1.4	50	2	●
GM-2ES-D0.8		0.8	4	1.6	50	2	●
GM-2ES-D0.9		0.9	4	1.8	50	2	●
GM-2ES-D1.0		1	4	2	50	2	●
GM-2ES-D1.1		1.1	4	2	50	2	●
GM-2ES-D1.2		1.2	4	2.5	50	2	●
GM-2ES-D1.3		1.3	4	2.5	50	2	●
GM-2ES-D1.4		1.4	4	3	50	2	●
GM-2ES-D1.5		1.5	4	3	50	2	●
GM-2ES-D1.6		1.6	4	3.5	50	2	●
GM-2ES-D1.7		1.7	4	3.5	50	2	●
GM-2ES-D1.8		1.8	4	4	50	2	●
GM-2ES-D1.9		1.9	4	4	50	2	●
GM-2ES-D2.0		2	4	4	50	2	●
GM-2ES-D2.1		2.1	4	4	50	2	●
GM-2ES-D2.2		2.2	4	4.5	50	2	●
GM-2ES-D2.3		2.3	4	4.5	50	2	●
GM-2ES-D2.4		2.4	4	5	50	2	●
GM-2ES-D2.5		2.5	4	5	50	2	●
GM-2ES-D2.6		2.6	4	5	50	2	●
GM-2ES-D2.7		2.7	4	5.5	50	2	●
GM-2ES-D2.8		2.8	4	5.5	50	2	●
GM-2ES-D2.9		2.9	4	6	50	2	●
GM-2ES-D3.0		3	4	6	50	2	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



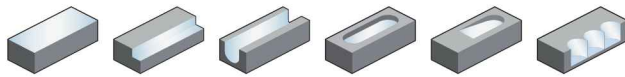


**A**

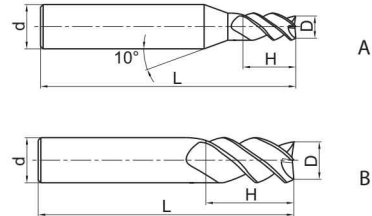
End mill

Semi-finishing

GM-3E



- Factory standard
- Centre cutting
- Helix angle 45°



Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-3E-D1.0S		1	4	3	50	3	A	○
GM-3E-D1.5S		1.5	4	4	50	3	A	○
GM-3E-D2.0S		2	4	6	50	3	A	○
GM-3E-D2.5S		2.5	4	8	50	3	A	○
GM-3E-D3.0S		3	4	8	50	3	A	○
GM-3E-D4.0S		4	4	11	50	3	B	○
GM-3E-D1.0		1	6	3	50	3	A	○
GM-3E-D1.5		1.5	6	4	50	3	A	○
GM-3E-D2.0		2	6	6	50	3	A	○
GM-3E-D2.5		2.5	6	8	50	3	A	○
GM-3E-D3.0		3	6	8	50	3	A	○
GM-3E-D3.5		3.5	6	10	50	3	A	○
GM-3E-D4.0		4	6	11	50	3	A	○
GM-3E-D4.5		4.5	6	11	50	3	A	○
GM-3E-D5.0		5	6	13	50	3	A	○
GM-3E-D5.5		5.5	6	16	50	3	A	○
GM-3E-D6.0		6	6	16	50	3	B	○
GM-3E-D7.0		7	8	20	60	3	A	○
GM-3E-D8.0		8	8	20	60	3	B	○
GM-3E-D9.0		9	10	22	75	3	A	○
GM-3E-D10.0		10	10	25	75	3	B	○
GM-3E-D11.0		11	12	26	75	3	A	○
GM-3E-D12.0		12	12	30	75	3	B	○
GM-3E-D14.0		14	14	32	75	3	B	○
GM-3E-D16.0		16	16	45	100	3	B	○
GM-3E-D18.0		18	18	45	100	3	B	○
GM-3E-D20.0		20	20	45	100	3	B	○

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

- ✓ Very suitable
- ✓ Suitable

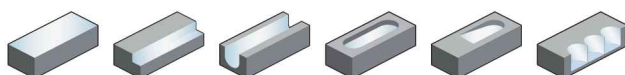
System code > B278

Cutting data > B492

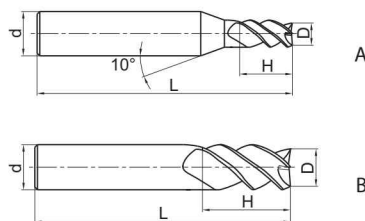
Nonstandard order > B541

End mill long cutting edge **Semi-finishing**

**GM-3EL**



- Factory standard
- Centre cutting
- Helix angle 45°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-3EL-D3.0		3	6	12	75	3	A	●
GM-3EL-D4.0		4	6	15	75	3	A	●
GM-3EL-D5.0		5	6	20	75	3	A	●
GM-3EL-D6.0		6	6	20	75	3	B	●
GM-3EL-D8.0		8	8	25	100	3	B	●
GM-3EL-D10.0		10	10	30	100	3	B	●
GM-3EL-D12.0		12	12	35	100	3	B	●
GM-3EL-D14.0		14	14	40	100	3	B	●
GM-3EL-D16.0		16	16	50	150	3	B	●
GM-3EL-D20.0		20	20	55	150	3	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

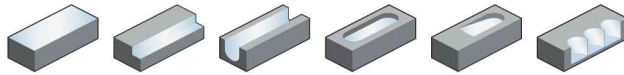
Cutting data > B492

Nonstandard order > B541

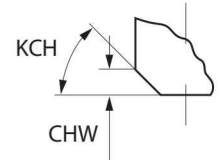
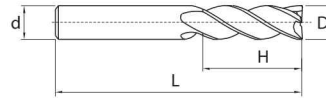
**A**

## End mill Semi-finishing

### 5501R303GM



- Type of shank DIN 6535HA
- Centre cutting
- Helix angle 30°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5501R303GM-0300		3	6	4	50	0	0	3	●	○
5501R303GM-0400		4	6	5	54	0	0	3	●	○
5501R303GM-0500		5	6	6	54	0	0	3	●	○
5501R303GM-0600		6	6	7	54	45	0.1	3	●	○
5501R303GM-0800		8	8	9	58	45	0.1	3	●	○
5501R303GM-1000		10	10	11	66	45	0.1	3	●	○
5501R303GM-1200		12	12	12	73	45	0.1	3	●	○
5501R303GM-1400		14	14	14	75	45	0.15	3	●	○
5501R303GM-1600		16	16	16	82	45	0.15	3	●	○
5501R303GM-1800		18	18	18	84	45	0.15	3	●	○
5501R303GM-2000		20	20	20	92	45	0.15	3	●	○

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

### Application field

P	M	K	N	S	H
✓	✓	✓			

- ✓ Very suitable
- ✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

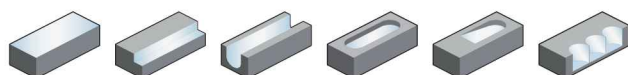
System code > B278

Cutting data > B492

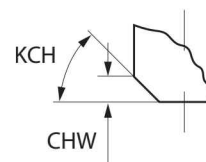
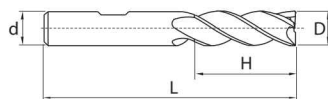
Nonstandard order > B541

**End mill** **Semi-finishing**

**5601R303GM**



- Type of shank: DIN 6535HB
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	H	L	KCH	CHW		KMG303
5601R303GM-0300		3	6	4	50	0	0	3	●
5601R303GM-0400		4	6	5	54	0	0	3	●
5601R303GM-0500		5	6	6	54	0	0	3	●
5601R303GM-0600		6	6	7	54	45	0.1	3	●
5601R303GM-0800		8	8	9	58	45	0.1	3	●
5601R303GM-1000		10	10	11	66	45	0.1	3	●
5601R303GM-1200		12	12	12	73	45	0.1	3	●
5601R303GM-1400		14	14	14	75	45	0.15	3	●
5601R303GM-1600		16	16	16	82	45	0.15	3	●
5601R303GM-1800		18	18	18	84	45	0.15	3	●
5601R303GM-2000		20	20	20	92	45	0.15	3	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

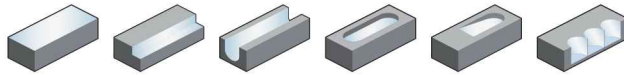
Nonstandard order > B541



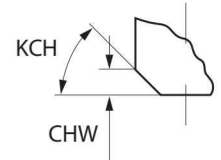
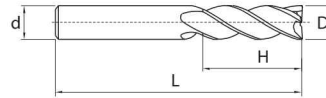
**A**

## End mill long cutting edge Semi-finishing

### 5502R303GM



- Type of shank DIN 6535HA
- Centre cutting
- Helix angle 30°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5502R303GM-0300		3	6	7	57	0	0	3	●	○
5502R303GM-0400		4	6	8	57	0	0	3	●	○
5502R303GM-0500		5	6	10	57	0	0	3	●	○
5502R303GM-0600		6	6	10	57	45	0.1	3	●	○
5502R303GM-0800		8	8	16	63	45	0.1	3	●	○
5502R303GM-1000		10	10	19	72	45	0.1	3	●	○
5502R303GM-1200		12	12	22	83	45	0.1	3	●	○
5502R303GM-1300		13	14	22	83	45	0.1	3	○	○
5502R303GM-1400		14	14	22	83	45	0.15	3	●	○
5502R303GM-1600		16	16	26	92	45	0.15	3	●	○
5502R303GM-1800		18	18	26	92	45	0.15	3	●	○
5502R303GM-2000		20	20	32	104	45	0.15	3	●	○

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

### Application field

P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

System code > B278

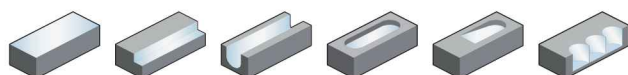
Cutting data > B492

Nonstandard order > B541

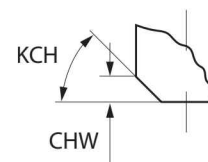
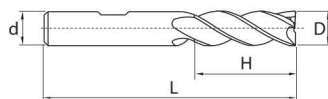
End mill long cutting edge

Semi-finishing

5602R303GM



- Type of shank: DIN 6535HB
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	H	L	KCH	CHW		KMG303
5602R303GM-0300		3	6	7	57	0	0	3	●
5602R303GM-0400		4	6	8	57	0	0	3	●
5602R303GM-0500		5	6	10	57	0	0	3	●
5602R303GM-0600		6	6	10	57	45	0.1	3	●
5602R303GM-0800		8	8	16	63	45	0.1	3	●
5602R303GM-1000		10	10	19	72	45	0.1	3	●
5602R303GM-1200		12	12	22	83	45	0.1	3	●
5602R303GM-1400		14	14	22	83	45	0.15	3	●
5602R303GM-1600		16	16	26	92	45	0.15	3	●
5602R303GM-1800		18	18	26	92	45	0.15	3	●
5602R303GM-2000		20	20	32	104	45	0.15	3	●

● Ex stock ○ On demand

\* With internal cooling

Application field

P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

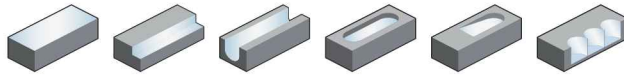
Nonstandard order > B541



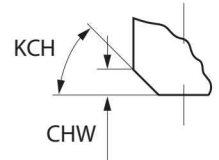
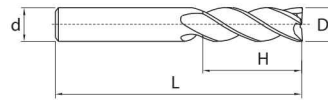
**A**

## End mill long cutting edge Semi-finishing

### 5502R453GM



- Type of shank DIN 6535HA
- Centre cutting
- Helix angle 45°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	H	L	KCH	CHW		KMG405
5502R453GM-0300		3	6	7	57	0	0	3	●
5502R453GM-0400		4	6	8	57	0	0	3	●
5502R453GM-0500		5	6	10	57	0	0	3	●
5502R453GM-0600		6	6	10	57	45	0.1	3	●
5502R453GM-0800		8	8	16	63	45	0.1	3	●
5502R453GM-1000		10	10	19	72	45	0.1	3	●
5502R453GM-1200		12	12	22	83	45	0.1	3	●
5502R453GM-1400		14	14	22	83	45	0.15	3	●
5502R453GM-1600		16	16	26	92	45	0.15	3	●
5502R453GM-1800		18	18	26	92	45	0.15	3	●
5502R453GM-2000		20	20	32	104	45	0.15	3	●

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

### Application field

P	M	K	N	S	H
✓	✓	✓			

- ✓ Very suitable
- ✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

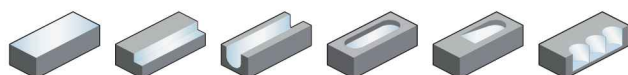
System code > B278

Cutting data > B492

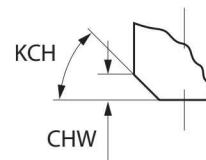
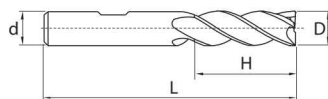
Nonstandard order > B541

End mill long cutting edge **Semi-finishing**

**5602R453GM**



- Type of shank: DIN 6535HB
- Centre cutting
- Helix angle 45°



Article	*	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	KMG405
5602R453GM-0300		3	6	7	57	0	0	3	○	●
5602R453GM-0400		4	6	8	57	0	0	3	○	●
5602R453GM-0500		5	6	10	57	0	0	3	○	●
5602R453GM-0600		6	6	10	57	45	0.1	3	○	●
5602R453GM-0800		8	8	16	63	45	0.1	3	○	●
5602R453GM-1000		10	10	19	72	45	0.1	3	○	●
5602R453GM-1200		12	12	22	83	45	0.1	3	○	●
5602R453GM-1400		14	14	22	83	45	0.15	3	○	●
5602R453GM-1600		16	16	26	92	45	0.15	3	○	●
5602R453GM-1800		18	18	26	92	45	0.15	3	○	●
5602R453GM-2000		20	20	32	104	45	0.15	3	○	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



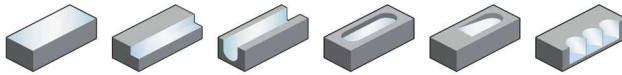


A

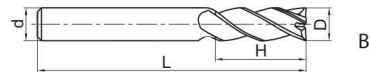
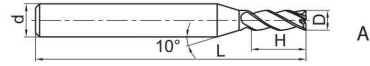
End mill

Semi-finishing

GM-4F-G



- Factory standard
- Centre cutting
- Helix angle 30°



Turning

B

Milling

C

Drilling

D

Technical Information

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-4F-D2.0S-G		2	4	6	50	4	A	○
GM-4F-D2.5S-G		2.5	4	8	50	4	A	○
GM-4F-D4.0S-G		4	4	11	50	4	B	○
GM-4F-D1.0-G		1	6	3	50	4	A	○
GM-4F-D1.5-G		1.5	6	4	50	4	A	○
GM-4F-D2.0-G		2	6	6	50	4	A	○
GM-4F-D2.5-G		2.5	6	8	50	4	A	○
GM-4F-D3.0-G		3	6	8	50	4	A	○
GM-4F-D3.5-G		3.5	6	10	50	4	A	○
GM-4F-D4.0-G		4	6	11	50	4	A	○
GM-4F-D4.5-G		4.5	6	11	50	4	A	○
GM-4F-D5.0-G		5	6	13	50	4	A	○
GM-4F-D5.5-G		5.5	6	16	50	4	A	○
GM-4F-D6.0-G		6	6	16	50	4	B	○
GM-4F-D7.0-G		7	8	20	60	4	A	○
GM-4F-D8.0-G		8	8	20	60	4	B	○
GM-4F-D9.0-G		9	10	22	75	4	A	○
GM-4F-D10.0-G		10	10	25	75	4	B	○
GM-4F-D11.0-G		11	12	26	75	4	A	○
GM-4F-D12.0-G		12	12	30	75	4	B	○
GM-4F-D14.0-G		14	14	32	75	4	B	○
GM-4F-D16.0-G		16	16	45	100	4	B	○
GM-4F-D18.0-G		18	18	45	100	4	B	○
GM-4F-D20.0-G		20	20	45	100	4	B	○

● Ex stock ○ On demand

\* With internal cooling

E

Index

Application field

P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

System code > B278

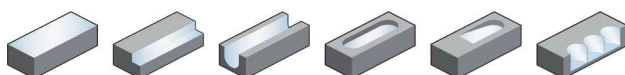
Cutting data > B492

Nonstandard order > B541

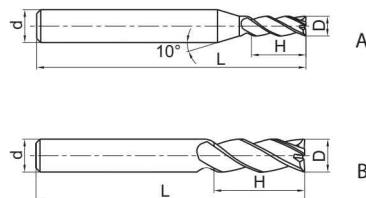
End mill long cutting edge

Semi-finishing

GM-4EL-G



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-4EL-D3.0-G		3	6	12	75	4	A	○
GM-4EL-D4.0-G		4	6	15	75	4	A	○
GM-4EL-D5.0-G		5	6	20	75	4	A	○
GM-4EL-D6.0-G		6	6	20	75	4	B	○
GM-4EL-D8.0-G		8	8	25	100	4	B	○
GM-4EL-D10.0-G		10	10	30	100	4	B	○
GM-4EL-D12.0-G		12	12	35	100	4	B	○
GM-4EL-D14.0-G		14	14	40	100	4	B	○
GM-4EL-D16.0-G		16	16	50	150	4	B	○
GM-4EL-D20.0-G		20	20	55	150	4	B	○

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

System code > B278

Cutting data > B492

Nonstandard order > B541

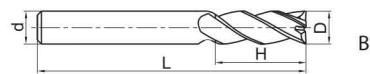
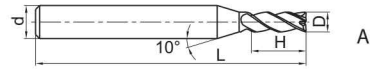
**A**

## End mill long cutting edge Semi-finishing

### GM-4FL-G



- Factory standard
- Centre cutting
- Helix angle 30°



Turning

**B**

Milling

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-4FL-D3.0-G		3	6	12	75	4	A	○
GM-4FL-D4.0-G		4	6	15	75	4	A	○
GM-4FL-D5.0-G		5	6	20	75	4	A	●
GM-4FL-D6.0-G		6	6	20	75	4	B	●
GM-4FL-D8.0-G		8	8	25	100	4	B	●
GM-4FL-D10.0-G		10	10	30	100	4	B	●
GM-4FL-D12.0-G		12	12	35	100	4	B	●
GM-4FL-D14.0-G		14	14	40	100	4	B	○
GM-4FL-D16.0-G		16	16	50	150	4	B	○

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

### Application field

P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

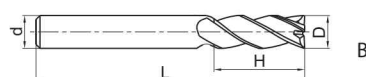
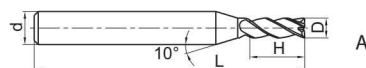
Nonstandard order > B541

**End mill extra long cutting edge** **Semi-finishing**

**GM-4EX-G**



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-4EX-D3.0-G		3	6	20	75	4	A	●
GM-4EX-D4.0-G		4	6	25	75	4	A	●
GM-4EX-D5.0-G		5	6	30	75	4	A	●
GM-4EX-D6.0-G		6	6	30	75	4	B	●
GM-4EX-D8.0-G		8	8	40	100	4	B	●
GM-4EX-D10.0-G		10	10	50	110	4	B	●
GM-4EX-D12.0-G		12	12	50	110	4	B	●
GM-4EX-D16.0-G		16	16	70	150	4	B	●
GM-4EX-D20.0-G		20	20	75	150	4	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

- ✓ Very suitable
- ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

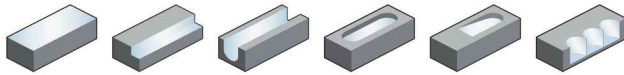
Nonstandard order > B541

**A**

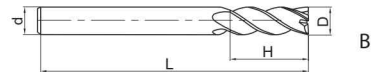
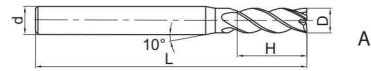
End mill

Semi-finishing

GM-4E



- Factory standard
- Centre cutting
- Helix angle 45°



Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-4E-D1.0S		1	4	3	50	4	A	●
GM-4E-D1.5S		1.5	4	4	50	4	A	●
GM-4E-D2.0S		2	4	6	50	4	A	●
GM-4E-D2.5S		2.5	4	8	50	4	A	●
GM-4E-D3.0S		3	4	8	50	4	A	●
GM-4E-D4.0S		4	4	11	50	4	B	●
GM-4E-D1.0		1	6	3	50	4	A	●
GM-4E-D1.5		1.5	6	4	50	4	A	●
GM-4E-D2.0		2	6	6	50	4	A	●
GM-4E-D2.5		2.5	6	8	50	4	A	●
GM-4E-D3.0		3	6	8	50	4	A	●
GM-4E-D3.5		3.5	6	10	50	4	A	●
GM-4E-D4.0		4	6	11	50	4	A	●
GM-4E-D4.5		4.5	6	11	50	4	A	●
GM-4E-D5.0		5	6	13	50	4	A	●
GM-4E-D5.5		5.5	6	16	50	4	A	●
GM-4E-D6.0		6	6	16	50	4	B	●
GM-4E-D7.0		7	8	20	60	4	A	●
GM-4E-D8.0		8	8	20	60	4	B	●
GM-4E-D9.0		9	10	22	75	4	A	●
GM-4E-D10.0		10	10	25	75	4	B	●
GM-4E-D11.0		11	12	26	75	4	A	●
GM-4E-D12.0		12	12	30	75	4	B	●
GM-4E-D14.0		14	14	32	75	4	B	●
GM-4E-D16.0		16	16	45	100	4	B	●
GM-4E-D18.0		18	18	45	100	4	B	●
GM-4E-D20.0		20	20	45	100	4	B	●

● Ex stock ○ On demand

\* With internal cooling

**E**

Index

Application field

P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

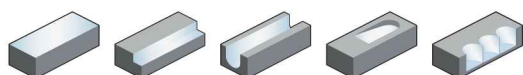
System code > B278

Cutting data > B492

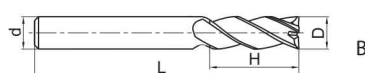
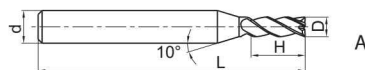
Nonstandard order > B541

**End mill** **Semi-finishing**

**GM-4E-G**



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-4E-D1.0S-G		1	4	3	50	4	A	●
GM-4E-D1.5S-G		1.5	4	4	50	4	A	●
GM-4E-D2.0S-G		2	4	6	50	4	A	●
GM-4E-D2.5S-G		2.5	4	8	50	4	A	●
GM-4E-D3.0S-G		3	4	8	50	4	A	●
GM-4E-D4.0S-G		4	4	11	50	4	B	●
GM-4E-D1.0-G		1	6	3	50	4	A	●
GM-4E-D1.5-G		1.5	6	4	50	4	A	●
GM-4E-D2.0-G		2	6	6	50	4	A	●
GM-4E-D2.5-G		2.5	6	8	50	4	A	●
GM-4E-D3.0-G		3	6	8	50	4	A	●
GM-4E-D3.5-G		3.5	6	10	50	4	A	●
GM-4E-D4.0-G		4	6	11	50	4	A	●
GM-4E-D4.5-G		4.5	6	11	50	4	A	○
GM-4E-D5.0-G		5	6	13	50	4	A	●
GM-4E-D5.5-G		5.5	6	16	50	4	A	●
GM-4E-D6.0-G		6	6	16	50	4	B	●
GM-4E-D7.0-G		7	8	20	60	4	A	●
GM-4E-D8.0-G		8	8	20	60	4	B	●
GM-4E-D9.0-G		9	10	22	75	4	A	●
GM-4E-D10.0-G		10	10	25	75	4	B	●
GM-4E-D11.0-G		11	12	26	75	4	A	●
GM-4E-D12.0-G		12	12	30	75	4	B	●
GM-4E-D14.0-G		14	14	32	75	4	B	●
GM-4E-D16.0-G		16	16	45	100	4	B	●
GM-4E-D18.0-G		18	18	45	100	4	B	●
GM-4E-D20.0-G		20	20	45	100	4	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

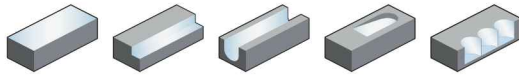
Nonstandard order > B541



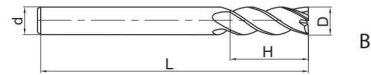
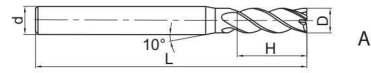
**A**

## End mill long cutting edge Semi-finishing

### GM-4EL



- Factory standard
- Centre cutting
- Helix angle 45°



Turning

**B**

Milling

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-4EL-D3.0		3	6	12	75	4	A	●
GM-4EL-D4.0		4	6	15	75	4	A	●
GM-4EL-D5.0		5	6	20	75	4	A	●
GM-4EL-D6.0		6	6	20	75	4	B	●
GM-4EL-D8.0		8	8	25	100	4	B	●
GM-4EL-D10.0		10	10	30	100	4	B	●
GM-4EL-D12.0		12	12	35	100	4	B	●
GM-4EL-D14.0		14	14	40	100	4	B	●
GM-4EL-D16.0		16	16	50	150	4	B	●
GM-4EL-D20.0		20	20	55	150	4	B	●

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

### Application field

P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

**D**

Technical Information

**E**

Index

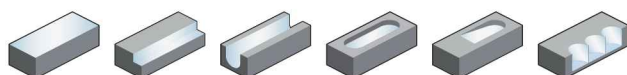
System code > B278

Cutting data > B492

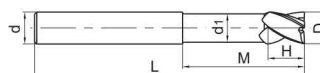
Nonstandard order > B541

End mill short cutting edge **Semi-finishing**

**GM-4EFP**



- Factory standard
- Centre cutting
- Helix angle 45°



Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d <sub>1</sub>	H	M	L		KMG303
GM-4EFP-D6.0		6	6	5.8	9	30	75	4	○
GM-4EFP-D8.0		8	8	7.8	12	40	100	4	○
GM-4EFP-D10.0		10	10	9.6	15	50	100	4	○
GM-4EFP-D12.0		12	12	11.5	18	50	100	4	○
GM-4EFP-D16.0		16	16	15.5	24	50	150	4	○
GM-4EFP-D20.0		20	20	19.5	30	60	150	4	○

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

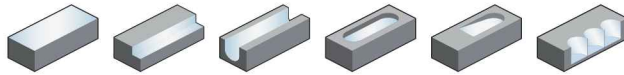
Nonstandard order > B541





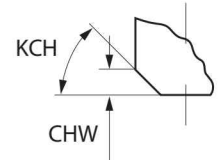
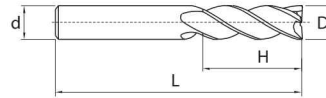
**A**

## End mill Finishing



### 5501R304GF

- Type of shank DIN 6535HA
- Centre cutting
- Helix angle 30°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5501R304GF-0300		3	6	5	50	0	0	4	●	○
5501R304GF-0400		4	6	8	54	0	0	4	●	○
5501R304GF-0500		5	6	9	54	0	0	4	●	○
5501R304GF-0600		6	6	10	54	45	0.1	4	●	○
5501R304GF-0800		8	8	12	58	45	0.1	4	●	○
5501R304GF-1000		10	10	14	66	45	0.1	4	●	○
5501R304GF-1200		12	12	16	73	45	0.1	4	●	○
5501R304GF-1400		14	14	18	75	45	0.15	4	●	○
5501R304GF-1600		16	16	22	82	45	0.15	4	●	○
5501R304GF-1800		18	18	24	84	45	0.15	4	●	○
5501R304GF-2000		20	20	26	92	45	0.15	4	●	○

Milling

**C**

- Ex stock ○ On demand
- \* With internal cooling

Drilling

#### Application field

P	M	K	N	S	H
✓	✓	✓			

- ✓ Very suitable
- ✓ Suitable

**D**

Technical Information

**E**

Index

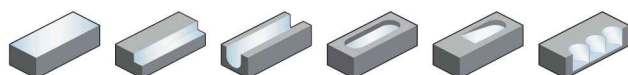
System code > B278

Cutting data > B492

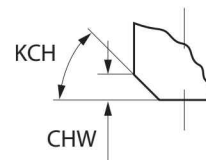
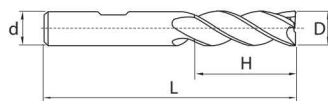
Nonstandard order > B541

**End mill** **Finishing**

**5601R304GF**



- Type of shank: DIN 6535HB
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	H	L	KCH	CHW		KMG303
5601R304GF-0300		3	6	5	50	0	0	4	●
5601R304GF-0400		4	6	8	54	0	0	4	●
5601R304GF-0500		5	6	9	54	0	0	4	●
5601R304GF-0600		6	6	10	54	45	0.1	4	●
5601R304GF-0800		8	8	12	58	45	0.1	4	●
5601R304GF-1000		10	10	14	66	45	0.1	4	●
5601R304GF-1200		12	12	16	73	45	0.1	4	●
5601R304GF-1400		14	14	18	75	45	0.15	4	●
5601R304GF-1600		16	16	22	82	45	0.15	4	●
5601R304GF-1800		18	18	24	84	45	0.15	4	●
5601R304GF-2000		20	20	26	92	45	0.15	4	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

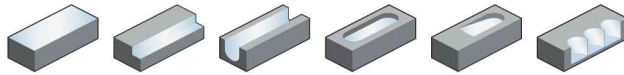
Nonstandard order > B541



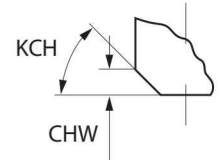
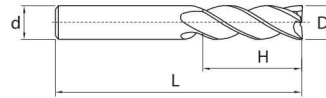
**A**

## End mill long cutting edge Finishing

**5502R304GF**



- Type of shank DIN 6535HA
- Centre cutting
- Helix angle 30°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5502R304GF-0300		3	6	8	57	0	0	4	●	○
5502R304GF-0400		4	6	11	57	0	0	4	●	○
5502R304GF-0500		5	6	13	57	0	0	4	●	○
5502R304GF-0600		6	6	13	57	45	0.1	4	●	○
5502R304GF-0800		8	8	19	63	45	0.1	4	●	○
5502R304GF-1000		10	10	22	72	45	0.1	4	●	○
5502R304GF-1200		12	12	26	83	45	0.1	4	●	○
5502R304GF-1400		14	14	26	83	45	0.15	4	●	○
5502R304GF-1600		16	16	32	92	45	0.15	4	●	○
5502R304GF-1800		18	18	32	92	45	0.15	4	●	○
5502R304GF-2000		20	20	38	104	45	0.15	4	●	○

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

### Application field

P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

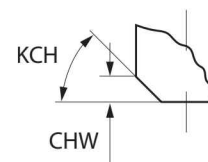
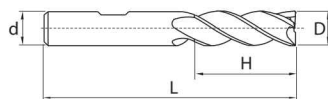
Nonstandard order > B541

End mill long cutting edge **Finishing**

**5602R304GF**



- Type of shank: DIN 6535HB
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5602R304GF-0300		3	6	8	57	0	0	4	●	○
5602R304GF-0400		4	6	11	57	0	0	4	●	○
5602R304GF-0500		5	6	13	57	0	0	4	●	○
5602R304GF-0600		6	6	13	57	45	0.1	4	●	○
5602R304GF-0800		8	8	19	63	45	0.1	4	●	○
5602R304GF-1000		10	10	22	72	45	0.1	4	●	○
5602R304GF-1200		12	12	26	83	45	0.1	4	●	○
5602R304GF-1400		14	14	26	83	45	0.15	4	●	○
5602R304GF-1600		16	16	32	92	45	0.15	4	●	○
5602R304GF-1800		18	18	32	92	45	0.15	4	●	○
5602R304GF-2000		20	20	38	104	45	0.15	4	●	○

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

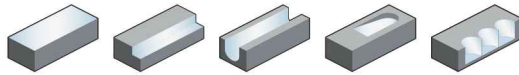
Nonstandard order > B541



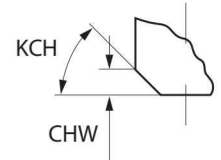
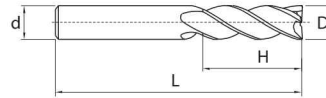
**A**

## End mill long cutting edge Semi-finishing

### 5508R454GM



- Type of shank DIN 6535HA
- Centre cutting
- Helix angle 45°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5508R454GM-0300		3	3	8	45	0	0	4	●	○
5508R454GM-0400		4	4	11	50	0	0	4	●	○
5508R454GM-0500		5	5	13	50	0	0	4	●	○
5508R454GM-0600		6	6	13	57	45	0.1	4	●	○
5508R454GM-0800		8	8	19	63	45	0.1	4	●	○
5508R454GM-1000		10	10	22	72	45	0.1	4	●	○
5508R454GM-1200		12	12	26	83	45	0.1	4	●	○
5508R454GM-1400		14	14	26	83	45	0.15	4	●	○
5508R454GM-1500		15	16	32	92	0	0	4	○	
5508R454GM-1600		16	16	32	92	45	0.15	4	●	○
5508R454GM-1800		18	18	32	92	45	0.15	4	●	○
5508R454GM-2000		20	20	38	104	45	0.15	4	●	○

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

### Application field

P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

System code > B278

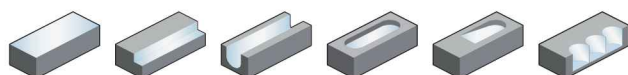
Cutting data > B492

Nonstandard order > B541

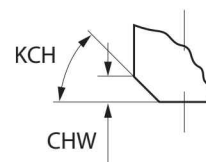
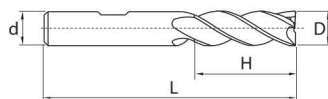
End mill long cutting edge

Semi-finishing

**5602R454GM**



- Type of shank: DIN 6535HB
- Centre cutting
- Helix angle 45°



Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	H	L	KCH	CHW		KMG303
5602R454GM-0300		3	6	8	57	0	0	4	●
5602R454GM-0400		4	6	11	57	0	0	4	●
5602R454GM-0500		5	6	13	57	0	0	4	●
5602R454GM-0600		6	6	13	57	45	0.1	4	●
5602R454GM-0800		8	8	19	63	45	0.1	4	●
5602R454GM-1000		10	10	22	72	45	0.1	4	●
5602R454GM-1200		12	12	26	83	45	0.1	4	●
5602R454GM-1400		14	14	26	83	45	0.15	4	●
5602R454GM-1600		16	16	32	92	45	0.15	4	●
5602R454GM-1800		18	18	32	92	45	0.15	4	●
5602R454GM-2000		20	20	38	104	45	0.15	4	●

● Ex stock ○ On demand

\* With internal cooling

Application field

P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

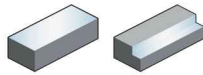
Nonstandard order > B541



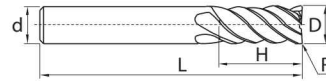
**A**

## Torus mill long cutting edge Finishing

**5589R45MGFR**



- Type of shank DIN 6535HA
- Helix angle 45°



Turning

**B**

Article	*	Dimensions [mm]					Teeth	Grade
		D	R	d (h6)	H	L		KMG405
5589R45MGFR02-0600		6	0.2	6	19	63	6	●
5589R45MGFR02-0800		8	0.2	8	28	72	6	●
5589R45MGFR02-1000		10	0.2	10	34	84	6	●
5589R45MGFR02-1200		12	0.2	12	40	97	6	●

- Ex stock ○ On demand
- \* With internal cooling

Milling

**C**

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable  
✓ Suitable

Drilling

**D**

Technical Information

**E**

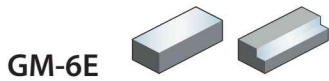
Index

System code > B278

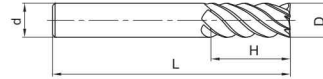
Cutting data > B492

Nonstandard order > B541

End mill **Semi-finishing**



- Factory standard
- Non-centre cutting
- Helix angle 45°



Article	*	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		KMG303
GM-6E-D6.0		6	6	18	60	6	●
GM-6E-D8.0		8	8	20	60	6	●
GM-6E-D10.0		10	10	30	75	6	●
GM-6E-D12.0		12	12	32	75	6	●
GM-6E-D16.0		16	16	40	100	6	●
GM-6E-D20.0		20	20	45	100	6	●

- Ex stock ○ On demand
- \* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

- ✓ Very suitable
- ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541



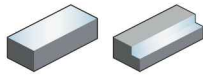


**A**

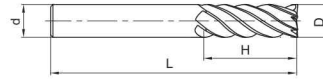
End mill long cutting edge

Semi-finishing

**GM-6EL**



- Factory standard
- Non-centre cutting
- Helix angle 45°



Turning

**B**

Article	*	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		KMG303
GM-6EL-D6.0		6	6	24	75	6	●
GM-6EL-D8.0		8	8	32	75	6	●
GM-6EL-D10.0		10	10	40	100	6	●
GM-6EL-D12.0		12	12	45	100	6	●
GM-6EL-D16.0		16	16	64	150	6	●
GM-6EL-D20.0		20	20	75	150	6	●

- Ex stock ○ On demand
- \* With internal cooling

Milling

**C**

Application field						
P	M	K	N	S	H	
✓	✓	✓				✓ Very suitable ✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

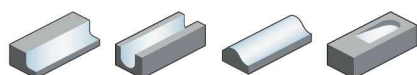
System code > B278

Cutting data > B492

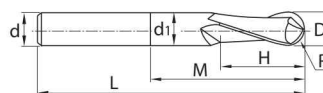
Nonstandard order > B541

**Ball nose cutter** **Finishing**

**5565R302GF**



- Type of shank DIN 6535HA
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]							Teeth	Grade
		D	R	d (h6)	d <sub>1</sub>	H	M	L		KMG303
5565R302GF-0300		3	1.5	6	2.8	4	9	57	2	●
5565R302GF-0400		4	2	6	3.7	5	12	57	2	●
5565R302GF-0500		5	2.5	6	4.6	6	15	57	2	●
5565R302GF-0600		6	3	6	5.5	7	20	57	2	●
5565R302GF-0800		8	4	8	7.4	9	26	63	2	●
5565R302GF-1000		10	5	10	9.2	11	31	72	2	●
5565R302GF-1200		12	6	12	11	12	37	83	2	●
5565R302GF-1600		16	8	16	15	16	43	92	2	●
5565R302GF-2000		20	10	20	19	20	50	104	2	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

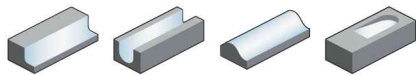
Nonstandard order > B541



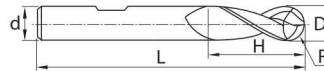
**A**

## Ball nose cutter Semi-finishing

**5665R202GM**



- Type of shank: DIN 6535HB
- Centre cutting
- Helix angle 20°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade
		D	R	d (h6)	d <sub>1</sub>	H	L		KMG303
5665R202GM-0300		3	1.5	6	2.8	4	57	2	●
5665R202GM-0400		4	2	6	3.7	5	57	2	●
5665R202GM-0500		5	2.5	6	4.6	6	57	2	●
5665R202GM-0600		6	3	6	5.5	7	57	2	●
5665R202GM-0800		8	4	8	7.4	9	63	2	●
5665R202GM-1000		10	5	10	9.2	11	72	2	●
5665R202GM-1200		12	6	12	11	12	83	2	●
5665R202GM-1600		16	8	16	15	16	92	2	●
5665R202GM-2000		20	10	20	19	20	104	2	●

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

### Application field

P	M	K	N	S	H
✓	✓	✓			

- ✓ Very suitable
- ✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

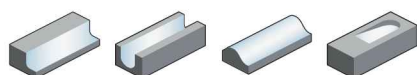
System code > B278

Cutting data > B492

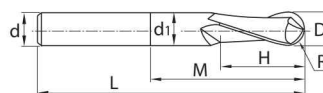
Nonstandard order > B541

**Ball nose cutter long shank** Finishing

**5566R302GF**



- Type of shank DIN 6535HA
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]							Teeth	Grade
		D	R	d (h6)	d <sub>1</sub>	H	M	L		KMG303
5566R302GF-0300		3	1.5	6	2.8	4	15	75	2	●
5566R302GF-0400		4	2	6	3.7	5	20	75	2	●
5566R302GF-0500		5	2.5	6	4.6	6	25	80	2	●
5566R302GF-0600		6	3	6	5.5	7	60	80	2	●
5566R302GF-0800		8	4	8	7.4	9	65	90	2	●
5566R302GF-1000		10	5	10	9.2	11	40	100	2	●
5566R302GF-1200		12	6	12	11	12	50	120	2	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

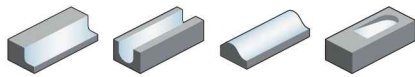
Nonstandard order > B541



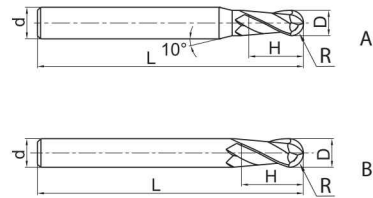
**A**

## Ball nose cutter Semi-finishing

**GM-2B**



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG303
GM-2B-R0.5S		0.5	1	4	2	50	2	A	●
GM-2B-R0.75S		0.75	1.5	4	3	50	2	A	●
GM-2B-R1.0S		1	2	4	4	50	2	A	●
GM-2B-R1.25S		1.25	2.5	4	5	50	2	A	●
GM-2B-R1.5S		1.5	3	4	6	50	2	A	●
GM-2B-R2.0S		2	4	4	8	50	2	B	●
GM-2B-R0.5		0.5	1	6	2	50	2	A	○
GM-2B-R0.75		0.75	1.5	6	3	50	2	A	○
GM-2B-R1.0		1	2	6	4	50	2	A	●
GM-2B-R1.25		1.25	2.5	6	5	50	2	A	○
GM-2B-R1.5		1.5	3	6	6	50	2	A	●
GM-2B-R1.75		1.75	3.5	6	8	50	2	A	○
GM-2B-R2.0		2	4	6	8	50	2	A	●
GM-2B-R2.5		2.5	5	6	10	50	2	A	●
GM-2B-R2.75		2.75	5.5	6	12	50	2	A	○
GM-2B-R3.0		3	6	6	12	50	2	B	●
GM-2B-R3.5		3.5	7	8	14	60	2	A	○
GM-2B-R4.0		4	8	8	16	60	2	B	●
GM-2B-R4.5		4.5	9	10	18	75	2	A	○
GM-2B-R5.0		5	10	10	20	75	2	B	●
GM-2B-R6.0		6	12	12	24	75	2	B	●
GM-2B-R7.0		7	14	14	28	75	2	B	●
GM-2B-R8.0		8	16	16	32	100	2	B	●
GM-2B-R10.0		10	20	20	40	100	2	B	●

● Ex stock ○ On demand

\* With internal cooling

### Application field

P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

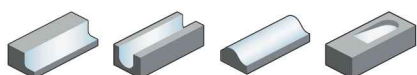
System code > B278

Cutting data > B492

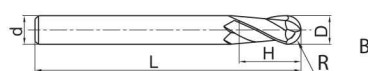
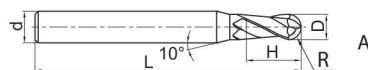
Nonstandard order > B541

**Ball nose cutter long shank** **Semi-finishing**

**GM-2BL**



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG303
GM-2BL-R1.0		1	2	6	4	75	2	A	●
GM-2BL-R1.25		1.25	2.5	6	5	75	2	A	●
GM-2BL-R1.5		1.5	3	6	6	75	2	A	●
GM-2BL-R1.75		1.75	3.5	6	8	75	2	A	●
GM-2BL-R2.0		2	4	6	8	75	2	A	●
GM-2BL-R2.5		2.5	5	6	10	75	2	A	●
GM-2BL-R2.75		2.75	5.5	6	12	75	2	A	●
GM-2BL-R3.0		3	6	6	12	75	2	B	●
GM-2BL-R3.5		3.5	7	8	14	75	2	A	●
GM-2BL-R4.0		4	8	8	16	100	2	B	●
GM-2BL-R4.5		4.5	9	10	18	100	2	A	●
GM-2BL-R5.0		5	10	10	20	100	2	B	●
GM-2BL-R6.0		6	12	12	24	100	2	B	●
GM-2BL-R7.0		7	14	14	28	100	2	B	●
GM-2BL-R8.0		8	16	16	32	150	2	B	●
GM-2BL-R10.0		10	20	20	40	150	2	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

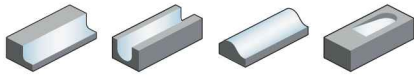
Nonstandard order > B541



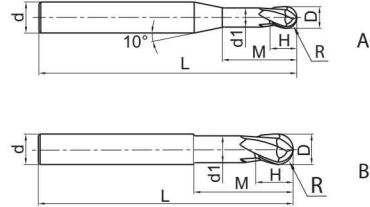
**A**

## Ball nose cutter short cutting edge Semi-finishing

**GM-2BFP**



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Milling

Article	*	Dimensions [mm]								Teeth	Geometry	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L	KMG303			
GM-2BFP-R0.5		0.5	1	6	0.95	1	2.5	75	2	A	○	
GM-2BFP-R0.75		0.75	1.5	6	1.45	1	3	75	2	A	○	
GM-2BFP-R1.0		1	2	6	1.95	2	4	75	2	A	●	
GM-2BFP-R1.5		1.5	3	6	2.85	3	6	75	2	A	○	
GM-2BFP-R2.0		2	4	6	3.85	4	8	75	2	A	○	
GM-2BFP-R2.5		2.5	5	6	4.85	5	10	75	2	A	○	
GM-2BFP-R3.0		3	6	6	5.8	6	12	75	2	B	○	
GM-2BFP-R4.0		4	8	8	7.8	8	16	100	2	B	○	
GM-2BFP-R5.0		5	10	10	9.6	10	20	100	2	B	○	
GM-2BFP-R6.0		6	12	12	11.5	12	24	100	2	B	○	
GM-2BFP-R8.0		8	16	16	15.5	16	32	150	2	B	○	
GM-2BFP-R10.0		10	20	20	19.5	20	40	150	2	B	○	

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

**D**

Technical Information

### Application field

P	M	K	N	S	H
✓	✓	✓			

- ✓ Very suitable
- ✓ Suitable

**E**

Index

System code > B278

Cutting data > B492

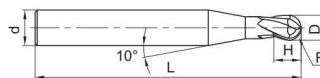
Nonstandard order > B541

**Ball nose cutter** **Semi-finishing**

**GM-2BS**



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMG303
GM-2BS-R0.15		0.15	0.3	4	0.5	50	2	●
GM-2BS-R0.20		0.2	0.4	4	0.6	50	2	●
GM-2BS-R0.25		0.25	0.5	4	0.8	50	2	●
GM-2BS-R0.30		0.3	0.6	4	0.9	50	2	●
GM-2BS-R0.35		0.35	0.7	4	1	50	2	●
GM-2BS-R0.40		0.4	0.8	4	1.2	50	2	●
GM-2BS-R0.45		0.45	0.9	4	1.3	50	2	●
GM-2BS-R0.50		0.5	1	4	1.5	50	2	●
GM-2BS-R0.60		0.6	1.2	4	1.8	50	2	●
GM-2BS-R0.70		0.7	1.4	4	2	50	2	●
GM-2BS-R0.75		0.75	1.5	4	2.3	50	2	●
GM-2BS-R0.80		0.8	1.6	4	2.5	50	2	●
GM-2BS-R0.90		0.9	1.8	4	2.7	50	2	●
GM-2BS-R1.00		1	2	4	3	50	2	●
GM-2BS-R1.25		1.25	2.5	4	3.7	50	2	●
GM-2BS-R1.50		1.5	3	4	4.5	50	2	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



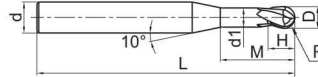


## Ball nose cutter Semi-finishing

### GM-2BP



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]							Teeth	Grade KMG303
		R	D	d (h6)	d <sub>1</sub>	H	M	L		
GM-2BP-R0.25-M04		0.25	0.5	4	0.45	0.7	4	50	2	●
GM-2BP-R0.25-M06		0.25	0.5	4	0.45	0.7	6	50	2	●
GM-2BP-R0.3-M04		0.3	0.6	4	0.55	0.9	4	50	2	●
GM-2BP-R0.3-M06		0.3	0.6	4	0.55	0.9	6	50	2	●
GM-2BP-R0.3-M08		0.3	0.6	4	0.55	0.9	8	50	2	●
GM-2BP-R0.4-M04		0.4	0.8	4	0.75	1.2	4	50	2	●
GM-2BP-R0.4-M06		0.4	0.8	4	0.75	1.2	6	50	2	●
GM-2BP-R0.4-M08		0.4	0.8	4	0.75	1.2	8	50	2	●
GM-2BP-R0.4-M10		0.4	0.8	4	0.75	1.2	10	50	2	●
GM-2BP-R0.5-M04		0.5	1	4	0.95	1.5	4	50	2	●
GM-2BP-R0.5-M06		0.5	1	4	0.95	1.5	6	50	2	●
GM-2BP-R0.5-M08		0.5	1	4	0.95	1.5	8	50	2	●
GM-2BP-R0.5-M10		0.5	1	4	0.95	1.5	10	50	2	●
GM-2BP-R0.5-M12		0.5	1	4	0.95	1.5	12	50	2	●
GM-2BP-R0.6-M06		0.6	1.2	4	1.15	1.8	6	50	2	●
GM-2BP-R0.6-M08		0.6	1.2	4	1.15	1.8	8	50	2	●
GM-2BP-R0.6-M12		0.6	1.2	4	1.15	1.8	12	50	2	●
GM-2BP-R0.6-M16		0.6	1.2	4	1.15	1.8	16	50	2	●
GM-2BP-R0.75-M08		0.75	1.5	4	1.45	2.3	8	50	2	●
GM-2BP-R0.75-M12		0.75	1.5	4	1.45	2.3	12	50	2	●
GM-2BP-R0.75-M16		0.75	1.5	4	1.45	2.3	16	50	2	●
GM-2BP-R1.0-M06		1	2	4	1.95	3	6	50	2	●
GM-2BP-R1.0-M08		1	2	4	1.95	3	8	50	2	●
GM-2BP-R1.0-M10		1	2	4	1.95	3	10	50	2	●
GM-2BP-R1.0-M12		1	2	4	1.95	3	12	50	2	●
GM-2BP-R1.0-M16		1	2	4	1.95	3	16	50	2	●
GM-2BP-R1.0-M20		1	2	4	1.95	3	20	50	2	●
GM-2BP-R1.25-M08		1.25	2.5	4	2.4	3.7	8	50	2	●
GM-2BP-R1.25-M12		1.25	2.5	4	2.4	3.7	12	50	2	●
GM-2BP-R1.25-M16		1.25	2.5	4	2.4	3.7	16	60	2	●
GM-2BP-R1.25-M20		1.25	2.5	4	2.4	3.7	20	60	2	●
GM-2BP-R1.5-M08		1.5	3	6	2.85	4.5	8	50	2	●
GM-2BP-R1.5-M10		1.5	3	6	2.85	4.5	10	50	2	●
GM-2BP-R1.5-M12		1.5	3	6	2.85	4.5	12	50	2	●
GM-2BP-R1.5-M16		1.5	3	6	2.85	4.5	16	60	2	●
GM-2BP-R1.5-M20		1.5	3	6	2.85	4.5	20	60	2	●
GM-2BP-R2.0-M10		2	4	6	3.85	6	10	60	2	●

● Ex stock ○ On demand

\* With internal cooling

#### Application field

P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

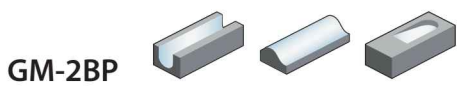
✓ Suitable

System code > B278

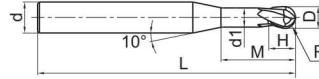
Cutting data > B492

Nonstandard order > B541

**Ball nose cutter** **Semi-finishing**



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L		KMG303
GM-2BP-R2.0-M16		2	4	6	3.85	6	16	60	2	●
GM-2BP-R2.0-M20		2	4	6	3.85	6	20	60	2	●
GM-2BP-R2.0-M25		2	4	6	3.85	6	25	60	2	●
GM-2BP-R2.5-M16		2.5	5	6	4.85	7.5	16	60	2	●
GM-2BP-R2.5-M25		2.5	5	6	4.85	7.5	25	70	2	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

- ✓ Very suitable
- ✓ Suitable

System code > B278

Cutting data > B492

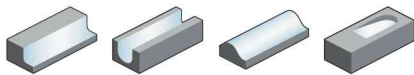
Nonstandard order > B541



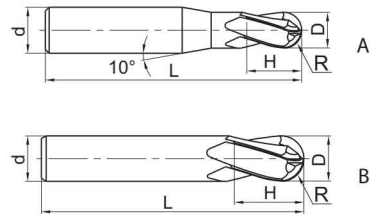
**A**

## Ball nose cutter Semi-finishing

**GM-4B**



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Milling

Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG303
GM-4B-R1.5		1.5	3	6	6	50	4	A	●
GM-4B-R2.0		2	4	6	8	50	4	A	●
GM-4B-R2.5		2.5	5	6	10	50	4	A	●
GM-4B-R3.0		3	6	6	12	50	4	B	●
GM-4B-R4.0		4	8	8	16	60	4	B	●
GM-4B-R5.0		5	10	10	20	75	4	B	●
GM-4B-R6.0		6	12	12	24	75	4	B	●
GM-4B-R7.0		7	14	14	28	75	4	B	●
GM-4B-R8.0		8	16	16	32	100	4	B	●
GM-4B-R9.0		9	18	18	36	100	4	B	●
GM-4B-R10.0		10	20	20	40	100	4	B	●

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

**D**

Technical Information

**E**

Index

### Application field

P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

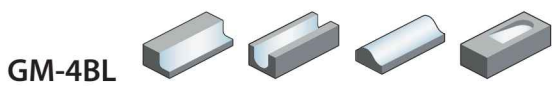
✓ Suitable

System code > B278

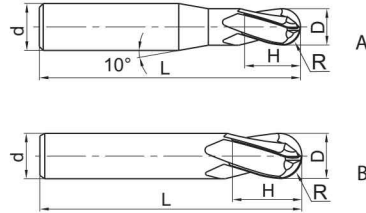
Cutting data > B492

Nonstandard order > B541

**Ball nose cutter long shank** **Semi-finishing**



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG303
GM-4BL-R1.5		1.5	3	6	6	75	4	A	○
GM-4BL-R2.0		2	4	6	8	75	4	A	○
GM-4BL-R2.5		2.5	5	6	10	75	4	A	○
GM-4BL-R3.0		3	6	6	12	75	4	B	○
GM-4BL-R4.0		4	8	8	16	100	4	B	○
GM-4BL-R5.0		5	10	10	20	100	4	B	○
GM-4BL-R6.0		6	12	12	24	100	4	B	○
GM-4BL-R7.0		7	14	14	28	100	4	B	○
GM-4BL-R8.0		8	16	16	32	150	4	B	○
GM-4BL-R10.0		10	20	20	40	150	4	B	○

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541



A

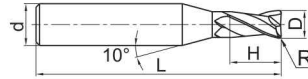
Torus mill

Semi-finishing

GM-2R



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

B

Article	*	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMG303
GM-2R-D1.0R0.2		0.2	1	4	3	50	2	○
GM-2R-D1.5R0.2		0.2	1.5	4	4	50	2	○
GM-2R-D2.0R0.2		0.2	2	4	6	50	2	○
GM-2R-D2.0R0.5		0.5	2	4	6	50	2	○
GM-2R-D2.5R0.2		0.2	2.5	4	8	50	2	○
GM-2R-D2.5R0.5		0.5	2.5	4	8	50	2	○
GM-2R-D3.0R0.2		0.2	3	4	8	50	2	○
GM-2R-D3.0R0.3		0.3	3	4	8	50	2	○
GM-2R-D3.0R0.5		0.5	3	4	8	50	2	○
GM-2R-D4.0R0.2		0.2	4	4	11	50	2	○
GM-2R-D4.0R0.3		0.3	4	4	11	50	2	○
GM-2R-D4.0R0.5		0.5	4	4	11	50	2	○
GM-2R-D4.0R1.0		1	4	4	11	50	2	○
GM-2R-D5.0R0.3		0.3	5	6	13	50	2	○
GM-2R-D5.0R0.5		0.5	5	6	13	50	2	○
GM-2R-D5.0R1.0		1	5	6	13	50	2	○
GM-2R-D6.0R0.3		0.3	6	6	16	50	2	○
GM-2R-D6.0R0.5		0.5	6	6	16	50	2	○
GM-2R-D6.0R1.0		1	6	6	16	50	2	○
GM-2R-D8.0R0.3		0.3	8	8	20	60	2	○
GM-2R-D8.0R0.5		0.5	8	8	20	60	2	○
GM-2R-D8.0R1.0		1	8	8	20	60	2	○
GM-2R-D10.0R0.5		0.5	10	10	25	75	2	○
GM-2R-D10.0R1.0		1	10	10	25	75	2	○
GM-2R-D10.0R1.5		1.5	10	10	25	75	2	●
GM-2R-D10.0R2.0		2	10	10	25	75	2	○
GM-2R-D12.0R0.5		0.5	12	12	30	75	2	○
GM-2R-D12.0R1.0		1	12	12	30	75	2	○
GM-2R-D12.0R1.5		1.5	12	12	30	75	2	○
GM-2R-D12.0R2.0		2	12	12	30	75	2	●

Milling

C

Drilling

D

Technical Information

- Ex stock ○ On demand
- \* With internal cooling

E

Application field

P	M	K	N	S	H
✓	✓	✓			

- ✓ Very suitable
- ✓ Suitable

Index

System code > B278

Cutting data > B492

Nonstandard order > B541

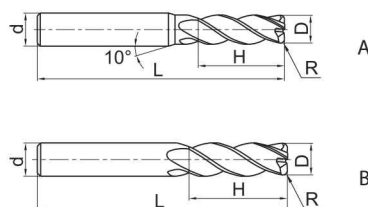
**Torus mill**

**Semi-finishing**

**GM-4R**



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG303
GM-4R-D3.0R0.2		0.2	3	4	8	50	4	A	●
GM-4R-D4.0R0.3		0.3	4	4	10	50	4	B	○
GM-4R-D4.0R0.5		0.5	4	4	10	50	4	B	●
GM-4R-D5.0R0.5		0.5	5	6	13	50	4	A	●
GM-4R-D5.0R1.0		1	5	6	13	50	4	A	●
GM-4R-D6.0R0.5		0.5	6	6	16	50	4	B	●
GM-4R-D6.0R1.0		1	6	6	16	50	4	B	●
GM-4R-D8.0R0.5		0.5	8	8	20	60	4	B	●
GM-4R-D8.0R1.0		1	8	8	20	60	4	B	●
GM-4R-D10.0R0.5		0.5	10	10	25	75	4	B	●
GM-4R-D10.0R1.0		1	10	10	25	75	4	B	●
GM-4R-D10.0R2.0		2	10	10	25	75	4	B	●
GM-4R-D10.0R3.0		3	10	10	25	75	4	B	●
GM-4R-D12.0R0.5		0.5	12	12	30	75	4	B	●
GM-4R-D12.0R1.0		1	12	12	30	75	4	B	●
GM-4R-D12.0R2.0		2	12	12	30	75	4	B	●
GM-4R-D12.0R3.0		3	12	12	30	75	4	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



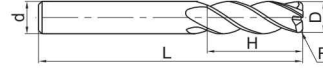
**A**

## Torus mill long shank Semi-finishing

**GM-4RL**



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Article	*	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMG303
GM-4RL-D6.0R0.5		0.5	6	6	16	75	4	●
GM-4RL-D6.0R1.0		1	6	6	16	75	4	●
GM-4RL-D8.0R0.5		0.5	8	8	20	100	4	●
GM-4RL-D8.0R1.0		1	8	8	20	100	4	●
GM-4RL-D10.0R0.5		0.5	10	10	25	100	4	●
GM-4RL-D10.0R1.0		1	10	10	25	100	4	●
GM-4RL-D10.0R2.0		2	10	10	25	100	4	●
GM-4RL-D12.0R0.5		0.5	12	12	30	100	4	○
GM-4RL-D12.0R1.0		1	12	12	30	100	4	●
GM-4RL-D12.0R2.0		2	12	12	30	100	4	●
GM-4RL-D16.0R1.0		1	16	16	45	150	4	●
GM-4RL-D16.0R2.0		2	16	16	45	150	4	●

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

### Application field

P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

System code > B278

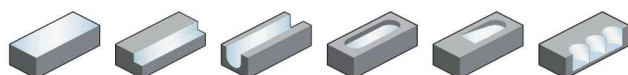
Cutting data > B492

Nonstandard order > B541

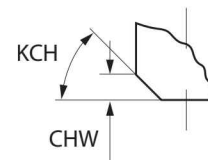
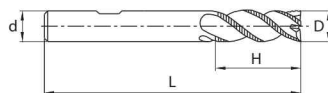
End mill long cutting edge

General roughing

**5602R303GR**



- Type of shank: DIN 6535HB
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	H	L	KCH	CHW		KMG303
5602R303GR-0600		6	6	13	57	45	0.25	3	●
5602R303GR-0800		8	8	19	63	45	0.25	3	●

- Ex stock ○ On demand
- \* With internal cooling

Application field

P	M	K	N	S	H
✓	✓	✓			

- ✓ Very suitable
- ✓ Suitable

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

System code > B278

Cutting data > B492

Nonstandard order > B541

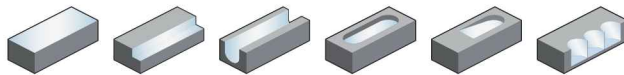




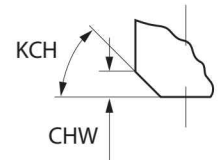
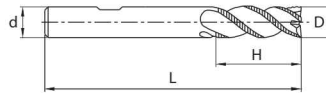
**A**

**End mill long cutting edge    General roughing**

**5602R304GR**



- Type of shank: DIN 6535HB
- Centre cutting
- Helix angle 30°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	H	L	KCH	CHW		KMG303
5602R304GR-1000		10	10	22	72	45	0.5	4	●
5602R304GR-1200		12	12	26	83	45	0.5	4	●
5602R304GR-1400		14	14	30	90	45	0.5	4	○
5602R304GR-1600		16	16	32	92	45	0.5	4	●
5602R304GR-2000		20	20	38	104	45	0.5	4	●

● Ex stock    ○ On demand

\* With internal cooling

Milling

**C**

**Application field**

P	M	K	N	S	H
✓	✓	✓			

✓ Very suitable

✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

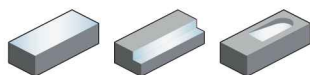
System code > B278

Cutting data > B492

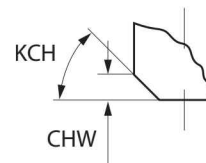
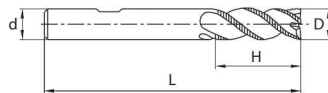
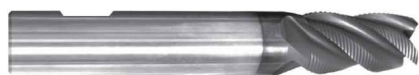
Nonstandard order > B541

End mill long cutting edge **General roughing**

**5602R305GR**



- Type of shank: DIN 6535HB
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]					Teeth	Grade	
		D	d (h6)	H	L	KCH		CHW	KMG303
5602R305GR-2500		25	25	45	121	45	0.5	5	o

- Ex stock ○ On demand
- \* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			

- ✓ Very suitable
- ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

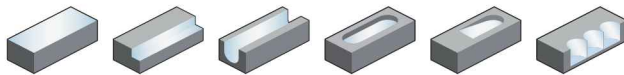
Nonstandard order > B541



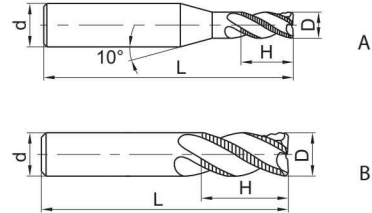
**A**

## End mill serrated teeth Semi-finishing

**GM-4W**



- Factory standard
- Centre cutting
- Helix angle 30°



Turning

**B**

Milling

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG405
GM-4W-D6.0		6	6	16	50	4	B	●
GM-4W-D7.0		7	8	20	60	4	A	●
GM-4W-D8.0		8	8	20	60	4	B	●
GM-4W-D9.0		9	10	22	75	4	A	●
GM-4W-D10.0		10	10	25	75	4	B	●
GM-4W-D11.0		11	12	26	75	4	A	●
GM-4W-D12.0		12	12	30	75	4	B	●
GM-4W-D16.0		16	16	45	100	4	B	●
GM-4W-D20.0		20	20	45	100	4	B	●

- Ex stock ○ On demand
- \* With internal cooling

**C**

Drilling

Application field						
P	M	K	N	S	H	
✓	✓	✓				✓ Very suitable ✓ Suitable

**D**

Technical Information

**E**

Index

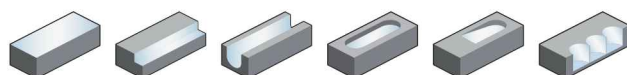
System code > B278

Cutting data > B492

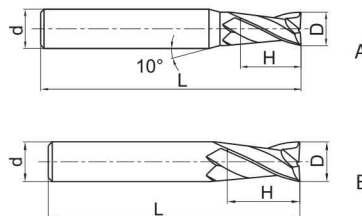
Nonstandard order > B541

**End mill** **High-performance machining**

**PM-2E**



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG405
PM-2E-D1.0S		1	4	3	50	2	A	●
PM-2E-D1.5S		1.5	4	4	50	2	A	●
PM-2E-D2.0S		2	4	6	50	2	A	●
PM-2E-D2.5S		2.5	4	8	50	2	A	●
PM-2E-D3.0S		3	4	8	50	2	A	●
PM-2E-D4.0S		4	4	11	50	2	B	●
PM-2E-D1.0		1	6	3	50	2	A	●
PM-2E-D1.5		1.5	6	4	50	2	A	●
PM-2E-D2.0		2	6	6	50	2	A	●
PM-2E-D2.5		2.5	6	8	50	2	A	●
PM-2E-D3.0		3	6	8	50	2	A	●
PM-2E-D3.5		3.5	6	10	50	2	A	●
PM-2E-D4.0		4	6	11	50	2	A	●
PM-2E-D4.5		4.5	6	11	50	2	A	●
PM-2E-D5.0		5	6	13	50	2	A	●
PM-2E-D5.5		5.5	6	16	50	2	A	●
PM-2E-D6.0		6	6	16	50	2	B	●
PM-2E-D7.0		7	8	20	60	2	A	●
PM-2E-D8.0		8	8	20	60	2	B	●
PM-2E-D9.0		9	10	22	75	2	A	●
PM-2E-D10.0		10	10	25	75	2	B	●
PM-2E-D11.0		11	12	26	75	2	A	○
PM-2E-D12.0		12	12	30	75	2	B	●
PM-2E-D14.0		14	14	32	75	2	B	●
PM-2E-D16.0		16	16	45	100	2	B	●
PM-2E-D18.0		18	18	45	100	2	B	○
PM-2E-D20.0		20	20	45	100	2	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

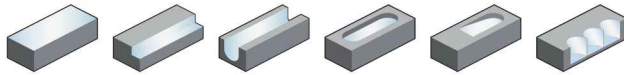
**E**

Index

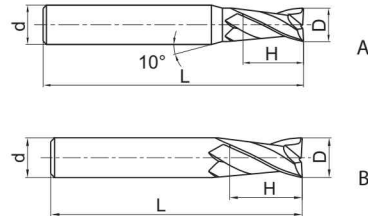
**A**

## End mill long cutting edge High-performance machining

**PM-2EL**



- Factory standard
- Centre cutting
- Helix angle 30°



Turning

**B**

Milling

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG405
PM-2EL-D3.0		3	6	12	75	2	A	●
PM-2EL-D4.0		4	6	15	75	2	A	●
PM-2EL-D5.0		5	6	20	75	2	A	●
PM-2EL-D6.0		6	6	20	75	2	B	●
PM-2EL-D8.0		8	8	25	100	2	B	●
PM-2EL-D10.0		10	10	30	100	2	B	●
PM-2EL-D12.0		12	12	35	100	2	B	●
PM-2EL-D14.0		14	14	40	100	2	B	○
PM-2EL-D16.0		16	16	50	150	2	B	●
PM-2EL-D20.0		20	20	55	150	2	B	●

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

### Application field

P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

**D**

Technical Information

**E**

Index

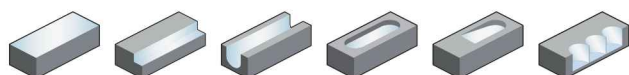
System code > B278

Cutting data > B492

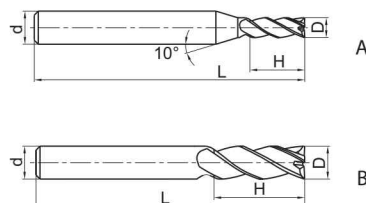
Nonstandard order > B541

**End mill** **High-performance machining**

**PM-4E-G**



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG405
PM-4E-D1.0S-G		1	4	3	50	4	A	●
PM-4E-D1.5S-G		1.5	4	4	50	4	A	●
PM-4E-D2.0S-G		2	4	6	50	4	A	●
PM-4E-D2.5S-G		2.5	4	8	50	4	A	●
PM-4E-D3.0S-G		3	4	8	50	4	A	●
PM-4E-D4.0S-G		4	4	11	50	4	B	●
PM-4E-D1.0-G		1	6	3	50	4	A	●
PM-4E-D1.5-G		1.5	6	4	50	4	A	●
PM-4E-D2.0-G		2	6	6	50	4	A	●
PM-4E-D2.5-G		2.5	6	8	50	4	A	●
PM-4E-D3.0-G		3	6	8	50	4	A	●
PM-4E-D3.5-G		3.5	6	10	50	4	A	●
PM-4E-D4.0-G		4	6	11	50	4	A	●
PM-4E-D4.5-G		4.5	6	11	50	4	A	●
PM-4E-D5.0-G		5	6	13	50	4	A	●
PM-4E-D5.5-G		5.5	6	16	50	4	A	●
PM-4E-D6.0-G		6	6	16	50	4	B	●
PM-4E-D7.0-G		7	8	20	60	4	A	●
PM-4E-D8.0-G		8	8	20	60	4	B	●
PM-4E-D9.0-G		9	10	22	75	4	A	●
PM-4E-D10.0-G		10	10	25	75	4	B	●
PM-4E-D11.0-G		11	12	26	75	4	A	●
PM-4E-D12.0-G		12	12	30	75	4	B	●
PM-4E-D14.0-G		14	14	32	75	4	B	●
PM-4E-D16.0-G		16	16	45	100	4	B	●
PM-4E-D18.0-G		18	18	45	100	4	B	●
PM-4E-D20.0-G		20	20	45	100	4	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

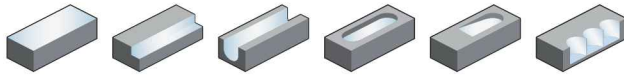
Nonstandard order > B541



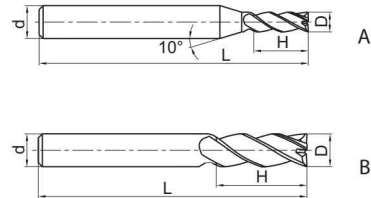
**A**

## End mill long cutting edge High-performance machining

### PM-4EL-G



- Factory standard
- Centre cutting
- Helix angle 30°



Turning

**B**

Milling

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG405
PM-4EL-D3.0-G		3	6	12	75	4	A	○
PM-4EL-D4.0-G		4	6	15	75	4	A	○
PM-4EL-D5.0-G		5	6	20	75	4	A	○
PM-4EL-D6.0-G		6	6	20	75	4	B	○
PM-4EL-D8.0-G		8	8	25	100	4	B	○
PM-4EL-D10.0-G		10	10	30	100	4	B	○
PM-4EL-D12.0-G		12	12	35	100	4	B	○
PM-4EL-D14.0-G		14	14	40	100	4	B	○
PM-4EL-D16.0-G		16	16	50	150	4	B	○
PM-4EL-D20.0-G		20	20	55	150	4	B	○

- Ex stock ○ On demand
- \* With internal cooling

**C**

Drilling

### Application field

P	M	K	N	S	H
✓	✓	✓			✓

- ✓ Very suitable
- ✓ Suitable

**D**

Technical Information

**E**

Index

System code > B278

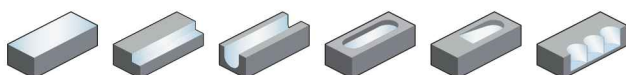
Cutting data > B492

Nonstandard order > B541

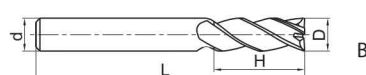
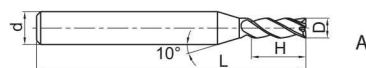
**End mill extra long cutting edge**

**High-performance machining**

**PM-4EX-G**



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG405
PM-4EX-D3.0-G		3	6	20	75	4	A	●
PM-4EX-D4.0-G		4	6	25	75	4	A	●
PM-4EX-D5.0-G		5	6	30	75	4	A	●
PM-4EX-D6.0-G		6	6	30	75	4	B	●
PM-4EX-D8.0-G		8	8	40	100	4	B	●
PM-4EX-D10.0-G		10	10	50	110	4	B	●
PM-4EX-D12.0-G		12	12	50	110	4	B	●
PM-4EX-D16.0-G		16	16	70	150	4	B	●
PM-4EX-D20.0-G		20	20	75	150	4	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

- ✓ Very suitable
- ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541

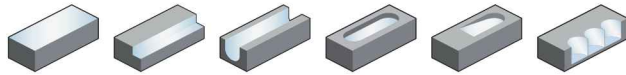




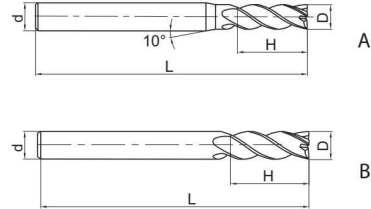
**A**

## End mill High-performance machining

**PM-4E**



- Factory standard
- Centre cutting
- Helix angle 45°



Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG405
PM-4E-D1.0S		1	4	3	50	4	A	●
PM-4E-D1.5S		1.5	4	4	50	4	A	●
PM-4E-D2.0S		2	4	6	50	4	A	●
PM-4E-D2.5S		2.5	4	8	50	4	A	●
PM-4E-D3.0S		3	4	8	50	4	A	●
PM-4E-D4.0S		4	4	11	50	4	B	●
PM-4E-D1.0		1	6	3	50	4	A	●
PM-4E-D1.5		1.5	6	4	50	4	A	●
PM-4E-D2.0		2	6	6	50	4	A	●
PM-4E-D2.5		2.5	6	8	50	4	A	●
PM-4E-D3.0		3	6	8	50	4	A	●
PM-4E-D3.5		3.5	6	10	50	4	A	●
PM-4E-D4.0		4	6	11	50	4	A	●
PM-4E-D4.5		4.5	6	11	50	4	A	●
PM-4E-D5.0		5	6	13	50	4	A	●
PM-4E-D5.5		5.5	6	16	50	4	A	●
PM-4E-D6.0		6	6	16	50	4	B	●
PM-4E-D7.0		7	8	20	60	4	A	●
PM-4E-D8.0		8	8	20	60	4	B	●
PM-4E-D9.0		9	10	22	75	4	A	●
PM-4E-D10.0		10	10	25	75	4	B	●
PM-4E-D11.0		11	12	26	75	4	A	●
PM-4E-D12.0		12	12	30	75	4	B	●
PM-4E-D14.0		14	14	32	75	4	B	●
PM-4E-D16.0		16	16	45	100	4	B	●
PM-4E-D18.0		18	18	45	100	4	B	●
PM-4E-D20.0		20	20	45	100	4	B	●

● Ex stock ○ On demand

\* With internal cooling

**E**

Index

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable  
 ✓ Suitable

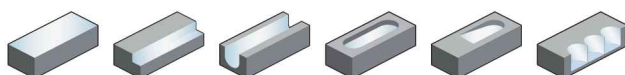
System code > B278

Cutting data > B492

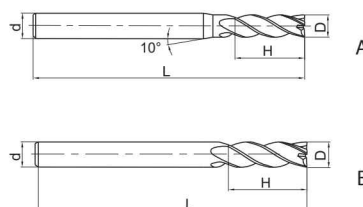
Nonstandard order > B541

**End mill long cutting edge** **High-performance machining**

**PM-4EL**



- Factory standard
- Centre cutting
- Helix angle 45°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG405
PM-4EL-D3.0		3	6	12	75	4	A	●
PM-4EL-D4.0		4	6	15	75	4	A	●
PM-4EL-D5.0		5	6	20	75	4	A	●
PM-4EL-D6.0		6	6	20	75	4	B	●
PM-4EL-D8.0		8	8	25	100	4	B	●
PM-4EL-D10.0		10	10	30	100	4	B	●
PM-4EL-D12.0		12	12	35	100	4	B	●
PM-4EL-D14.0		14	14	40	100	4	B	●
PM-4EL-D16.0		16	16	50	150	4	B	●
PM-4EL-D20.0		20	20	55	150	4	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

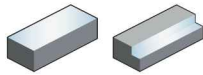
Nonstandard order > B541



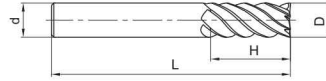
**A**

## End mill High-performance machining

**PM-6E**



- Factory standard
- Non-centre cutting
- Helix angle 45°



Turning

**B**

Article	*	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		KMG405
PM-6E-D6.0		6	6	18	60	6	●
PM-6E-D8.0		8	8	20	60	6	●
PM-6E-D10.0		10	10	30	75	6	●
PM-6E-D12.0		12	12	32	75	6	●
PM-6E-D16.0		16	16	40	100	6	●
PM-6E-D20.0		20	20	45	100	6	●

- Ex stock   ○ On demand
- \* With internal cooling

Milling

**C**

Application field						
P	M	K	N	S	H	
✓	✓	✓			✓	✓ Very suitable
						✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

System code > B278

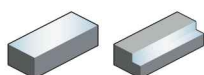
Cutting data > B492

Nonstandard order > B541

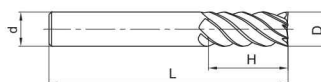
End mill long cutting edge

High-performance machining

PM-6EL



- Factory standard
- Non-centre cutting
- Helix angle 45°



Article	*	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		KMG405
PM-6EL-D6.0		6	6	24	75	6	●
PM-6EL-D8.0		8	8	32	75	6	●
PM-6EL-D10.0		10	10	40	100	6	●
PM-6EL-D12.0		12	12	45	100	6	●
PM-6EL-D16.0		16	16	64	150	6	●
PM-6EL-D20.0		20	20	75	150	6	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

System code > B278

Cutting data > B492

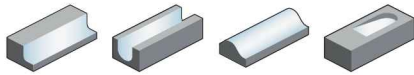
Nonstandard order > B541



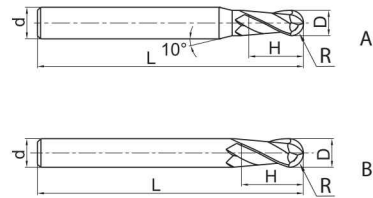
**A**

## Ball nose cutter High-performance machining

**PM-2B**



- Factory standard
- Centre cutting
- Helix angle 30°



Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG405
PM-2B-R0.5S		0.5	1	4	2	50	2	A	●
PM-2B-R0.75S		0.75	1.5	4	3	50	2	A	●
PM-2B-R1.0S		1	2	4	4	50	2	A	●
PM-2B-R1.25S		1.25	2.5	4	5	50	2	A	●
PM-2B-R1.5S		1.5	3	4	6	50	2	A	●
PM-2B-R2.0S		2	4	4	8	50	2	B	●
PM-2B-R0.5		0.5	1	6	2	50	2	A	●
PM-2B-R0.75		0.75	1.5	6	3	50	2	A	●
PM-2B-R1.0		1	2	6	4	50	2	A	●
PM-2B-R1.25		1.25	2.5	6	5	50	2	A	●
PM-2B-R1.5		1.5	3	6	6	50	2	A	●
PM-2B-R1.75		1.75	3.5	6	8	50	2	A	●
PM-2B-R2.0		2	4	6	8	50	2	A	●
PM-2B-R2.5		2.5	5	6	10	50	2	A	●
PM-2B-R2.75		2.75	5.5	6	12	50	2	A	●
PM-2B-R3.0		3	6	6	12	50	2	B	●
PM-2B-R3.5		3.5	7	8	14	60	2	A	●
PM-2B-R4.0		4	8	8	16	60	2	B	●
PM-2B-R4.5		4.5	9	10	18	75	2	A	●
PM-2B-R5.0		5	10	10	20	75	2	B	●
PM-2B-R6.0		6	12	12	24	75	2	B	●
PM-2B-R7.0		7	14	14	28	75	2	B	●
PM-2B-R8.0		8	16	16	32	100	2	B	●
PM-2B-R10.0		10	20	20	40	100	2	B	●

● Ex stock ○ On demand

\* With internal cooling

**E**

Index

### Application field

P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

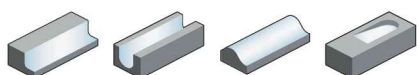
System code > B278

Cutting data > B492

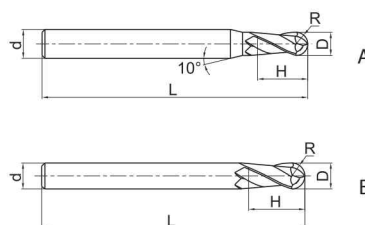
Nonstandard order > B541

**Ball nose cutter long shank** High-performance machining

**PM-2BL**



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG405
PM-2BL-R1.0		1	2	6	4	75	2	A	●
PM-2BL-R1.25		1.25	2.5	6	5	75	2	A	●
PM-2BL-R1.5		1.5	3	6	6	75	2	A	●
PM-2BL-R1.75		1.75	3.5	6	8	75	2	A	●
PM-2BL-R2.0		2	4	6	8	75	2	A	●
PM-2BL-R2.5		2.5	5	6	10	75	2	A	●
PM-2BL-R2.75		2.75	5.5	6	12	75	2	A	●
PM-2BL-R3.0		3	6	6	12	75	2	B	●
PM-2BL-R3.5		3.5	7	8	14	75	2	A	●
PM-2BL-R4.0		4	8	8	16	100	2	B	●
PM-2BL-R4.5		4.5	9	10	18	100	2	A	●
PM-2BL-R5.0		5	10	10	20	100	2	B	●
PM-2BL-R6.0		6	12	12	24	100	2	B	●
PM-2BL-R7.0		7	14	14	28	100	2	B	●
PM-2BL-R8.0		8	16	16	32	150	2	B	●
PM-2BL-R10.0		10	20	20	40	150	2	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

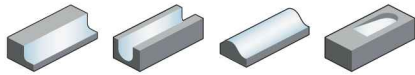
Nonstandard order > B541



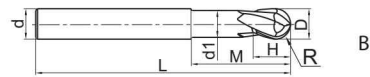
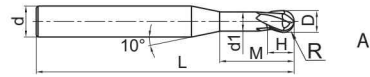
**A**

## Ball nose cutter short cutting edge High-performance machining

**PM-2BFP**



- Factory standard
- Centre cutting
- Helix angle 30°



Turning

**B**

Milling

Article	*	Dimensions [mm]								Teeth	Geometry	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L	KMG405			
PM-2BFP-R0.5		0.5	1	6	0.95	1	2.5	75	2	A	●	
PM-2BFP-R0.75		0.75	1.5	6	1.45	1.5	3	75	2	A	●	
PM-2BFP-R1.0		1	2	6	1.95	2	4	75	2	A	●	
PM-2BFP-R1.5		1.5	3	6	2.85	3	6	75	2	A	●	
PM-2BFP-R2.0		2	4	6	3.85	4	8	75	2	A	●	
PM-2BFP-R2.5		2.5	5	6	4.85	5	10	75	2	A	●	
PM-2BFP-R3.0		3	6	6	5.8	6	12	75	2	B	●	
PM-2BFP-R4.0		4	8	8	7.8	8	16	100	2	B	●	
PM-2BFP-R5.0		5	10	10	9.6	10	20	100	2	B	●	
PM-2BFP-R6.0		6	12	12	11.5	12	24	100	2	B	●	
PM-2BFP-R8.0		8	16	16	15.5	16	32	150	2	B	●	
PM-2BFP-R10.0		10	20	20	19.5	20	40	150	2	B	●	

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

**D**

Technical Information

### Application field

P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

**E**

Index

System code > B278

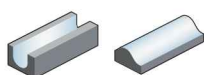
Cutting data > B492

Nonstandard order > B541

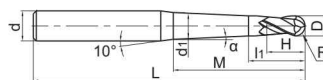
**Ball nose cutter conical neck**

**High-performance machining**

**PM-2BC**



- Straight shank
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]										Teeth	Grade KMG405
		R	D	d (h6)	d <sub>1</sub>	M	H	L	α	l <sub>1</sub>			
PM-2BC05-R0.25-M03		0.25	0.5	4	0.49	3	0.5	50	0.5	1.5	2	○	
PM-2BC05-R0.25-M05		0.25	0.5	4	0.53	5	0.5	50	0.5	1.5	2	○	
PM-2BC10-R0.25-M03		0.25	0.5	4	0.52	3	0.5	50	1	1.5	2	○	
PM-2BC10-R0.25-M05		0.25	0.5	4	0.59	5	0.5	50	1	1.5	2	○	
PM-2BC15-R0.25-M03		0.25	0.5	4	0.54	3	0.5	50	1.5	1.5	2	○	
PM-2BC15-R0.25-M05		0.25	0.5	4	0.65	5	0.5	50	1.5	1.5	2	○	
PM-2BC05-R0.30-M05		0.3	0.6	4	0.62	5	0.6	50	0.5	1.6	2	○	
PM-2BC05-R0.30-M08		0.3	0.6	4	0.68	8	0.6	50	0.5	1.6	2	○	
PM-2BC10-R0.30-M05		0.3	0.6	4	0.68	5	0.6	50	1	1.6	2	○	
PM-2BC10-R0.30-M08		0.3	0.6	4	0.79	8	0.6	50	1	1.6	2	○	
PM-2BC10-R0.30-M10		0.3	0.6	4	0.86	10	0.6	50	1	1.6	2	○	
PM-2BC10-R0.30-M12		0.3	0.6	4	0.93	12	0.6	50	1	1.6	2	○	
PM-2BC10-R0.30-M15		0.3	0.6	4	1.03	15	0.6	50	1	1.6	2	○	
PM-2BC15-R0.30-M05		0.3	0.6	4	0.74	5	0.6	50	1.5	1.6	2	○	
PM-2BC15-R0.30-M08		0.3	0.6	4	0.9	8	0.6	50	1.5	1.6	2	○	
PM-2BC05-R0.40-M08		0.4	0.8	4	0.87	8	0.8	50	0.5	1.8	2	○	
PM-2BC10-R0.40-M08		0.4	0.8	4	0.98	8	0.8	50	1	1.8	2	○	
PM-2BC15-R0.40-M08		0.4	0.8	4	1.09	8	0.8	50	1.5	1.8	2	○	
PM-2BC05-R0.40-M12		0.4	0.8	4	0.94	12	0.8	60	0.5	1.8	2	○	
PM-2BC10-R0.40-M12		0.4	0.8	4	1.12	12	0.8	60	1	1.8	2	○	
PM-2BC15-R0.40-M12		0.4	0.8	4	1.3	12	0.8	60	1.5	1.8	2	○	
PM-2BC05-R0.50-M10		0.5	1	6	1.08	10	1	60	0.5	2.5	2	○	
PM-2BC05-R0.50-M15		0.5	1	6	1.16	15	1	60	0.5	2.5	2	○	
PM-2BC10-R0.50-M10		0.5	1	6	1.21	10	1	60	1	2.5	2	○	
PM-2BC10-R0.50-M15		0.5	1	6	1.38	15	1	60	1	2.5	2	○	
PM-2BC15-R0.50-M10		0.5	1	6	1.34	10	1	60	1.5	2.5	2	○	
PM-2BC15-R0.50-M15		0.5	1	6	1.6	15	1	60	1.5	2.5	2	○	
PM-2BC20-R0.50-M15		0.5	1	6	1.82	15	1	60	2	2.5	2	○	
PM-2BC05-R0.50-M20		0.5	1	6	1.25	20	1	70	0.5	2.5	2	○	
PM-2BC05-R0.50-M25		0.5	1	6	1.34	25	1	70	0.5	2.5	2	○	
PM-2BC05-R0.50-M30		0.5	1	6	1.42	30	1	70	0.5	2.5	2	○	
PM-2BC10-R0.50-M20		0.5	1	6	1.56	20	1	70	1	2.5	2	○	
PM-2BC10-R0.50-M25		0.5	1	6	1.73	25	1	70	1	2.5	2	○	
PM-2BC10-R0.50-M30		0.5	1	6	1.91	30	1	70	1	2.5	2	○	
PM-2BC15-R0.50-M20		0.5	1	6	1.86	20	1	70	1.5	2.5	2	○	
PM-2BC20-R0.50-M20		0.5	1	6	2.17	20	1	70	2	2.5	2	○	
PM-2BC30-R0.50-M20		0.5	1	6	2.78	20	1	70	3	2.5	2	○	

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541

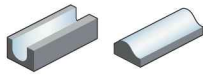




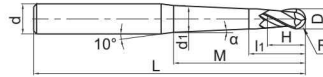
## Ball nose cutter conical neck

## High-performance machining

### PM-2BC



- Straight shank
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]										Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	M	H	L	α	I <sub>1</sub>	KMG405		
PM-2BC50-R0.50-M20		0.5	1	6	4.01	20	1	70	5	2.5	2	○	
PM-2BC10-R0.50-M35		0.5	1	6	2.08	35	1	80	1	2.5	2	○	
PM-2BC05-R0.60-M12		0.6	1.2	6	1.31	12	1.2	60	0.5	2.7	2	○	
PM-2BC10-R0.60-M12		0.6	1.2	6	1.47	12	1.2	60	1	2.7	2	○	
PM-2BC15-R0.60-M12		0.6	1.2	6	1.63	12	1.2	60	1.5	2.7	2	○	
PM-2BC05-R0.60-M24		0.6	1.2	6	1.52	24	1.2	70	0.5	2.7	2	○	
PM-2BC10-R0.60-M24		0.6	1.2	6	1.89	24	1.2	70	1	2.7	2	○	
PM-2BC15-R0.60-M24		0.6	1.2	6	2.26	24	1.2	70	1.5	2.7	2	○	
PM-2BC05-R0.75-M10		0.75	1.5	6	1.57	10	1.5	60	0.5	3	2	○	
PM-2BC05-R0.75-M15		0.75	1.5	6	1.65	15	1.5	60	0.5	3	2	○	
PM-2BC10-R0.75-M10		0.75	1.5	6	1.69	10	1.5	60	1	3	2	○	
PM-2BC10-R0.75-M15		0.75	1.5	6	1.86	15	1.5	60	1	3	2	○	
PM-2BC15-R0.75-M10		0.75	1.5	6	1.81	10	1.5	60	1.5	3	2	○	
PM-2BC15-R0.75-M15		0.75	1.5	6	2.07	15	1.5	60	1.5	3	2	○	
PM-2BC05-R0.75-M30		0.75	1.5	6	1.92	30	1.5	70	0.5	3	2	○	
PM-2BC10-R0.75-M20		0.75	1.5	6	2.04	20	1.5	70	1	3	2	○	
PM-2BC10-R0.75-M30		0.75	1.5	6	2.39	30	1.5	70	1	3	2	○	
PM-2BC15-R0.75-M30		0.75	1.5	6	2.86	30	1.5	70	1.5	3	2	○	
PM-2BC05-R1.0-M20		1	2	6	2.18	20	2	60	0.5	4	2	○	
PM-2BC10-R1.0-M20		1	2	6	2.46	20	2	60	1	4	2	○	
PM-2BC10-R1.0-M25		1	2	6	2.64	25	2	60	1	4	2	○	
PM-2BC15-R1.0-M20		1	2	6	2.74	20	2	60	1.5	4	2	○	
PM-2BC05-R1.0-M30		1	2	6	2.36	30	2	70	0.5	4	2	○	
PM-2BC10-R1.0-M30		1	2	6	2.81	30	2	70	1	4	2	○	
PM-2BC15-R1.0-M30		1	2	6	3.27	30	2	70	1.5	4	2	○	
PM-2BC20-R1.0-M30		1	2	6	3.72	30	2	70	2	4	2	○	
PM-2BC30-R1.0-M30		1	2	6	4.63	30	2	70	3	4	2	○	
PM-2BC05-R1.0-M40		1	2	6	2.53	40	2	80	0.5	4	2	○	
PM-2BC10-R1.0-M35		1	2	6	2.99	35	2	80	1	4	2	○	
PM-2BC10-R1.0-M40		1	2	6	3.16	40	2	80	1	4	2	○	
PM-2BC15-R1.0-M40		1	2	6	3.79	40	2	80	1.5	4	2	○	
PM-2BC20-R1.0-M40		1	2	6	4.42	40	2	80	2	4	2	○	
PM-2BC30-R1.0-M40		1	2	6	5.68	40	2	80	3	4	2	○	
PM-2BC10-R1.0-M50		1	2	6	3.51	50	2	90	1	4	2	○	
PM-2BC05-R1.5-M30		1.5	3	6	3.32	30	3	70	0.5	6	2	○	
PM-2BC10-R1.5-M30		1.5	3	6	3.74	30	3	70	1	6	2	○	
PM-2BC15-R1.5-M30		1.5	3	6	4.16	30	3	70	1.5	6	2	○	

● Ex stock ○ On demand

\* With internal cooling

### Application field

P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278

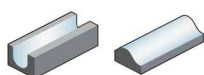
Cutting data > B492

Nonstandard order > B541

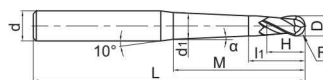
**Ball nose cutter conical neck**

**High-performance machining**

**PM-2BC**



- Straight shank
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]										Grade	
		R	D	d (h6)	d <sub>1</sub>	M	H	L	α	l <sub>1</sub>	Teeth	KMG405	
PM-2BC05-R1.5-M40		1.5	3	6	3.5	40	3	80	0.5	6	2	○	
PM-2BC10-R1.5-M40		1.5	3	6	4.09	40	3	80	1	6	2	○	
PM-2BC15-R1.5-M40		1.5	3	6	4.69	40	3	80	1.5	6	2	○	
PM-2BC05-R1.5-M50		1.5	3	6	3.67	50	3	90	0.5	6	2	○	
PM-2BC10-R1.5-M50		1.5	3	6	4.44	50	3	90	1	6	2	○	
PM-2BC15-R1.5-M50		1.5	3	6	5.21	50	3	90	1.5	6	2	○	
PM-2BC05-R2.0-M60		2	4	6	4.83	60	4	110	0.5	7	2	○	
PM-2BC10-R2.0-M60		2	4	6	5.76	60	4	110	1	7	2	○	

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

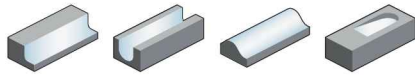
Nonstandard order > B541



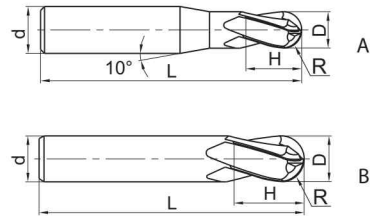
**A**

## Ball nose cutter High-performance machining

**PM-4B**



- Factory standard
- Centre cutting
- Helix angle 30°



Turning

**B**

Milling

Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG405
PM-4B-R1.5		1.5	3	6	6	50	4	A	●
PM-4B-R2.0		2	4	6	8	50	4	A	●
PM-4B-R2.5		2.5	5	6	10	50	4	A	●
PM-4B-R3.0		3	6	6	12	50	4	B	●
PM-4B-R4.0		4	8	8	16	60	4	B	●
PM-4B-R5.0		5	10	10	20	75	4	B	●
PM-4B-R6.0		6	12	12	24	75	4	B	●
PM-4B-R7.0		7	14	14	28	75	4	B	●
PM-4B-R8.0		8	16	16	32	100	4	B	●
PM-4B-R9.0		9	18	18	36	100	4	B	●
PM-4B-R10.0		10	20	20	40	100	4	B	●

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

**D**

Technical Information

**E**

Index

### Application field

P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

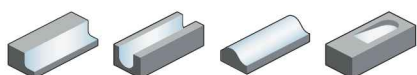
System code > B278

Cutting data > B492

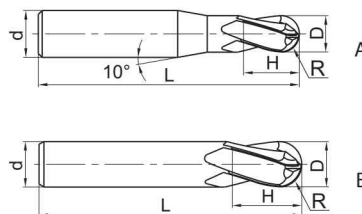
Nonstandard order > B541

**Ball nose cutter long shank** High-performance machining

**PM-4BL**



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG405
PM-4BL-R1.5		1.5	3	6	6	75	4	A	●
PM-4BL-R2.0		2	4	6	8	75	4	A	●
PM-4BL-R2.5		2.5	5	6	10	75	4	A	●
PM-4BL-R3.0		3	6	6	12	75	4	B	●
PM-4BL-R4.0		4	8	8	16	100	4	B	●
PM-4BL-R5.0		5	10	10	20	100	4	B	●
PM-4BL-R6.0		6	12	12	24	100	4	B	●
PM-4BL-R7.0		7	14	14	28	100	4	B	●
PM-4BL-R8.0		8	16	16	32	150	4	B	●
PM-4BL-R9.0		9	18	18	36	150	4	B	●
PM-4BL-R10.0		10	20	20	40	150	4	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541



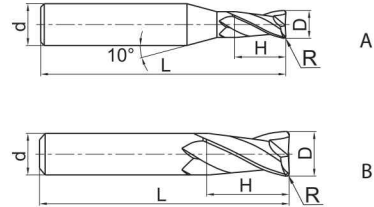
**A**

## Torus mill High-performance machining

**PM-2R**



- Factory standard
- Centre cutting
- Helix angle 30°



Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG405
PM-2R-D1.0R0.2		0.2	1	4	3	50	2	A	●
PM-2R-D1.5R0.2		0.2	1.5	4	4	50	2	A	●
PM-2R-D2.0R0.2		0.2	2	4	6	50	2	A	●
PM-2R-D2.0R0.5		0.5	2	4	6	50	2	A	●
PM-2R-D2.5R0.2		0.2	2.5	4	8	50	2	A	●
PM-2R-D2.5R0.5		0.5	2.5	4	8	50	2	A	●
PM-2R-D3.0R0.2		0.2	3	4	8	50	2	A	●
PM-2R-D3.0R0.3		0.3	3	4	8	50	2	A	○
PM-2R-D3.0R0.5		0.5	3	4	8	50	2	A	●
PM-2R-D4.0R0.2		0.2	4	4	11	50	2	B	●
PM-2R-D4.0R0.3		0.3	4	4	11	50	2	B	●
PM-2R-D4.0R0.5		0.5	4	4	11	50	2	B	●
PM-2R-D4.0R1.0		1	4	4	11	50	2	B	●
PM-2R-D5.0R0.3		0.3	5	6	13	50	2	A	○
PM-2R-D5.0R0.5		0.5	5	6	13	50	2	A	●
PM-2R-D5.0R1.0		1	5	6	13	50	2	A	●
PM-2R-D6.0R0.3		0.3	6	6	16	50	2	B	●
PM-2R-D6.0R0.5		0.5	6	6	16	50	2	B	●
PM-2R-D6.0R1.0		1	6	6	16	50	2	B	●
PM-2R-D8.0R0.3		0.3	8	8	20	60	2	B	○
PM-2R-D8.0R0.5		0.5	8	8	20	60	2	B	●
PM-2R-D8.0R1.0		1	8	8	20	60	2	B	●
PM-2R-D10.0R0.5		0.5	10	10	25	75	2	B	●
PM-2R-D10.0R1.0		1	10	10	25	75	2	B	●
PM-2R-D10.0R1.5		1.5	10	10	25	75	2	B	●
PM-2R-D10.0R2.0		2	10	10	25	75	2	B	●
PM-2R-D12.0R0.5		0.5	12	12	30	75	2	B	●
PM-2R-D12.0R1.0		1	12	12	30	75	2	B	●
PM-2R-D12.0R1.5		1.5	12	12	30	75	2	B	●
PM-2R-D12.0R2.0		2	12	12	30	75	2	B	●

- Ex stock ○ On demand
- \* With internal cooling

### Application field

P	M	K	N	S	H
✓	✓	✓			✓

- ✓ Very suitable
- ✓ Suitable

System code > B278

Cutting data > B492

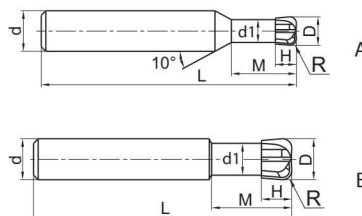
Nonstandard order > B541

**End mill** **High-performance machining**

**PM-4H**



- Factory standard
- Centre cutting
- Helix angle 0°



Article	*	Dimensions [mm]								Teeth	Geometry	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L	KMG405			
PM-4H-D3.0R0.8		0.8	3	6	2.7	1.2	8	50	4	A	●	
PM-4H-D4.0R1.0		1	4	6	3.6	1.6	10	50	4	A	●	
PM-4H-D5.0R1.2		1.2	5	6	4.5	2	12.5	50	4	A	●	
PM-4H-D6.0R1.0		1	6	6	5.4	2.5	12	50	4	B	●	
PM-4H-D6.0R1.5		1.5	6	6	5.4	2.5	12	50	4	B	●	
PM-4H-D6.0R2.0		2	6	6	5.4	2.5	12	50	4	B	●	
PM-4H-D8.0R1.0		1	8	8	7	3.5	16	60	4	B	●	
PM-4H-D8.0R2.0		2	8	8	7	3.5	16	60	4	B	●	
PM-4H-D10.0R1.0		1	10	10	9	4	20	75	4	B	●	
PM-4H-D10.0R2.0		2	10	10	9	4	20	75	4	B	●	
PM-4H-D10.0R3.0		3	10	10	9	4	20	75	4	B	●	
PM-4H-D12.0R2.0		2	12	12	11	5	24	75	4	B	●	
PM-4H-D12.0R3.0		3	12	12	11	5	24	75	4	B	●	

● Ex stock ○ On demand

\* With internal cooling

**Application field**

P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



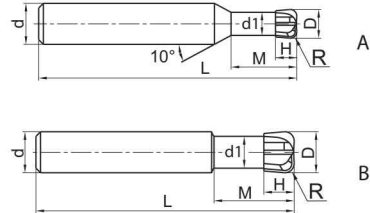
**A**

## End mill long shank High-performance machining

**PM-4HL**



- Factory standard
- Centre cutting
- Helix angle 0°



Turning

**B**

Milling

Article	*	Dimensions [mm]								Teeth	Geometry	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L	KMG405			
PM-4HL-D4.0R1.0		1	4	6	3.6	1.6	10	75	4	A	●	
PM-4HL-D5.0R1.2		1.2	5	6	4.5	2	12.5	75	4	A	●	
PM-4HL-D6.0R1.0		1	6	6	5.4	2.5	12	75	4	B	●	
PM-4HL-D6.0R1.5		1.5	6	6	5.4	2.5	12	75	4	B	●	
PM-4HL-D6.0R2.0		2	6	6	5.4	2.5	12	75	4	B	●	
PM-4HL-D8.0R1.0		1	8	8	7	3.5	16	100	4	B	●	
PM-4HL-D8.0R2.0		2	8	8	7	3.5	16	100	4	B	●	
PM-4HL-D10.0R1.0		1	10	10	9	4	20	100	4	B	●	
PM-4HL-D10.0R2.0		2	10	10	9	4	20	100	4	B	●	
PM-4HL-D10.0R3.0		3	10	10	9	4	20	100	4	B	●	
PM-4HL-D12.0R2.0		2	12	12	11	5	24	100	4	B	●	
PM-4HL-D12.0R3.0		3	12	12	11	5	24	100	4	B	●	

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

**D**

Technical Information

### Application field

P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

**E**

Index

System code > B278

Cutting data > B492

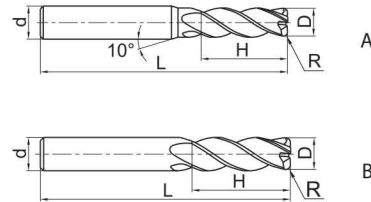
Nonstandard order > B541

**Torus mill** **High-performance machining**

**PM-4R**



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG405
PM-4R-D3.0R0.2		0.2	3	6	8	50	4	A	●
PM-4R-D4.0R0.3		0.3	4	6	10	50	4	A	●
PM-4R-D4.0R0.5		0.5	4	6	10	50	4	A	●
PM-4R-D5.0R0.5		0.5	5	6	13	50	4	A	●
PM-4R-D5.0R1.0		1	5	6	13	50	4	A	●
PM-4R-D6.0R0.5		0.5	6	6	16	50	4	B	●
PM-4R-D6.0R1.0		1	6	6	16	50	4	B	●
PM-4R-D8.0R0.5		0.5	8	8	20	60	4	B	●
PM-4R-D8.0R1.0		1	8	8	20	60	4	B	●
PM-4R-D10.0R0.5		0.5	10	10	25	75	4	B	●
PM-4R-D10.0R1.0		1	10	10	25	75	4	B	●
PM-4R-D10.0R2.0		2	10	10	25	75	4	B	●
PM-4R-D10.0R3.0		3	10	10	25	75	4	B	●
PM-4R-D12.0R0.5		0.5	12	12	30	75	4	B	●
PM-4R-D12.0R1.0		1	12	12	30	75	4	B	●
PM-4R-D12.0R2.0		2	12	12	30	75	4	B	●
PM-4R-D12.0R3.0		3	12	12	30	75	4	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

- ✓ Very suitable
- ✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index



**A**

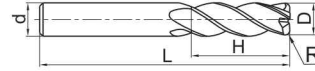
## Torus mill long shank

## High-performance machining

**PM-4RL**



- Factory standard
- Centre cutting
- Helix angle 30°



Turning

**B**

Article	*	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMG405
PM-4RL-D6.0R0.5		0.5	6	6	16	75	4	●
PM-4RL-D6.0R1.0		1	6	6	16	75	4	●
PM-4RL-D8.0R0.5		0.5	8	8	20	100	4	●
PM-4RL-D8.0R1.0		1	8	8	20	100	4	○
PM-4RL-D10.0R0.5		0.5	10	10	25	100	4	○
PM-4RL-D10.0R1.0		1	10	10	25	100	4	●
PM-4RL-D10.0R2.0		2	10	10	25	100	4	●
PM-4RL-D12.0R0.5		0.5	12	12	30	100	4	●
PM-4RL-D12.0R1.0		1	12	12	30	100	4	●
PM-4RL-D12.0R2.0		2	12	12	30	100	4	●
PM-4RL-D16.0R1.0		1	16	16	45	150	4	●
PM-4RL-D16.0R2.0		2	16	16	45	150	4	●

- Ex stock ○ On demand
- \* With internal cooling

Milling

**C**

### Application field

P	M	K	N	S	H
✓	✓	✓			✓

- ✓ Very suitable
- ✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

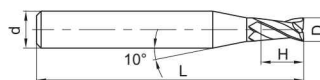
Nonstandard order > B541

**End mill** **High-performance machining**

**PM-2ES**



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		KMG405
PM-2ES-D0.3		0.3	4	0.6	50	2	●
PM-2ES-D0.4		0.4	4	0.8	50	2	●
PM-2ES-D0.5		0.5	4	1	50	2	●
PM-2ES-D0.6		0.6	4	1.2	50	2	●
PM-2ES-D0.7		0.7	4	1.4	50	2	●
PM-2ES-D0.8		0.8	4	1.6	50	2	●
PM-2ES-D0.9		0.9	4	1.8	50	2	○
PM-2ES-D1.0		1	4	2	50	2	●
PM-2ES-D1.1		1.1	4	2	50	2	○
PM-2ES-D1.2		1.2	4	2.5	50	2	●
PM-2ES-D1.3		1.3	4	2.5	50	2	●
PM-2ES-D1.4		1.4	4	3	50	2	●
PM-2ES-D1.5		1.5	4	3	50	2	●
PM-2ES-D1.6		1.6	4	3.5	50	2	●
PM-2ES-D1.7		1.7	4	3.5	50	2	●
PM-2ES-D1.8		1.8	4	4	50	2	●
PM-2ES-D1.9		1.9	4	4	50	2	○
PM-2ES-D2.0		2	4	4	50	2	●
PM-2ES-D2.1		2.1	4	4	50	2	●
PM-2ES-D2.2		2.2	4	4.5	50	2	●
PM-2ES-D2.3		2.3	4	4.5	50	2	●
PM-2ES-D2.4		2.4	4	5	50	2	●
PM-2ES-D2.5		2.5	4	5	50	2	●
PM-2ES-D2.6		2.6	4	5	50	2	○
PM-2ES-D2.7		2.7	4	5.5	50	2	○
PM-2ES-D2.8		2.8	4	5.5	50	2	○
PM-2ES-D2.9		2.9	4	6	50	2	○
PM-2ES-D3.0		3	4	6	50	2	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



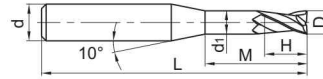
**A**

## End mill High-performance machining

### PM-2EP



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d <sub>1</sub>	H	M	L		KMG405
PM-2EP-D0.5-M06		0.5	4	0.45	0.7	6	50	2	●
PM-2EP-D0.5-M04		0.5	4	0.45	0.6	4	50	2	●
PM-2EP-D0.5-M08		0.5	4	0.45	0.7	8	50	2	○
PM-2EP-D0.8-M04		0.8	4	0.75	1.2	4	50	2	●
PM-2EP-D0.8-M08		0.8	4	0.75	1.2	8	50	2	○
PM-2EP-D0.8-M10		0.8	4	0.75	1.2	10	50	2	○
PM-2EP-D0.8-M06		0.8	4	0.75	1.2	6	50	2	○
PM-2EP-D1.0-M20		1	4	0.95	1.5	20	50	2	●
PM-2EP-D1.0-M14		1	4	0.95	1.5	14	50	2	●
PM-2EP-D1.0-M16		1	4	0.95	1.5	16	50	2	●
PM-2EP-D1.0-M04		1	4	0.95	1.5	4	50	2	●
PM-2EP-D1.0-M06		1	4	0.95	1.5	6	50	2	●
PM-2EP-D1.0-M10		1	4	0.95	1.5	10	50	2	●
PM-2EP-D1.0-M12		1	4	0.95	1.5	12	50	2	●
PM-2EP-D1.0-M08		1	4	0.95	1.5	8	50	2	●
PM-2EP-D1.2-M10		1.2	4	1.15	1.8	10	50	2	○
PM-2EP-D1.2-M06		1.2	4	1.15	1.8	6	50	2	●
PM-2EP-D1.2-M08		1.2	4	1.15	1.8	8	50	2	○
PM-2EP-D1.2-M16		1.2	4	1.15	1.8	16	50	2	○
PM-2EP-D1.2-M12		1.2	4	1.15	1.8	12	50	2	○
PM-2EP-D1.5-M18		1.5	4	1.45	2.3	18	50	2	●
PM-2EP-D1.5-M16		1.5	4	1.45	2.3	16	50	2	●
PM-2EP-D1.5-M10		1.5	4	1.45	2.3	10	50	2	●
PM-2EP-D1.5-M12		1.5	4	1.45	2.3	12	50	2	●
PM-2EP-D1.5-M14		1.5	4	1.45	2.3	14	50	2	●
PM-2EP-D1.5-M20		1.5	4	1.45	2.3	20	50	2	●
PM-2EP-D1.5-M08		1.5	4	1.45	2.3	8	50	2	●
PM-2EP-D1.5-M06		1.5	4	1.45	2.3	6	50	2	●
PM-2EP-D2.0-M20		2	4	1.95	3	20	50	2	●
PM-2EP-D2.0-M12		2	4	1.95	3	12	50	2	●
PM-2EP-D2.0-M10		2	4	1.95	3	10	50	2	●
PM-2EP-D2.0-M18		2	4	1.95	3	18	50	2	●
PM-2EP-D2.0-M16		2	4	1.95	3	16	50	2	●
PM-2EP-D2.0-M08		2	4	1.95	3	8	50	2	●
PM-2EP-D2.0-M14		2	4	1.95	3	14	50	2	●
PM-2EP-D2.0-M06		2	4	1.95	3	6	50	2	●
PM-2EP-D2.5-M08		2.5	4	2.4	3.7	8	50	2	●

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

**D**

Technical Information

**E**

Index

#### Application field

P	M	K	N	S	H	
✓	✓	✓			✓	✓ Very suitable
						✓ Suitable

System code > B278

Cutting data > B492

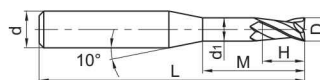
Nonstandard order > B541

**End mill** High-performance machining

**PM-2EP**



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d <sub>1</sub>	H	M	L		KMG405
PM-2EP-D2.5-M10		2.5	4	2.4	3.7	10	50	2	○
PM-2EP-D2.5-M16		2.5	4	2.4	3.7	16	60	2	○
PM-2EP-D2.5-M20		2.5	4	2.4	3.7	20	60	2	○
PM-2EP-D2.5-M14		2.5	4	2.4	3.7	14	50	2	○
PM-2EP-D2.5-M12		2.5	4	2.4	3.7	12	50	2	○
PM-2EP-D2.5-M18		2.5	4	2.4	3.7	18	60	2	○
PM-2EP-D3.0-M18		3	6	2.85	4.5	18	60	2	○
PM-2EP-D3.0-M10		3	6	2.85	4.5	10	50	2	●
PM-2EP-D3.0-M20		3	6	2.85	4.5	20	60	2	●
PM-2EP-D3.0-M16		3	6	2.85	4.5	16	60	2	●
PM-2EP-D3.0-M06		3	6	2.85	4.5	6	50	2	○
PM-2EP-D3.0-M14		3	6	2.85	4.5	14	60	2	○
PM-2EP-D3.0-M12		3	6	2.85	4.5	12	50	2	●
PM-2EP-D3.0-M08		3	6	2.85	4.5	8	50	2	○
PM-2EP-D4.0-M20		4	6	3.85	6	20	60	2	●
PM-2EP-D4.0-M14		4	6	3.85	6	14	60	2	○
PM-2EP-D4.0-M16		4	6	3.85	6	16	60	2	○
PM-2EP-D4.0-M25		4	6	3.85	6	25	60	2	●
PM-2EP-D4.0-M12		4	6	3.85	6	12	50	2	●
PM-2EP-D5.0-M25		5	6	4.85	7.5	25	70	2	●
PM-2EP-D5.0-M12		5	6	4.85	7.5	12	60	2	●
PM-2EP-D5.0-M14		5	6	4.85	7.5	14	60	2	●
PM-2EP-D5.0-M20		5	6	4.85	7.5	20	70	2	●
PM-2EP-D5.0-M16		5	6	4.85	7.5	16	60	2	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



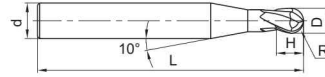
**A**

## Ball nose cutter High-performance machining

**PM-2BS**



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Article	*	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMG405
PM-2BS-R0.15		0.15	0.3	4	0.5	50	2	●
PM-2BS-R0.20		0.2	0.4	4	0.6	50	2	●
PM-2BS-R0.25		0.25	0.5	4	0.8	50	2	●
PM-2BS-R0.30		0.3	0.6	4	0.9	50	2	●
PM-2BS-R0.35		0.35	0.7	4	1	50	2	○
PM-2BS-R0.40		0.4	0.8	4	1.2	50	2	●
PM-2BS-R0.45		0.45	0.9	4	1.3	50	2	○
PM-2BS-R0.50		0.5	1	4	1.5	50	2	●
PM-2BS-R0.60		0.6	1.2	4	1.8	50	2	●
PM-2BS-R0.70		0.7	1.4	4	2	50	2	○
PM-2BS-R0.75		0.75	1.5	4	2.3	50	2	●
PM-2BS-R0.80		0.8	1.6	4	2.5	50	2	○
PM-2BS-R0.90		0.9	1.8	4	2.7	50	2	○
PM-2BS-R1.00		1	2	4	3	50	2	●
PM-2BS-R1.25		1.25	2.5	4	3.7	50	2	○
PM-2BS-R1.50		1.5	3	4	4.5	50	2	●

Milling

**C**

- Ex stock ○ On demand
- \* With internal cooling

Drilling

**D**

### Application field

P	M	K	N	S	H
✓	✓	✓			✓

- ✓ Very suitable
- ✓ Suitable

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541

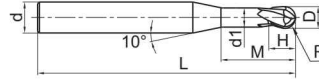
## Ball nose cutter

## High-performance machining

### PM-2BP



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]								Teeth	Grade KMG405
		R	D	d (h6)	d <sub>1</sub>	H	M	L			
PM-2BP-R0.25-M04		0.25	0.5	4	0.45	0.7	4	50	2	●	
PM-2BP-R0.25-M06		0.25	0.5	4	0.45	0.7	6	50	2	●	
PM-2BP-R0.3-M06		0.3	0.6	4	0.55	0.9	6	50	2	●	
PM-2BP-R0.3-M08		0.3	0.6	4	0.55	0.9	8	50	2	●	
PM-2BP-R0.3-M04		0.3	0.6	4	0.55	0.9	4	50	2	●	
PM-2BP-R0.4-M04		0.4	0.8	4	0.75	1.2	4	50	2	●	
PM-2BP-R0.4-M10		0.4	0.8	4	0.75	1.2	10	50	2	●	
PM-2BP-R0.4-M06		0.4	0.8	4	0.75	1.2	6	50	2	●	
PM-2BP-R0.4-M08		0.4	0.8	4	0.75	1.2	8	50	2	●	
PM-2BP-R0.5-M06		0.5	1	4	0.95	1.5	6	50	2	●	
PM-2BP-R0.5-M15		0.5	1	4	0.95	1.5	15	50	2	○	
PM-2BP-R0.5-M04		0.5	1	4	0.95	1.5	4	50	2	●	
PM-2BP-R0.5-M08		0.5	1	4	0.95	1.5	8	50	2	●	
PM-2BP-R0.5-M10		0.5	1	4	0.95	1.5	10	50	2	●	
PM-2BP-R0.5-M12		0.5	1	4	0.95	1.5	12	50	2	●	
PM-2BP-R0.6-M16		0.6	1.2	4	1.15	1.8	16	50	2	○	
PM-2BP-R0.6-M06		0.6	1.2	4	1.15	1.8	6	50	2	●	
PM-2BP-R0.6-M12		0.6	1.2	4	1.15	1.8	12	50	2	○	
PM-2BP-R0.6-M08		0.6	1.2	4	1.15	1.8	8	50	2	○	
PM-2BP-R0.75-M08		0.75	1.5	4	1.45	2.3	8	50	2	●	
PM-2BP-R0.75-M06		0.75	1.5	4	1.45	2.3	6	50	2	○	
PM-2BP-R0.75-M12		0.75	1.5	4	1.45	2.3	12	50	2	●	
PM-2BP-R0.75-M16		0.75	1.5	4	1.45	2.3	16	50	2	●	
PM-2BP-R1.0-M16		1	2	4	1.95	3	16	50	2	●	
PM-2BP-R1.0-M06		1	2	4	1.95	3	6	50	2	●	
PM-2BP-R1.0-M20		1	2	4	1.95	3	20	50	2	●	
PM-2BP-R1.0-M10		1	2	4	1.95	3	10	50	2	●	
PM-2BP-R1.0-M12		1	2	4	1.95	3	12	50	2	●	
PM-2BP-R1.0-M08		1	2	4	1.95	3	8	50	2	●	
PM-2BP-R1.25-M08		1.25	2.5	4	2.4	3.7	8	50	2	○	
PM-2BP-R1.25-M10		1.25	2.5	4	2.4	3.7	10	50	2	○	
PM-2BP-R1.25-M16		1.25	2.5	4	2.4	3.7	16	60	2	○	
PM-2BP-R1.25-M12		1.25	2.5	4	2.4	3.7	12	50	2	●	
PM-2BP-R1.25-M20		1.25	2.5	4	2.4	3.7	20	60	2	○	
PM-2BP-R1.5-M10		1.5	3	6	2.85	4.5	10	50	2	●	
PM-2BP-R1.5-M20		1.5	3	6	2.85	4.5	20	60	2	●	
PM-2BP-R1.5-M08		1.5	3	6	2.85	4.5	8	50	2	●	

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



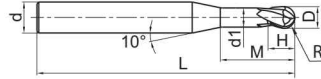
**A**

## Ball nose cutter High-performance machining

**PM-2BP**



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Article	*	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L		KMG405
PM-2BP-R1.5-M12		1.5	3	6	2.85	4.5	12	50	2	●
PM-2BP-R1.5-M16		1.5	3	6	2.85	4.5	16	60	2	●
PM-2BP-R2.0-M10		2	4	6	3.85	6	10	60	2	●
PM-2BP-R2.0-M16		2	4	6	3.85	6	16	60	2	●
PM-2BP-R2.0-M20		2	4	6	3.85	6	20	60	2	●
PM-2BP-R2.0-M25		2	4	6	3.85	6		60	2	○
PM-2BP-R2.5-M16		2.5	5	6	4.85	7.5	16	60	2	●
PM-2BP-R2.5-M25		2.5	5	6	4.85	7.5	25	70	2	●

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

Application field						
P	M	K	N	S	H	
✓	✓	✓			✓	✓ Very suitable ✓ Suitable

Drilling

**D**

Technical Information

**E**

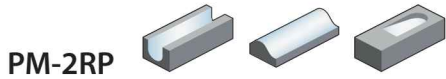
Index

System code > B278

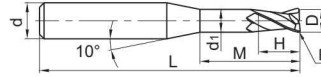
Cutting data > B492

Nonstandard order > B541

**Torus mill** High-performance machining



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]								Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L	KMG405		
PM-2RP-D0.5-R0.1-M04		0.1	0.5	4	0.45	0.6	4	50	2	●	
PM-2RP-D0.5-R0.1-M08		0.1	0.5	4	0.45	0.7	8	50	2	○	
PM-2RP-D0.5-R0.1-M06		0.1	0.5	4	0.45	0.7	6	50	2	●	
PM-2RP-D0.5-R0.05-M06		0.05	0.5	4	0.45	0.7	6	50	2	●	
PM-2RP-D0.5-R0.05-M08		0.05	0.5	4	0.45	0.7	8	50	2	○	
PM-2RP-D0.5-R0.05-M04		0.05	0.5	4	0.45	0.6	4	50	2	●	
PM-2RP-D0.8-R0.1-M04		0.1	0.8	4	0.75	1.2	4	50	2	●	
PM-2RP-D0.8-R0.1-M08		0.1	0.8	4	0.75	1.2	8	50	2	●	
PM-2RP-D0.8-R0.2-M04		0.2	0.8	4	0.75	1.2	4	50	2	●	
PM-2RP-D0.8-R0.1-M10		0.1	0.8	4	0.75	1.2	10	50	2	○	
PM-2RP-D0.8-R0.2-M08		0.2	0.8	4	0.75	1.2	8	50	2	●	
PM-2RP-D0.8-R0.2-M10		0.2	0.8	4	0.75	1.2	10	50	2	○	
PM-2RP-D0.8-R0.1-M06		0.1	0.8	4	0.75	1.2	6	50	2	●	
PM-2RP-D0.8-R0.2-M06		0.2	0.8	4	0.75	1.2	6	50	2	●	
PM-2RP-D1.0-R0.3-M12		0.3	1	4	0.95	1.5	12	50	2	●	
PM-2RP-D1.0-R0.3-M08		0.3	1	4	0.95	1.5	8	50	2	●	
PM-2RP-D1.0-R0.2-M16		0.2	1	4	0.95	1.5	16	60	2	●	
PM-2RP-D1.0-R0.2-M14		0.2	1	4	0.95	1.5	14	50	2	○	
PM-2RP-D1.0-R0.1-M20		0.1	1	4	0.95	1.5	20	60	2	●	
PM-2RP-D1.0-R0.3-M10		0.3	1	4	0.95	1.5	10	50	2	●	
PM-2RP-D1.0-R0.1-M10		0.1	1	4	0.95	1.5	10	50	2	●	
PM-2RP-D1.0-R0.1-M12		0.1	1	4	0.95	1.5	12	50	2	●	
PM-2RP-D1.0-R0.3-M04		0.3	1	4	0.95	1.5	4	50	2	●	
PM-2RP-D1.0-R0.2-M04		0.2	1	4	0.95	1.5	4	50	2	●	
PM-2RP-D1.0-R0.2-M12		0.2	1	4	0.95	1.5	12	50	2	●	
PM-2RP-D1.0-R0.1-M14		0.1	1	4	0.95	1.5	14	50	2	○	
PM-2RP-D1.0-R0.2-M08		0.2	1	4	0.95	1.5	8	50	2	●	
PM-2RP-D1.0-R0.1-M06		0.1	1	4	0.95	1.5	6	50	2	●	
PM-2RP-D1.0-R0.2-M20		0.2	1	4	0.95	1.5	20	60	2	●	
PM-2RP-D1.0-R0.1-M04		0.1	1	4	0.95	1.5	4	50	2	●	
PM-2RP-D1.0-R0.3-M06		0.3	1	4	0.95	1.5	6	50	2	●	
PM-2RP-D1.0-R0.1-M16		0.1	1	4	0.95	1.5	16	60	2	●	
PM-2RP-D1.0-R0.2-M06		0.2	1	4	0.95	1.5	6	50	2	●	
PM-2RP-D1.0-R0.2-M10		0.2	1	4	0.95	1.5	10	50	2	●	
PM-2RP-D1.0-R0.1-M08		0.1	1	4	0.95	1.5	8	50	2	●	
PM-2RP-D1.2-R0.2-M16		0.2	1.2	4	1.5	1.8	16	60	2	○	
PM-2RP-D1.2-R0.1-M08		0.1	1.2	4	1.15	1.8	8	50	2	●	

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278    Cutting data > B492    Nonstandard order > B541



A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index



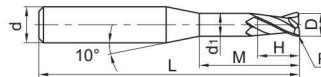
A

## Torus mill High-performance machining

### PM-2RP



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

B

Article	*	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L		
PM-2RP-D1.2-R0.1-M16		0.1	1.2	4	1.5	1.8	16	60	2	○
PM-2RP-D1.2-R0.2-M12		0.2	1.2	4	1.15	1.8	12	50	2	●
PM-2RP-D1.2-R0.1-M06		0.1	1.2	4	1.15	1.8	6	50	2	●
PM-2RP-D1.2-R0.2-M10		0.2	1.2	4	1.15	1.8	10	50	2	●
PM-2RP-D1.2-R0.1-M12		0.1	1.2	4	1.15	1.8	12	50	2	●
PM-2RP-D1.2-R0.2-M06		0.2	1.2	4	1.15	1.8	6	50	2	●
PM-2RP-D1.2-R0.2-M08		0.2	1.2	4	1.15	1.8	8	50	2	●
PM-2RP-D1.2-R0.1-M10		0.1	1.2	4	1.15	1.8	10	50	2	●
PM-2RP-D1.5-R0.3-M12		0.3	1.5	4	1.45	2.3	12	50	2	●
PM-2RP-D1.5-R0.3-M10		0.3	1.5	4	1.45	2.3	10	50	2	●
PM-2RP-D1.5-R0.2-M12		0.2	1.5	4	1.45	2.3	12	50	2	●
PM-2RP-D1.5-R0.3-M08		0.3	1.5	4	1.45	2.3	8	50	2	●
PM-2RP-D1.5-R0.2-M06		0.2	1.5	4	1.45	2.3	6	50	2	●
PM-2RP-D1.5-R0.2-M10		0.2	1.5	4	1.45	2.3	10	50	2	●
PM-2RP-D1.5-R0.2-M14		0.2	1.5	4	1.45	2.3	14	50	2	○
PM-2RP-D1.5-R0.2-M20		0.2	1.5	4	1.45	2.3	20	50	2	○
PM-2RP-D1.5-R0.3-M18		0.3	1.5	4	1.45	2.3	18	50	2	○
PM-2RP-D1.5-R0.3-M20		0.3	1.5	4	1.45	2.3	20	50	2	○
PM-2RP-D1.5-R0.3-M06		0.3	1.5	4	1.45	2.3	6	50	2	●
PM-2RP-D1.5-R0.2-M08		0.2	1.5	4	1.45	2.3	8	50	2	●
PM-2RP-D1.5-R0.2-M18		0.2	1.5	4	1.45	2.3	18	50	2	○
PM-2RP-D1.5-R0.2-M16		0.2	1.5	4	1.45	2.3	16	50	2	●
PM-2RP-D1.5-R0.3-M16		0.3	1.5	4	1.45	2.3	16	50	2	●
PM-2RP-D1.5-R0.3-M14		0.3	1.5	4	1.45	2.3	14	50	2	○
PM-2RP-D2.0-R0.5-M06		0.5	2	4	1.95	3	6	50	2	●
PM-2RP-D2.0-R0.2-M10		0.2	2	4	1.95	3	10	50	2	●
PM-2RP-D2.0-R0.5-M20		0.5	2	4	1.97	3	20	50	2	●
PM-2RP-D2.0-R0.5-M08		0.5	2	4	1.95	3	8	50	2	●
PM-2RP-D2.0-R0.5-M16		0.5	2	4	1.95	3	16	50	2	●
PM-2RP-D2.0-R0.2-M08		0.2	2	4	1.95	3	8	50	2	●
PM-2RP-D2.0-R0.2-M16		0.2	2	4	1.95	3	16	50	2	●
PM-2RP-D2.0-R0.5-M12		0.5	2	4	1.95	3	12	50	2	●
PM-2RP-D2.0-R0.5-M14		0.5	2	4	1.95	3	14	50	2	○
PM-2RP-D2.0-R0.5-M10		0.5	2	4	1.95	3	10	50	2	●
PM-2RP-D2.0-R0.2-M18		0.2	2	4	1.96	3	18	50	2	○
PM-2RP-D2.0-R0.2-M12		0.2	2	4	1.95	3	12	50	2	●
PM-2RP-D2.0-R0.5-M18		0.5	2	4	1.96	3	18	50	2	○

● Ex stock ○ On demand

\* With internal cooling

Milling

C

Drilling

D

Technical Information

E

Index

#### Application field

P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

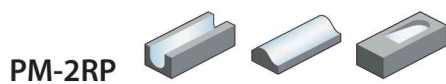
✓ Suitable

System code > B278

Cutting data > B492

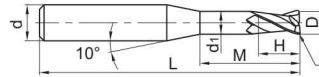
Nonstandard order > B541

**Torus mill** **High-performance machining**



**PM-2RP**

- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]								Teeth	Grade KMG405
		R	D	d (h6)	d <sub>1</sub>	H	M	L			
PM-2RP-D2.0-R0.2-M20		0.2	2	4	1.97	3	20	50	2	●	
PM-2RP-D2.0-R0.2-M06		0.2	2	4	1.95	3	6	50	2	●	
PM-2RP-D2.0-R0.2-M14		0.2	2	4	1.95	3	14	50	2	○	
PM-2RP-D2.5-R0.2-M16		0.2	2.5	4	2.4	3.7	16	60	2	○	
PM-2RP-D2.5-R0.2-M18		0.2	2.5	4	2.4	3.7	18	60	2	○	
PM-2RP-D2.5-R0.2-M08		0.2	2.5	4	2.4	3.7	8	50	2	●	
PM-2RP-D2.5-R0.2-M20		0.2	2.5	4	2.4	3.7	20	60	2	●	
PM-2RP-D2.5-R0.5-M14		0.5	2.5	4	2.4	3.7	14	50	2	○	
PM-2RP-D2.5-R0.5-M20		0.5	2.5	4	2.4	3.7	20	60	2	●	
PM-2RP-D2.5-R0.5-M10		0.5	2.5	4	2.4	3.7	10	50	2	●	
PM-2RP-D2.5-R0.5-M18		0.5	2.5	4	2.4	3.7	18	60	2	○	
PM-2RP-D2.5-R0.2-M10		0.2	2.5	4	2.4	3.7	10	50	2	●	
PM-2RP-D2.5-R0.5-M08		0.5	2.5	4	2.4	3.7	8	50	2	●	
PM-2RP-D2.5-R0.5-M12		0.5	2.5	4	2.4	3.7	12	50	2	○	
PM-2RP-D2.5-R0.5-M16		0.5	2.5	4	2.4	3.7	16	60	2	○	
PM-2RP-D2.5-R0.2-M14		0.2	2.5	4	2.4	3.7	14	50	2	○	
PM-2RP-D2.5-R0.2-M12		0.2	2.5	4	2.4	3.7	12	50	2	○	
PM-2RP-D3.0-R0.5-M18		0.5	3	6	2.85	4.5	18	60	2	○	
PM-2RP-D3.0-R0.2-M18		0.2	3	6	2.85	4.5	18	60	2	○	
PM-2RP-D3.0-R0.5-M08		0.5	3	6	2.85	4.5	8	50	2	●	
PM-2RP-D3.0-R0.2-M08		0.2	3	6	2.85	4.5	8	50	2	●	
PM-2RP-D3.0-R0.2-M06		0.2	3	6	2.85	4.5	6	50	2	○	
PM-2RP-D3.0-R0.2-M20		0.2	3	6	2.85	4.5	20	60	2	●	
PM-2RP-D3.0-R0.5-M10		0.5	3	6	2.85	4.5	10	50	2	●	
PM-2RP-D3.0-R0.2-M10		0.2	3	6	2.85	4.5	10	50	2	●	
PM-2RP-D3.0-R0.5-M14		0.5	3	6	2.85	4.5	14	60	2	○	
PM-2RP-D3.0-R0.5-M06		0.5	3	6	2.85	4.5	6	50	2	○	
PM-2RP-D3.0-R0.2-M16		0.2	3	6	2.85	4.5	16	60	2	●	
PM-2RP-D3.0-R0.2-M12		0.2	3	6	2.85	4.5	12	50	2	●	
PM-2RP-D3.0-R0.5-M20		0.5	3	6	2.85	4.5	20	60	2	●	
PM-2RP-D3.0-R0.5-M12		0.5	3	6	2.85	4.5	12	50	2	●	
PM-2RP-D3.0-R0.2-M14		0.2	3	6	2.85	4.5	14	60	2	○	
PM-2RP-D3.0-R0.5-M16		0.5	3	6	2.85	4.5	16	60	2	●	
PM-2RP-D4.0-R0.2-M12		0.2	4	6	3.85	6	12	50	2	●	
PM-2RP-D4.0-R0.5-M20		0.5	4	6	3.85	6	20	60	2	●	
PM-2RP-D4.0-R0.5-M12		0.5	4	6	3.85	6	12	50	2	●	
PM-2RP-D4.0-R0.5-M14		0.5	4	6	3.85	6	14	60	2	○	

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278    Cutting data > B492    Nonstandard order > B541



A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

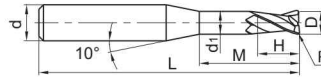
A

## Torus mill High-performance machining

### PM-2RP



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

B

Article	*	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L		KMG405
PM-2RP-D4.0-R0.2-M20		0.2	4	6	3.85	6	20	60	2	●
PM-2RP-D4.0-R0.2-M16		0.2	4	6	3.85	6	16	60	2	●
PM-2RP-D4.0-R0.5-M25		0.5	4	6	3.85	6	25	60	2	●
PM-2RP-D4.0-R0.5-M16		0.5	4	6	3.85	6	16	60	2	●
PM-2RP-D4.0-R0.2-M25		0.2	4	6	3.85	6	25	60	2	●
PM-2RP-D4.0-R0.2-M14		0.2	4	6	3.85	6	14	60	2	○
PM-2RP-D5.0-R0.5-M14		0.5	5	6	4.85	7.5	14	60	2	○
PM-2RP-D5.0-R0.5-M12		0.5	5	6	4.85	7.5	12	60	2	●
PM-2RP-D5.0-R1.0-M12		1	5	6	4.85	7.5	12	60	2	●
PM-2RP-D5.0-R0.5-M20		0.5	5	6	4.85	7.5	20	70	2	●
PM-2RP-D5.0-R1.0-M14		1	5	6	4.85	7.5	14	60	2	○
PM-2RP-D5.0-R0.5-M25		0.5	5	6	4.85	7.5	25	70	2	●
PM-2RP-D5.0-R1.0-M20		1	5	6	4.85	7.5	20	70	2	●
PM-2RP-D5.0-R1.0-M25		1	5	6	4.85	7.5	25	70	2	●
PM-2RP-D5.0-R0.5-M16		0.5	5	6	4.85	7.5	16	60	2	●
PM-2RP-D5.0-R1.0-M16		1	5	6	4.85	7.5	16	60	2	●

- Ex stock ○ On demand
- \* With internal cooling

Milling

C

Drilling

D

Technical Information

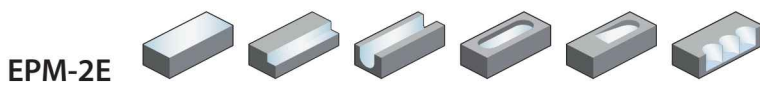
E

Index

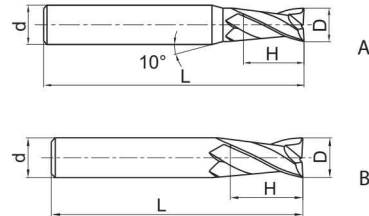
Application field						
P	M	K	N	S	H	
✓	✓	✓				✓ Very suitable ✓ Suitable



**End mill** **High-performance machining**



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG406
EPM-2E-D3.0		3	6	8	50	2	A	●
EPM-2E-D4.0		4	6	11	50	2	A	●
EPM-2E-D5.0		5	6	13	50	2	A	●
EPM-2E-D6.0		6	6	16	50	2	B	●
EPM-2E-D8.0		8	8	20	60	2	B	●
EPM-2E-D10.0		10	10	25	75	2	B	●
EPM-2E-D12.0		12	12	30	75	2	B	●
EPM-2E-D14.0		14	14	32	75	2	B	●
EPM-2E-D16.0		16	16	45	100	2	B	●
EPM-2E-D18.0		18	18	45	100	2	B	●
EPM-2E-D20.0		20	20	45	100	2	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

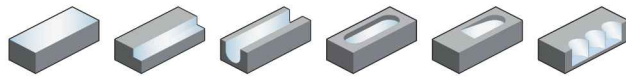
Index



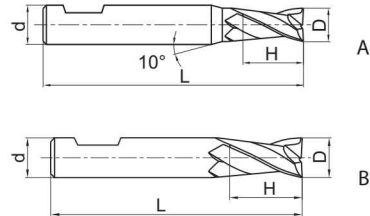
**A**

## End mill High-performance machining

### EPM-2E-W



- Type of shank DIN 6535HB
- Centre cutting
- Helix angle 30°



Turning

**B**

Milling

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG406
EPM-2E-D3.0-W		3	6	4	50	2	A	●
EPM-2E-D4.0-W		4	6	5	54	2	A	●
EPM-2E-D5.0-W		5	6	6	54	2	A	●
EPM-2E-D6.0-W		6	6	7	54	2	B	●
EPM-2E-D8.0-W		8	8	9	58	2	B	●
EPM-2E-D10.0-W		10	10	11	66	2	B	●
EPM-2E-D12.0-W		12	12	12	73	2	B	●
EPM-2E-D14.0-W		14	14	14	75	2	B	●
EPM-2E-D16.0-W		16	16	16	82	2	B	●
EPM-2E-D18.0-W		18	18	18	84	2	B	●
EPM-2E-D20.0-W		20	20	20	92	2	B	●

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

**D**

Technical Information

**E**

Index

### Application field

P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

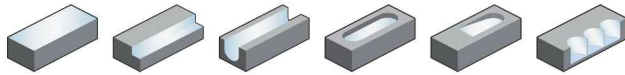
System code > B278

Cutting data > B492

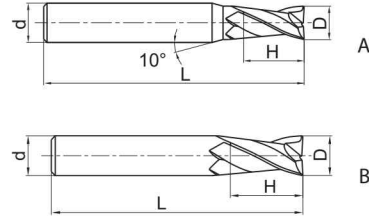
Nonstandard order > B541

**End mill long cutting edge** **High-performance machining**

**EPM-2EL**



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG406
EPM-2EL-D3.0		3	6	12	75	2	A	●
EPM-2EL-D4.0		4	6	15	75	2	A	●
EPM-2EL-D5.0		5	6	20	75	2	A	●
EPM-2EL-D6.0		6	6	20	75	2	B	●
EPM-2EL-D8.0		8	8	25	100	2	B	●
EPM-2EL-D10.0		10	10	30	100	2	B	●
EPM-2EL-D12.0		12	12	35	100	2	B	●
EPM-2EL-D14.0		14	14	40	100	2	B	●
EPM-2EL-D16.0		16	16	50	150	2	B	●
EPM-2EL-D20.0		20	20	55	150	2	B	●

- Ex stock ○ On demand
- \* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

- ✓ Very suitable
- ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

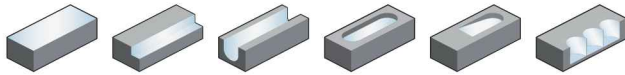
Nonstandard order > B541



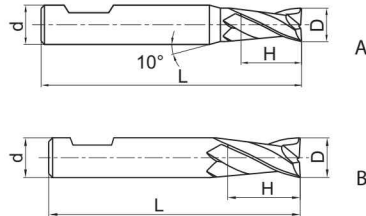
**A**

## End mill long cutting edge High-performance machining

### EPM-2EL-W



- Type of shank DIN 6535HB
- Centre cutting
- Helix angle 30°



Turning

**B**

Milling

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG406
EPM-2EL-D3.0-W		3	6	6	57	2	A	●
EPM-2EL-D4.0-W		4	6	8	57	2	A	●
EPM-2EL-D5.0-W		5	6	10	57	2	A	●
EPM-2EL-D6.0-W		6	6	10	57	2	B	●
EPM-2EL-D8.0-W		8	8	16	63	2	B	●
EPM-2EL-D10.0-W		10	10	19	72	2	B	●
EPM-2EL-D12.0-W		12	12	22	83	2	B	●
EPM-2EL-D14.0-W		14	14	22	83	2	B	●
EPM-2EL-D16.0-W		16	16	26	92	2	B	●
EPM-2EL-D18.0-W		18	18	26	92	2	B	●
EPM-2EL-D20.0-W		20	20	32	104	2	B	●

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

**D**

Technical Information

**E**

Index

### Application field

P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

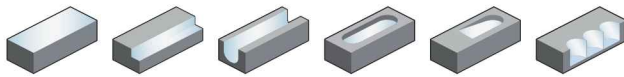
System code > B278

Cutting data > B492

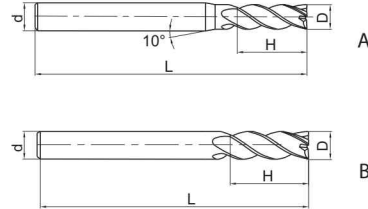
Nonstandard order > B541

**End mill** **High-performance machining**

**EPM-4E**



- Factory standard
- Centre cutting
- Helix angle 45°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG406
EPM-4E-D3.0		3	6	8	50	4	A	●
EPM-4E-D4.0		4	6	11	50	4	A	●
EPM-4E-D5.0		5	6	13	50	4	A	●
EPM-4E-D6.0		6	6	16	50	4	B	●
EPM-4E-D8.0		8	8	20	60	4	B	●
EPM-4E-D10.0		10	10	25	75	4	B	●
EPM-4E-D12.0		12	12	30	75	4	B	●
EPM-4E-D14.0		14	14	32	75	4	B	●
EPM-4E-D16.0		16	16	45	100	4	B	●
EPM-4E-D18.0		18	18	45	100	4	B	●
EPM-4E-D20.0		20	20	45	100	4	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

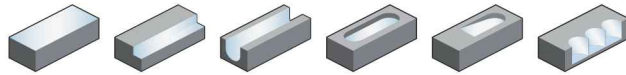
- ✓ Very suitable
- ✓ Suitable



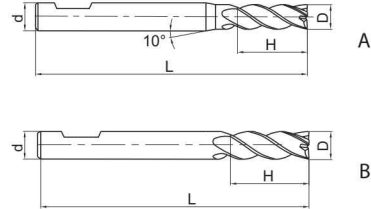
**A**

## End mill High-performance machining

### EPM-4E-W



- Type of shank DIN 6535HB
- Centre cutting
- Helix angle 45°



Turning

**B**

Milling

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG406
EPM-4E-D3.0-W		3	6	4	50	4	A	●
EPM-4E-D4.0-W		4	6	5	54	4	A	●
EPM-4E-D5.0-W		5	6	6	54	4	A	●
EPM-4E-D6.0-W		6	6	7	54	4	B	●
EPM-4E-D8.0-W		8	8	9	58	4	B	●
EPM-4E-D10.0-W		10	10	11	66	4	B	●
EPM-4E-D12.0-W		12	12	12	73	4	B	●
EPM-4E-D14.0-W		14	14	14	75	4	B	●
EPM-4E-D16.0-W		16	16	16	82	4	B	●
EPM-4E-D18.0-W		18	18	18	84	4	B	●
EPM-4E-D20.0-W		20	20	20	92	4	B	●

- Ex stock ○ On demand
- \* With internal cooling

**C**

Drilling

**D**

Technical Information

**E**

Index

### Application field

P	M	K	N	S	H
✓	✓	✓			✓

- ✓ Very suitable
- ✓ Suitable

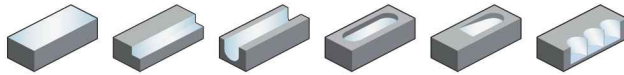
System code > B278

Cutting data > B492

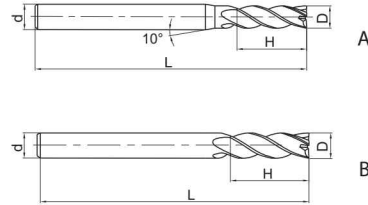
Nonstandard order > B541

**End mill long cutting edge** **High-performance machining**

**EPM-4EL**



- Factory standard
- Centre cutting
- Helix angle 45°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG406
EPM-4EL-D3.0		3	6	12	75	4	A	●
EPM-4EL-D4.0		4	6	15	75	4	A	●
EPM-4EL-D5.0		5	6	20	75	4	A	●
EPM-4EL-D6.0		6	6	20	75	4	B	●
EPM-4EL-D8.0		8	8	25	100	4	B	●
EPM-4EL-D10.0		10	10	30	100	4	B	●
EPM-4EL-D12.0		12	12	35	100	4	B	●
EPM-4EL-D14.0		14	14	40	100	4	B	●
EPM-4EL-D16.0		16	16	50	150	4	B	●
EPM-4EL-D20.0		20	20	55	150	4	B	●

- Ex stock ○ On demand
- \* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

- ✓ Very suitable
- ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

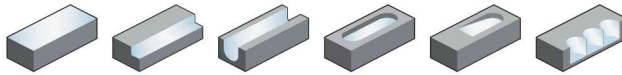
Index



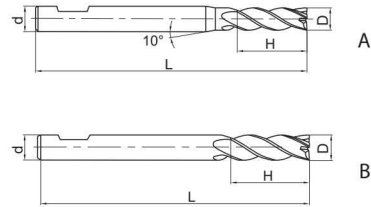
**A**

## End mill long cutting edge High-performance machining

### EPM-4EL-W



- Type of shank DIN 6535HB
- Centre cutting
- Helix angle 45°



Turning

**B**

Milling

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG406
EPM-4EL-D3.0-W		3	6	8	57	4	A	●
EPM-4EL-D4.0-W		4	6	11	57	4	A	●
EPM-4EL-D5.0-W		5	6	13	57	4	A	●
EPM-4EL-D6.0-W		6	6	13	57	4	B	●
EPM-4EL-D8.0-W		8	8	19	63	4	B	●
EPM-4EL-D10.0-W		10	10	22	72	4	B	●
EPM-4EL-D12.0-W		12	12	26	83	4	B	●
EPM-4EL-D14.0-W		14	14	26	83	4	B	●
EPM-4EL-D16.0-W		16	16	32	92	4	B	●
EPM-4EL-D18.0-W		18	18	32	92	4	B	●
EPM-4EL-D20.0-W		20	20	38	104	4	B	●

- Ex stock ○ On demand
- \* With internal cooling

**C**

Drilling

**D**

Technical Information

**E**

Index

#### Application field

P	M	K	N	S	H
✓	✓	✓			✓

- ✓ Very suitable
- ✓ Suitable

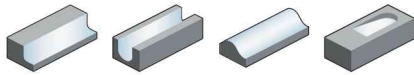
System code > B278

Cutting data > B492

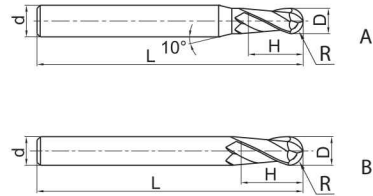
Nonstandard order > B541

**Ball nose cutter** **High-performance machining**

**EPM-2B**



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG406
EPM-2B-R1.5		1.5	3	6	6	50	2	A	●
EPM-2B-R2.0		2	4	6	8	50	2	A	●
EPM-2B-R2.5		2.5	5	6	10	50	2	A	●
EPM-2B-R3.0		3	6	6	12	50	2	B	●
EPM-2B-R4.0		4	8	8	16	60	2	B	●
EPM-2B-R5.0		5	10	10	20	75	2	B	●
EPM-2B-R6.0		6	12	12	24	75	2	B	●
EPM-2B-R7.0		7	14	14	28	75	2	B	●
EPM-2B-R8.0		8	16	16	32	100	2	B	●
EPM-2B-R10.0		10	20	20	40	100	2	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

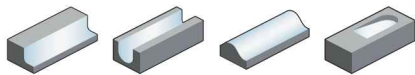
Nonstandard order > B541



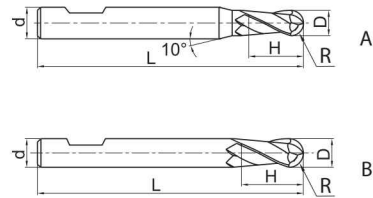
**A**

## Ball nose cutter High-performance machining

### EPM-2B-W



- Type of shank DIN 6535HB
- Centre cutting
- Helix angle 30°



Turning

**B**

Milling

Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG406
EPM-2B-R1.5-W		1.5	3	6	4	50	2	A	●
EPM-2B-R2.0-W		2	4	6	5	54	2	A	●
EPM-2B-R2.5-W		2.5	5	6	6	54	2	A	●
EPM-2B-R3.0-W		3	6	6	7	54	2	B	●
EPM-2B-R4.0-W		4	8	8	9	58	2	B	●
EPM-2B-R5.0-W		5	10	10	11	66	2	B	●
EPM-2B-R6.0-W		6	12	12	12	73	2	B	●
EPM-2B-R8.0-W		8	16	16	16	83	2	B	●
EPM-2B-R10.0-W		10	20	20	20	92	2	B	●

- Ex stock ○ On demand
- \* With internal cooling

**C**

Drilling

Application field						
P	M	K	N	S	H	
✓	✓	✓			✓	✓ Very suitable ✓ Suitable

**D**

Technical Information

**E**

Index

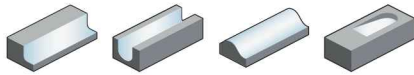
System code > B278

Cutting data > B492

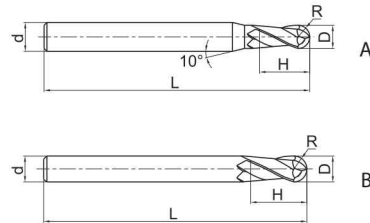
Nonstandard order > B541

**Ball nose cutter long shank** **High-performance machining**

**EPM-2BL**



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG406
EPM-2BL-R1.5		1.5	3	6	6	75	2	A	●
EPM-2BL-R2.0		2	4	6	8	75	2	A	●
EPM-2BL-R2.5		2.5	5	6	10	75	2	A	●
EPM-2BL-R3.0		3	6	6	12	75	2	B	●
EPM-2BL-R4.0		4	8	8	16	100	2	B	●
EPM-2BL-R5.0		5	10	10	20	100	2	B	●
EPM-2BL-R6.0		6	12	12	24	100	2	B	●
EPM-2BL-R7.0		7	14	14	28	100	2	B	●
EPM-2BL-R8.0		8	16	16	32	150	2	B	●
EPM-2BL-R10.0		10	20	20	40	150	2	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



A

Turning

B

Milling

C

Drilling

D

Technical Information

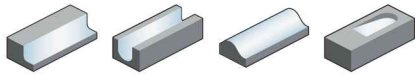
E

Index

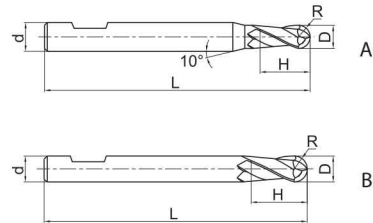
**A**

## Ball nose cutter long shank High-performance machining

**EPM-2BL-W**



- Type of shank DIN 6535HB
- Centre cutting
- Helix angle 30°



Turning

**B**

Milling

Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG406
EPM-2BL-R1.5-W		1.5	3	6	4	57	2	A	●
EPM-2BL-R2.0-W		2	4	6	5	57	2	A	●
EPM-2BL-R2.5-W		2.5	5	6	6	57	2	A	●
EPM-2BL-R3.0-W		3	6	6	7	57	2	B	●
EPM-2BL-R4.0-W		4	8	8	9	63	2	B	●
EPM-2BL-R5.0-W		5	10	10	11	72	2	B	●
EPM-2BL-R6.0-W		6	12	12	12	83	2	B	●
EPM-2BL-R8.0-W		8	16	16	16	92	2	B	●
EPM-2BL-R10.0-W		10	20	20	20	104	2	B	●

- Ex stock ○ On demand
- \* With internal cooling

**C**

Drilling

Application field						
P	M	K	N	S	H	
✓	✓	✓			✓	✓ Very suitable ✓ Suitable

**D**

Technical Information

**E**

Index

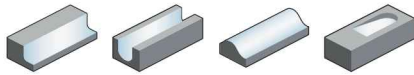
System code > B278

Cutting data > B492

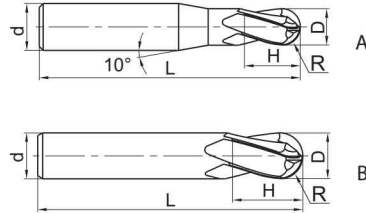
Nonstandard order > B541

**Ball nose cutter** **High-performance machining**

**EPM-4B**



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG406
EPM-4B-R1.5		1.5	3	6	6	50	4	A	●
EPM-4B-R2.0		2	4	6	8	50	4	A	●
EPM-4B-R2.5		2.5	5	6	10	50	4	A	●
EPM-4B-R3.0		3	6	6	12	50	4	B	●
EPM-4B-R4.0		4	8	8	16	60	4	B	●
EPM-4B-R5.0		5	10	10	20	75	4	B	●
EPM-4B-R6.0		6	12	12	24	75	4	B	●
EPM-4B-R7.0		7	14	14	28	75	4	B	●
EPM-4B-R8.0		8	16	16	32	100	4	B	●
EPM-4B-R9.0		9	18	18	36	100	4	B	●
EPM-4B-R10.0		10	20	20	40	100	4	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541

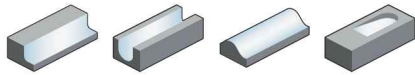




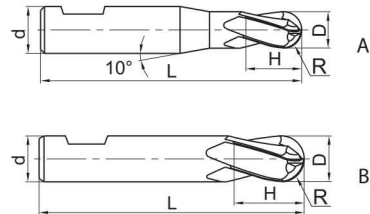
**A**

## Ball nose cutter High-performance machining

### EPM-4B-W



- Type of shank DIN 6535HB
- Centre cutting
- Helix angle 30°



Turning

**B**

Milling

Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG406
EPM-4B-R1.5-W		1.5	3	6	4	50	4	A	●
EPM-4B-R2.0-W		2	4	6	5	54	4	A	●
EPM-4B-R2.5-W		2.5	5	6	6	54	4	A	●
EPM-4B-R3.0-W		3	6	6	7	54	4	B	●
EPM-4B-R4.0-W		4	8	8	9	58	4	B	●
EPM-4B-R5.0-W		5	10	10	11	66	4	B	●
EPM-4B-R6.0-W		6	12	12	12	73	4	B	●
EPM-4B-R7.0-W		7	14	14	14	75	4	B	●
EPM-4B-R8.0-W		8	16	16	16	83	4	B	●
EPM-4B-R9.0-W		9	18	18	18	84	4	B	●
EPM-4B-R10.0-W		10	20	20	20	92	4	B	●

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

**D**

Technical Information

**E**

Index

#### Application field

P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

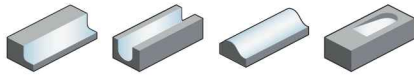
System code > B278

Cutting data > B492

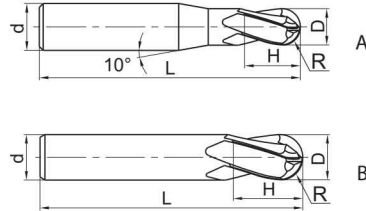
Nonstandard order > B541

**Ball nose cutter long shank** High-performance machining

**EPM-4BL**



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG406
EPM-4BL-R1.5		1.5	3	6	6	75	4	A	●
EPM-4BL-R2.0		2	4	6	8	75	4	A	●
EPM-4BL-R2.5		2.5	5	6	10	75	4	A	●
EPM-4BL-R3.0		3	6	6	12	75	4	B	●
EPM-4BL-R4.0		4	8	8	16	100	4	B	●
EPM-4BL-R5.0		5	10	10	20	100	4	B	●
EPM-4BL-R6.0		6	12	12	24	100	4	B	●
EPM-4BL-R7.0		7	14	14	28	100	4	B	●
EPM-4BL-R8.0		8	16	16	32	150	4	B	●
EPM-4BL-R10.0		10	20	20	40	150	4	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

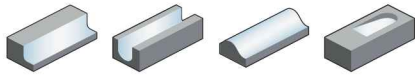
Nonstandard order > B541



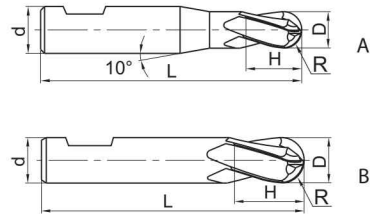
**A**

## Ball nose cutter long shank High-performance machining

**EPM-4BL-W**



- Type of shank DIN 6535HB
- Centre cutting
- Helix angle 30°



Turning

**B**

Milling

Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG406
EPM-4BL-R1.5-W		1.5	3	6	4	57	4	A	●
EPM-4BL-R2.0-W		2	4	6	5	57	4	A	●
EPM-4BL-R2.5-W		2.5	5	6	6	57	4	A	●
EPM-4BL-R3.0-W		3	6	6	7	57	4	B	●
EPM-4BL-R4.0-W		4	8	8	9	63	4	B	●
EPM-4BL-R5.0-W		5	10	10	11	72	4	B	●
EPM-4BL-R6.0-W		6	12	12	12	83	4	B	●
EPM-4BL-R8.0-W		8	16	16	16	92	4	B	●
EPM-4BL-R10.0-W		10	20	20	20	104	4	B	●

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

### Application field

P	M	K	N	S	H
✓	✓	✓			✓

- ✓ Very suitable
- ✓ Suitable

**D**

Technical Information

**E**

Index

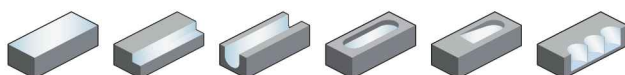
System code > B278

Cutting data > B492

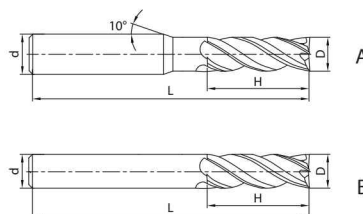
Nonstandard order > B541

**End mill** High-performance machining

**VPM-4E**



- Factory standard
- Centre cutting
- Helix angle 36°/38°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG406
VPM-4E-D3.0		3	6	8	50	4	A	●
VPM-4E-D4.0		4	6	11	50	4	A	●
VPM-4E-D5.0		5	6	13	50	4	A	●
VPM-4E-D6.0		6	6	16	50	4	B	●
VPM-4E-D7.0		7	8	20	60	4	A	●
VPM-4E-D8.0		8	8	20	60	4	B	●
VPM-4E-D9.0		9	10	22	75	4	A	●
VPM-4E-D10.0		10	10	25	75	4	B	●
VPM-4E-D11.0		11	12	26	75	4	A	●
VPM-4E-D12.0		12	12	30	75	4	B	●
VPM-4E-D14.0		14	14	32	75	4	B	●
VPM-4E-D16.0		16	16	45	100	4	B	●
VPM-4E-D18.0		18	18	45	100	4	B	●
VPM-4E-D20.0		20	20	45	100	4	B	●

● Ex stock ○ On demand

\* With internal cooling

**Application field**

P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



Notes

**A**  
Turning

.....

.....

.....

.....

.....

**B**  
Milling

.....

.....

.....

.....

.....

**C**  
Drilling

.....

.....

.....

.....

.....

**D**  
Technical Information

.....

.....

.....

.....

.....

**E**  
Index

.....

.....

.....

.....

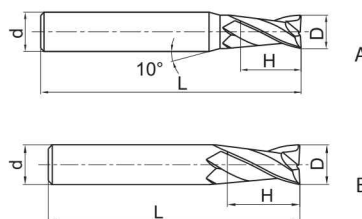
.....

**End mill** **Hard machining**

**HM-2E**



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG555
HM-2E-D1.0S		1	4	3	50	2	A	●
HM-2E-D1.5S		1.5	4	4	50	2	A	●
HM-2E-D2.0S		2	4	6	50	2	A	●
HM-2E-D2.5S		2.5	4	8	50	2	A	●
HM-2E-D3.0S		3	4	8	50	2	A	●
HM-2E-D4.0S		4	4	11	50	2	B	●
HM-2E-D1.0		1	6	3	50	2	A	●
HM-2E-D1.5		1.5	6	4	50	2	A	●
HM-2E-D2.0		2	6	6	50	2	A	●
HM-2E-D2.5		2.5	6	8	50	2	A	●
HM-2E-D3.0		3	6	8	50	2	A	●
HM-2E-D3.5		3.5	6	10	50	2	A	●
HM-2E-D4.0		4	6	11	50	2	A	●
HM-2E-D4.5		4.5	6	11	50	2	A	●
HM-2E-D5.0		5	6	13	50	2	A	●
HM-2E-D5.5		5.5	6	16	50	2	A	●
HM-2E-D6.0		6	6	16	50	2	B	●
HM-2E-D7.0		7	8	20	60	2	A	●
HM-2E-D8.0		8	8	20	60	2	B	●
HM-2E-D9.0		9	10	22	75	2	A	●
HM-2E-D10.0		10	10	25	75	2	B	●
HM-2E-D11.0		11	12	26	75	2	A	○
HM-2E-D12.0		12	12	30	75	2	B	●
HM-2E-D14.0		14	14	32	100	2	B	●
HM-2E-D16.0		16	16	45	100	2	B	●
HM-2E-D18.0		18	18	45	100	2	B	○
HM-2E-D20.0		20	20	45	100	2	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
					✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

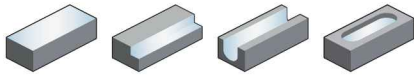
Nonstandard order > B541



**A**

## End mill short cutting edge Hard machining

**HM-2EFP**



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d <sub>1</sub>	H	M	L		KMG555
HM-2EFP-D6.0		6	6	5.8	9	30	75	2	○
HM-2EFP-D8.0		8	8	7.8	12	40	100	2	○
HM-2EFP-D10.0		10	10	9.6	15	50	100	2	○
HM-2EFP-D12.0		12	12	11.5	18	50	100	2	○
HM-2EFP-D16.0		16	16	15.5	24	50	150	2	○
HM-2EFP-D20.0		20	20	19.5	30	60	150	2	○

- Ex stock ○ On demand
- \* With internal cooling

Milling

**C**

Application field							
P	M	K	N	S	H		
						✓	Very suitable
					✓		Suitable

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

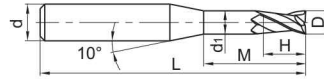
Nonstandard order > B541

**End mill** **Hard machining**

**HM-2EP**



- Straight shank
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]						Teeth	Grade KMG555
		D	d (h6)	d <sub>1</sub>	H	M	L		
HM-2EP-D0.5-M04		0.5	4	0.45	0.7	4	50	2	●
HM-2EP-D0.5-M06		0.5	4	0.45	0.7	6	50	2	●
HM-2EP-D0.5-M08		0.5	4	0.45	0.7	8	50	2	●
HM-2EP-D0.8-M04		0.8	4	0.75	1.2	4	50	2	●
HM-2EP-D0.8-M06		0.8	4	0.75	1.2	6	50	2	●
HM-2EP-D0.8-M08		0.8	4	0.75	1.2	8	50	2	●
HM-2EP-D0.8-M10		0.8	4	0.75	1.2	10	50	2	●
HM-2EP-D1.0-M04		1	4	0.95	1.5	4	50	2	●
HM-2EP-D1.0-M06		1	4	0.95	1.5	6	50	2	●
HM-2EP-D1.0-M08		1	4	0.95	1.5	8	50	2	●
HM-2EP-D1.0-M10		1	4	0.95	1.5	10	50	2	●
HM-2EP-D1.0-M12		1	4	0.95	1.5	12	50	2	●
HM-2EP-D1.0-M14		1	4	0.95	1.5	14	50	2	●
HM-2EP-D1.2-M06		1.2	4	1.15	1.8	6	50	2	●
HM-2EP-D1.2-M08		1.2	4	1.15	1.8	8	50	2	●
HM-2EP-D1.2-M10		1.2	4	1.15	1.8	10	50	2	●
HM-2EP-D1.2-M12		1.2	4	1.15	1.8	12	50	2	●
HM-2EP-D1.5-M06		1.5	4	1.45	2.3	6	50	2	●
HM-2EP-D1.5-M08		1.5	4	1.45	2.3	8	50	2	●
HM-2EP-D1.5-M10		1.5	4	1.45	2.3	10	50	2	●
HM-2EP-D1.5-M12		1.5	4	1.45	2.3	12	50	2	●
HM-2EP-D1.5-M14		1.5	4	1.45	2.3	14	50	2	●
HM-2EP-D2.0-M06		2	4	1.95	3	6	50	2	●
HM-2EP-D2.0-M08		2	4	1.95	3	8	50	2	●
HM-2EP-D2.0-M10		2	4	1.95	3	10	50	2	●
HM-2EP-D2.0-M12		2	4	1.95	3	12	50	2	●
HM-2EP-D2.0-M14		2	4	1.95	3	14	50	2	●
HM-2EP-D2.0-M16		2	4	1.95	3	16	50	2	●
HM-2EP-D2.5-M08		2.5	4	2.4	3.7	8	50	2	●
HM-2EP-D2.5-M10		2.5	4	2.4	3.7	10	50	2	●
HM-2EP-D2.5-M12		2.5	4	2.4	3.7	12	50	2	●
HM-2EP-D2.5-M14		2.5	4	2.4	3.7	14	50	2	●
HM-2EP-D2.5-M16		2.5	4	2.4	3.7	16	60	2	●
HM-2EP-D2.5-M18		2.5	4	2.4	3.7	18	60	2	●
HM-2EP-D2.5-M20		2.5	4	2.4	3.7	20	60	2	●
HM-2EP-D3.0-M06		3	6	2.85	4.5	6	50	2	●
HM-2EP-D3.0-M08		3	6	2.85	4.5	8	50	2	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
					✓

✓ Very suitable

✓ Suitable

System code > B278    Cutting data > B492    Nonstandard order > B541

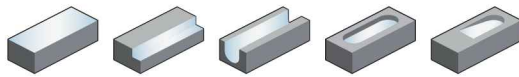




**A**

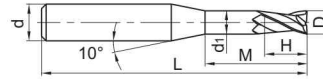
End mill

Hard machining



HM-2EP

- Straight shank
- Centre cutting
- Helix angle 35°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d <sub>1</sub>	H	M	L		KMG555
HM-2EP-D3.0-M10		3	6	2.85	4.5	10	50	2	●
HM-2EP-D3.0-M12		3	6	2.85	4.5	12	50	2	●
HM-2EP-D3.0-M14		3	6	2.85	4.5	14	60	2	●
HM-2EP-D3.0-M16		3	6	2.85	4.5	16	60	2	●
HM-2EP-D3.0-M18		3	6	2.85	4.5	18	60	2	●
HM-2EP-D3.0-M20		3	6	2.85	4.5	20	60	2	●
HM-2EP-D4.0-M12		4	6	3.85	6	12	60	2	●
HM-2EP-D4.0-M16		4	6	3.85	6	16	60	2	●
HM-2EP-D4.0-M20		4	6	3.85	6	20	60	2	●
HM-2EP-D4.0-M25		4	6	3.85	6	25	60	2	●
HM-2EP-D5.0-M16		5	6	4.85	7.5	16	60	2	●
HM-2EP-D5.0-M25		5	6	4.85	7.5	25	70	2	●

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

Application field

P	M	K	N	S	H
					✓

✓ Very suitable

✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

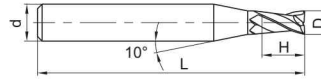
Nonstandard order > B541

**End mill** **Hard machining**

**HM-2ES**



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		KMG555
HM-2ES-D0.3		0.3	4	0.6	50	2	●
HM-2ES-D0.4		0.4	4	0.8	50	2	●
HM-2ES-D0.5		0.5	4	1	50	2	●
HM-2ES-D0.6		0.6	4	1.2	50	2	●
HM-2ES-D0.7		0.7	4	1.4	50	2	●
HM-2ES-D0.8		0.8	4	1.6	50	2	●
HM-2ES-D0.9		0.9	4	1.8	50	2	●
HM-2ES-D1.0		1	4	2	50	2	●
HM-2ES-D1.1		1.1	4	2	50	2	●
HM-2ES-D1.2		1.2	4	2.5	50	2	●
HM-2ES-D1.3		1.3	4	2.5	50	2	●
HM-2ES-D1.4		1.4	4	3	50	2	●
HM-2ES-D1.5		1.5	4	3	50	2	●
HM-2ES-D1.6		1.6	4	3.5	50	2	●
HM-2ES-D1.7		1.7	4	3.5	50	2	●
HM-2ES-D1.8		1.8	4	4	50	2	●
HM-2ES-D1.9		1.9	4	4	50	2	●
HM-2ES-D2.0		2	4	4	50	2	●
HM-2ES-D2.1		2.1	4	4	50	2	●
HM-2ES-D2.2		2.2	4	4.5	50	2	●
HM-2ES-D2.3		2.3	4	4.5	50	2	●
HM-2ES-D2.4		2.4	4	5	50	2	●
HM-2ES-D2.5		2.5	4	5	50	2	●
HM-2ES-D2.6		2.6	4	5	50	2	●
HM-2ES-D2.7		2.7	4	5.5	50	2	●
HM-2ES-D2.8		2.8	4	5.5	50	2	●
HM-2ES-D2.9		2.9	4	6	50	2	●
HM-2ES-D3.0		3	4	6	50	2	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
					✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



**A**

End mill

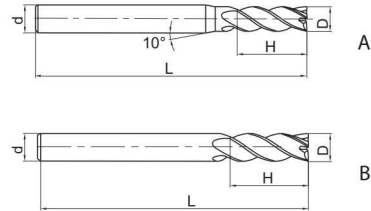
Hard machining



HM-4E

- Factory standard
- Centre cutting
- Helix angle 45°

Turning



**B**

Milling

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG555
HM-4E-D1.0S		1	4	3	50	4	A	●
HM-4E-D1.5S		1.5	4	4	50	4	A	●
HM-4E-D2.0S		2	4	6	50	4	A	●
HM-4E-D2.5S		2.5	4	8	50	4	A	●
HM-4E-D3.0S		3	4	8	50	4	A	●
HM-4E-D4.0S		4	4	11	50	4	B	●
HM-4E-D1.0		1	6	3	50	4	A	●
HM-4E-D1.5		1.5	6	4	50	4	A	●
HM-4E-D2.0		2	6	6	50	4	A	●
HM-4E-D2.5		2.5	6	8	50	4	A	●
HM-4E-D3.0		3	6	8	50	4	A	●
HM-4E-D3.5		3.5	6	10	50	4	A	●
HM-4E-D4.0		4	6	11	50	4	A	●
HM-4E-D4.5		4.5	6	11	50	4	A	●
HM-4E-D5.0		5	6	13	50	4	A	●
HM-4E-D5.5		5.5	6	16	50	4	A	●
HM-4E-D6.0		6	6	16	50	4	B	●
HM-4E-D7.0		7	8	20	60	4	A	●
HM-4E-D8.0		8	8	20	60	4	B	●
HM-4E-D9.0		9	10	22	75	4	A	●
HM-4E-D10.0		10	10	25	75	4	B	●
HM-4E-D11.0		11	12	26	75	4	A	●
HM-4E-D12.0		12	12	30	75	4	B	●
HM-4E-D14.0		14	14	32	75	4	B	●
HM-4E-D16.0		16	16	45	100	4	B	●
HM-4E-D18.0		18	18	45	100	4	B	●
HM-4E-D20.0		20	20	45	100	4	B	●

**C**

Drilling

**D**

Technical Information

● Ex stock ○ On demand

\* With internal cooling

**E**

Application field

P	M	K	N	S	H
					✓

✓ Very suitable

✓ Suitable

Index

System code > B278

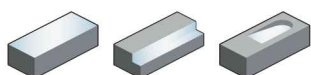
Cutting data > B492

Nonstandard order > B541

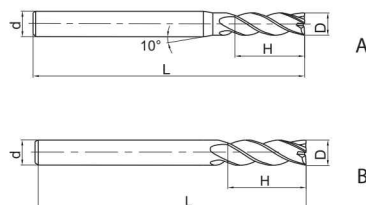
End mill long shank

Hard machining

HM-4EL



- Factory standard
- Centre cutting
- Helix angle 45°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG555
HM-4EL-D3.0		3	6	12	75	4	A	●
HM-4EL-D4.0		4	6	15	75	4	A	●
HM-4EL-D5.0		5	6	20	75	4	A	●
HM-4EL-D6.0		6	6	20	75	4	B	●
HM-4EL-D8.0		8	8	25	100	4	B	●
HM-4EL-D10.0		10	10	30	100	4	B	●
HM-4EL-D12.0		12	12	35	100	4	B	●
HM-4EL-D14.0		14	14	40	100	4	B	●
HM-4EL-D16.0		16	16	50	150	4	B	●
HM-4EL-D20.0		20	20	55	150	4	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
					✓

✓ Very suitable

✓ Suitable

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

System code > B278

Cutting data > B492

Nonstandard order > B541

**A**

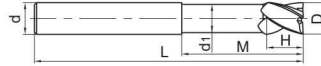
## End mill short cutting edge Hard machining

Turning

### HM-4EFP



- Factory standard
- Centre cutting
- Helix angle 45°



**B**

Milling

Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d <sub>1</sub>	H	M	L		KMG555
HM-4EFP-D6.0		6	6	5.8	9	30	75	4	●
HM-4EFP-D8.0		8	8	7.8	12	40	100	4	●
HM-4EFP-D10.0		10	10	9.6	15	50	100	4	●
HM-4EFP-D12.0		12	12	11.5	18	50	100	4	●
HM-4EFP-D16.0		16	16	15.5	24	50	150	4	●
HM-4EFP-D20.0		20	20	19.5	30	60	150	4	○

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

Application field					
P	M	K	N	S	H
					✓

✓ Very suitable

✓ Suitable

**D**

Technical Information

**E**

Index

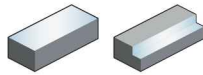
System code > B278

Cutting data > B492

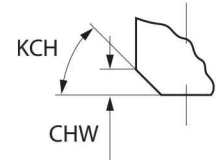
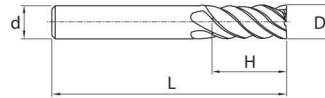
Nonstandard order > B541

**End mill long cutting edge** **High-speed hard machining**

**5502R55MHH**



- Type of shank DIN 6535HA
- Non-centre cutting
- Helix angle 55°



Article	*	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG405	KMG555
5502R55MHH-0300		3	6	8	57	0	0	4	●	●
5502R55MHH-0400		4	6	11	57	0	0	4	●	●
5502R55MHH-0500		5	6	13	57	0	0	5	●	●
5502R55MHH-0600		6	6	13	57	45	0.1	6	●	●
5502R55MHH-0800		8	8	19	63	45	0.1	6	●	●
5502R55MHH-1000		10	10	22	72	45	0.1	6	●	●
5502R55MHH-1200		12	12	26	83	45	0.1	6	●	●
5502R55MHH-1600		16	16	32	92	45	0.1	6	●	●
5502R55MHH-2000		20	20	38	104	45	0.1	8	●	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
					✓

- ✓ Very suitable
- ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541

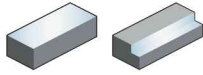


**A**

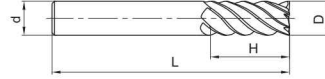
End mill

Hard machining

HM-6E



- Factory standard
- Non-centre cutting
- Helix angle 45°



Turning

**B**

Article	*	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		KMG555
HM-6E-D6.0		6	6	18	60	6	○
HM-6E-D8.0		8	8	20	60	6	○
HM-6E-D10.0		10	10	30	75	6	○
HM-6E-D12.0		12	12	32	75	6	○
HM-6E-D16.0		16	16	40	100	6	○
HM-6E-D20.0		20	20	45	100	6	●

- Ex stock ○ On demand
- \* With internal cooling

Milling

**C**

Application field					
P	M	K	N	S	H
					✓

- ✓ Very suitable
- ✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

System code > B278

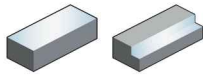
Cutting data > B492

Nonstandard order > B541

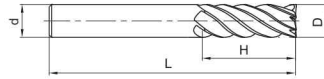
**End mill long shank**

**Hard machining**

**HM-6EL**



- Factory standard
- Non-centre cutting
- Helix angle 45°



Article	*	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		KMG555
HM-6EL-D6.0		6	6	24	75	6	●
HM-6EL-D8.0		8	8	32	75	6	●
HM-6EL-D10.0		10	10	40	100	6	●
HM-6EL-D12.0		12	12	45	100	6	●
HM-6EL-D16.0		16	16	64	150	6	●
HM-6EL-D20.0		20	20	75	150	6	●

- Ex stock ○ On demand
- \* With internal cooling

Application field					
P	M	K	N	S	H
					✓

- ✓ Very suitable
- ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541

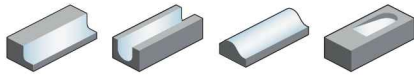




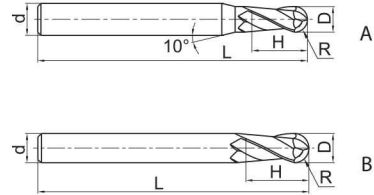
**A**

## Ball nose cutter Hard machining

**HM-2B**



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG555
HM-2B-R0.5S		0.5	1	4	2	50	2	A	●
HM-2B-R0.75S		0.75	1.5	4	3	50	2	A	●
HM-2B-R1.0S		1	2	4	4	50	2	A	●
HM-2B-R1.25S		1.25	2.5	4	5	50	2	A	●
HM-2B-R1.5S		1.5	3	4	6	50	2	A	●
HM-2B-R2.0S		2	4	4	8	50	2	B	●
HM-2B-R0.5		0.5	1	6	2	50	2	A	●
HM-2B-R0.75		0.75	1.5	6	3	50	2	A	●
HM-2B-R1.0		1	2	6	4	50	2	A	●
HM-2B-R1.25		1.25	2.5	6	5	50	2	A	●
HM-2B-R1.5		1.5	3	6	6	50	2	A	●
HM-2B-R1.75		1.75	3.5	6	8	50	2	A	●
HM-2B-R2.0		2	4	6	8	50	2	A	●
HM-2B-R2.5		2.5	5	6	10	50	2	A	●
HM-2B-R2.75		2.75	5.5	6	12	50	2	A	●
HM-2B-R3.0		3	6	6	12	50	2	B	●
HM-2B-R3.5		3.5	7	8	14	60	2	A	●
HM-2B-R4.0		4	8	8	16	60	2	B	●
HM-2B-R4.5		4.5	9	10	18	75	2	A	●
HM-2B-R5.0		5	10	10	20	75	2	B	●
HM-2B-R6.0		6	12	12	24	75	2	B	●
HM-2B-R7.0		7	14	14	28	75	2	B	●
HM-2B-R8.0		8	16	16	32	100	2	B	●
HM-2B-R10.0		10	20	20	40	100	2	B	●

● Ex stock ○ On demand

\* With internal cooling

### Application field

P	M	K	N	S	H
					✓

✓ Very suitable

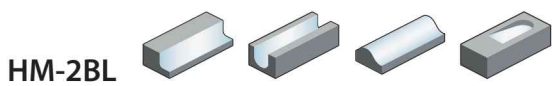
✓ Suitable

System code > B278

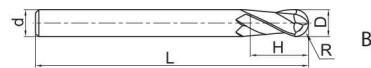
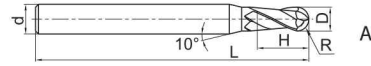
Cutting data > B492

Nonstandard order > B541

**Ball nose cutter long shank** **Hard machining**



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG555
HM-2BL-R1.0		1	2	6	4	75	2	A	●
HM-2BL-R1.25		1.25	2.5	6	6	75	2	A	●
HM-2BL-R1.5		1.5	3	6	6	75	2	A	●
HM-2BL-R1.75		1.75	3.5	6	8	75	2	A	●
HM-2BL-R2.0		2	4	6	8	75	2	A	●
HM-2BL-R2.5		2.5	5	6	10	75	2	A	●
HM-2BL-R2.75		2.75	5.5	6	12	75	2	A	●
HM-2BL-R3.0		3	6	6	12	75	2	B	●
HM-2BL-R3.5		3.5	7	8	14	75	2	A	●
HM-2BL-R4.0		4	8	8	16	100	2	B	●
HM-2BL-R4.5		4.5	9	10	18	100	2	A	●
HM-2BL-R5.0		5	10	10	20	100	2	B	●
HM-2BL-R6.0		6	12	12	24	100	2	B	●
HM-2BL-R7.0		7	14	14	28	100	2	B	●
HM-2BL-R8.0		8	16	16	32	150	2	B	●
HM-2BL-R10.0		10	20	20	40	150	2	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
					✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

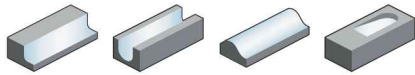
**E**

Index

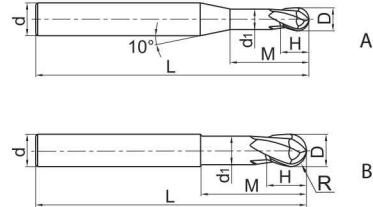
**A**

## Ball nose cutter short cutting edge Hard machining

**HM-2BFP**



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Milling

Article	*	Dimensions [mm]								Teeth	Geometry	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L	KMG555			
HM-2BFP-R0.5		0.5	1	6	0.95	1	2.5	75	2	A	●	
HM-2BFP-R0.75		0.75	1.5	6	1.45	1.5	3	75	2	A	●	
HM-2BFP-R1.0		1	2	6	1.95	2	4	75	2	A	●	
HM-2BFP-R1.5		1.5	3	6	2.85	3	6	75	2	A	●	
HM-2BFP-R2.0		2	4	6	3.85	4	8	75	2	A	●	
HM-2BFP-R2.5		2.5	5	6	4.85	5	10	75	2	A	●	
HM-2BFP-R3.0		3	6	6	5.8	6	12	75	2	B	●	
HM-2BFP-R4.0		4	8	8	7.8	8	16	100	2	B	●	
HM-2BFP-R5.0		5	10	10	9.6	10	20	100	2	B	●	
HM-2BFP-R6.0		6	12	12	11.5	12	24	100	2	B	●	
HM-2BFP-R8.0		8	16	16	15.5	16	32	150	2	B	●	
HM-2BFP-R10.0		10	20	20	19.5	20	40	150	2	B	○	

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

**D**

Technical Information

**E**

Index

### Application field

P	M	K	N	S	H
					✓

✓ Very suitable

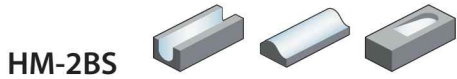
✓ Suitable

System code > B278

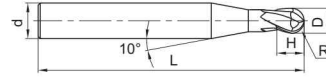
Cutting data > B492

Nonstandard order > B541

**Ball nose cutter** **Hard machining**



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMG555
HM-2BS-R0.15		0.15	0.3	4	0.5	50	2	●
HM-2BS-R0.20		0.2	0.4	4	0.6	50	2	●
HM-2BS-R0.25		0.25	0.5	4	0.8	50	2	●
HM-2BS-R0.30		0.3	0.6	4	0.9	50	2	●
HM-2BS-R0.35		0.35	0.7	4	1	50	2	●
HM-2BS-R0.40		0.4	0.8	4	1.2	50	2	●
HM-2BS-R0.45		0.45	0.9	4	1.3	50	2	●
HM-2BS-R0.50		0.5	1	4	1.5	50	2	●
HM-2BS-R0.60		0.6	1.2	4	1.8	50	2	●
HM-2BS-R0.70		0.7	1.4	4	2	50	2	●
HM-2BS-R0.75		0.75	1.5	4	2.3	50	2	●
HM-2BS-R0.80		0.8	1.6	4	2.5	50	2	●
HM-2BS-R0.90		0.9	1.8	4	2.7	50	2	●
HM-2BS-R1.00		1	2	4	3	50	2	●
HM-2BS-R1.25		1.25	2.5	4	3.7	50	2	●
HM-2BS-R1.50		1.5	3	4	4.5	50	2	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
					✓

✓ Very suitable

✓ Suitable

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

**A**

End mill

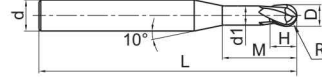
Hard machining

Turning

HM-2BP



- Straight shank
- Centre cutting
- Helix angle 35°



**B**

Milling

Article	*	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L		
HM-2BP-R0.25-M04		0.25	0.5	4	0.45	0.7	4	50	2	●
HM-2BP-R0.25-M06		0.25	0.5	4	0.45	0.7	6	50	2	●
HM-2BP-R0.3-M04		0.3	0.6	4	0.55	0.9	4	50	2	●
HM-2BP-R0.3-M06		0.3	0.6	4	0.55	0.9	6	50	2	●
HM-2BP-R0.3-M08		0.3	0.6	4	0.55	0.9	8	50	2	●
HM-2BP-R0.4-M04		0.4	0.8	4	0.75	1.2	4	50	2	●
HM-2BP-R0.4-M06		0.4	0.8	4	0.75	1.2	6	50	2	●
HM-2BP-R0.4-M08		0.4	0.8	4	0.75	1.2	8	50	2	●
HM-2BP-R0.4-M10		0.4	0.8	4	0.75	1.2	10	50	2	●
HM-2BP-R0.5-M04		0.5	1	4	0.95	1.5	4	50	2	●
HM-2BP-R0.5-M06		0.5	1	4	0.95	1.5	6	50	2	●
HM-2BP-R0.5-M08		0.5	1	4	0.95	1.5	8	50	2	●
HM-2BP-R0.5-M10		0.5	1	4	0.95	1.5	10	50	2	●
HM-2BP-R0.5-M12		0.5	1	4	0.95	1.5	12	50	2	●
HM-2BP-R0.6-M06		0.6	1.2	4	1.15	1.8	6	50	2	●
HM-2BP-R0.6-M08		0.6	1.2	4	1.15	1.8	8	50	2	●
HM-2BP-R0.6-M12		0.6	1.2	4	1.15	1.8	12	50	2	●
HM-2BP-R0.6-M16		0.6	1.2	4	1.15	1.8	16	50	2	●
HM-2BP-R0.75-M08		0.75	1.5	4	1.45	2.3	8	50	2	●
HM-2BP-R0.75-M12		0.75	1.5	4	1.45	2.3	12	50	2	●
HM-2BP-R0.75-M16		0.75	1.5	4	1.45	2.3	16	50	2	●
HM-2BP-R1.0-M06		1	2	4	1.95	3	6	50	2	●
HM-2BP-R1.0-M08		1	2	4	1.95	3	8	50	2	●
HM-2BP-R1.0-M10		1	2	4	1.95	3	10	50	2	●
HM-2BP-R1.0-M12		1	2	4	1.95	3	12	50	2	●
HM-2BP-R1.0-M16		1	2	4	1.95	3	16	50	2	●
HM-2BP-R1.0-M20		1	2	4	1.95	3	20	50	2	●
HM-2BP-R1.25-M08		1.25	2.5	4	2.4	3.7	8	50	2	●
HM-2BP-R1.25-M12		1.25	2.5	4	2.4	3.7	12	50	2	●
HM-2BP-R1.25-M16		1.25	2.5	4	2.4	3.7	16	60	2	●
HM-2BP-R1.25-M20		1.25	2.5	4	2.4	3.7	20	60	2	●
HM-2BP-R1.5-M08		1.5	3	6	2.85	4.5	8	50	2	●
HM-2BP-R1.5-M10		1.5	3	6	2.85	4.5	10	50	2	●
HM-2BP-R1.5-M12		1.5	3	6	2.85	4.5	12	50	2	●
HM-2BP-R1.5-M16		1.5	3	6	2.85	4.5	16	60	2	●
HM-2BP-R1.5-M20		1.5	3	6	2.85	4.5	20	60	2	●
HM-2BP-R2.0-M10		2	4	6	3.85	6	10	60	2	●

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

**D**

Technical Information

**E**

Index

Application field

P	M	K	N	S	H
					✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

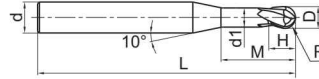
Nonstandard order > B541

**End mill** **Hard machining**

**HM-2BP**



- Straight shank
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L		
HM-2BP-R2.0-M16		2	4	6	3.85	6	16	60	2	●
HM-2BP-R2.0-M20		2	4	6	3.85	6	20	60	2	●
HM-2BP-R2.0-M25		2	4	6	3.85	6	25	60	2	●
HM-2BP-R2.5-M16		2.5	5	6	4.85	7.5	16	60	2	●
HM-2BP-R2.5-M25		2.5	5	6	4.85	7.5	25	70	2	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
					✓

- ✓ Very suitable
- ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541



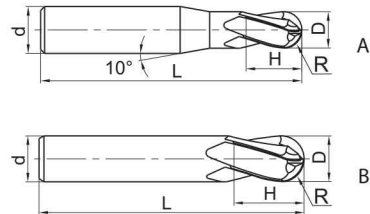
**A**

## Ball nose cutter Hard machining

**HM-4B**



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Milling

Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG555
HM-4B-R1.5		1.5	3	6	6	50	4	A	●
HM-4B-R2.0		2	4	6	8	50	4	A	●
HM-4B-R2.5		2.5	5	6	10	50	4	A	●
HM-4B-R3.0		3	6	6	12	50	4	B	●
HM-4B-R4.0		4	8	8	16	60	4	B	●
HM-4B-R5.0		5	10	10	20	75	4	B	●
HM-4B-R6.0		6	12	12	24	75	4	B	●
HM-4B-R7.0		7	14	14	28	75	4	B	●
HM-4B-R8.0		8	16	16	32	100	4	B	●
HM-4B-R9.0		9	18	18	36	100	4	B	●
HM-4B-R10.0		10	20	20	40	100	4	B	●

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

**D**

Technical Information

**E**

Index

### Application field

P	M	K	N	S	H
					✓

✓ Very suitable

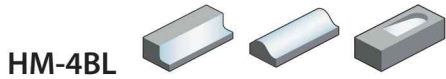
✓ Suitable

System code > B278

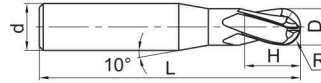
Cutting data > B492

Nonstandard order > B541

**Ball nose cutter long shank** **Hard machining**



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG555
HM-4BL-R1.5		1.5	3	6	6	75	4	A	●
HM-4BL-R2.0		2	4	6	8	75	4	A	●
HM-4BL-R2.5		2.5	5	6	10	75	4	A	●
HM-4BL-R3.0		3	6	6	12	75	4	B	●
HM-4BL-R4.0		4	8	8	16	100	4	B	●
HM-4BL-R5.0		5	10	10	20	100	4	B	●
HM-4BL-R6.0		6	12	12	24	100	4	B	●
HM-4BL-R7.0		7	14	14	28	100	4	B	●
HM-4BL-R8.0		8	16	16	32	150	4	B	●
HM-4BL-R9.0		9	18	18	36	150	4	B	●
HM-4BL-R10.0		10	20	20	40	150	4	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
					✓

✓ Very suitable

✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541



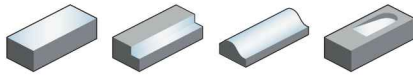


**A**

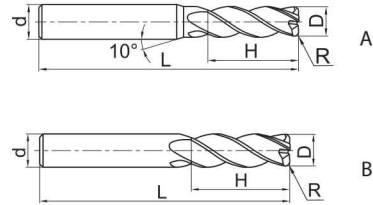
## Torus mill

## Hard machining

### HM-4R



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG555
HM-4R-D3.0R0.2		0.2	3	4	8	50	4	A	●
HM-4R-D4.0R0.3		0.3	4	4	10	50	4	B	●
HM-4R-D4.0R0.5		0.5	4	4	10	50	4	B	●
HM-4R-D5.0R0.5		0.5	5	6	13	50	4	A	●
HM-4R-D5.0R1.0		1	5	6	13	50	4	A	●
HM-4R-D6.0R0.5		0.5	6	6	16	50	4	B	●
HM-4R-D6.0R1.0		1	6	6	16	50	4	B	●
HM-4R-D8.0R0.5		0.5	8	8	20	60	4	B	●
HM-4R-D8.0R1.0		1	8	8	20	60	4	B	●
HM-4R-D10.0R0.5		0.5	10	10	25	75	4	B	●
HM-4R-D10.0R1.0		1	10	10	25	75	4	B	●
HM-4R-D10.0R2.0		2	10	10	25	75	4	B	●
HM-4R-D10.0R3.0		3	10	10	25	75	4	B	●
HM-4R-D12.0R0.5		0.5	12	12	30	75	4	B	●
HM-4R-D12.0R1.0		1	12	12	30	75	4	B	●
HM-4R-D12.0R2.0		2	12	12	30	75	4	B	●
HM-4R-D12.0R3.0		3	12	12	30	75	4	B	●

● Ex stock ○ On demand

\* With internal cooling

### Application field

P	M	K	N	S	H
					✓

✓ Very suitable

✓ Suitable

System code > B278

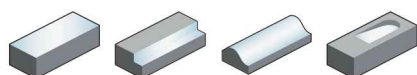
Cutting data > B492

Nonstandard order > B541

**Torus mill short cutting edge**

**Hard machining**

**HM-4RF**



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMG555
HM-4RF-D6.0R0.5		0.5	6	6	6	50	4	○
HM-4RF-D6.0R1.0		1	6	6	6	50	4	○
HM-4RF-D8.0R0.5		0.5	8	8	8	60	4	○
HM-4RF-D8.0R1.0		1	8	8	8	60	4	○
HM-4RF-D10.0R1.0		1	10	10	10	75	4	○
HM-4RF-D10.0R2.0		2	10	10	10	75	4	○
HM-4RF-D12.0R0.5		0.5	12	12	12	75	4	○
HM-4RF-D12.0R1.0		1	12	12	12	75	4	○
HM-4RF-D12.0R2.0		2	12	12	12	75	4	○

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
					✓

✓ Very suitable

✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

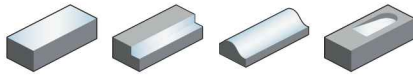
Nonstandard order > B541



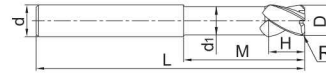
**A**

## Torus mill long shank Hard machining

**HM-4RP**



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Article	*	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L		KMG555
HM-4RP-D6.0R0.5		0.5	6	6	5.8	6	18	75	4	○
HM-4RP-D6.0R1.0		1	6	6	5.8	6	18	75	4	○
HM-4RP-D8.0R0.5		0.5	8	8	7.8	8	24	100	4	○
HM-4RP-D8.0R1.0		1	8	8	7.8	8	24	100	4	○
HM-4RP-D10.0R0.5		0.5	10	10	9.6	10	30	100	4	○
HM-4RP-D10.0R1.0		1	10	10	9.6	10	30	100	4	○
HM-4RP-D10.0R2.0		2	10	10	9.6	10	30	100	4	○
HM-4RP-D12.0R0.5		0.5	12	12	11.5	12	36	100	4	○
HM-4RP-D12.0R1.0		1	12	12	11.5	12	36	100	4	○
HM-4RP-D12.0R2.0		2	12	12	11.5	12	36	100	4	○
HM-4RP-D16.0R1.0		1	16	16	15.5	16	40	150	4	●
HM-4RP-D16.0R2.0		2	16	16	15.5	16	40	150	4	○

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

### Application field

P	M	K	N	S	H
					✓

- ✓ Very suitable
- ✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

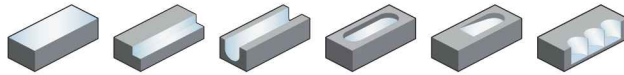
System code > B278

Cutting data > B492

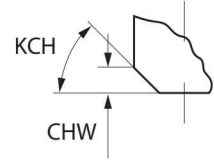
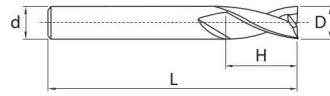
Nonstandard order > B541

**End mill** **General machining of non-ferrous metals**

**5502R402NM**



- Type of shank DIN 6535HA
- Centre cutting
- Helix angle 40°



Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	H	L	KCH	CHW		
5502R402NM-0300		3	6	8	57	0	0	2	●
5502R402NM-0400		4	6	11	57	0	0	2	●
5502R402NM-0500		5	6	13	57	0	0	2	●
5502R402NM-0600		6	6	13	57	45	0.1	2	●
5502R402NM-0800		8	8	19	63	45	0.1	2	●
5502R402NM-1000		10	10	22	72	45	0.1	2	●
5502R402NM-1200		12	12	26	83	45	0.1	2	●
5502R402NM-1400		14	14	26	83	45	0.15	2	●
5502R402NM-1600		16	16	32	92	45	0.15	2	●
5502R402NM-1800		18	18	32	92	45	0.15	2	●
5502R402NM-2000		20	20	38	104	45	0.15	2	●

- Ex stock ○ On demand
- \* With internal cooling

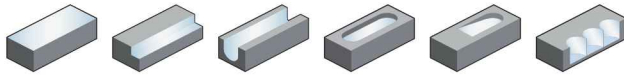
Application field					
P	M	K	N	S	H
			✓		

- ✓ Very suitable
- ✓ Suitable

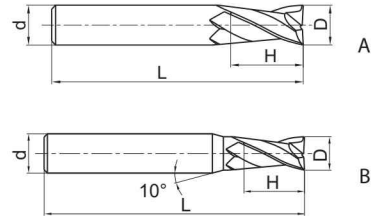
**A**

## End mill General machining of non-ferrous metals

**NM-2E**



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Milling

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG309
NM-2E-D1.0		1	4	3	50	2	A	●
NM-2E-D2.0		2	4	6	50	2	A	●
NM-2E-D3.0		3	6	8	50	2	A	●
NM-2E-D4.0		4	6	11	50	2	A	●
NM-2E-D5.0		5	6	13	50	2	A	●
NM-2E-D6.0		6	6	16	50	2	B	●
NM-2E-D8.0		8	8	20	60	2	B	●
NM-2E-D10.0		10	10	25	75	2	B	●
NM-2E-D12.0		12	12	30	75	2	B	●

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

Application field					
P	M	K	N	S	H
			✓		

- ✓ Very suitable
- ✓ Suitable

**D**

Technical Information

**E**

Index

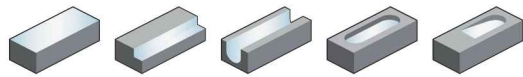
System code > B278

Cutting data > B492

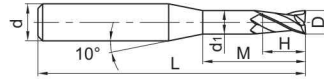
Nonstandard order > B541

**End mill** **General machining of non-ferrous metals**

**NM-2EP**



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d <sub>1</sub>	H	M	L		KMG309
NM-2EP-D0.5-M04		0.5	4	0.45	0.7	4	50	2	●
NM-2EP-D0.5-M08		0.5	4	0.45	0.7	8	50	2	●
NM-2EP-D0.5-M06		0.5	4	0.45	0.7	6	50	2	●
NM-2EP-D0.8-M10		0.8	4	0.75	1.2	10	50	2	●
NM-2EP-D0.8-M04		0.8	4	0.75	1.2	4	50	2	●
NM-2EP-D0.8-M08		0.8	4	0.75	1.2	8	50	2	●
NM-2EP-D0.8-M06		0.8	4	0.75	1.2	6	50	2	●
NM-2EP-D1.0-M08		1	4	0.95	1.5	8	50	2	●
NM-2EP-D1.0-M10		1	4	0.95	1.5	10	50	2	●
NM-2EP-D1.0-M14		1	4	0.95	1.5	14	50	2	●
NM-2EP-D1.0-M12		1	4	0.95	1.5	12	50	2	●
NM-2EP-D1.0-M06		1	4	0.95	1.5	6	50	2	●
NM-2EP-D1.0-M04		1	4	0.95	1.5	4	50	2	●
NM-2EP-D1.5-M08		1.5	4	1.45	2.3	8	50	2	●
NM-2EP-D1.5-M16		1.5	4	1.45	2.3	16	50	2	●
NM-2EP-D2.0-M16		2	4	1.95	3	16	50	2	●
NM-2EP-D2.0-M14		2	4	1.95	3	14	50	2	●
NM-2EP-D2.0-M08		2	4	1.95	3	8	50	2	●
NM-2EP-D2.0-M10		2	4	1.95	3	10	50	2	●
NM-2EP-D2.0-M12		2	4	1.95	3	12	50	2	●
NM-2EP-D2.0-M06		2	4	1.95	3	6	50	2	●
NM-2EP-D2.5-M10		2.5	4	2.4	3.7	10	50	2	●
NM-2EP-D2.5-M20		2.5	4	2.4	3.7	20	60	2	●
NM-2EP-D3.0-M20		3	6	2.85	4.5	20	60	2	●
NM-2EP-D3.0-M10		3	6	2.85	4.5	10	50	2	●
NM-2EP-D4.0-M25		4	6	3.85	6	25	60	2	●
NM-2EP-D4.0-M16		4	6	3.85	6	16	60	2	●
NM-2EP-D5.0-M25		5	6	4.85	7.5	25	70	2	●
NM-2EP-D5.0-M16		5	6	4.85	7.5	16	60	2	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
			✓		

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

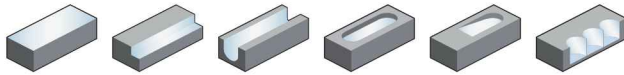
Nonstandard order > B541



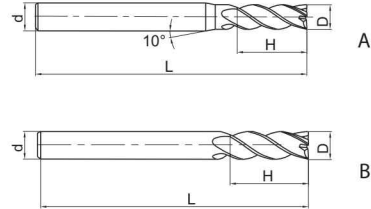
**A**

## End mill General machining of non-ferrous metals

**NM-4E**



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Milling

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG309
NM-4E-D3.0		3	6	8	50	4	A	●
NM-4E-D4.0		4	6	11	50	4	A	●
NM-4E-D5.0		5	6	13	50	4	A	●
NM-4E-D6.0		6	6	16	50	4	B	●
NM-4E-D8.0		8	8	20	60	4	B	●
NM-4E-D10.0		10	10	25	75	4	B	●
NM-4E-D12.0		12	12	30	75	4	B	●

- Ex stock ○ On demand
- \* With internal cooling

**C**

Drilling

Application field					
P	M	K	N	S	H
			✓		

- ✓ Very suitable
- ✓ Suitable

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

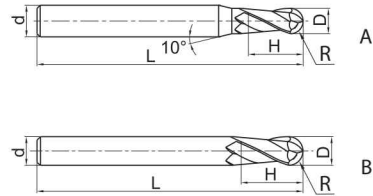
Nonstandard order > B541

**Ball nose cutter** **General machining of non-ferrous metals**

**NM-2B**



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG309
NM-2B-R0.5		0.5	1	4	2	50	2	A	●
NM-2B-R0.75		0.75	1.5	4	3	50	2	A	●
NM-2B-R1.0		1	2	4	4	50	2	A	●
NM-2B-R1.25		1.25	2.5	4	5	50	2	A	●
NM-2B-R1.5		1.5	3	6	6	50	2	A	●
NM-2B-R1.75		1.75	3.5	6	8	50	2	A	●
NM-2B-R2.0		2	4	6	8	50	2	A	●
NM-2B-R2.5		2.5	5	6	10	50	2	A	●
NM-2B-R3.0		3	6	6	12	50	2	B	●
NM-2B-R4.0		4	8	8	16	60	2	B	●
NM-2B-R5.0		5	10	10	20	75	2	B	●
NM-2B-R6.0		6	12	12	24	75	2	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
			✓		

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

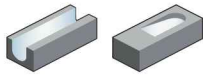
Nonstandard order > B541



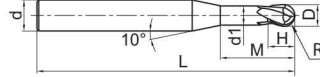


## Ball nose cutter General machining of non-ferrous metals

### NM-2BP



- Factory standard
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L		
NM-2BP-R0.25-M04	*	0.25	0.5	4	0.45	0.7	4	50	2	●
NM-2BP-R0.25-M06	*	0.25	0.5	4	0.45	0.7	6	50	2	●
NM-2BP-R0.3-M04	*	0.3	0.6	4	0.55	0.9	4	50	2	●
NM-2BP-R0.3-M06	*	0.3	0.6	4	0.55	0.9	6	50	2	●
NM-2BP-R0.3-M08	*	0.3	0.6	4	0.55	0.9	8	50	2	●
NM-2BP-R0.4-M04	*	0.4	0.8	4	0.75	1.2	4	50	2	●
NM-2BP-R0.4-M06	*	0.4	0.8	4	0.75	1.2	6	50	2	●
NM-2BP-R0.4-M08	*	0.4	0.8	4	0.75	1.2	8	50	2	●
NM-2BP-R0.4-M10	*	0.4	0.8	4	0.75	1.2	10	50	2	●
NM-2BP-R0.5-M04	*	0.5	1	4	0.95	1.5	4	50	2	●
NM-2BP-R0.5-M06	*	0.5	1	4	0.95	1.5	6	50	2	●
NM-2BP-R0.5-M08	*	0.5	1	4	0.95	1.5	8	50	2	●
NM-2BP-R0.5-M10	*	0.5	1	4	0.95	1.5	10	50	2	●
NM-2BP-R0.5-M12	*	0.5	1	4	0.95	1.5	12	50	2	●
NM-2BP-R0.75-M08	*	0.75	1.5	4	1.45	2.3	8	50	2	●
NM-2BP-R0.75-M16	*	0.75	1.5	4	1.45	2.3	16	50	2	●
NM-2BP-R1.0-M06	*	1	2	4	1.95	3	6	50	2	●
NM-2BP-R1.0-M08	*	1	2	4	1.95	3	8	50	2	●
NM-2BP-R1.0-M10	*	1	2	4	1.95	3	10	50	2	●
NM-2BP-R1.0-M12	*	1	2	4	1.95	3	12	50	2	●
NM-2BP-R1.0-M16	*	1	2	4	1.95	3	16	50	2	●
NM-2BP-R1.0-M20	*	1	2	4	1.95	3	20	60	2	●
NM-2BP-R1.5-M10	*	1.5	3	6	2.85	4.5	10	50	2	●
NM-2BP-R1.5-M20	*	1.5	3	6	2.85	4.5	20	60	2	●
NM-2BP-R2.0-M10	*	2	4	6	3.85	6	10	60	2	●
NM-2BP-R2.0-M16	*	2	4	6	3.85	6	16	60	2	●
NM-2BP-R2.0-M20	*	2	4	6	3.85	6	20	60	2	●
NM-2BP-R2.0-M25	*	2	4	6	3.85	6	25	60	2	●
NM-2BP-R2.5-M16	*	2.5	5	6	4.85	7.5	16	60	2	●
NM-2BP-R2.5-M25	*	2.5	5	6	4.85	7.5	25	70	2	●

● Ex stock ○ On demand

\* With internal cooling

#### Application field

P	M	K	N	S	H
			✓		

✓ Very suitable

✓ Suitable

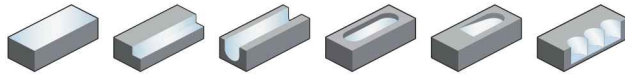
System code > B278

Cutting data > B492

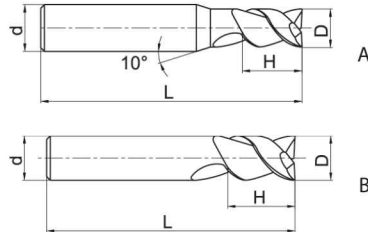
Nonstandard order > B541

**End mill** **General machining of Al and Al alloys**

**AL-2E**



- Factory standard
- Centre cutting
- Helix angle 55°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			YK30F
AL-2E-D1.0		1	4	3	50	2	A	●
AL-2E-D1.5		1.5	4	4	50	2	A	●
AL-2E-D2.0		2	4	6	50	2	A	●
AL-2E-D2.5		2.5	4	7	50	2	A	●
AL-2E-D3.0		3	6	9	50	2	A	●
AL-2E-D4.0		4	6	12	50	2	A	●
AL-2E-D5.0		5	6	15	50	2	A	●
AL-2E-D6.0		6	6	18	60	2	B	●
AL-2E-D8.0		8	8	20	60	2	B	●
AL-2E-D10.0		10	10	30	75	2	B	●
AL-2E-D12.0		12	12	32	75	2	B	●
AL-2E-D16.0		16	16	45	100	2	B	●
AL-2E-D20.0		20	20	45	100	2	B	●

- Ex stock ○ On demand
- \* With internal cooling

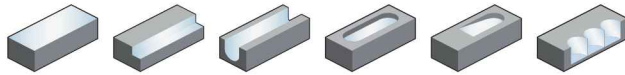
Application field					
P	M	K	N	S	H
			✓		

- ✓ Very suitable
- ✓ Suitable

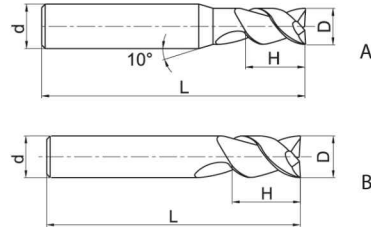
**A**

## End mill long cutting edge General machining of Al and Al alloys

**AL-2EL**



- Factory standard
- Centre cutting
- Helix angle 55°



Turning

**B**

Milling

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			YK30F
AL-2EL-D3.0		3	6	12	60	2	A	●
AL-2EL-D4.0		4	6	16	60	2	A	●
AL-2EL-D5.0		5	6	20	60	2	A	●
AL-2EL-D6.0		6	6	25	75	2	B	●
AL-2EL-D8.0		8	8	32	75	2	B	●
AL-2EL-D10.0		10	10	45	100	2	B	●
AL-2EL-D12.0		12	12	45	100	2	B	●
AL-2EL-D16.0		16	16	65	150	2	B	●
AL-2EL-D20.0		20	20	75	150	2	B	●

- Ex stock ○ On demand
- \* With internal cooling

**C**

Drilling

Application field					
P	M	K	N	S	H
			✓		

- ✓ Very suitable
- ✓ Suitable

**D**

Technical Information

**E**

Index

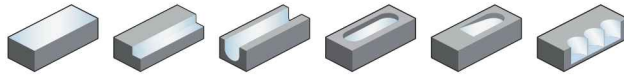
System code > B278

Cutting data > B492

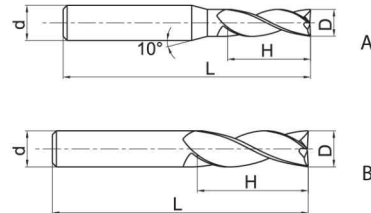
Nonstandard order > B541

**End mill**    **General machining of Al and Al alloys**

**AL-3E**



- Factory standard
- Centre cutting
- Helix angle 45°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			YK30F
AL-3E-D1.0		1	4	3	50	3	A	●
AL-3E-D1.5		1.5	4	4	50	3	A	●
AL-3E-D2.0		2	4	6	50	3	A	●
AL-3E-D2.5		2.5	4	7	50	3	A	●
AL-3E-D3.0		3	6	9	50	3	A	●
AL-3E-D4.0		4	6	12	50	3	A	●
AL-3E-D5.0		5	6	15	50	3	A	●
AL-3E-D6.0		6	6	18	60	3	B	●
AL-3E-D8.0		8	8	20	60	3	B	●
AL-3E-D10.0		10	10	30	75	3	B	●
AL-3E-D12.0		12	12	32	75	3	B	●
AL-3E-D16.0		16	16	45	100	3	B	●
AL-3E-D20.0		20	20	45	100	3	B	●

- Ex stock    ○ On demand
- \* With internal cooling

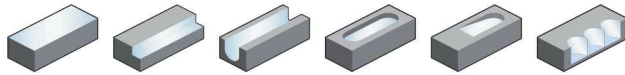
Application field					
P	M	K	N	S	H
			✓		

- ✓ Very suitable
- ✓ Suitable

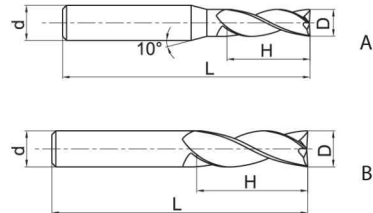
**A**

## End mill long cutting edge General machining of Al and Al alloys

**AL-3EL**



- Factory standard
- Centre cutting
- Helix angle 45°



Turning

**B**

Milling

Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			YK30F
AL-3EL-D3.0		3	6	12	60	3	A	●
AL-3EL-D4.0		4	6	16	60	3	A	●
AL-3EL-D5.0		5	6	20	60	3	A	●
AL-3EL-D6.0		6	6	25	75	3	B	●
AL-3EL-D8.0		8	8	32	75	3	B	●
AL-3EL-D10.0		10	10	45	100	3	B	●
AL-3EL-D12.0		12	12	45	100	3	B	●
AL-3EL-D16.0		16	16	65	150	3	B	●
AL-3EL-D20.0		20	20	75	150	3	B	●

- Ex stock ○ On demand
- \* With internal cooling

**C**

Drilling

### Application field

P	M	K	N	S	H
			✓		

- ✓ Very suitable
- ✓ Suitable

**D**

Technical Information

**E**

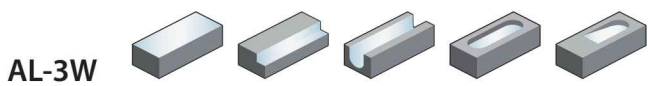
Index

System code > B278

Cutting data > B492

Nonstandard order > B541

**End mill serrated teeth**    **General machining of Al and Al alloys**



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		YK30F
AL-3W-D6.0		6	6	16	50	3	●
AL-3W-D8.0		8	8	20	60	3	●
AL-3W-D10.0		10	10	25	75	3	●
AL-3W-D12.0		12	12	30	75	3	●
AL-3W-D16.0		16	16	45	100	3	●
AL-3W-D18.0		18	18	45	100	3	○
AL-3W-D20.0		20	20	45	100	3	●

● Ex stock    ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
			✓		

✓ Very suitable

✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

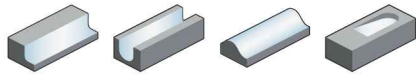
Nonstandard order > B541



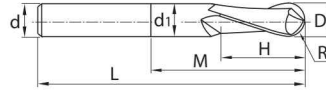
**A**

## Ball nose cutter High performance machining of non-ferrous metals

**5565R302NH**



- Type of shank DIN 6535HA
- Centre cutting
- Helix angle 30°



Turning

**B**

Article	*	Dimensions [mm]							Teeth	Grade
		D	R	d (h6)	d <sub>1</sub>	H	M	L		YK40F
5565R302NH-0300		3	1.5	6	2.8	6	9	57	2	●
5565R302NH-0400		4	2	6	3.7	8	12	57	2	●
5565R302NH-0500		5	2.5	6	4.6	10	15	57	2	●
5565R302NH-0600		6	3	6	5.5	12	20	57	2	●
5565R302NH-0800		8	4	8	7.4	16	26	63	2	●
5565R302NH-1000		10	5	10	9.2	20	31	72	2	●
5565R302NH-1200		12	6	12	11	24	37	83	2	●
5565R302NH-1600		16	8	16	15	32	43	92	2	●

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

Application field					
P	M	K	N	S	H
			✓		

- ✓ Very suitable
- ✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

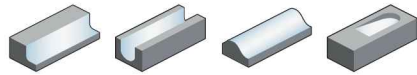
System code > B278

Cutting data > B492

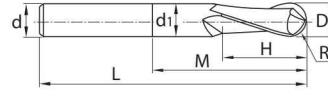
Nonstandard order > B541

**Ball nose cutter long shank** High performance machining of non-ferrous metals

**5566R302NH**



- Type of shank DIN 6535HA
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]							Teeth	Grade YK40F
		D	R	d (h6)	d <sub>1</sub>	H	M	L		
5566R302NH-0300		3	1.5	6	2.8	6	9	75	2	●
5566R302NH-0400		4	2	6	3.7	8	12	75	2	●
5566R302NH-0500		5	2.5	6	4.6	10	15	80	2	●
5566R302NH-0600		6	3	6	5.5	12	20	80	2	●
5566R302NH-0800		8	4	8	7.4	16	26	90	2	●
5566R302NH-1000		10	5	10	9.2	20	31	100	2	●
5566R302NH-1200		12	6	12	11	24	37	120	2	●
5566R302NH-1600		16	8	16	15	32	43	140	2	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
			✓		

- ✓ Very suitable
- ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541





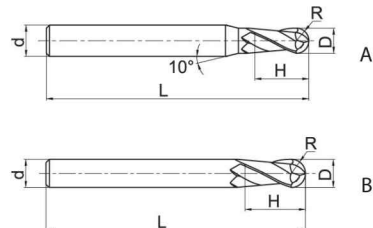
**A**

## Ball nose cutter General machining of Al and Al alloys

**AL-2B**



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Milling

Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			YK30F
AL-2B-R1.0		1	2	6	4	60	2	A	○
AL-2B-R1.5		1.5	3	6	6	60	2	A	○
AL-2B-R2.0		2	4	6	8	60	2	A	○
AL-2B-R2.5		2.5	5	6	10	60	2	A	○
AL-2B-R3.0		3	6	6	12	60	2	B	○
AL-2B-R4.0		4	8	8	16	75	2	B	○
AL-2B-R5.0		5	10	10	20	75	2	B	○
AL-2B-R6.0		6	12	12	24	75	2	B	○

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

Application field					
P	M	K	N	S	H
			✓		

- ✓ Very suitable
- ✓ Suitable

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541

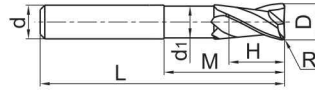
**Torus mill**

**General machining of Al and Al alloys**

**AL-2R-AIR**



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]							Teeth	Grade YK40F
		R	D	d (h6)	d <sub>1</sub>	H	M	L		
AL-2R-D6.0R1.0-AIR		1	6	6	5.5	7	20	57	2	●
AL-2R-D8.0R1.0-AIR		1	8	8	7.4	9	26	63	2	●
AL-2R-D10.0R1.0-AIR		1	10	10	9.2	11	31	72	2	○
AL-2R-D10.0R2.0-AIR		2	10	10	9.2	11	31	72	2	○
AL-2R-D12.0R1.0-AIR		1	12	12	11	12	37	83	2	●
AL-2R-D12.0R2.0-AIR		2	12	12	11	12	37	83	2	○
AL-2R-D12.0R3.0-AIR		3	12	12	11	12	37	83	2	○
AL-2R-D16.0R1.0-AIR		1	16	16	15	16	43	92	2	○
AL-2R-D16.0R2.0-AIR		2	16	16	15	16	43	92	2	○
AL-2R-D16.0R3.0-AIR		3	16	16	15	16	43	92	2	○
AL-2R-D16.0R4.0-AIR		4	16	16	15	16	43	92	2	○
AL-2R-D20.0R1.0-AIR		1	20	20	19	20	53	104	2	●
AL-2R-D20.0R2.0-AIR		2	20	20	19	20	53	104	2	○
AL-2R-D20.0R3.0-AIR		3	20	20	19	20	53	104	2	○
AL-2R-D20.0R4.0-AIR		4	20	20	19	20	53	104	2	○
AL-2R-D20.0R5.0-AIR		5	20	20	19	20	53	104	2	●
AL-2R-D20.0R6.0-AIR		6	20	20	19	20	53	104	2	○

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
			✓		

- ✓ Very suitable
- ✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



**A**

## Torus mill long shank General machining of Al and Al alloys

**AL-2RL-AIR**



- Factory standard
- Centre cutting
- Helix angle 30°



Turning

**B**

Article	*	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L		YK40F
AL-2RL-D6.0R1.0-AIR		1	6	6	5.5	7	43	80	2	●
AL-2RL-D8.0R1.0-AIR		1	8	8	7.4	9	53	90	2	●
AL-2RL-D10.0R1.0-AIR		1	10	10	9.2	11	59	100	2	●
AL-2RL-D10.0R2.0-AIR		2	10	10	9.2	11	59	100	2	●
AL-2RL-D12.0R1.0-AIR		1	12	12	11	12	74	120	2	●
AL-2RL-D12.0R2.0-AIR		2	12	12	11	12	74	120	2	●
AL-2RL-D12.0R3.0-AIR		3	12	12	11	12	74	120	2	●
AL-2RL-D16.0R1.0-AIR		1	16	16	15	16	84	140	2	●
AL-2RL-D16.0R2.0-AIR		2	16	16	15	16	84	140	2	●
AL-2RL-D16.0R3.0-AIR		3	16	16	15	16	84	140	2	●
AL-2RL-D16.0R4.0-AIR		4	16	16	15	16	84	140	2	●
AL-2RL-D20.0R1.0-AIR		1	20	20	19	20	89	140	2	○
AL-2RL-D20.0R2.0-AIR		2	20	20	19	20	89	140	2	●
AL-2RL-D20.0R3.0-AIR		3	20	20	19	20	89	140	2	●
AL-2RL-D20.0R4.0-AIR		4	20	20	19	20	89	140	2	●
AL-2RL-D20.0R5.0-AIR		5	20	20	19	20	89	140	2	○
AL-2RL-D20.0R6.0-AIR		6	20	20	19	20	89	140	2	○

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

### Application field

P	M	K	N	S	H
			✓		

- ✓ Very suitable
- ✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541

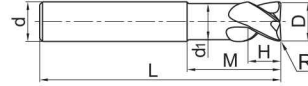
**Torus mill**

**General machining of Al and Al alloys**

**AL-3R-AIR**



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d <sub>i</sub>	H	M	L		
AL-3R-D12.0R1.0-AIR	*	1	12	12	11	12	37	83	3	●
AL-3R-D12.0R2.0-AIR		2	12	12	11	12	37	83	3	●
AL-3R-D12.0R3.0-AIR		3	12	12	11	12	37	83	3	●
AL-3R-D16.0R1.0-AIR		1	16	16	15	16	43	92	3	●
AL-3R-D16.0R2.0-AIR		2	16	16	15	16	43	92	3	●
AL-3R-D16.0R3.0-AIR		3	16	16	15	16	43	92	3	●
AL-3R-D16.0R4.0-AIR		4	16	16	15	16	43	92	3	●
AL-3R-D20.0R1.0-AIR		1	20	20	19	20	53	104	3	●
AL-3R-D20.0R2.0-AIR		2	20	20	19	20	53	104	3	○
AL-3R-D20.0R3.0-AIR		3	20	20	19	20	53	104	3	○
AL-3R-D20.0R4.0-AIR		4	20	20	19	20	53	104	3	○
AL-3R-D20.0R5.0-AIR		5	20	20	19	20	53	104	3	●
AL-3R-D20.0R6.0-AIR		6	20	20	19	20	53	104	3	○

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
			✓		

✓ Very suitable

✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541



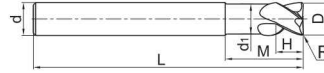
**A**

## Torus mill long shank General machining of Al and Al alloys

### AL-3RL-AIR



- Factory standard
- Centre cutting
- Helix angle 30°



Turning

**B**

Article	*	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L		YK40F
AL-3RL-D12.0R1.0-AIR	*	1	12	12	11	12	74	120	3	●
AL-3RL-D12.0R2.0-AIR		2	12	12	11	12	74	120	3	●
AL-3RL-D12.0R3.0-AIR		3	12	12	11	12	74	120	3	●
AL-3RL-D16.0R1.0-AIR		1	16	16	15	16	84	140	3	●
AL-3RL-D16.0R2.0-AIR		2	16	16	15	16	84	140	3	○
AL-3RL-D16.0R3.0-AIR		3	16	16	15	16	84	140	3	●
AL-3RL-D16.0R4.0-AIR		4	16	16	15	16	84	140	3	●
AL-3RL-D20.0R1.0-AIR		1	20	20	19	20	89	140	3	●
AL-3RL-D20.0R2.0-AIR		2	20	20	19	20	89	140	3	○
AL-3RL-D20.0R3.0-AIR		3	20	20	19	20	89	140	3	○
AL-3RL-D20.0R4.0-AIR		4	20	20	19	20	89	140	3	○
AL-3RL-D20.0R5.0-AIR		5	20	20	19	20	89	140	3	○
AL-3RL-D20.0R6.0-AIR		6	20	20	19	20	89	140	3	○

Milling

**C**

- Ex stock ○ On demand
- \* With internal cooling

Drilling

#### Application field

P	M	K	N	S	H
			✓		

- ✓ Very suitable
- ✓ Suitable

**D**

Technical Information

**E**

Index

System code > B278

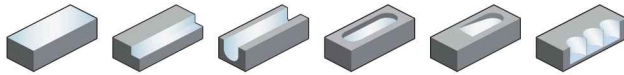
Cutting data > B492

Nonstandard order > B541

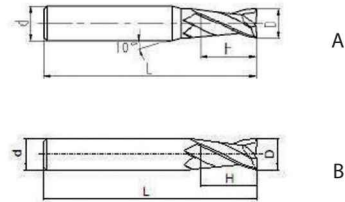
## End mill

### General machining of Al and Al alloys

#### ALG-2E



- Factory standard
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			YK40F
ALG-2E-D1.0		1	4	3	50	2	A	●
ALG-2E-D1.5		1.5	4	4	50	2	A	○
ALG-2E-D2.0		2	4	6	50	2	A	●
ALG-2E-D2.5		2.5	4	8	50	2	A	○
ALG-2E-D3.0S		3	4	8	50	2	A	●
ALG-2E-D3.5S		3.5	4	10	50	2	A	○
ALG-2E-D4.0S		4	4	11	50	2	B	○
ALG-2E-D3.0		3	6	8	50	2	A	●
ALG-2E-D3.5		3.5	6	10	50	2	A	○
ALG-2E-D4.0		4	6	11	50	2	A	●
ALG-2E-D4.5		4.5	6	11	50	2	A	○
ALG-2E-D5.0		5	6	13	50	2	A	●
ALG-2E-D5.5		5.5	6	16	50	2	A	○
ALG-2E-D6.0		6	6	16	50	2	B	●
ALG-2E-D7.0		7	8	20	60	2	A	○
ALG-2E-D8.0		8	8	20	60	2	B	●
ALG-2E-D9.0		9	10	22	75	2	A	○
ALG-2E-D10.0		10	10	25	75	2	B	●
ALG-2E-D11.0		11	12	26	75	2	A	○
ALG-2E-D12.0		12	12	30	75	2	B	●
ALG-2E-D14.0		14	14	32	75	2	B	●
ALG-2E-D16.0		16	16	45	100	2	B	●
ALG-2E-D18.0		18	18	45	100	2	B	○
ALG-2E-D20.0		20	20	45	100	2	B	●

- Ex stock ○ On demand
- \* With internal cooling

Application field					
P	M	K	N	S	H
			✓		

- ✓ Very suitable
- ✓ Suitable

A

Turning

B

Milling

C

Drilling

D

Technical Information

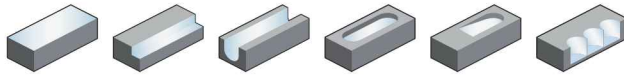
E

Index

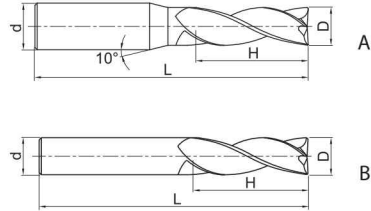
**A**

## End mill General machining of Al and Al alloys

**ALG-3E**



- Factory standard
- Centre cutting
- Helix angle 45°



Turning

**B**

Milling

Article	*	Dimensions [mm]				Teeth	Geometry	Grade	
		D	d (h6)	H	L			KMD401	YK40F
ALG-3E-D1.0		1	4	3	50	3	A	○	●
ALG-3E-D1.5		1.5	4	4	50	3	A	○	●
ALG-3E-D2.0		2	4	6	50	3	A	○	●
ALG-3E-D2.5		2.5	4	8	50	3	A	○	○
ALG-3E-D3.0S		3	4	8	50	3	A	○	●
ALG-3E-D3.5S		3.5	4	10	50	3	A	○	○
ALG-3E-D4.0S		4	4	11	50	3	B	○	●
ALG-3E-D3.0		3	6	8	50	3	A	●	●
ALG-3E-D3.5		3.5	6	10	50	3	A	●	○
ALG-3E-D4.0		4	6	11	50	3	A	●	●
ALG-3E-D4.5		4.5	6	11	50	3	A	●	○
ALG-3E-D5.0		5	6	13	50	3	A	●	●
ALG-3E-D5.5		5.5	6	16	50	3	A	●	○
ALG-3E-D6.0		6	6	16	50	3	B	●	●
ALG-3E-D7.0		7	8	20	60	3	A	●	○
ALG-3E-D8.0		8	8	20	60	3	B	●	●
ALG-3E-D9.0		9	10	22	75	3	A	●	○
ALG-3E-D10.0		10	10	25	75	3	B	●	●
ALG-3E-D11.0		11	12	26	75	3	A	●	○
ALG-3E-D12.0		12	12	30	75	3	B	●	●
ALG-3E-D14.0		14	14	32	75	3	B	●	●
ALG-3E-D16.0		16	16	45	100	3	B	●	●
ALG-3E-D18.0		18	18	45	100	3	B	●	○
ALG-3E-D20.0		20	20	45	100	3	B	○	●

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

**D**

Technical Information

**E**

Index

### Application field

P	M	K	N	S	H
			✓		

✓ Very suitable

✓ Suitable

System code > B278

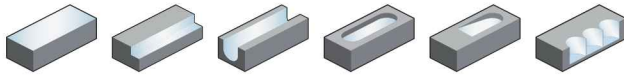
Cutting data > B492

Nonstandard order > B541

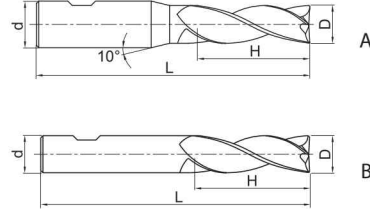
## End mill

### General machining of Al and Al alloys

#### ALG-3E-W



- Factory standard with weldon clamping surface
- Centre cutting
- Helix angle 45°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMD401
ALG-3E-D3.0-W		3	6	8	50	3	A	●
ALG-3E-D3.5-W		3.5	6	10	50	3	A	●
ALG-3E-D4.0-W		4	6	11	50	3	A	●
ALG-3E-D4.5-W		4.5	6	11	50	3	A	●
ALG-3E-D5.0-W		5	6	13	50	3	A	●
ALG-3E-D5.5-W		5.5	6	16	50	3	A	●
ALG-3E-D6.0-W		6	6	16	50	3	B	●
ALG-3E-D7.0-W		7	8	20	60	3	A	●
ALG-3E-D8.0-W		8	8	20	60	3	B	●
ALG-3E-D9.0-W		9	10	22	75	3	A	●
ALG-3E-D10.0-W		10	10	25	75	3	B	●
ALG-3E-D11.0-W		11	12	26	75	3	A	●
ALG-3E-D12.0-W		12	12	30	75	3	B	●
ALG-3E-D14.0-W		14	14	32	75	3	B	●
ALG-3E-D16.0-W		16	16	45	100	3	B	●
ALG-3E-D18.0-W		18	18	45	100	3	B	●
ALG-3E-D20.0-W		20	20	45	100	3	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
			✓		

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541

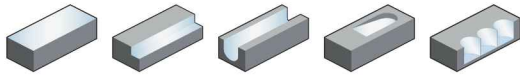




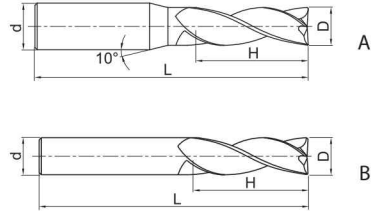
**A**

## End mill High-performance machining of Al and Al alloys

**ALP-3E**



- Factory standard
- Centre cutting
- Helix angle 35°



Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

Article	*	Dimensions [mm]				Teeth	Geometry	Grade	
		D	d (h6)	H	L			KMD401	YK40F
ALP-3E-D1.0		1	4	3	50	3	A	○	○
ALP-3E-D1.5		1.5	4	4	50	3	A	○	●
ALP-3E-D2.0		2	4	6	50	3	A	○	●
ALP-3E-D2.5		2.5	4	8	50	3	A	○	○
ALP-3E-D3.0S		3	4	8	50	3	A	○	●
ALP-3E-D4.0S		4	4	11	50	3	B	○	●
ALP-3E-D3.0		3	6	8	50	3	A	●	●
ALP-3E-D4.0		4	6	11	50	3	A	●	●
ALP-3E-D4.5		4.5	6	11	50	3	A	●	○
ALP-3E-D5.0		5	6	13	50	3	A	●	●
ALP-3E-D5.5		5.5	6	16	50	3	A	●	○
ALP-3E-D6.0		6	6	16	50	3	B	●	●
ALP-3E-D7.0		7	8	20	60	3	B	●	○
ALP-3E-D8.0		8	8	20	60	3	B	●	●
ALP-3E-D9.0		9	10	22	75	3	B	●	○
ALP-3E-D10.0		10	10	25	75	3	B	●	●
ALP-3E-D11.0		11	12	26	75	3	B	●	●
ALP-3E-D12.0		12	12	30	75	3	B	●	●
ALP-3E-D14.0		14	14	32	75	3	B	●	●
ALP-3E-D16.0		16	16	45	100	3	B	●	●
ALP-3E-D20.0		20	20	45	100	3	B	●	○

● Ex stock ○ On demand

\* With internal cooling

### Application field

P	M	K	N	S	H
			✓		

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541

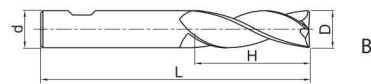
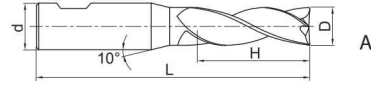
## End mill

### High-performance machining of Al and Al alloys

#### ALP-3E-W



- Factory standard with weldon clamping surface
- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMD401
ALP-3E-D3.0-W		3	6	8	50	3	A	●
ALP-3E-D4.0-W		4	6	11	50	3	A	●
ALP-3E-D4.5-W		4.5	6	11	50	3	A	●
ALP-3E-D5.0-W		5	6	13	50	3	A	●
ALP-3E-D5.5-W		5.5	6	16	50	3	A	●
ALP-3E-D6.0-W		6	6	16	50	3	B	●
ALP-3E-D7.0-W		7	8	20	60	3	B	●
ALP-3E-D8.0-W		8	8	20	60	3	B	●
ALP-3E-D9.0-W		9	10	22	75	3	B	●
ALP-3E-D10.0-W		10	10	25	75	3	B	●
ALP-3E-D11.0-W		11	12	26	75	3	B	●
ALP-3E-D12.0-W		12	12	30	75	3	B	●
ALP-3E-D14.0-W		14	14	32	75	3	B	●
ALP-3E-D16.0-W		16	16	45	100	3	B	●
ALP-3E-D20.0-W		20	20	45	100	3	B	●

● Ex stock ○ On demand

\* With internal cooling

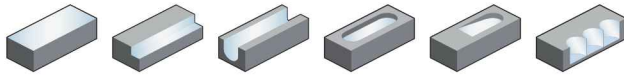
Application field					
P	M	K	N	S	H
			✓		

- ✓ Very suitable
- ✓ Suitable

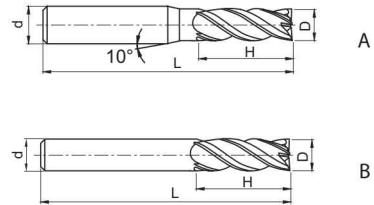
**A**

## End mill High-performance machining of Al and Al alloys

**ALP-4E**



- Factory standard
- Centre cutting
- Helix angle 38°



Turning

**B**

Milling

**C**

Drilling

Article	*	Dimensions [mm]				Teeth	Geometry	Grade	
		D	d (h6)	H	L			KMD401	YK40F
ALP-4E-D3.0S	*	3	4	9	50	4	A	○	●
ALP-4E-D4.0S	*	4	4	11	50	4	B	○	●
ALP-4E-D3.0		3	6	9	50	4	A	●	●
ALP-4E-D4.0		4	6	11	50	4	A	●	●
ALP-4E-D5.0		5	6	13	50	4	A	●	●
ALP-4E-D6.0		6	6	16	50	4	B	●	●
ALP-4E-D8.0		8	8	20	60	4	B	●	●
ALP-4E-D10.0		10	10	25	75	4	B	●	●
ALP-4E-D12.0		12	12	30	75	4	B	●	●
ALP-4E-D16.0		16	16	45	100	4	B	●	●
ALP-4E-D18.0		18	18	45	100	4	B	●	○
ALP-4E-D20.0		20	20	45	100	4	B	●	●

● Ex stock ○ On demand

\* With internal cooling

**D**

Technical Information

### Application field

P	M	K	N	S	H
			✓		

✓ Very suitable

✓ Suitable

**E**

Index

System code > B278

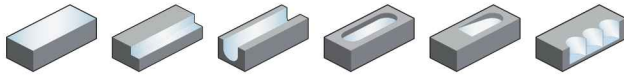
Cutting data > B492

Nonstandard order > B541

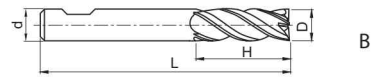
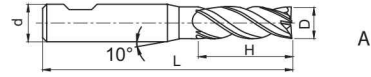
## End mill

### High-performance machining of Al and Al alloys

#### ALP-4E-W



- Factory standard with weldon clamping surface
- Centre cutting
- Helix angle 38°



Article	*	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMD401
ALP-4E-D3.0-W		3	6	9	50	4	A	●
ALP-4E-D4.0-W		4	6	11	50	4	A	●
ALP-4E-D5.0-W		5	6	13	50	4	A	●
ALP-4E-D6.0-W		6	6	16	50	4	B	●
ALP-4E-D8.0-W		8	8	20	60	4	B	●
ALP-4E-D10.0-W		10	10	25	75	4	B	●
ALP-4E-D12.0-W		12	12	30	75	4	B	●
ALP-4E-D16.0-W		16	16	45	100	4	B	●
ALP-4E-D18.0-W		18	18	45	100	4	B	●
ALP-4E-D20.0-W		20	20	45	100	4	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
			✓		

✓ Very suitable

✓ Suitable

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

System code > B278

Cutting data > B492

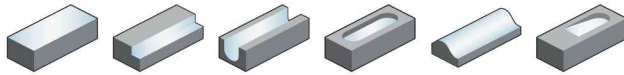
Nonstandard order > B541



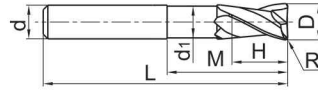
**A**

## Torus mill General machining of Al and Al alloys

**ALG-2R**



- Straight shank
- Centre cutting
- Helix angle 30°



Turning

**B**

Article	*	Dimensions [mm]							Teeth	Grade	
		R	D	d (h6)	d <sub>1</sub>	H	M	L		KMD401	YK40F
ALG-2R-D6.0R0.3		0.3	6	6	5,7	8	16	75	2	●	●
ALG-2R-D6.0R0.5		0.5	6	6	5,7	8	16	75	2	●	●
ALG-2R-D6.0R1.0		1	6	6	5,7	8	16	75	2	●	●
ALG-2R-D8.0R0.3		0.3	8	8	7,4	10	20	75	2	●	●
ALG-2R-D8.0R0.5		0.5	8	8	7,4	10	20	75	2	●	●
ALG-2R-D8.0R1.0		1	8	8	7,4	10	20	75	2	●	●
ALG-2R-D10.0R0.5		0.5	10	10	9,4	12	35	100	2	●	●
ALG-2R-D10.0R1.0		1	10	10	9,4	12	35	100	2	●	●
ALG-2R-D10.0R1.6		1.6	10	10	9,4	12	35	100	2	●	●
ALG-2R-D10.0R2.5		2.5	10	10	9,4	12	35	100	2	●	●
ALG-2R-D12.0R0.5		0.5	12	12	11,4	15	35	100	2	●	●
ALG-2R-D12.0R1.0		1	12	12	11,4	15	35	100	2	●	●
ALG-2R-D12.0R1.6		1.6	12	12	11,4	15	35	100	2	●	●
ALG-2R-D12.0R2.5		2.5	12	12	11,4	15	35	100	2	●	●
ALG-2R-D12.0R3.2		3.2	12	12	11,4	15	35	100	2	●	●
ALG-2R-D12.0R4.0		4	12	12	11,4	15	35	100	2	●	●
ALG-2R-D16.0R1.0		1	16	16	15,4	15	45	125	2	●	●
ALG-2R-D16.0R1.6		1.6	16	16	15,4	15	45	125	2	●	●
ALG-2R-D16.0R2.5		2.5	16	16	15,4	15	45	125	2	●	●
ALG-2R-D16.0R3.2		3.2	16	16	15,4	15	45	125	2	●	●
ALG-2R-D16.0R4.0		4	16	16	15,4	15	45	125	2	●	●
ALG-2R-D16.0R6.3		6.3	16	16	15,4	15	45	125	2	○	○
ALG-2R-D20.0R1.0		1	20	20	18	20	50	125	2	●	●
ALG-2R-D20.0R1.6		1.6	20	20	18	20	50	125	2	●	●
ALG-2R-D20.0R2.5		2.5	20	20	18	20	50	125	2	●	●
ALG-2R-D20.0R3.2		3.2	20	20	18	20	50	125	2	●	●
ALG-2R-D20.0R4.0		4	20	20	18	20	50	125	2	●	●
ALG-2R-D20.0R6.3		6.3	20	20	18	20	50	125	2	○	○
ALG-2R-D25.0R6.3		6.3	25	25	23	25	75	150	2	○	○

Milling

**C**

Drilling

**D**

Technical Information

- Ex stock ○ On demand
- \* With internal cooling

**E**

Index

### Application field

P	M	K	N	S	H
			✓		

- ✓ Very suitable
- ✓ Suitable

System code > B278

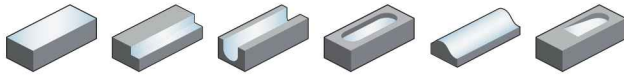
Cutting data > B492

Nonstandard order > B541

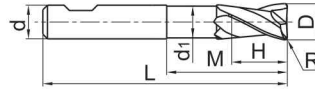
## Torus mill

### General machining of Al and Al alloys

#### ALG-2R-W



- Factory standard with weldon clamping surface
- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]								Teeth	Grade KMD401
		R	D	d (h6)	d <sub>1</sub>	H	M	L			
ALG-2R-D6.0R0.3-W		0.3	6	6	5,7	8	16	75	2	●	
ALG-2R-D6.0R0.5-W		0.5	6	6	5,7	8	16	75	2	●	
ALG-2R-D6.0R1.0-W		1	6	6	5,7	8	16	75	2	●	
ALG-2R-D8.0R0.3-W		0.3	8	8	7,4	10	20	75	2	●	
ALG-2R-D8.0R0.5-W		0.5	8	8	7,4	10	20	75	2	●	
ALG-2R-D8.0R1.0-W		1	8	8	7,4	10	20	75	2	●	
ALG-2R-D10.0R0.5-W		0.5	10	10	9,4	12	35	100	2	●	
ALG-2R-D10.0R1.0-W		1	10	10	9,4	12	35	100	2	●	
ALG-2R-D10.0R1.6-W		1.6	10	10	9,4	12	35	100	2	●	
ALG-2R-D10.0R2.5-W		2.5	10	10	9,4	12	35	100	2	●	
ALG-2R-D12.0R0.5-W		0.5	12	12	11,4	15	35	100	2	●	
ALG-2R-D12.0R1.0-W		1	12	12	11,4	15	35	100	2	●	
ALG-2R-D12.0R1.6-W		1.6	12	12	11,4	15	35	100	2	●	
ALG-2R-D12.0R2.5-W		2.5	12	12	11,4	15	35	100	2	●	
ALG-2R-D12.0R3.2-W		3.2	12	12	11,4	15	35	100	2	●	
ALG-2R-D12.0R4.0-W		4	12	12	11,4	15	35	100	2	●	
ALG-2R-D16.0R1.0-W		1	16	16	15,4	15	45	125	2	●	
ALG-2R-D16.0R1.6-W		1.6	16	16	15,4	15	45	125	2	●	
ALG-2R-D16.0R2.5-W		2.5	16	16	15,4	15	45	125	2	●	
ALG-2R-D16.0R3.2-W		3.2	16	16	15,4	15	45	125	2	●	
ALG-2R-D16.0R4.0-W		4	16	16	15,4	15	45	125	2	●	
ALG-2R-D16.0R6.3-W		6.3	16	16	15,4	15	45	125	2	○	
ALG-2R-D20.0R1.0-W		1	20	20	18	20	50	125	2	●	
ALG-2R-D20.0R1.6-W		1.6	20	20	18	20	50	125	2	●	
ALG-2R-D20.0R2.5-W		2.5	20	20	18	20	50	125	2	●	
ALG-2R-D20.0R3.2-W		3.2	20	20	18	20	50	125	2	●	
ALG-2R-D20.0R4.0-W		4	20	20	18	20	50	125	2	●	
ALG-2R-D20.0R6.3-W		6.3	20	20	18	20	50	125	2	○	
ALG-2R-D25.0R6.3-W		6.3	25	25	23	25	75	150	2	○	

● Ex stock ○ On demand

\* With internal cooling

#### Application field

P	M	K	N	S	H
			✓		

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



## Notes

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

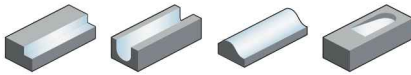
Technical  
Information

**E**

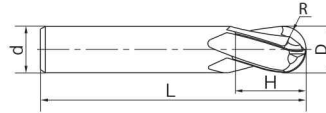
Index

**Ball nose cutter** **High-performance machining**

**TM-4B**



- Factory standard
- Centre cutting
- Helix angle 38°



Article	*	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMS405
TM-4B-R3.0		3	6	6	9	50	4	●
TM-4B-R4.0		4	8	8	12	60	4	●
TM-4B-R5.0		5	10	10	15	75	4	●
TM-4B-R6.0		6	12	12	18	75	4	●
TM-4B-R8.0		8	16	16	24	85	4	●
TM-4B-R10.0		10	20	20	30	100	4	●

- Ex stock ○ On demand
- \* With internal cooling

Application field					
P	M	K	N	S	H
	✓			✓	

- ✓ Very suitable
- ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541

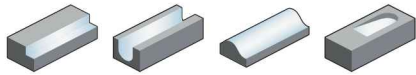




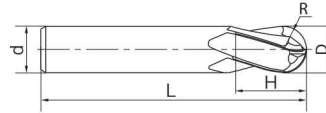
**A**

## Ball nose cutter High-performance machining

**TM-4BL**



- Type of shank DIN 6535HA
- Centre cutting
- Helix angle 38°



Turning

**B**

Article	*	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMS405
TM-4BL-R3.0		3	6	6	16	57	4	●
TM-4BL-R4.0		4	8	8	20	63	4	●
TM-4BL-R5.0		5	10	10	22	72	4	●
TM-4BL-R6.0		6	12	12	25	83	4	●
TM-4BL-R8.0		8	16	16	32	92	4	●
TM-4BL-R10.0		10	20	20	38	104	4	●

- Ex stock   ○ On demand
- \* With internal cooling

Milling

**C**

Application field						
P	M	K	N	S	H	
	✓			✓		✓ Very suitable ✓ Suitable

Drilling

**D**

Technical Information

**E**

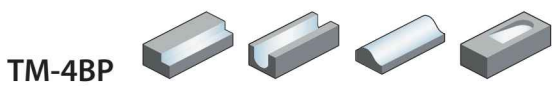
Index

System code > B278

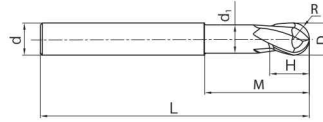
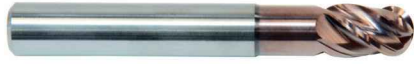
Cutting data > B492

Nonstandard order > B541

**Ball nose cutter** **High-performance machining**



- Factory standard
- Centre cutting
- Helix angle 38°



Article	*	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L		
TM-4BP-R3.0		3	6	6	5.5	9	18	60	4	●
TM-4BP-R4.0		4	8	8	7.4	12	24	75	4	●
TM-4BP-R5.0		5	10	10	9.4	15	30	75	4	●
TM-4BP-R6.0		6	12	12	11.4	18	35	90	4	●
TM-4BP-R8.0		8	16	16	15.4	24	40	90	4	●
TM-4BP-R10.0		10	20	20	19.4	35	50	110	4	●

- Ex stock ○ On demand
- \* With internal cooling

Application field					
P	M	K	N	S	H
	✓			✓	

- ✓ Very suitable
- ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

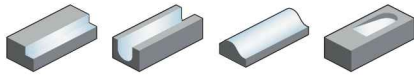
Index



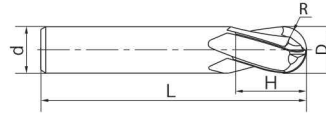
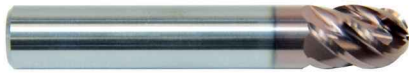
**A**

## Ball nose cutter High-performance machining

**TM-5B**



- Factory standard
- Helix angle 38°



Turning

**B**

Article	*	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMS405
TM-5B-R3.0		3	6	6	9	50	5	●
TM-5B-R4.0		4	8	8	12	60	5	●
TM-5B-R5.0		5	10	10	15	75	5	●
TM-5B-R6.0		6	12	12	18	75	5	●
TM-5B-R8.0		8	16	16	24	85	5	●
TM-5B-R10.0		10	20	20	35	100	5	●

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

### Application field

P	M	K	N	S	H
	✓			✓	

✓ Very suitable

✓ Suitable

Drilling

**D**

Technical Information

**E**

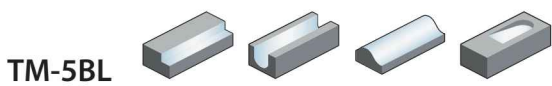
Index

System code > B278

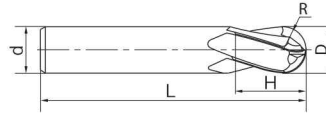
Cutting data > B492

Nonstandard order > B541

**Ball nose cutter** **High-performance machining**



- Type of shank DIN 6535HA
- Helix angle 38°



Article	*	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMS405
TM-5BL-R3.0		3	6	6	16	57	5	●
TM-5BL-R4.0		4	8	8	20	63	5	●
TM-5BL-R5.0		5	10	10	22	72	5	●
TM-5BL-R6.0		6	12	12	25	83	5	●
TM-5BL-R8.0		8	16	16	32	92	5	●
TM-5BL-R10.0		10	20	20	38	104	5	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
	✓			✓	

- ✓ Very suitable
- ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

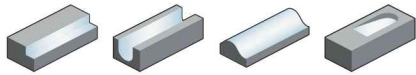
Nonstandard order > B541



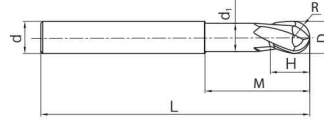
**A**

## Ball nose cutter High-performance machining

**TM-5BP**



- Factory standard
- Helix angle 38°



Turning

**B**

Article	*	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L		
TM-5BP-R3.0		3	6	6	5.5	9	18	60	5	●
TM-5BP-R4.0		4	8	8	7.4	12	24	75	5	●
TM-5BP-R5.0		5	10	10	9.4	15	30	75	5	●
TM-5BP-R6.0		6	12	12	11.4	18	35	90	5	●
TM-5BP-R8.0		8	16	16	15.4	24	40	90	5	●
TM-5BP-R10.0		10	20	20	19.4	35	50	110	5	●

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

### Application field

P	M	K	N	S	H
	✓			✓	

✓ Very suitable

✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

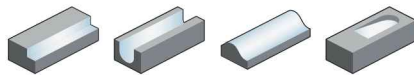
System code > B278

Cutting data > B492

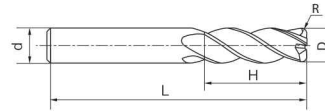
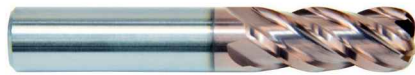
Nonstandard order > B541

**Torus mill** **High-performance machining**

**TM-4R**



- Factory standard
- Centre cutting
- Helix angle 38°



Article	*	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMS405
TM-4R-D6R0.5		0.5	6	6	16	50	4	●
TM-4R-D6R0.3		0.3	6	6	16	50	4	●
TM-4R-D6R1.0		1	6	6	16	50	4	●
TM-4R-D6R 0.75		0.75	6	6	16	50	4	○
TM-4R-D8R0.5		0.5	8	8	20	60	4	●
TM-4R-D8R0.3		0.3	8	8	20	60	4	●
TM-4R-D8R1.0		1	8	8	20	60	4	●
TM-4R-D8R0.75		0.75	8	8	20	60	4	○
TM-4R-D10R0.75		0.75	10	10	25	75	4	○
TM-4R-D10R1.6		1.6	10	10	25	75	4	●
TM-4R-D10R2.0		2	10	10	25	75	4	●
TM-4R-D10R0.5		0.5	10	10	25	75	4	●
TM-4R-D10R2.5		2.5	10	10	25	75	4	○
TM-4R-D10R1.0		1	10	10	25	75	4	●
TM-4R-D10R3.0		3	10	10	25	75	4	●
TM-4R-D10R1.25		1.25	10	10	25	75	4	○
TM-4R-D10R1.5		1.5	10	10	25	75	4	●
TM-4R-D12R1.5		1.5	12	12	30	75	4	●
TM-4R-D12R0.5		0.5	12	12	30	75	4	●
TM-4R-D12R1.0		1	12	12	30	75	4	●
TM-4R-D12R4.0		4	12	12	30	75	4	●
TM-4R-D12R1.6		1.6	12	12	30	75	4	●
TM-4R-D12R2.5		2.5	12	12	30	75	4	●
TM-4R-D12R1.25		1.25	12	12	30	75	4	○
TM-4R-D12R0.75		0.75	12	12	30	75	4	○
TM-4R-D12R3.0		3	12	12	30	75	4	●
TM-4R-D12R3.2		3.2	12	12	30	75	4	●
TM-4R-D12R2.0		2	12	12	30	75	4	●
TM-4R-D16R1.25		1.25	16	16	35	90	4	●
TM-4R-D16R4.0		4	16	16	35	90	4	●
TM-4R-D16R1.0		1	16	16	35	90	4	●
TM-4R-D16R3.0		3	16	16	35	90	4	●
TM-4R-D16R2.0		2	16	16	35	90	4	●
TM-4R-D16R6.3		6.3	16	16	35	90	4	○
TM-4R-D16R5.0		5	16	16	35	90	4	●
TM-4R-D16R1.5		1.5	16	16	35	90	4	●
TM-4R-D16R2.5		2.5	16	16	35	90	4	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
	✓			✓	

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



A

Turning

B

Milling

C

Drilling

D

Technical Information

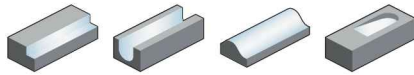
E

Index

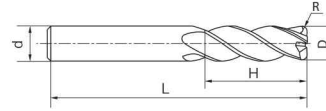
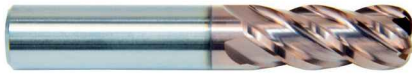
**A**

## Torus mill High-performance machining

**TM-4R**



- Factory standard
- Centre cutting
- Helix angle 38°



Turning

**B**

Article	*	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMS405
TM-4R-D16R1.6		1.6	16	16	35	90	4	●
TM-4R-D16R3.2		3.2	16	16	35	90	4	●
TM-4R-D20R1.5		1.5	20	20	45	100	4	●
TM-4R-D20R2.0		2	20	20	45	100	4	●
TM-4R-D20R2.5		2.5	20	20	45	100	4	●
TM-4R-D20R1.0		1	20	20	45	100	4	●
TM-4R-D20R4.0		4	20	20	45	100	4	●
TM-4R-D20R1.6		1.6	20	20	45	100	4	●
TM-4R-D20R5.0		5	20	20	45	100	4	●
TM-4R-D20R3.0		3	20	20	45	100	4	●
TM-4R-D20R3.2		3.2	20	20	45	100	4	●
TM-4R-D20R6.3		6.3	20	20	45	100	4	●
TM-4R-D20R1.25		1.25	21	20	45	100	4	●
TM-4R-D25R1.0		1	25	25	50	110	4	●
TM-4R-D25R3.0		3	25	25	50	110	4	●
TM-4R-D25R2.0		2	25	25	50	110	4	●
TM-4R-D25R2.5		2.5	25	25	50	110	4	○
TM-4R-D25R4.0		4	25	25	50	110	4	●
TM-4R-D25R3.2		3.2	25	25	50	110	4	●
TM-4R-D25R1.5		1.5	25	25	50	110	4	●
TM-4R-D25R5.0		5	25	25	50	110	4	●
TM-4R-D25R6.3		6.3	25	25	50	110	4	●
TM-4R-D25R1.6		1.6	25	25	50	110	4	●
TM-4R-D25R1.25		1.25	25	25	50	110	4	○

Milling

**C**

Drilling

**D**

- Ex stock ○ On demand
- \* With internal cooling

Technical Information

Application field					
P	M	K	N	S	H
	✓			✓	

- ✓ Very suitable
- ✓ Suitable

**E**

Index

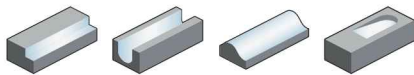
System code > B278

Cutting data > B492

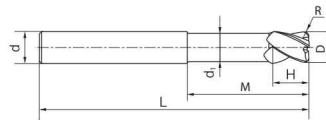
Nonstandard order > B541

**Torus mill** **High-performance machining**

**TM-4RP**



- Factory standard
- Centre cutting
- Helix angle 38°



Article	*	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L		
TM-4RP-D8R0.75		0.75	8	8	7.4	16	25	75	4	○
TM-4RP-D8R1.0		1	8	8	7.4	16	25	75	4	●
TM-4RP-D8R0.3		0.3	8	8	7.4	16	25	75	4	●
TM-4RP-D8R0.5		0.5	8	8	7.4	16	25	75	4	●
TM-4RP-D10R2.0		2	10	10	9.4	20	32	75	4	●
TM-4RP-D10R1.6		1.6	10	10	9.4	20	32	75	4	●
TM-4RP-D10R1.5		1.5	10	10	9.4	20	32	75	4	●
TM-4RP-D10R1.25		1.25	10	10	9.4	20	32	75	4	●
TM-4RP-D10R3.0		3	10	10	9.4	20	32	75	4	●
TM-4RP-D10R0.5		0.5	10	10	9.4	20	32	75	4	●
TM-4RP-D10R0.75		0.75	10	10	9.4	20	32	75	4	○
TM-4RP-D10R2.5		2.5	10	10	9.4	20	32	75	4	○
TM-4RP-D10R1.0		1	10	10	9.4	20	32	75	4	●
TM-4RP-D12R1.25		1.25	12	12	11.4	24	40	90	4	●
TM-4RP-D12R1.0		1	12	12	11.4	24	40	90	4	●
TM-4RP-D12R2.0		2	12	12	11.4	24	40	90	4	●
TM-4RP-D12R0.5		0.5	12	12	11.4	24	40	90	4	●
TM-4RP-D12R3.0		3	12	12	11.4	24	40	90	4	●
TM-4RP-D12R4.0		4	12	12	11.4	24	40	90	4	●
TM-4RP-D12R3.2		3.2	12	12	11.4	24	40	90	4	●
TM-4RP-D12R1.5		1.5	12	12	11.4	24	40	90	4	●
TM-4RP-D12R2.5		2.5	12	12	11.4	24	40	90	4	○
TM-4RP-D12R0.75		0.75	12	12	11.4	24	40	90	4	○
TM-4RP-D12R1.6		1.6	12	12	11.4	24	40	90	4	●
TM-4RP-D16R6.3		6.3	16	16	15	32	50	100	4	○
TM-4RP-D16R4.0		4	16	16	15	32	50	100	4	●
TM-4RP-D16R5.0		5	16	16	15	32	50	100	4	●
TM-4RP-D16R3.2		3.2	16	16	15	32	50	100	4	●
TM-4RP-D16R1.25		1.25	16	16	15	32	50	100	4	●
TM-4RP-D16R2.5		2.5	16	16	15	32	50	100	4	○
TM-4RP-D16R1.0		1	16	16	15	32	50	100	4	●
TM-4RP-D16R3.0		3	16	16	14	32	50	100	4	●
TM-4RP-D16R1.6		1.6	16	16	15	32	50	100	4	●
TM-4RP-D16R1.5		1.5	16	16	15	32	50	100	4	●
TM-4RP-D16R2.0		2	16	16	15	32	50	100	4	●
TM-4RP-D20R1.6		1.6	20	20	19	35	60	110	4	●
TM-4RP-D20R4.0		4	20	20	19	35	60	110	4	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
	✓			✓	

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



A

Turning

B

Milling

C

Drilling

D

Technical Information

E

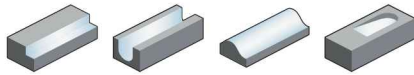
Index



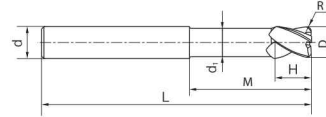
**A**

## Torus mill High-performance machining

### TM-4RP



- Factory standard
- Centre cutting
- Helix angle 38°



Turning

**B**

Article	*	Dimensions [mm]							Teeth	Grade KMS405
		R	D	d (h6)	d <sub>1</sub>	H	M	L		
TM-4RP-D20R1.0		1	20	20	19	35	60	110	4	●
TM-4RP-D20R1.5		1.5	20	20	19	35	60	110	4	●
TM-4RP-D20R1.25		1.25	20	20	19	35	60	110	4	●
TM-4RP-D20R2.5		2.5	20	20	19	35	60	110	4	○
TM-4RP-D20R2.0		2	20	20	19	35	60	110	4	●
TM-4RP-D20R3.0		3	20	20	19	35	60	110	4	●
TM-4RP-D20R5.0		5	20	20	19	35	60	110	4	●
TM-4RP-D20R6.3		6.3	20	20	19	35	60	110	4	●
TM-4RP-D20R3.2		3.2	20	20	19	35	60	110	4	●
TM-4RP-D25R3.0		3	25	25	24	45	75	150	4	●
TM-4RP-D25R6.3		6.3	25	25	24	45	75	150	4	●
TM-4RP-D25R2.5		2.5	25	25	24	45	75	150	4	●
TM-4RP-D25R4.0		4	25	25	24	45	75	150	4	●
TM-4RP-D25R3.2		3.2	25	25	24	45	75	150	4	●
TM-4RP-D25R1.5		1.5	25	25	24	45	75	150	4	●
TM-4RP-D25R2.0		2	25	25	24	45	75	150	4	●
TM-4RP-D25R1.25		1.25	25	25	24	45	75	150	4	○
TM-4RP-D25R5.0		5	25	25	24	45	75	150	4	●
TM-4RP-D25R1.0		1	25	25	24	45	75	150	4	●
TM-4RP-D25R1.6		1.6	25	25	24	45	75	150	4	●

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

Drilling

**D**

Technical Information

#### Application field

P	M	K	N	S	H
	✓			✓	

✓ Very suitable

✓ Suitable

**E**

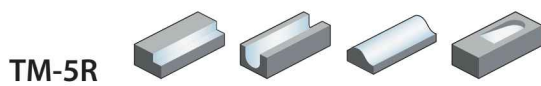
Index

System code > B278

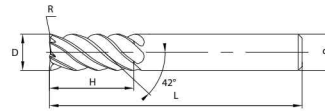
Cutting data > B492

Nonstandard order > B541

**Torus mill** **High-performance machining**



- Factory standard
- Helix angle 42°



Article	*	Dimensions [mm]					Teeth	Grade KMS405
		R	D	d (h6)	H	L		
TM-5R-D6R1.0		1	6	6	16	50	5	●
TM-5R-D6R0.5		0.5	6	6	16	50	5	●
TM-5R-D6R0.3		0.3	6	6	16	50	5	●
TM-5R-D6R0.75		0.75	6	6	16	50	5	○
TM-5R-D8R0.5		0.5	8	8	20	60	5	●
TM-5R-D8R0.3		0.3	8	8	20	60	5	●
TM-5R-D8R0.75		0.75	8	8	20	60	5	○
TM-5R-D8R1.0		1	8	8	20	60	5	●
TM-5R-D10R3.0		3	10	10	25	75	5	●
TM-5R-D10R1.6		1.6	10	10	25	75	5	●
TM-5R-D10R2.5		2.5	10	10	25	75	5	○
TM-5R-D10R1.5		1.5	10	10	25	75	5	●
TM-5R-D10R2.0		2	10	10	25	75	5	●
TM-5R-D10R0.75		0.75	10	10	25	75	5	○
TM-5R-D10R1.0		1	10	10	25	75	5	●
TM-5R-D10R1.25		1.25	10	10	25	75	5	○
TM-5R-D10R0.5		0.5	10	10	25	75	5	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
	✓			✓	

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



A

Turning

B

Milling

C

Drilling

D

Technical Information

E

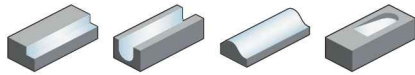
Index

# Solid carbide milling TM series

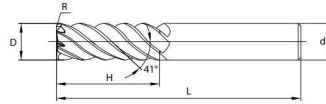
**A**

## Torus mill **High-performance machining**

**TM-7R**



- Factory standard
- Helix angle 41°



Turning

**B**

Article	*	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMS405
TM-7R-D12R2.0		2	12	12	30	75	7	●
TM-7R-D12R1.5		1.5	12	12	30	75	7	●
TM-7R-D12R1.0		1	12	12	30	75	7	●
TM-7R-D12R3.2		3.2	12	12	30	75	7	●
TM-7R-D12R1.6		1.6	12	12	30	75	7	●
TM-7R-D12R3.0		3	12	12	30	75	7	●
TM-7R-D12R0.75		0.75	12	12	30	75	7	○
TM-7R-D12R2.5		2.5	12	12	30	75	7	●
TM-7R-D12R4.0		4	12	12	30	75	7	●
TM-7R-D12R0.5		0.5	12	12	30	75	7	●
TM-7R-D12R1.25		1.25	12	12	30	75	7	○
TM-7R-D16R1.25		1.25	16	16	35	90	7	○
TM-7R-D16R5.0		5	16	16	35	90	7	●
TM-7R-D16R6.3		6.3	16	16	35	90	7	○
TM-7R-D16R1.0		1	16	16	35	90	7	●
TM-7R-D16R3.0		3	16	16	35	90	7	●
TM-7R-D16R2.0		2	16	16	35	90	7	●
TM-7R-D16R2.5		2.5	16	16	35	90	7	●
TM-7R-D16R3.2		3.2	16	16	35	90	7	●
TM-7R-D16R1.5		1.5	16	16	35	90	7	●
TM-7R-D16R1.6		1.6	16	16	35	90	7	●
TM-7R-D16R4.0		4	16	16	35	90	7	●
TM-7R-D20R4.0		4	20	20	45	100	7	●
TM-7R-D20R6.3		6.3	20	20	45	100	7	●
TM-7R-D20R1.5		1.5	20	20	45	100	7	●
TM-7R-D20R3.0		3	20	20	45	100	7	●
TM-7R-D20R5.0		5	20	20	45	100	7	●
TM-7R-D20R2.0		2	20	20	45	100	7	●
TM-7R-D20R1.6		1.6	20	20	45	100	7	●
TM-7R-D20R3.2		3.2	20	20	45	100	7	●
TM-7R-D20R2.5		2.5	20	20	45	100	7	●
TM-7R-D20R1.0		1	20	20	45	100	7	●
TM-7R-D20R1.25		1.25	21	20	45	100	7	○

Milling

**C**

Drilling

**D**

Technical Information

- Ex stock ○ On demand
- \* With internal cooling

**E**

Index

### Application field

P	M	K	N	S	H
	✓			✓	

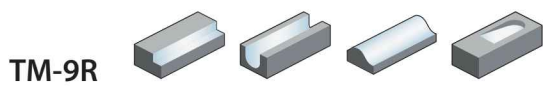
- ✓ Very suitable
- ✓ Suitable

System code > B278

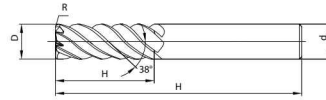
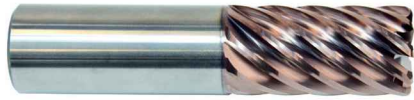
Cutting data > B492

Nonstandard order > B541

**Torus mill** **High-performance machining**



- Factory standard
- Helix angle 38°



Article	*	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		
TM-9R-D25R2.0		2	25	25	50	110	9	●
TM-9R-D25R3.2		3.2	25	25	50	110	9	●
TM-9R-D25R1.6		1.6	25	25	50	110	9	●
TM-9R-D25R5.0		5	25	25	50	110	9	●
TM-9R-D25R1.25		1.25	25	25	50	110	9	○
TM-9R-D25R1.0		1	25	25	50	110	9	●
TM-9R-D25R1.5		1.5	25	25	50	110	9	●
TM-9R-D25R3.0		3	25	25	50	110	9	●
TM-9R-D25R6.3		6.3	25	25	50	110	9	●
TM-9R-D25R4.0		4	25	25	50	110	9	●
TM-9R-D25R2.5		2.5	25	25	50	110	9	○

- Ex stock ○ On demand
- \* With internal cooling

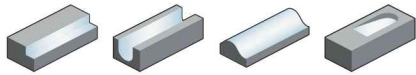
Application field					
P	M	K	N	S	H
	✓			✓	

- ✓ Very suitable
- ✓ Suitable

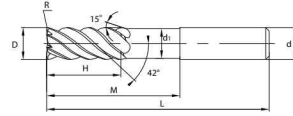
A

## Torus mill High-performance machining

TM-5RP



- Factory standard
- Helix angle 42°



Turning

B

Article	*	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L		
TM-5RP-D8R0.5		0.5	8	8	7.4	16	25	75	5	●
TM-5RP-D8R1.0		1	8	8	7.4	16	25	75	5	●
TM-5RP-D8R0.3		0.3	8	8	7.4	16	25	75	5	●
TM-5RP-D8R0.75		0.75	8	8	7.4	16	25	75	5	○
TM-5RP-D10R1.6		1.6	10	10	9.4	20	32	75	5	●
TM-5RP-D10R1.5		1.5	10	10	9.4	20	32	75	5	●
TM-5RP-D10R3.0		3	10	10	9.4	20	32	75	5	●
TM-5RP-D10R0.5		0.5	10	10	9.4	20	32	75	5	●
TM-5RP-D10R1.25		1.25	10	10	9.4	20	32	75	5	○
TM-5RP-D10R2.0		2	10	10	9.4	20	32	75	5	●
TM-5RP-D10R1.0		1	10	10	9.4	20	32	75	5	●
TM-5RP-D10R0.75		0.75	10	10	9.4	20	32	75	5	○
TM-5RP-D10R2.5		2.5	10	10	9.4	20	32	75	5	●

Milling

C

- Ex stock ○ On demand
- \* With internal cooling

Drilling

Application field						
P	M	K	N	S	H	
	✓			✓		✓ Very suitable
						✓ Suitable

D

Technical Information

E

Index

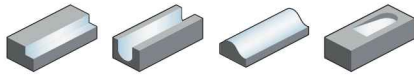
System code > B278

Cutting data > B492

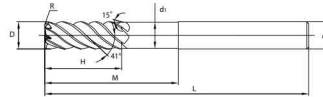
Nonstandard order > B541

**Torus mill** **High-performance machining**

**TM-7RP**



- Factory standard
- Helix angle 41°



Article	*	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L		
TM-7RP-D12R1.6		1.6	12	12	11.4	24	40	90	7	●
TM-7RP-D12R1.5		1.5	12	12	11.4	24	40	90	7	●
TM-7RP-D12R2.0		2	12	12	11.4	24	40	90	7	●
TM-7RP-D12R2.5		2.5	12	12	11.4	24	40	90	7	●
TM-7RP-D12R4.0		4	12	12	11.4	24	40	90	7	●
TM-7RP-D12R0.5		0.5	12	12	11.4	24	40	90	7	●
TM-7RP-D12R1.0		1	12	12	11.4	24	40	90	7	●
TM-7RP-D12R3.0		3	12	12	11.4	24	40	90	7	●
TM-7RP-D12R0.75		0.75	12	12	11.4	24	40	90	7	○
TM-7RP-D12R3.2		3.2	12	12	11.4	24	40	90	7	●
TM-7RP-D12R1.25		1.25	12	12	11.4	24	40	90	7	○
TM-7RP-D16R2.0		2	16	16	15	32	50	100	7	●
TM-7RP-D16R3.2		3.2	16	16	15	32	50	100	7	●
TM-7RP-D16R1.5		1.5	16	16	15	32	50	100	7	●
TM-7RP-D16R1.6		1.6	16	16	15	32	50	100	7	●
TM-7RP-D16R4.0		4	16	16	15	32	50	100	7	●
TM-7RP-D16R3.0		3	16	16	15	32	50	100	7	●
TM-7RP-D16R1.0		1	16	16	15	32	50	100	7	●
TM-7RP-D16R5.0		5	16	16	15	32	50	100	7	●
TM-7RP-D16R6.3		6.3	16	16	15	32	50	100	7	○
TM-7RP-D16R1.25		1.25	16	16	15	32	50	100	7	○
TM-7RP-D16R2.5		2.5	16	16	15	32	50	100	7	●
TM-7RP-D20R3.0		3	20	20	19	35	60	110	7	●
TM-7RP-D20R1.5		1.5	20	20	19	35	60	110	7	●
TM-7RP-D20R6.3		6.3	20	20	19	35	60	110	7	●
TM-7RP-D20R2.5		2.5	20	20	19	35	60	110	7	●
TM-7RP-D20R5.0		5	20	20	19	35	60	110	7	●
TM-7RP-D20R1.25		1.25	20	20	19	35	60	110	7	○
TM-7RP-D20R1.0		1	20	20	19	35	60	110	7	●
TM-7RP-D20R3.2		3.2	20	20	19	35	60	110	7	●
TM-7RP-D20R1.6		1.6	20	20	19	35	60	110	7	●
TM-7RP-D20R2.0		2	20	20	19	35	60	110	7	●
TM-7RP-D20R4.0		4	20	20	19	35	60	110	7	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
	✓			✓	

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



A

Turning

B

Milling

C

Drilling

D

Technical Information

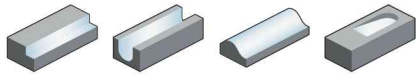
E

Index

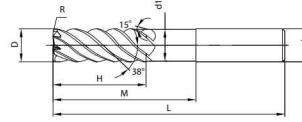
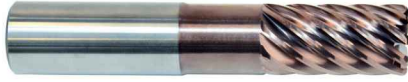
A

## Torus mill High-performance machining

TM-9RP



- Factory standard
- Helix angle 38°



Turning

B

Article	*	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L		KMS405
TM-9RP-D25R3.0		3	25	25	24	45	75	150	9	●
TM-9RP-D25R3.2		3.2	25	25	24	45	75	150	9	●
TM-9RP-D25R6.3		6.3	25	25	24	45	75	150	9	●
TM-9RP-D25R1.0		1	25	25	24	45	75	150	9	●
TM-9RP-D25R1.6		1.6	25	25	24	45	75	150	9	●
TM-9RP-D25R1.5		1.5	25	25	24	45	75	150	9	●
TM-9RP-D25R2.0		2	25	25	24	45	75	150	9	●
TM-9RP-D25R4.0		4	25	25	24	45	75	150	9	●
TM-9RP-D25R5.0		5	25	25	24	45	75	150	9	●
TM-9RP-D25R1.25		1.25	25	25	24	45	75	150	9	○
TM-9RP-D25R2.5		2.5	25	25	24	45	75	150	9	●

Milling

C

- Ex stock ○ On demand
- \* With internal cooling

Drilling

Application field					
P	M	K	N	S	H
	✓			✓	

✓ Very suitable  
✓ Suitable

D

Technical Information

E

Index

System code > B278

Cutting data > B492

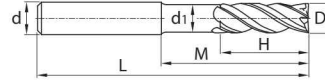
Nonstandard order > B541

End mill **HSC/HPC machining**

**5501R38414GM**



- Type of shank DIN 6535HA
- Centre cutting
- Helix angle 38°/41°



Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d <sub>1</sub>	H	M	L		KMG405
5501R38414GM-0400		4	6	3.7	8	16	54	4	●
5501R38414GM-0500		5	6	4.7	9	17	54	4	●
5501R38414GM-0600		6	6	5.7	10	18	54	4	●
5501R38414GM-0800		8	8	7.7	12	22	58	4	●
5501R38414GM-1000		10	10	9.5	14	26	66	4	●
5501R38414GM-1200		12	12	11.5	16	28	73	4	●
5501R38414GM-1400		14	14	13.5	18	30	75	4	●
5501R38414GM-1600		16	16	15.5	22	34	82	4	●
5501R38414GM-1800		18	18	17.5	24	36	84	4	●
5501R38414GM-2000		20	20	19.5	26	42	92	4	●

- Ex stock ○ On demand
- \* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

- ✓ Very suitable
- ✓ Suitable

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index



**A**

## End mill long cutting edge HSC/HPC machining

**5502R38414GM**



- Type of shank DIN 6535HA
- Centre cutting
- Helix angle 38°/41°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	d <sub>1</sub>	H	M	L		KMG405	KMG406
5502R38414GM-0400	*	4	6	3.7	11	19	57	4	●	●
5502R38414GM-0500		5	6	4.7	13	21	57	4	●	●
5502R38414GM-0600		6	6	5.7	13	21	57	4	●	●
5502R38414GM-0800		8	8	7.7	19	27	63	4	●	●
5502R38414GM-1000		10	10	9.5	22	32	72	4	●	●
5502R38414GM-1200		12	12	11.5	26	38	83	4	●	●
5502R38414GM-1400		14	14	13.5	26	38	83	4	●	●
5502R38414GM-1600		16	16	15.5	32	44	92	4	●	●
5502R38414GM-1800		18	18	17.5	32	44	92	4	●	●
5502R38414GM-2000		20	20	19.5	38	54	104	4	●	●

- Ex stock   ○ On demand
- \* With internal cooling

Milling

**C**

Application field						
P	M	K	N	S	H	
✓	✓	✓			✓	✓ Very suitable ✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

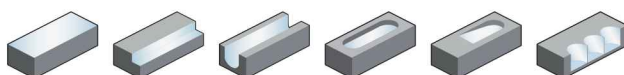
System code > B278

Cutting data > B492

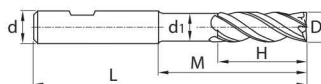
Nonstandard order > B541

End mill **HSC/HPC machining**

**5601R38414GM**



- Type of shank: DIN 6535HB
- Centre cutting
- Helix angle 38°/41°



Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d <sub>1</sub>	H	M	L		KMG405
5601R38414GM-0400		4	6	3.7	8	16	54	4	●
5601R38414GM-0500		5	6	4.7	9	17	54	4	●
5601R38414GM-0600		6	6	5.7	10	18	54	4	●
5601R38414GM-0800		8	8	7.7	12	22	58	4	●
5601R38414GM-1000		10	10	9.5	14	26	66	4	●
5601R38414GM-1200		12	12	11.5	16	28	73	4	●
5601R38414GM-1400		14	14	13.5	18	30	75	4	●
5601R38414GM-1600		16	16	15.5	22	34	82	4	●
5601R38414GM-1800		18	18	17.5	24	36	84	4	●
5601R38414GM-2000		20	20	19.5	26	42	92	4	●

- Ex stock ○ On demand
- \* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

- ✓ Very suitable
- ✓ Suitable

System code > B278

Cutting data > B492

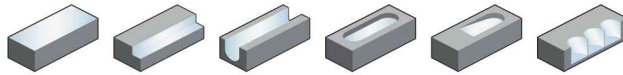
Nonstandard order > B541



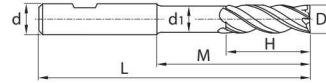
**A**

## End mill long cutting edge HSC/HPC machining

### 5602R38414GM



- Type of shank: DIN 6535HB
- Centre cutting
- Helix angle 38°/41°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	d <sub>1</sub>	H	M	L		KMG405	KMG406
5602R38414GM-0400		4	6	3.7	11	19	57	4	●	●
5602R38414GM-0500		5	6	4.7	13	21	57	4	●	●
5602R38414GM-0600		6	6	5.7	13	21	57	4	●	●
5602R38414GM-0800		8	8	7.7	19	27	63	4	●	●
5602R38414GM-1000		10	10	9.5	22	32	72	4	●	●
5602R38414GM-1200		12	12	11.5	26	38	83	4	●	●
5602R38414GM-1400		14	14	13.5	26	38	83	4	●	●
5602R38414GM-1600		16	16	15.5	32	44	92	4	●	●
5602R38414GM-1800		18	18	17.5	32	44	92	4	●	●
5602R38414GM-2000		20	20	19.5	38	54	104	4	●	●

- Ex stock ○ On demand
- \* With internal cooling

Milling

**C**

#### Application field

P	M	K	N	S	H
✓	✓	✓			✓

- ✓ Very suitable
- ✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

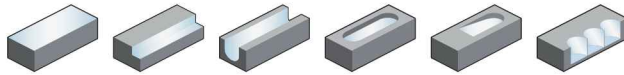
System code > B278

Cutting data > B492

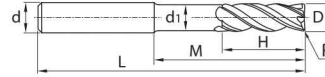
Nonstandard order > B541

**Torus mill long cutting edge** **HSC/HPC machining**

**5502R38414GM-R**



- Type of shank DIN 6535HA
- Centre cutting
- Helix angle 38°/41°



Article	*	Dimensions [mm]							Teeth	Grade KMG405
		D	R	d (h6)	d <sub>1</sub>	H	M	L		
5502R38414GM-R02-0400		4	0.2	6	3.7	11	19	57	4	●
5502R38414GM-R05-0400		4	0.5	6	3.7	11	19	57	4	●
5502R38414GM-R02-0500		5	0.2	6	4.7	13	21	57	4	●
5502R38414GM-R05-0500		5	0.5	6	4.7	13	21	57	4	●
5502R38414GM-R02-0600		6	0.2	6	5.7	13	21	57	4	●
5502R38414GM-R05-0600		6	0.5	6	5.7	13	21	57	4	●
5502R38414GM-R10-0600		6	1	6	5.7	13	21	57	4	●
5502R38414GM-R02-0800		8	0.2	8	7.7	19	27	63	4	●
5502R38414GM-R05-0800		8	0.5	8	7.7	19	27	63	4	●
5502R38414GM-R10-0800		8	1	8	7.7	19	27	63	4	●
5502R38414GM-R15-0800		8	1.5	8	7.7	19	27	63	4	●
5502R38414GM-R20-0800		8	2	8	7.7	19	27	63	4	●
5502R38414GM-R02-1000		10	0.2	10	9.5	22	32	72	4	●
5502R38414GM-R05-1000		10	0.5	10	9.5	22	32	72	4	●
5502R38414GM-R10-1000		10	1	10	9.5	22	32	72	4	●
5502R38414GM-R15-1000		10	1.5	10	9.5	22	32	72	4	●
5502R38414GM-R20-1000		10	2	10	9.5	22	32	72	4	●
5502R38414GM-R05-1200		12	0.5	12	11.5	26	38	83	4	●
5502R38414GM-R10-1200		12	1	12	11.5	26	38	83	4	●
5502R38414GM-R15-1200		12	1.5	12	11.5	26	38	83	4	●
5502R38414GM-R20-1200		12	2	12	11.5	26	38	83	4	●
5502R38414GM-R10-1600		16	1	16	15.5	32	44	92	4	●
5502R38414GM-R15-1600		16	1.5	16	15.5	32	44	92	4	●
5502R38414GM-R20-1600		16	2	16	15.5	32	44	92	4	●
5502R38414GM-R30-1600		16	3	16	15.5	32	44	92	4	●
5502R38414GM-R10-2000		20	1	20	19.5	38	54	104	4	●
5502R38414GM-R15-2000		20	1.5	20	19.5	38	54	104	4	●
5502R38414GM-R20-2000		20	2	20	19.5	38	54	104	4	●
5502R38414GM-R30-2000		20	3	20	19.5	38	54	104	4	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

- ✓ Very suitable
- ✓ Suitable

System code > B278

Cutting data > B492

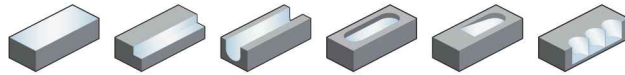
Nonstandard order > B541



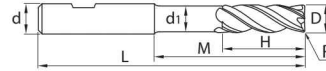
**A**

## Torus mill long cutting edge HSC/HPC machining

### 5602R38414GM-R



- Type of shank: DIN 6535HB
- Centre cutting
- Helix angle 38°/41°



Turning

**B**

Article	*	Dimensions [mm]							Teeth	Grade
		D	R	d (h6)	d <sub>1</sub>	H	M	L		KMG405
5602R38414GM-R02-0400		4	0.2	6	3.7	11	19	57	4	●
5602R38414GM-R05-0400		4	0.5	6	3.7	11	19	57	4	●
5602R38414GM-R02-0500		5	0.2	6	4.7	13	21	57	4	●
5602R38414GM-R05-0500		5	0.5	6	4.7	13	21	57	4	●
5602R38414GM-R02-0600		6	0.2	6	5.7	13	21	57	4	●
5602R38414GM-R05-0600		6	0.5	6	5.7	13	21	57	4	●
5602R38414GM-R10-0600		6	1	6	5.7	13	21	57	4	●
5602R38414GM-R02-0800		8	0.2	8	7.7	19	27	63	4	●
5602R38414GM-R05-0800		8	0.5	8	7.7	19	27	63	4	●
5602R38414GM-R10-0800		8	1	8	7.7	19	27	63	4	●
5602R38414GM-R15-0800		8	1.5	8	7.7	19	27	63	4	●
5602R38414GM-R20-0800		8	2	8	7.7	19	27	63	4	●
5602R38414GM-R02-1000		10	0.2	10	9.5	22	32	72	4	●
5602R38414GM-R05-1000		10	0.5	10	9.5	22	32	72	4	●
5602R38414GM-R10-1000		10	1	10	9.5	22	32	72	4	●
5602R38414GM-R15-1000		10	1.5	10	9.5	22	32	72	4	●
5602R38414GM-R20-1000		10	2	10	9.5	22	32	72	4	●
5602R38414GM-R05-1200		12	0.5	12	11.5	26	38	83	4	●
5602R38414GM-R10-1200		12	1	12	11.5	26	38	83	4	●
5602R38414GM-R15-1200		12	1.5	12	11.5	26	38	83	4	●
5602R38414GM-R20-1200		12	2	12	11.5	26	38	83	4	●
5602R38414GM-R10-1600		16	1	16	15.5	32	44	92	4	●
5602R38414GM-R15-1600		16	1.5	16	15.5	32	44	92	4	●
5602R38414GM-R20-1600		16	2	16	15.5	32	44	92	4	●
5602R38414GM-R30-1600		16	3	16	15.5	32	44	92	4	●
5602R38414GM-R10-2000		20	1	20	19.5	38	54	104	4	●
5602R38414GM-R15-2000		20	1.5	20	19.5	38	54	104	4	●
5602R38414GM-R20-2000		20	2	20	19.5	38	54	104	4	●
5602R38414GM-R30-2000		20	3	20	19.5	38	54	104	4	●

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

#### Application field

P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

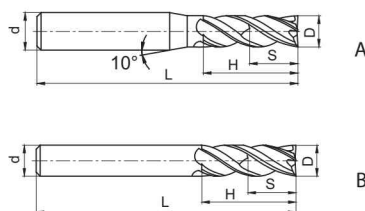
Nonstandard order > B541

End mill **HSC/HPC machining**

**UM-4E**



- Factory standard
- Centre cutting
- Helix angle 38°/41°



Article	*	Dimensions [mm]					Teeth	Geometry	Grade	
		D	d (h6)	H	L	S			KMG405	YK40F
UM-4E-D4.0S		4	4	11	50	6	4	B	●	
UM-4E-D4.0		4	6	11	50	6	4	A	●	
UM-4E-D4.5		4.5	6	11	50	6.75	4	A	●	
UM-4E-D5.0		5	6	13	50	7.5	4	A	●	
UM-4E-D5.5		5.5	6	16	50	8.25	4	A	●	
UM-4E-D6.0		6	6	16	50	9	4	B	●	○
UM-4E-D7.0		7	8	20	60	10.5	4	A	●	
UM-4E-D8.0		8	8	20	60	12	4	B	●	○
UM-4E-D9.0		9	10	22	75	13.5	4	A	●	
UM-4E-D10.0		10	10	25	75	15	4	B	●	○
UM-4E-D11.0		11	12	26	75	16.5	4	A	●	
UM-4E-D12.0		12	12	30	75	18	4	B	●	○
UM-4E-D14.0		14	14	32	75	21	4	B	●	
UM-4E-D16.0		16	16	45	100	24	4	B	●	○
UM-4E-D18.0		18	18	45	100	27	4	B	●	
UM-4E-D20.0		20	20	45	100	30	4	B	●	

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278

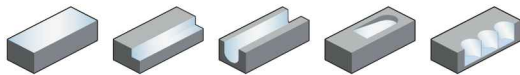
Cutting data > B492

Nonstandard order > B541



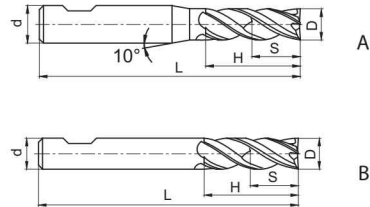
**A**

End mill **HSC/HPC machining**



**UM-4E-W**

- Factory standard with weldon clamping surface
- Centre cutting
- Helix angle 38°/41°



Turning

**B**

Milling

**C**

Drilling

Article	*	Dimensions [mm]					Teeth	Geometry	Grade	
		D	d (h6)	H	L	S			KMG405	YK40F
UM-4E-D4.0-W		4	6	11	50	6	4	A	●	
UM-4E-D4.5-W		4.5	6	11	50	6.75	4	A	●	
UM-4E-D5.0-W		5	6	13	50	7.5	4	A	●	
UM-4E-D5.5-W		5.5	6	16	50	8.25	4	A	●	
UM-4E-D6.0-W		6	6	16	50	9	4	B	●	○
UM-4E-D7.0-W		7	8	20	60	10.5	4	A	●	
UM-4E-D8.0-W		8	8	20	60	12	4	B	●	○
UM-4E-D9.0-W		9	10	22	75	13.5	4	A	●	
UM-4E-D10.0-W		10	10	25	75	15	4	B	●	○
UM-4E-D11.0-W		11	12	26	75	16.5	4	A	●	
UM-4E-D12.0-W		12	12	30	75	18	4	B	●	○
UM-4E-D14.0-W		14	14	32	75	21	4	B	●	
UM-4E-D16.0-W		16	16	45	100	24	4	B	●	○
UM-4E-D18.0-W		18	18	45	100	27	4	B	●	
UM-4E-D20.0-W		20	20	45	100	30	4	B	●	

● Ex stock ○ On demand

\* With internal cooling

**D**

Technical Information

Application field

P	M	K	N	S	H
✓	✓	✓			✓

- ✓ Very suitable
- ✓ Suitable

**F**

Index

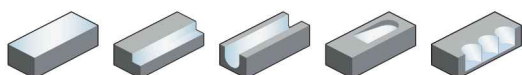
System code > B278

Cutting data > B492

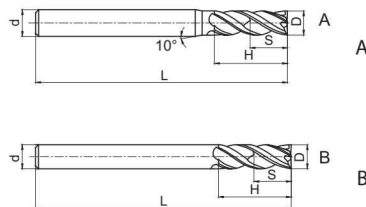
Nonstandard order > B541

**End mill long cutting edge** **HSC/HPC machining**

**UM-4EL**



- Factory standard
- Centre cutting
- Helix angle 38°/41°



Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		D	d (h6)	H	L	S			KMG405
UM-4EL-D4.0		4	6	15	75	6	4	A	●
UM-4EL-D5.0		5	6	20	75	7.5	4	A	●
UM-4EL-D6.0		6	6	20	75	9	4	B	●
UM-4EL-D8.0		8	8	25	100	12	4	B	●
UM-4EL-D10.0		10	10	30	100	15	4	B	●
UM-4EL-D12.0		12	12	35	100	18	4	B	●
UM-4EL-D14.0		14	14	40	100	21	4	B	●
UM-4EL-D16.0		16	16	50	150	24	4	B	●
UM-4EL-D20.0		20	20	55	150	30	4	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

- ✓ Very suitable
- ✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541





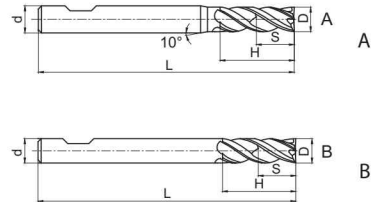
**A**

## End mill long cutting edge HSC/HPC machining

### UM-4EL-W



- Factory standard with weldon clamping surface
- Centre cutting
- Helix angle 38°/41°



Turning

**B**

Milling

Article	*	Dimensions [mm]					Teeth	Geometry	Grade
		D	d (h6)	H	L	S			KMG405
UM-4EL-D4.0-W		4	6	15	75	6	4	A	●
UM-4EL-D5.0-W		5	6	20	75	7.5	4	A	●
UM-4EL-D6.0-W		6	6	20	75	9	4	B	●
UM-4EL-D8.0-W		8	8	25	100	12	4	B	●
UM-4EL-D10.0-W		10	10	30	100	15	4	B	●
UM-4EL-D12.0-W		12	12	35	100	18	4	B	●
UM-4EL-D14.0-W		14	14	40	100	21	4	B	●
UM-4EL-D16.0-W		16	16	50	150	24	4	B	●
UM-4EL-D20.0-W		20	20	55	150	30	4	B	●

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

### Application field

P	M	K	N	S	H
✓	✓	✓			✓

- ✓ Very suitable
- ✓ Suitable

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

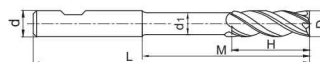
Nonstandard order > B541

End mill reduced neck **HSC/HPC machining**

**UM-4ELP-W**



- Factory standard with weldon clamping surface
- Centre cutting
- Helix angle 38°/41°



Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d <sub>1</sub>	H	M	L		KMG405
UM-4ELP-D4.0-W		4	6	3.8	15	36	75	4	●
UM-4ELP-D5.0-W		5	6	4.8	20	36	75	4	●
UM-4ELP-D6.0-W		6	6	5.7	20	36	75	4	●
UM-4ELP-D8.0-W		8	8	7.7	25	60	100	4	●
UM-4ELP-D10.0-W		10	10	9.5	30	55	100	4	●
UM-4ELP-D12.0-W		12	12	11.5	35	50	100	4	●
UM-4ELP-D14.0-W		14	14	13.5	40	50	100	4	●
UM-4ELP-D16.0-W		16	16	15.5	50	100	150	4	●
UM-4ELP-D20.0-W		20	20	19.5	55	98	150	4	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

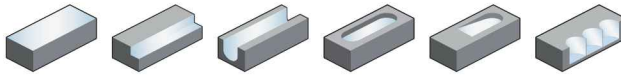
Nonstandard order > B541



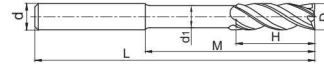
**A**

## End mill short cutting edge HSC/HPC machining

### UM-4EFP



- Factory standard
- Centre cutting
- Helix angle 38°/41°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d <sub>1</sub>	H	M	L		KMG405
UM-4EFP-D6.0		6	6	5.8	9	30	75	4	●
UM-4EFP-D8.0		8	8	7.8	12	40	100	4	●
UM-4EFP-D10.0		10	10	9.6	15	50	100	4	●
UM-4EFP-D12.0		12	12	11.5	18	50	100	4	●
UM-4EFP-D16.0		16	16	15.5	24	50	150	4	●
UM-4EFP-D20.0		20	20	19.5	30	60	150	4	●

- Ex stock   ○ On demand
- \* With internal cooling

Milling

**C**

Application field							
P	M	K	N	S	H		
✓	✓	✓				✓	✓ Very suitable
							✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

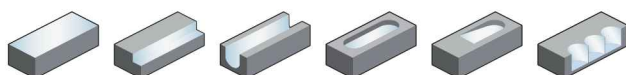
System code > B278

Cutting data > B492

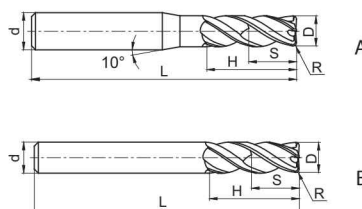
Nonstandard order > B541

**End mill** **HSC/HPC machining**

**UM-4R**



- Factory standard
- Centre cutting
- Helix angle 38°/41°



Article	*	Dimensions [mm]						Teeth	Geometry	Grade
		R	D	d (h6)	H	L	S			KMG405
UM-4R-D4.0R0.3		0.3	4	6	10	50	6	4	A	●
UM-4R-D4.0R0.5		0.5	4	6	10	50	6	4	A	●
UM-4R-D5.0R0.5		0.5	5	6	13	50	7.5	4	A	●
UM-4R-D5.0R1.0		1	5	6	13	50	7.5	4	A	●
UM-4R-D6.0R0.5		0.5	6	6	16	50	9	4	B	●
UM-4R-D6.0R1.0		1	6	6	16	50	9	4	B	●
UM-4R-D8.0R0.5		0.5	8	8	20	60	12	4	B	●
UM-4R-D8.0R1.0		1	8	8	20	60	12	4	B	●
UM-4R-D10.0R0.5		0.5	10	10	25	75	15	4	B	●
UM-4R-D10.0R1.0		1	10	10	25	75	15	4	B	●
UM-4R-D10.0R2.0		2	10	10	25	75	15	4	B	●
UM-4R-D10.0R3.0		3	10	10	25	75	15	4	B	●
UM-4R-D12.0R0.5		0.5	12	12	30	75	18	4	B	●
UM-4R-D12.0R1.0		1	12	12	30	75	18	4	B	●
UM-4R-D12.0R2.0		2	12	12	30	75	18	4	B	●
UM-4R-D12.0R3.0		3	12	12	30	75	18	4	B	●
UM-4R-D16.0R0.5		0.5	16	16	45	100	24	4	B	●
UM-4R-D16.0R1.0		1	16	16	45	100	24	4	B	●
UM-4R-D16.0R2.0		2	16	16	45	100	24	4	B	●
UM-4R-D16.0R3.0		3	16	16	45	100	24	4	B	●
UM-4R-D20.0R1.0		1	20	20	45	100	30	4	B	●
UM-4R-D20.0R2.0		2	20	20	45	100	30	4	B	●
UM-4R-D20.0R3.0		3	20	20	45	100	30	4	B	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

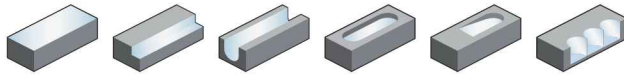
**E**

Index

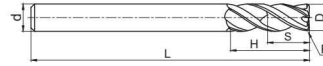
**A**

## Torus mill long shank HSC/HPC machining

**UM-4RL**



- Factory standard
- Centre cutting
- Helix angle 38°/41°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade
		R	D	d (h6)	H	L	S		KMG405
UM-4RL-D6.0R0.5		0.5	6	6	16	75	9	4	●
UM-4RL-D6.0R1.0		1	6	6	16	75	9	4	●
UM-4RL-D8.0R0.5		0.5	8	8	20	100	12	4	●
UM-4RL-D8.0R1.0		1	8	8	20	100	12	4	●
UM-4RL-D10.0R0.5		0.5	10	10	25	100	15	4	●
UM-4RL-D10.0R1.0		1	10	10	25	100	15	4	●
UM-4RL-D10.0R2.0		2	10	10	25	100	15	4	●
UM-4RL-D12.0R0.5		0.5	12	12	30	100	18	4	●
UM-4RL-D12.0R1.0		1	12	12	30	100	18	4	●
UM-4RL-D12.0R2.0		2	12	12	30	100	18	4	●
UM-4RL-D16.0R1.0		1	16	16	45	150	24	4	●
UM-4RL-D16.0R2.0		2	16	16	45	150	24	4	●

● Ex stock   ○ On demand

\* With internal cooling

Milling

**C**

Application field						
P	M	K	N	S	H	
✓	✓	✓				✓ Very suitable
					✓	✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

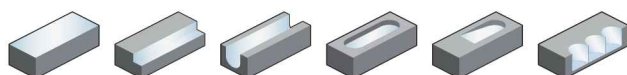
System code > B278

Cutting data > B492

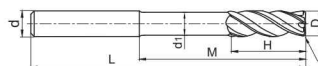
Nonstandard order > B541

**Torus mill short cutting edge** **HSC/HPC machining**

**UM-4RFP**



- Factory standard
- Centre cutting
- Helix angle 38°/41°



Article	*	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d <sub>1</sub>	H	M	L		
UM-4RFP-D6.0R0.5		0.5	6	6	5.8	6	18	75	4	●
UM-4RFP-D6.0R1.0		1	6	6	5.8	6	18	75	4	●
UM-4RFP-D8.0R0.5		0.5	8	8	7.7	8	24	100	4	●
UM-4RFP-D8.0R1.0		1	8	8	7.7	8	24	100	4	●
UM-4RFP-D10.0R0.5		0.5	10	10	9.6	10	30	100	4	●
UM-4RFP-D10.0R1.0		1	10	10	9.6	10	30	100	4	●
UM-4RFP-D10.0R2.0		2	10	10	9.6	10	30	100	4	●
UM-4RFP-D12.0R0.5		0.5	12	12	11.5	12	36	100	4	●
UM-4RFP-D12.0R1.0		1	12	12	11.5	12	36	100	4	●
UM-4RFP-D12.0R2.0		2	12	12	11.5	12	36	100	4	●
UM-4RFP-D16.0R1.0		1	16	16	15.5	16	40	150	4	●
UM-4RFP-D16.0R2.0		2	16	16	15.5	16	40	150	4	●

● Ex stock ○ On demand

\* With internal cooling

**Application field**

P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



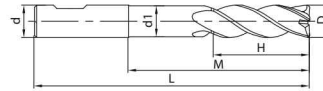
**A**

**End mill HSC/HPC machining**

**UM-5EP-W**



- Factory standard with weldon clamping surface
- Non-centre cutting
- Helix angle 38°/39°/40°



Turning

**B**

Article	*	Dimensions [mm]						Grade
		D	d (h6)	d <sub>1</sub>	H	M	L	KMG405
UM-5EP-D6.0-W		6	6	5.7	16	22	58	●
UM-5EP-D8.0-W		8	8	7.7	21	27	63	●
UM-5EP-D10.0-W		10	10	9.5	24	35	75	●
UM-5EP-D12.0-W		12	12	11.5	31	43	88	●
UM-5EP-D16.0-W		16	16	15.5	36	52	100	●
UM-5EP-D20.0-W		20	20	19.5	41	72	126	●
UM-5EP-D25.0-W		25	25	24	51	102	160	○

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

Application field							
P	M	K	N	S	H		
✓	✓	✓			✓	✓ Very suitable ✓ Suitable	

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

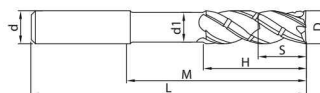
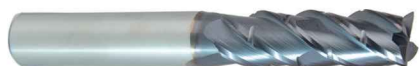
Nonstandard order > B541

End mill **HSC/HPC machining**

**UMC-4E**



- Factory standard
- Centre cutting
- Helix angle 38°/40°



Article	*	Dimensions [mm]							Grade
		D	d (h6)	d <sub>1</sub>	H	M	L	S	
UMC-4E-D6.0		6	6	5.8	18	24	60	9	○
UMC-4E-D8.0		8	8	7.8	24	34	70	12	○
UMC-4E-D10.0		10	10	9.6	30	40	80	15	○
UMC-4E-D12.0		12	12	11.5	36	45	90	18	○
UMC-4E-D16.0		16	16	15.5	48	62	110	24	○
UMC-4E-D20.0		20	20	19.5	60	80	130	30	○

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541



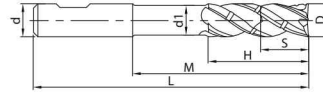
**A**

## End mill HSC/HPC machining

### UMC-4E-W



- Factory standard with weldon clamping surface
- Centre cutting
- Helix angle 38°/40°



Turning

**B**

Article	*	Dimensions [mm]							Grade
		D	d (h6)	d <sub>1</sub>	H	M	L	S	KMG405
UMC-4E-D6.0-W		6	6	5.8	18	24	60	9	○
UMC-4E-D8.0-W		8	8	7.8	24	34	70	12	○
UMC-4E-D10.0-W		10	10	9.6	30	40	80	15	○
UMC-4E-D12.0-W		12	12	11.5	36	45	90	18	○
UMC-4E-D16.0-W		16	16	15.5	48	62	110	24	○
UMC-4E-D20.0-W		20	20	19.5	60	80	130	30	○

- Ex stock ○ On demand
- \* With internal cooling

Milling

**C**

Application field						
P	M	K	N	S	H	
✓	✓	✓			✓	✓ Very suitable
						✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

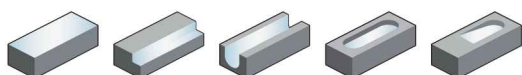
System code > B278

Cutting data > B492

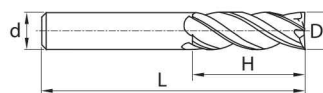
Nonstandard order > B541

**End mill**    **General machining of heat-resistant alloys**

**VSM-4E**



- Factory standard
- Centre cutting
- Helix angle 38°/41°



Article	*	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		KMG405
VSM-4E-D4.0		4	6	11	50	4	●
VSM-4E-D5.0		5	6	13	50	4	●
VSM-4E-D6.0		6	6	16	50	4	●
VSM-4E-D8.0		8	8	20	60	4	●
VSM-4E-D10.0		10	10	25	75	4	●
VSM-4E-D12.0		12	12	30	75	4	●
VSM-4E-D16.0		16	16	45	100	4	●
VSM-4E-D20.0		20	20	45	100	4	●

● Ex stock    ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓			✓	

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



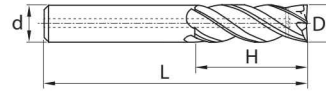
**A**

## End mill General machining of heat-resistant alloys

### VSM-4E-C



- Factory standard
- Coolant exit, radial
- Centre cutting
- Helix angle 38°/41°



Turning

**B**

Article	*	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		KMG405
VSM-4E-C-D10.0	*	10	10	25	75	4	○
VSM-4E-C-D12.0	*	12	12	30	75	4	○
VSM-4E-C-D16.0	*	16	16	45	100	4	○
VSM-4E-C-D20.0	*	20	20	45	100	4	○

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

Application field						
P	M	K	N	S	H	
✓	✓			✓		✓ Very suitable ✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

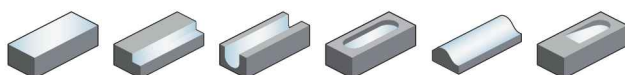
System code > B278

Cutting data > B492

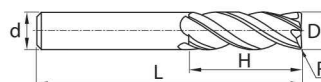
Nonstandard order > B541

**Torus mill** **General machining of heat-resistant alloys**

**VSM-4R**



- Factory standard
- Centre cutting
- Helix angle 38°/41°



Article	*	Dimensions [mm]					Teeth	Grade
		D	R	d (h6)	H	L		KMG405
VSM-4R-D4.0R0.2		4	0.2	6	11	50	4	●
VSM-4R-D4.0R0.5		4	0.5	6	11	50	4	●
VSM-4R-D5.0R0.2		5	0.2	6	13	50	4	●
VSM-4R-D5.0R0.5		5	0.5	6	13	50	4	●
VSM-4R-D6.0R0.2		6	0.2	6	16	50	4	●
VSM-4R-D6.0R0.5		6	0.5	6	16	50	4	●
VSM-4R-D6.0R1.0		6	1	6	16	50	4	●
VSM-4R-D6.0R1.5		6	1.5	6	16	50	4	●
VSM-4R-D8.0R0.5		8	0.5	8	20	63	4	●
VSM-4R-D8.0R0.8		8	0.8	8	20	63	4	●
VSM-4R-D8.0R1.0		8	1	8	20	63	4	●
VSM-4R-D8.0R1.5		8	1.5	8	20	63	4	●
VSM-4R-D8.0R2.0		8	2	8	20	63	4	●
VSM-4R-D10.0R0.5		10	0.5	10	25	75	4	●
VSM-4R-D10.0R0.8		10	0.8	10	25	75	4	●
VSM-4R-D10.0R1.0		10	1	10	25	75	4	●
VSM-4R-D10.0R1.5		10	1.5	10	25	75	4	●
VSM-4R-D10.0R2.0		10	2	10	25	75	4	●
VSM-4R-D12.0R0.5		12	0.5	12	30	75	4	●
VSM-4R-D12.0R0.8		12	0.8	12	30	75	4	●
VSM-4R-D12.0R1.0		12	1	12	30	75	4	●
VSM-4R-D12.0R1.5		12	1.5	12	30	75	4	●
VSM-4R-D12.0R2.0		12	2	12	30	75	4	●
VSM-4R-D12.0R2.5		12	2.5	12	30	75	4	●
VSM-4R-D12.0R3.0		12	3	12	30	75	4	●
VSM-4R-D12.0R4.0		12	4	12	30	75	4	●
VSM-4R-D16.0R0.5		16	0.5	16	45	100	4	●
VSM-4R-D16.0R0.8		16	0.8	16	45	100	4	●
VSM-4R-D16.0R1.0		16	1	16	45	100	4	●
VSM-4R-D16.0R1.5		16	1.5	16	45	100	4	●
VSM-4R-D16.0R2.0		16	2	16	45	100	4	●
VSM-4R-D16.0R2.5		16	2.5	16	45	100	4	●
VSM-4R-D16.0R3.0		16	3	16	45	100	4	●
VSM-4R-D16.0R4.0		16	4	16	45	100	4	●
VSM-4R-D20.0R0.5		20	0.5	20	45	100	4	●
VSM-4R-D20.0R1.0		20	1	20	45	100	4	●
VSM-4R-D20.0R1.5		20	1.5	20	45	100	4	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓			✓	

✓ Very suitable

✓ Suitable

System code > B278    Cutting data > B492    Nonstandard order > B541



A

Turning

B

Milling

C

Drilling

D

Technical Information

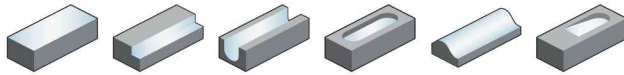
E

Index

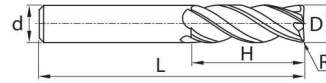
**A**

## Torus mill **General machining of heat-resistant alloys**

**VSM-4R**



- Factory standard
- Centre cutting
- Helix angle 38°/41°



Turning

**B**

Article	*	Dimensions [mm]					Teeth	Grade
		D	R	d (h6)	H	L		KMG405
VSM-4R-D20.0R2.0		20	2	20	45	100	4	●
VSM-4R-D20.0R2.5		20	2.5	20	45	100	4	●
VSM-4R-D20.0R3.0		20	3	20	45	100	4	●
VSM-4R-D20.0R4.0		20	4	20	45	100	4	●

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

### Application field

P	M	K	N	S	H
✓	✓			✓	

✓ Very suitable

✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541

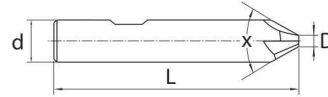
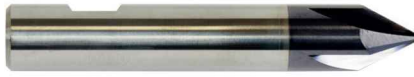
Deburring cutter 60°

General machining

5501/5601R60\*FM



- Type of shank DIN 6535HA
- Type of shank: DIN 6535HB
- Non-centre cutting
- Helix angle 0°



Article	*	Dimensions [mm]					Teeth	Grade
		d(h6)	L	D	Shank	X		KMG303
5501R603FM-0300		3	48	0.2	HA	60	3	●
5501R604FM-0400		4	48	0.2	HA	60	4	●
5601R604FM-0600		6	55	0.2	HB	60	4	●
5601R604FM-0800		8	58	0.5	HB	60	4	●
5601R604FM-1000		10	65	0.5	HB	60	4	●
5601R606FM-1000		10	65	0.7	HB	60	6	○
5601R604FM-1200		12	75	0.5	HB	60	4	●
5601R606FM-1200		12	75	0.7	HB	60	6	○
5601R604FM-1600		16	85	0.7	HB	60	4	●
5601R606FM-1600		16	85	0.7	HB	60	6	○

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓	✓		

- ✓ Very suitable
- ✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541



**A**

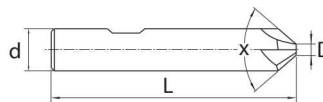
## Deburring cutter 90° General machining

Turning

**5501/5601R90\*FM**



- Type of shank DIN 6535HA
- Type of shank: DIN 6535HB
- Non-centre cutting
- Helix angle 0°



**B**

Milling

Article	*	Dimensions [mm]					Teeth	Grade
		d(h6)	L	D	Shank	X		KMG303
5501R903FM-0300		3	48	0.2	HA	90	3	●
5501R904FM-0400		4	48	0.2	HA	90	4	●
5601R904FM-0600		6	55	0.2	HB	90	4	●
5601R904FM-0800		8	58	0.5	HB	90	4	●
5601R904FM-1000		10	65	0.5	HB	90	4	●
5601R906FM-1000		10	65	0.7	HB	90	6	○
5601R904FM-1200		12	75	0.5	HB	90	4	●
5601R906FM-1200		12	75	0.7	HB	90	6	○
5501R904FM-1600		16	85	0.7	HA	90	4	○
5601R904FM-1600		16	85	0.7	HB	90	4	●
5601R906FM-1600		16	85	0.7	HB	90	6	○

● Ex stock ○ On demand

\* With internal cooling

**C**

Drilling

Application field						
P	M	K	N	S	H	
✓	✓	✓	✓			✓ Very suitable
						✓ Suitable

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541

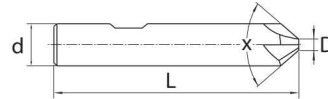
Deburring cutter

General machining

5501/5601R120\*FM



- Type of shank DIN 6535HA
- Type of shank: DIN 6535HB
- Non-centre cutting
- Helix angle 0°



Article	*	Dimensions [mm]					Teeth	Grade
		d(h6)	L	D	Shank	X		KMG406
5501R1203FM-0300		3	48	0.2	HA	120	3	○
5501R1204FM-0400		4	48	0.2	HA	120	4	○
5501R1204FM-0600		6	55	0.2	HA	120	4	○
5601R1204FM-0600		6	55	0.2	HB	120	4	○
5501R1204FM-0800		8	58	0.5	HA	120	4	○
5601R1204FM-0800		8	58	0.5	HB	120	4	○
5501R1204FM-1000		10	65	0.5	HA	120	4	○
5601R1204FM-1000		10	65	0.5	HB	120	4	○
5601R1206FM-1000		10	65	0.7	HB	120	6	○
5501R1206FM-1000		10	65	0.7	HA	120	6	○
5501R1204FM-1200		12	75	0.5	HA	120	4	○
5601R1204FM-1200		12	75	0.5	HB	120	4	○
5601R1206FM-1200		12	75	0.7	HB	120	6	○
5501R1206FM-1200		12	75	0.7	HA	120	6	○
5501R1206FM-1600		16	85	0.7	HA	120	6	○
5601R1204FM-1600		16	85	0.7	HB	120	4	○
5501R1204FM-1600		16	85	0.7	HA	120	4	○
5601R1206FM-1600		16	85	0.7	HB	120	6	○

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓	✓		

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

Nonstandard order > B541





A

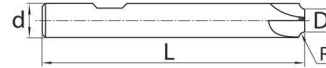
### Quarter round profile mill

### General machining

#### 5601R90\*FM-R



- Type of shank: DIN 6535HB
- Non-centre cutting
- Helix angle 0°



Turning

B

Article	*	Dimensions [mm]				Teeth	Grade
		d(h6)	L	D	R		KMG303
5601R904FM-R02-0600		6	60	5.6	0.2	4	●
5601R904FM-R03-0600		6	60	5.4	0.3	4	●
5601R904FM-R04-0600		6	60	5.2	0.4	4	●
5601R904FM-R05-0800		8	70	7	0.5	4	●
5601R904FM-R06-0800		8	70	6.8	0.6	4	●
5601R904FM-R075-0800		8	70	6.5	0.75	4	●
5601R904FM-R08-0800		8	70	6.4	0.8	4	●
5601R904FM-R10-0800		8	70	6	1	4	●
5601R904FM-R15-1000		10	75	7	1.5	4	●
5601R904FM-R20-1000		10	75	6	2	4	●
5601R904FM-R25-1200		12	75	7	2.5	4	●
5601R904FM-R30-1200		12	75	6	3	4	●
5601R904FM-R40-1600		16	80	8	4	4	●
5601R904FM-R50-2000		20	80	10	5	4	●

Milling

C

- Ex stock ○ On demand

\* With internal cooling

Drilling

#### Application field

P	M	K	N	S	H
✓	✓	✓	✓		

- ✓ Very suitable
- ✓ Suitable

D

Technical Information

E

Index

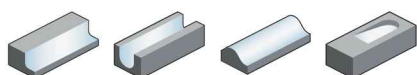
System code > B278

Cutting data > B492

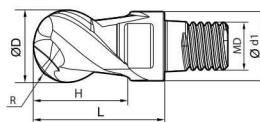
Nonstandard order > B541

**Ball nose cutter** **High-performance machining**

**PM-2B**



- Centre cutting
- Helix angle 30°



Article	*	Dimensions [mm]						Teeth	Grade
		R	D	d1	H	L	MD		KMG405
Q08-PM-2B-D12.0		6	12	11.5	7	17	8	2	●
Q10-PM-2B-D16.0		8	16	15.2	9	21.5	10	2	●
Q12-PM-2B-D20.0		10	20	19	11	25.5	12	2	●
Q14-PM-2B-D25.0		12.5	25	24	13.5	31.5	14	2	●
Q18-PM-2B-D32.0		16	32	30	17	36	18	2	●

● Ex stock ○ On demand

\* With internal cooling

**Application field**

P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

System code > B278

Cutting data > B492

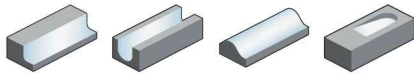
Nonstandard order > B541



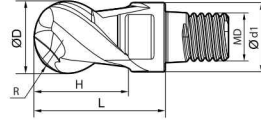
**A**

## Ball nose cutter High-performance machining

**PM-4B**



- Centre cutting
- Helix angle 30°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade
		R	D	d1	H	L	MD		KMG405
Q08-PM-4B-D12.0		6	12	11.5	7	17	8	4	●
Q10-PM-4B-D16.0		8	16	15.2	9	21.5	10	4	●
Q12-PM-4B-D20.0		10	20	19	11	25.5	12	4	●
Q14-PM-4B-D25.0		12.5	25	24	13.5	31.5	14	4	●
Q18-PM-4B-D32.0		16	32	30	17	36	18	4	●

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

### Application field

P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

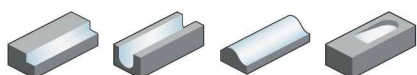
System code > B278

Cutting data > B492

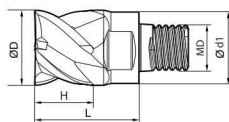
Nonstandard order > B541

**Square shoulder mill** **High-performance machining**

**PM-4E**



- Centre cutting
- Helix angle 45°



Article	*	Dimensions [mm]					Teeth	Grade
		D	d1	H	L	MD		KMG405
Q08-PM-4E-D12.0		12	11.5	7	17	8	4	●
Q10-PM-4E-D16.0		16	15.2	9	21.5	10	4	●
Q12-PM-4E-D20.0		20	19	11	25.5	12	4	●
Q14-PM-4E-D25.0		25	24	13.5	31.5	14	4	●
Q18-PM-4E-D32.0		32	30	17	36	18	4	●

● Ex stock ○ On demand

\* With internal cooling

**Application field**

P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

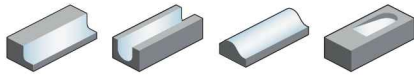
Cutting data > B492

Nonstandard order > B541

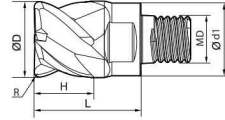
**A**

## Torus mill **High-performance machining**

**PM-4R**



- Centre cutting
- Helix angle 30°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade
		R	D	d1	H	L	MD		KMG405
Q08-PM-4R-D12.0R1.0		1	12	11.5	7	17	8	4	●
Q08-PM-4R-D12.0R2.0		2	12	11.5	7	17	8	4	●
Q10-PM-4R-D16.0R1.0		1	16	15.2	9	21.5	10	4	●
Q10-PM-4R-D16.0R1.5		1.5	16	15.2	9	21.5	10	4	●
Q10-PM-4R-D16.0R2.0		2	16	15.2	9	21.5	10	4	●
Q12-PM-4R-D20.0R1.0		1	20	19	11	25.5	12	4	●
Q12-PM-4R-D20.0R2.0		2	20	19	11	25.5	12	4	●
Q14-PM-4R-D25.0R1.0		1	25	24	13.5	31.5	14	4	●
Q14-PM-4R-D25.0R2.0		2	25	24	13.5	31.5	14	4	●
Q14-PM-4R-D25.0R2.5		2.5	25	24	13.5	31.5	14	4	●
Q18-PM-4R-D32.0R1.0		1	32	30	17	36	18	4	●
Q18-PM-4R-D32.0R2.0		2	32	30	17	36	18	4	●
Q18-PM-4R-D32.0R3.0		3	32	30	17	36	18	4	●

Milling

**C**

- Ex stock ○ On demand
- \* With internal cooling

Drilling

Application field						
P	M	K	N	S	H	
✓	✓	✓			✓	✓ Very suitable ✓ Suitable

**D**

Technical Information

**E**

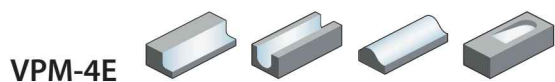
Index

System code > B278

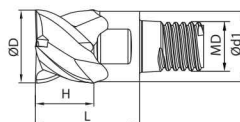
Cutting data > B492

Nonstandard order > B541

**Square shoulder mill** **High-performance machining**



- Centre cutting
- Helix angle 38°



Article	*	Dimensions [mm]					Teeth	Grade
		D	d1	H	L	MD		KMG406
Q08-VPM-4E-D12.0		12	11.5	7	17	8	4	●
Q10-VPM-4E-D16.0		16	15.2	9	21.5	10	4	●
Q12-VPM-4E-D20.0		20	19	11	25.5	12	4	●
Q14-VPM-4E-D25.0		25	24	13.5	31.5	14	4	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓			✓

✓ Very suitable

✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

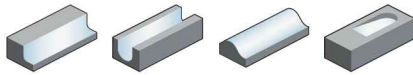
Nonstandard order > B541

**A**

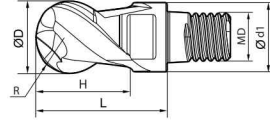
Ball nose cutter

Hard machining

**HMX-2B**



- Centre cutting
- Helix angle 35°



Turning

**B**

Article	*	Dimensions [mm]						Teeth	Grade
		R	D	d1	H	L	MD		KMG5515
Q08-HMX-2B-D12.0		6	12	11.5	7	17	8	2	●
Q10-HMX-2B-D16.0		8	16	15.2	9	21.5	10	2	●
Q12-HMX-2B-D20.0		10	20	19	11	25.5	12	2	●
Q14-HMX-2B-D25.0		12.5	25	24	13.5	31.5	14	2	●
Q18-HMX-2B-D32.0		16	32	30	17	36	18	2	●

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

Application field

P	M	K	N	S	H
					✓

✓ Very suitable

✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

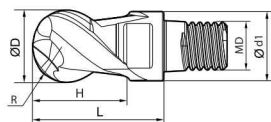
Nonstandard order > B541

**Ball nose cutter** **Hard machining**

**HMX-4B**



- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]						Teeth	Grade
		R	D	d1	H	L	MD		
Q08-HMX-4B-D12.0		6	12	11.5	7	17	8	4	●
Q10-HMX-4B-D16.0		8	16	15.2	9	21.5	10	4	●
Q12-HMX-4B-D20.0		10	20	19	11	25.5	12	4	●
Q14-HMX-4B-D25.0		12.5	25	24	13.5	31.5	14	4	●
Q18-HMX-4B-D32.0		16	32	30	17	36	18	4	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
					✓

✓ Very suitable

✓ Suitable

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

System code > B278

Cutting data > B492

Nonstandard order > B541



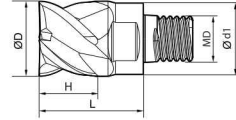
**A**

## Square shoulder mill **Hard machining**

**HMX-4E**



- Centre cutting
- Helix angle 45°



Turning

**B**

Article	*	Dimensions [mm]					Teeth	Grade
		D	d1	H	L	MD		KMG5515
Q08-HMX-4E-D12.0		12	11.5	7	17	8	4	●
Q10-HMX-4E-D16.0		16	15.2	9	21.5	10	4	●
Q12-HMX-4E-D20.0		20	19	11	25.5	12	4	●
Q14-HMX-4E-D25.0		25	24	13.5	31.5	14	4	●
Q18-HMX-4E-D32.0		32	30	17	36	18	4	●

● Ex stock ○ On demand

\* With internal cooling

Milling

**C**

Application field					
P	M	K	N	S	H
					✓

✓ Very suitable  
 ✓ Suitable

Drilling

**D**

Technical Information

**E**

Index

System code > B278

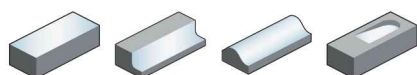
Cutting data > B492

Nonstandard order > B541

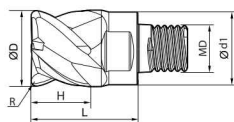
**Torus mill**

**Hard machining**

**HMX-4R**



- Centre cutting
- Helix angle 35°



Article	*	Dimensions [mm]						Teeth	Grade
		R	D	d1	H	L	MD		KMG405
Q08-HMX-4R-D12.0R1.0		1	12	11.5	7	17	8	4	●
Q08-HMX-4R-D12.0R2.0		2	12	11.5	7	17	8	4	●
Q10-HMX-4R-D16.0R1.0		1	16	15.2	9	21.5	10	4	●
Q10-HMX-4R-D16.0R1.5		1.5	16	15.2	9	21.5	10	4	●
Q10-HMX-4R-D16.0R2.0		2	16	15.2	9	21.5	10	4	●
Q12-HMX-4R-D20.0R1.0		1	20	19	11	25.5	12	4	●
Q12-HMX-4R-D20.0R2.0		2	20	19	11	25.5	12	4	●
Q14-HMX-4R-D25.0R1.0		1	25	24	13.5	31.5	14	4	●
Q14-HMX-4R-D25.0R2.0		2	25	24	13.5	31.5	14	4	●
Q14-HMX-4R-D25.0R2.5		2.5	25	24	13.5	31.5	14	4	●
Q18-HMX-4R-D32.0R1.0		1	32	30	17	36	18	4	●
Q18-HMX-4R-D32.0R2.0		2	32	30	17	36	18	4	●
Q18-HMX-4R-D32.0R3.0		3	32	30	17	36	18	4	●

● Ex stock ○ On demand

\* With internal cooling

Application field					
P	M	K	N	S	H
					✓

✓ Very suitable

✓ Suitable

System code > B278

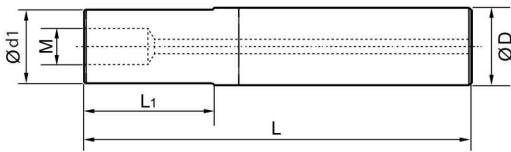
Cutting data > B492

Nonstandard order > B541



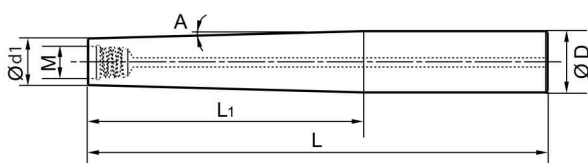
## Indexable heads shanks

Solid carbide shank, stepped, Q thread




Article	Dimensions [mm]				Thread (M)	Stock
	D	d1	L	L1		
G12-QCH-Q08-80C	12	11,5	80	30	Q8	●
G12-QCH-Q08-100C	12	11,5	100	50	Q8	●
G12-QCH-Q08-120C	12	11,5	120	70	Q8	●
G16-QCH-Q10-90C	16	15,2	90	40	Q10	●
G16-QCH-Q10-120C	16	15,2	120	70	Q10	●
G16-QCH-Q10-150C	16	15,2	150	100	Q10	●
G20-QCH-Q12-100C	20	19	100	40	Q12	●
G20-QCH-Q12-140C	20	19	140	80	Q12	●
G20-QCH-Q12-180C	20	19	180	120	Q12	●
G25-QCH-Q14-120C	25	24	120	50	Q14	●
G25-QCH-Q14-170C	25	24	170	100	Q14	●
G25-QCH-Q14-220C	25	24	220	150	Q14	●
G32-QCH-Q18-140C	32	30	140	70	Q18	●
G32-QCH-Q18-200C	32	30	200	130	Q18	●
G32-QCH-Q18-260C	32	30	260	190	Q18	●
G32-QCH-Q18-320C	32	30	320	250	Q18	●

Solid carbide shank, tapered, Q thread



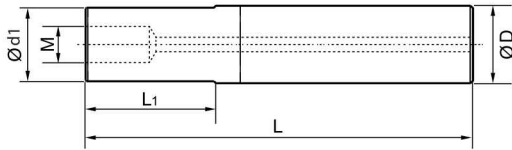
Article	Dimensions [mm]				Thread (M)	Angle (A)	Stock
	D	d1	L	L1			
G16-QCH-Q08-140C-ZJ90	16	11,5	140	90	Q8	1,0	●
G20-QCH-Q10-200C-ZJ140	20	15,2	200	140	Q8	0,8	●
G25-QCH-Q12-250C-ZJ180	25	19	250	180	Q8	0,8	●
G32-QCH-Q14-270C-ZJ200	32	30	270	200	Q10	0,8	●

Spare parts

	Thread	Q8 / Q10	Q12 / Q14	Q18
	Wrench	QCH-10×13	QCH-16×20	QCH-26

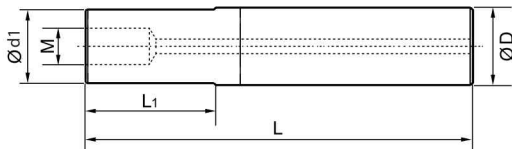
## Indexable heads shanks

Steel shank, stepped, Q thread



Article	Dimensions [mm]				Thread (M)	Stock
	D	d1	L	L1		
G12-QCH-Q08-65S	12	11,5	65	19	Q08	●
G16-QCH-Q10-100S	16	15,2	100	42	Q10	●
G20-QCH-Q12-110S	20	19	110	54	Q12	●

Solid carbide shank, stepped, metric thread



Article	Dimensions [mm]				Thread (M)	Stock
	D	d1	L	L1		
G16-QCH-M8-90C-125	16	12,5	90	35	M8	○
G16-QCH-M8-110C-125	16	12,5	110	55	M8	○
G16-QCH-M8-130C-125	16	12,5	130	75	M8	○
G16-QCH-M8-90C	16	15	90	35	M8	○
G16-QCH-M8-110C	16	15	110	55	M8	○
G16-QCH-M8-130C	16	15	130	75	M8	○
G16-QCH-M8-170C	16	15	170	115	M8	○
G16-QCH-M8-200C	16	15	200	145	M8	○
G20-QCH-M10-87C	20	18,5	87	30	M10	○
G20-QCH-M10-107C	20	18,5	107	50	M10	○
G20-QCH-M10-127C	20	18,5	127	70	M10	○
G20-QCH-M10-167C	20	18,5	167	110	M10	○
G20-QCH-M10-197C	20	18,5	197	140	M10	○
G25-QCH-M12-128C	25	23	128	65	M12	○
G25-QCH-M12-148C	25	23	148	85	M12	○
G25-QCH-M12-168C	25	23	168	105	M12	○
G25-QCH-M12-198C	25	23	198	135	M12	○
G25-QCH-M12-228C	25	23	228	165	M12	○
G32-QCH-M16-161C	32	29	161	95	M16	○
G32-QCH-M16-211C	32	29	211	145	M16	○
G32-QCH-M16-281C	32	29	281	215	M16	○
G32-QCH-M16-311C	32	29	311	245	M16	○
G32-QCH-M16-361C	32	29	361	295	M16	○

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

## Guide for recommended cutting data – solid carbide milling

### End mill – GM series

1	Material group	Composition / structure / heat treatment	2 Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]								
					5501R302GM 5601R302GM 5502R302GM 5602R302GM				GM-2E GM-2EFP GM-2F				
					Slot milling		Shoulder milling		Slot milling		Shoulder milling		
					$\phi$ [mm]	$a_{p,max}$	$\phi$ [mm]	$a_{e,max}$	$\phi$ [mm]	$a_{p,max}$	$\phi$ [mm]	$a_{e,max}$	
					$0 < x < 3$	$0,1 \times D$	$0 < x \leq 20$	$< 0,5 \times D$	$0 < x < 3$	$0,1 \times D$	$0 < x \leq 20$	$< 0,5 \times D$	
					$3 \leq x \leq 20$	$0,8 \times D$			$3 \leq x \leq 20$	$0,8 \times D$			
					KMG303				KMG303				
					$a_e / D$								
						1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group
P	Unalloyed steel	ca. 0,15 % C	annealed	125	1	150	200	270	2	150	200	270	2
		ca. 0,45 % C	annealed	190	2	145	190	260	2	145	190	260	2
		ca. 0,45 % C	tempered	250	3	105	140	190	2	105	140	190	2
		ca. 0,75 % C	annealed	270	4	90	120	165	2	90	120	165	2
		ca. 0,75 % C	tempered	300	5	85	110	150	2	85	110	150	2
	Low-alloyed steel		annealed	180	6	115	150	205	2	115	150	205	2
			tempered	275	7	90	120	165	2	90	120	165	2
			tempered	300	8	85	110	150	2	85	110	150	2
			tempered	350	9	80	105	145	2	80	105	145	2
			tempered	300	10	85	110	150	2	85	110	150	2
High-alloyed steel and high-alloyed tool steel		annealed	200	10	105	140	190	2	105	140	190	2	
		hardened and tempered	325	11	80	110	145	2	80	110	145	2	
M	Stainless steel	ferritic/martensitic	annealed	200	12	50	65	90	2	50	65	90	2
		martensitic	tempered	240	13	45	60	80	2	45	60	80	2
		austenitic	quench hardened	180	14	55	70	95	2	55	70	95	2
		austenitic-ferritic		230	15	45	60	80	2	45	60	80	2
K	Grey cast iron	perlite/ferritic		180	16	110	150	200	2	110	150	200	2
		perlite (martensitic)		260	17	90	120	165	2	90	120	165	2
K	Cast iron with spheroidal graphite	ferritic		160	18	135	180	245	2	135	180	245	2
		perlite		250	19	105	140	190	2	105	140	190	2
	Malleable cast iron	ferritic		130	20	150	200	270	2	150	200	270	2
		perlite		230	21	120	160	220	2	120	160	220	2
N	Aluminium wrought alloys	cannot be hardened		60	22								
		hardenable	hardened	100	23								
	Cast aluminium alloys	$\leq 12\% \text{ Si}$ , cannot be hardened		75	24								
		$\leq 12\% \text{ Si}$ , hardenable	hardened	90	25								
		$> 12\% \text{ Si}$ , cannot be hardened		130	26								
	Copper and copper alloys (bronze/brass)	machining steel, PB > 1%		110	27								
CuZn, CuSnZn			90	28									
CuSn, Pb-free copper, electrolytic copper			100	29									
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co base	annealed	250	32								
			hardened	350	33								
			cast	320	34								
Titanium alloys	pure titanium		$R_m$ 400	35									
	$\alpha$ and $\beta$ alloys	hardened	$R_m$ 1050	36									
H	Hardened steel		hardened and tempered	55 HRC	37								
			hardened and tempered	60 HRC	38								
			cast	400	39								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
Wood			46										

Note: The given cutting values are guide values, which were determined under ideal conditions. The values have to be adapted in individual cases. Feed rate recommendations on page B460. For examples of material for cutting tool groups view page D22.

**Recommend feed rate**

**Solid carbide milling group 2 – Square shoulder mills GM series**

4 <sub>a<sub>p</sub>/D</sub>	a <sub>p</sub> /D	Feed rate per cutting edge (f <sub>z</sub> ) [mm]																		
		Ø0,5	Ø0,8	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20				
P	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09				
	1/2	0,01	0,03	0,03	0,03	0,03	0,03	0,04	0,04	0,05	0,08	0,09	0,09	0,10	0,10	0,12				
M	1/10	0,02	0,04	0,04	0,04	0,04	0,04	0,06	0,06	0,08	0,12	0,14	0,14	0,16	0,16	0,18				
	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,03	0,05	0,06	0,06	0,06	0,06	0,07				
	1/2	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09				
K	1/10	0,02	0,03	0,03	0,03	0,03	0,03	0,05	0,05	0,06	0,10	0,11	0,11	0,13	0,13	0,15				
	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09				
	1/2	0,01	0,03	0,03	0,03	0,03	0,03	0,04	0,04	0,05	0,08	0,09	0,09	0,10	0,10	0,12				
5	1/10	0,02	0,04	0,04	0,04	0,04	0,04	0,06	0,06	0,08	0,12	0,14	0,14	0,16	0,16	0,18				

Note: The given cutting values are guide values, which were determined under ideal conditions. The values have to be adapted in individual cases.

1. Select the appropriate product series.
2. Determine the immersion.
3. Select the used material and read the cutting speed.
4. Determine the feed rate group and have a look at the appropriate feed rate recommendations.
5. Select the diameter of tool and determine the immersion.

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index







## End mill – GM series

Material group	Composition / structure / heat treatment	Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]									
				5501R304GF 5601R304GF 5502R304GF 5602R304GF				GM-4F-G GM-4EFP					
				Slot milling		Shoulder milling		Slot milling		Shoulder milling			
				$\varnothing$ [mm]	$a_p$ max	$\varnothing$ [mm]	$a_e$ max	$\varnothing$ [mm]	$a_p$ max	$\varnothing$ [mm]	$a_e$ max		
				$0 < x < 3$	$0,1 \times D$	$0 < x \leq 20$	$< 0,5 \times D$	$0 < x < 3$	$0,1 \times D$	$0 < x \leq 20$	$< 0,5 \times D$		
						$3 \leq x \leq 20$	$0,8 \times D$			$3 \leq x \leq 20$	$0,8 \times D$		
				KMG303				KMG303					
				$a_e / D$				$a_e / D$					
				1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group		
P Unalloyed steel	approx. 0,15 % C	annealed	125	1	155	200	265	2	150	200	270	2	
	approx. 0,45 % C	annealed	190	2	150	190	255	2	145	190	260	2	
	approx. 0,45 % C	tempered	250	3	110	140	190	2	105	140	190	2	
	approx. 0,75 % C	annealed	270	4	95	120	160	2	90	120	165	2	
	approx. 0,75 % C	tempered	300	5	90	110	150	2	85	110	150	2	
P Low-alloyed steel		annealed	180	6	120	150	200	2	115	150	205	2	
		tempered	275	7	95	120	160	2	90	120	165	2	
		tempered	300	8	90	110	150	2	85	110	150	2	
		tempered	350	9	85	105	140	2	80	105	145	2	
P High-alloyed steel and high-alloyed tool steel		annealed	200	10	110	140	190	2	105	140	190	2	
		hardened and tempered	325	11	85	110	145	2	80	110	145	2	
M Stainless steel	ferritic/martensitic	annealed	200	12	50	65	85	2	50	65	90	2	
	martensitic	tempered	240	13	45	60	75	2	45	60	80	2	
	austenitic	quench hardened	180	14	55	70	95	2	55	70	95	2	
	austenitic-ferritic		230	15	45	60	75	2	45	60	80	2	
K Grey cast iron	perlitic/ferritic		180	16	115	150	195	2	110	150	200	2	
	perlitic (martensitic)		260	17	95	120	160	2	90	120	165	2	
K Cast iron with spheroidal graphite	ferritic		160	18	140	180	240	2	135	180	245	2	
	perlitic		250	19	110	140	190	2	105	140	190	2	
K Malleable cast iron	ferritic		130	20	155	200	265	2	150	200	270	2	
	perlitic		230	21	125	160	215	2	120	160	220	2	
N Aluminium wrought alloys	cannot be hardened		60	22									
	hardenable	hardened	100	23									
	$\leq 12\% \text{ Si}$ , cannot be hardened		75	24									
	$\leq 12\% \text{ Si}$ , hardenable	hardened	90	25									
N Cast aluminium alloys	$> 12\% \text{ Si}$ , cannot be hardened		130	26									
	machining steel, PB> 1%		110	27									
	CuZn, CuSnZn		90	28									
S Copper and copper alloys (bronze/brass)	CuSn, Pb-free copper, electrolytic copper		100	29									
	S Heat-resistant alloys	Fe-based alloys	annealed	200	30								
		hardened	280	31									
	S Ni or Co bass	annealed	250	32									
hardened		350	33										
S Titanium alloys	cast	320	34										
	pure titanium		$R_m$ 400	35									
H Hardened steel	$\alpha$ and $\beta$ alloys	hardened	$R_m$ 1050	36									
	hardened and tempered		55 HRC	37									
H Hard cast iron	hardened and tempered		60 HRC	38									
	cast		400	39									
H Hardened cast iron	hardened and tempered		55 HRC	40									
X Non-metallic materials	Thermoplasts			41									
	Thermosetting plastics			42									
	Plastic, glass-fibre reinforced GFRP			43									
	Plastic, carbon fibre reinforced CFRP			44									
	Graphite			45									
	Wood			46									

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 Feed rate recommendations on page B522.  
 For examples of material for cutting tool groups view page D11.

Starting values for cutting speed $v_c$ [m/min]																							
GM-4FL-G GM-4EX-G				GM-6E				GM-6E 5589R45MGFR				5565R302GF 5565R302GM 5566R302GF				GM-2B GM-4B GM-2BS GM-2BP							
Slot milling		Shoulder milling				Shoulder milling				Shoulder milling		Slot milling		Shoulder milling									
$\varnothing$ [mm]	$a_p$ max	$\varnothing$ [mm]	$a_e$ max			$\varnothing$ [mm]	$a_e$ max			$\varnothing$ [mm]	$a_e$ max	$\varnothing$ [mm]	$a_p$ max	$\varnothing$ [mm]	$a_e$ max								
$0 < x < 3$	$0,1 \times D$	$0 < x \leq 20$	$< 0,5 \times D$			$0 < x \leq 20$	$< 0,5 \times D$			$0 < x \leq 20$	$< 0,5 \times D$	$0 < x < 3$	$0,1 \times D$	$0 < x \leq 20$	$< 0,5 \times D$								
$3 \leq x \leq 20$	$0,8 \times D$													$3 \leq x \leq 20$	$0,8 \times D$								
KMG303				KMG303				KMG303				KMG303				KMG303							
$a_e / D$				$a_e / D$				$a_e / D$				$a_e / D$				$a_e / D$							
1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group	1/1	1/10	1/20	f-group	1/1	1/10	1/20	f-group	1/1	1/10	1/20	f-group
130	170	230	2	-	-	270	2	-	-	230	2	-	250	280	5	-	250	280	5	-	250	280	5
125	165	220	2	-	-	260	2	-	-	220	2	-	240	270	5	-	240	270	5	-	240	270	5
95	120	165	2	-	-	190	2	-	-	165	2	-	175	200	5	-	175	200	5	-	175	200	5
80	105	140	2	-	-	165	2	-	-	140	2	-	150	170	5	-	150	170	5	-	150	170	5
75	95	130	2	-	-	150	2	-	-	130	2	-	140	155	5	-	140	155	5	-	140	155	5
100	130	175	2	-	-	205	2	-	-	175	2	-	190	210	5	-	190	210	5	-	190	210	5
80	105	140	2	-	-	165	2	-	-	140	2	-	150	170	5	-	150	170	5	-	150	170	5
75	95	130	2	-	-	150	2	-	-	130	2	-	140	155	5	-	140	155	5	-	140	155	5
70	90	120	2	-	-	145	2	-	-	120	2	-	130	150	5	-	130	150	5	-	130	150	5
95	120	165	2	-	-	190	2	-	-	165	2	-	175	200	5	-	175	200	5	-	175	200	5
70	95	125	2	-	-	145	2	-	-	125	2	-	135	150	5	-	135	150	5	-	135	150	5
45	55	75	2	-	-	90	2	-	-	75	2	-	80	90	5	-	80	90	5	-	80	90	5
40	50	65	2	-	-	80	2	-	-	65	2	-	70	80	5	-	70	80	5	-	70	80	5
45	60	80	2	-	-	95	2	-	-	80	2	-	85	100	5	-	85	100	5	-	85	100	5
40	50	65	2	-	-	80	2	-	-	65	2	-	70	80	5	-	70	80	5	-	70	80	5
95	125	170	2	-	-	200	2	-	-	170	2	-	185	205	5	-	185	205	5	-	185	205	5
80	105	140	2	-	-	165	2	-	-	140	2	-	150	170	5	-	150	170	5	-	150	170	5
120	155	210	2	-	-	245	2	-	-	210	2	-	225	255	5	-	225	255	5	-	225	255	5
95	120	165	2	-	-	190	2	-	-	165	2	-	175	200	5	-	175	200	5	-	175	200	5
130	170	230	2	-	-	270	2	-	-	230	2	-	250	280	5	-	250	280	5	-	250	280	5
105	140	185	2	-	-	220	2	-	-	185	2	-	200	225	5	-	200	225	5	-	200	225	5

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

## End mill – GM series

Material group	Composition / structure / heat treatment	Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]										
				GM-2BL GM-4BL GM-2BFP					GM-2R GM-4R					
									Slot milling		Shoulder milling			
									$\varnothing$ [mm]	$a_{p\max}$	$\varnothing$ [mm]	$a_{e\max}$		
					$0 < x < 3$	$0,1 \times D$	$0 < x \leq 20$	$< 0,5 \times D$						
					KMG303					KMG303				
					$a_e / D$					$a_e / D$				
					1/1	1/10	1/20	f-group	1/1	1/2	1/10	f-group		
P Unalloyed steel	approx. 0,15 % C	annealed	125	1	-	220	250	5	160	215	275	2		
	approx. 0,45 % C	annealed	190	2	-	210	240	5	155	205	265	2		
	approx. 0,45 % C	tempered	250	3	-	155	175	5	115	155	195	2		
	approx. 0,75 % C	annealed	270	4	-	135	150	5	100	130	165	2		
	approx. 0,75 % C	tempered	300	5	-	125	140	5	90	120	155	2		
P Low-alloyed steel		annealed	180	6	-	165	190	5	120	165	210	2		
		tempered	275	7	-	135	150	5	100	130	165	2		
		tempered	300	8	-	125	140	5	90	120	155	2		
		tempered	350	9	-	115	130	5	85	115	145	2		
P High-alloyed steel and high-alloyed tool steel		annealed	200	10	-	155	175	5	115	155	195	2		
		hardened and tempered	325	11	-	120	135	5	85	115	150	2		
M Stainless steel	ferritic/martensitic	annealed	200	12	-	75	80	5	55	70	90	2		
	martensitic	tempered	240	13	-	65	70	5	45	65	80	2		
	austenitic	quench hardened	180	14	-	75	85	5	55	75	95	2		
	austenitic-ferritic		230	15	-	65	70	5	45	65	80	2		
K Grey cast iron	perlitic/ferritic		180	16	-	165	185	5	120	160	205	2		
	perlitic (martensitic)		260	17	-	135	150	5	100	130	165	2		
K Cast iron with spheroidal graphite	ferritic		160	18	-	200	225	5	145	195	250	2		
	perlitic		250	19	-	155	175	5	115	155	195	2		
K Malleable cast iron	ferritic		130	20	-	220	250	5	160	215	275	2		
	perlitic		230	21	-	180	200	5	130	175	220	2		
N Aluminium wrought alloys	cannot be hardened		60	22										
	hardenable	hardened	100	23										
	$\leq 12\% \text{ Si}$ , cannot be hardened		75	24										
	$\leq 12\% \text{ Si}$ , hardenable	hardened	90	25										
N Cast aluminium alloys	$> 12\% \text{ Si}$ , cannot be hardened		130	26										
	machining steel, PB> 1%		110	27										
	CuZn, CuSnZn		90	28										
S Copper and copper alloys (bronze/brass)	CuSn, Pb-free copper, electrolytic copper		100	29										
	Heat-resistant alloys	Fe-based alloys	annealed	200	30									
		hardened	280	31										
	Ni or Co bass	annealed	250	32										
hardened		350	33											
Titanium alloys	cast	320	34											
	pure titanium		$R_m$ 400	35										
H Hardened steel	$\alpha$ and $\beta$ alloys	hardened	$R_m$ 1050	36										
	hardened and tempered	55 HRC		37										
H Hard cast iron	hardened and tempered	60 HRC		38										
	cast	400		39										
H Hardened cast iron	hardened and tempered	55 HRC		40										
X Non-metallic materials	Thermoplasts			41										
	Thermosetting plastics			42										
	Plastic, glass-fibre reinforced GFRP			43										
	Plastic, carbon fibre reinforced CFRP			44										
	Graphite			45										
	Wood			46										

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 Feed rate recommendations on page B522.  
 For examples of material for cutting tool groups view page D11.



## End mill – HM series

Material group	Composition / structure / heat treatment	Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]									
				HM-2E HM-2EP HM-2ES HM-4E					HM-2EFP HM-4EL HM-4EFP				
				Shoulder milling					Shoulder milling				
				$\varnothing$ [mm]		$a_{e\ max}$			$\varnothing$ [mm]		$a_{e\ max}$		
$0 < x \leq 20$		$0,05 \times D$			$0 < x \leq 20$		$0,05 \times D$						
KMG555					KMG555								
$a_e / D$		$a_e / D$			$a_e / D$		$a_e / D$						
1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group		
P Unalloyed steel	approx. 0,15 % C	annealed	125	1									
	approx. 0,45 % C	annealed	190	2									
	approx. 0,45 % C	tempered	250	3									
	approx. 0,75 % C	annealed	270	4									
	approx. 0,75 % C	tempered	300	5									
P Low-alloyed steel		annealed	180	6									
		tempered	275	7									
		tempered	300	8									
		tempered	350	9									
High-alloyed steel and high-alloyed tool steel		annealed	200	10									
		hardened and tempered	325	11									
M Stainless steel	ferritic/martensitic	annealed	200	12									
		tempered	240	13									
	austenitic	quench hardened	180	14									
			230	15									
K Grey cast iron	perlitic/ferritic		180	16									
	perlitic (martensitic)		260	17									
K Cast iron with spheroidal graphite	ferritic		160	18									
	perlitic		250	19									
K Malleable cast iron	ferritic		130	20									
	perlitic		230	21									
N Aluminium wrought alloys	cannot be hardened		60	22									
	hardenable	hardened	100	23									
	$\leq 12\%$ Si, cannot be hardened		75	24									
	$\leq 12\%$ Si, hardenable	hardened	90	25									
N Cast aluminium alloys	$> 12\%$ Si, cannot be hardened		130	26									
	machining steel, PB> 1%		110	27									
	CuZn, CuSnZn		90	28									
S Copper and copper alloys (bronze/brass)	CuSn, Pb-free copper, electrolytic copper		100	29									
	Fe-based alloys	annealed	200	30									
		hardened	280	31									
	Ni or Co bass	annealed	250	32									
hardened		350	33										
S Titanium alloys	cast	320	34										
	pure titanium		$R_m$ 400	35									
H Hardened steel	$\alpha$ and $\beta$ alloys	hardened	$R_m$ 1050	36									
		hardened and tempered	55 HRC	37	55	100	125	3	50	95	115	3	
H Hard cast iron		hardened and tempered	60 HRC	38	55	95	120	3	50	95	110	3	
		cast	400	39	70	125	160	3	65	120	145	3	
H Hardened cast iron		hardened and tempered	55 HRC	40	55	100	125	3	50	95	115	3	
X Non-metallic materials	Thermoplasts			41									
	Thermosetting plastics			42									
	Plastic, glass-fibre reinforced GFRP			43									
	Plastic, carbon fibre reinforced CFRP			44									
	Graphite			45									
	Wood			46									

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 Feed rate recommendations on page B522.  
 For examples of material for cutting tool groups view page D11.



## End mill – NM series

Material group	Composition / structure / heat treatment	Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]											
				5502R402NM NM-2E NM-4E NM-2EP				NM-2B NM-4BP							
				Slot milling		Shoulder milling									
				$\varnothing$ [mm]	$a_p$ max	$\varnothing$ [mm]	$a_e$ max	$\varnothing$ [mm]	$a_e$ max	$\varnothing$ [mm]	$a_e$ max	$\varnothing$ [mm]	$a_e$ max	$\varnothing$ [mm]	$a_e$ max
$0 < x < 12$	$0.5 \times D$	$0 < x \leq 20$	$< 0.5 \times D$												
$12 \leq x \leq 20$	$1.0 \times D$			KMG309				KMG309							
		$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$		$a_e / D$					
		1/1	1/2	1/10	f-group	1/1	1/10	1/20	f-group						
P Unalloyed steel	approx. 0,15 % C	annealed	125	1											
	approx. 0,45 % C	annealed	190	2											
	approx. 0,45 % C	tempered	250	3											
	approx. 0,75 % C	annealed	270	4											
	approx. 0,75 % C	tempered	300	5											
P Low-alloyed steel		annealed	180	6											
		tempered	275	7											
		tempered	300	8											
		tempered	350	9											
High-alloyed steel and high-alloyed tool steel		annealed	200	10											
		hardened and tempered	325	11											
M Stainless steel	ferritic/martensitic	annealed	200	12											
	martensitic	tempered	240	13											
	austenitic	quench hardened	180	14											
	austenitic-ferritic		230	15											
K Grey cast iron	perlitic/ferritic		180	16											
	perlitic (martensitic)		260	17											
K Cast iron with spheroidal graphite	ferritic		160	18											
	perlitic		250	19											
K Malleable cast iron	ferritic		130	20											
	perlitic		230	21											
N Aluminium wrought alloys	cannot be hardened		60	22	920	1100	1200	4	–	1400	1550	4			
	hardenable	hardened	100	23	555	660	720	4	–	840	930	4			
	$\leq 12\% \text{ Si}$ , cannot be hardened		75	24	370	440	480	4	–	560	620	4			
	$\leq 12\% \text{ Si}$ , hardenable	hardened	90	25	460	550	600	4	–	700	775	4			
	$> 12\% \text{ Si}$ , cannot be hardened		130	26	140	165	180	4	–	210	235	4			
N Cast aluminium alloys			110	27	280	330	360	4	–	420	465	4			
			90	28	325	385	420	4	–	490	545	4			
			100	29	280	330	360	4	–	420	465	4			
N Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27	280	330	360	4	–	420	465	4			
	CuZn, CuSnZn		90	28	325	385	420	4	–	490	545	4			
S Heat-resistant alloys	Fe-based alloys	annealed	200	30											
		hardened	280	31											
	Ni or Co bass	annealed	250	32											
		hardened	350	33											
	Titanium alloys	cast	320	34											
		pure titanium		$R_m$ 400	35										
H Hardened steel	$\alpha$ and $\beta$ alloys	hardened	$R_m$ 1050	36											
		hardened and tempered	55 HRC	37											
H Hard cast iron		hardened and tempered	60 HRC	38											
		cast	400	39											
H Hardened cast iron		hardened and tempered	55 HRC	40											
				41											
X Non-metallic materials	Thermoplasts			41											
	Thermosetting plastics			42											
	Plastic, glass-fibre reinforced GFRP			43											
	Plastic, carbon fibre reinforced CFRP			44											
	Graphite			45											
	Wood			46											

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 Feed rate recommendations on page B522.  
 For examples of material for cutting tool groups view page D11.





## End mill – AL series, ALP/ALG series

Material group	Composition / structure / heat treatment	Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]								
				ALP-1EP				AL-1E AL-2E AL-3E (W) ALG-2E				
				Slot milling		Shoulder milling		Slot milling		Shoulder milling		
				$\varnothing$ [mm]	$a_{p \max}$	$\varnothing$ [mm]	$a_{e \max}$	$\varnothing$ [mm]	$a_{p \max}$	$\varnothing$ [mm]	$a_{e \max}$	
				0 < x < 12	0.5xD	0 < x ≤ 20	< 0.5xD	0 < x < 12	0.5xD	0 < x ≤ 20	< 0.5xD	
				12 ≤ x ≤ 20	1,0xD			12 ≤ x ≤ 20	1,0xD			
				YK40F / KMD401				YK30F / YK40F				
				$a_e / D$				$a_e / D$				
				1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group	
P Unalloyed steel	approx. 0,15 % C	annealed	125	1								
	approx. 0,45 % C	annealed	190	2								
	approx. 0,45 % C	tempered	250	3								
	approx. 0,75 % C	annealed	270	4								
	approx. 0,75 % C	tempered	300	5								
P Low-alloyed steel		annealed	180	6								
		tempered	275	7								
		tempered	300	8								
		tempered	350	9								
High-alloyed steel and high-alloyed tool steel		annealed	200	10								
		hardened and tempered	325	11								
M Stainless steel	ferritic/martensitic	annealed	200	12								
	martensitic	tempered	240	13								
	austenitic	quench hardened	180	14								
	austenitic-ferritic		230	15								
K Grey cast iron	perlitic/ferritic		180	16								
	perlitic (martensitic)		260	17								
K Cast iron with spheroidal graphite	ferritic		160	18								
	perlitic		250	19								
K Malleable cast iron	ferritic		130	20								
	perlitic		230	21								
N Aluminium wrought alloys	cannot be hardened		60	22	300	345	375	12	920	1100	1200	4
	hardenable	hardened	100	23	250	290	315	12	555	660	720	4
	≤ 12% Si, cannot be hardened		75	24	250	280	315	12	370	440	480	4
	≤ 12% Si, hardenable	hardened	90	25	210	240	265	12	460	550	600	4
	> 12% Si, cannot be hardened		130	26	180	210	225	12	140	165	180	4
N Cast aluminium alloys	machining steel, PB > 1%		110	27	280	320	350	12	280	330	360	4
	CuZn, CuSnZn		90	28	310	360	390	12	325	385	420	4
	CuSn, Pb-free copper, electrolytic copper		100	29	280	320	350	12	280	330	360	4
S Heat-resistant alloys	Fe-based alloys	annealed	200	30								
		hardened	280	31								
	Ni or Co bass	annealed	250	32								
		hardened	350	33								
		cast	320	34								
Titanium alloys	pure titanium		R <sub>m</sub> 400	35								
	α and β alloys	hardened	R <sub>m</sub> 1050	36								
H Hardened steel		hardened and tempered	55 HRC	37								
		hardened and tempered	60 HRC	38								
	Hard cast iron	cast	400	39								
H Hardened cast iron		hardened and tempered	55 HRC	40								
X Non-metallic materials	Thermoplasts			41								
	Thermosetting plastics			42								
	Plastic, glass-fibre reinforced GFRP			43								
	Plastic, carbon fibre reinforced CFRP			44								
	Graphite			45								
	Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 Feed rate recommendations on page B522.  
 For examples of material for cutting tool groups view page D11.







## End mill – TM series

Material group	Composition / structure / heat treatment	Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]									
				TM-4R / TM-4RP TM-5R / TM-5RP TM-7R / TM-7RP TM-9R / TM-9RP				TM-4B / TM-4BP TM-5B / TM-5BP					
				Slot milling		Shoulder milling							
				$\varnothing$ [mm]	$a_{p \max}$	$\varnothing$ [mm]	$a_{e \max}$						
P Unalloyed steel Low-alloyed steel High-alloyed steel and high-alloyed tool steel	approx. 0,15 % C	annealed	125	1									
	approx. 0,45 % C	annealed	190	2									
	approx. 0,45 % C	tempered	250	3									
	approx. 0,75 % C	annealed	270	4									
	approx. 0,75 % C	tempered	300	5									
		annealed	180	6									
		tempered	275	7									
		tempered	300	8									
		tempered	350	9									
		annealed	200	10									
		hardened and tempered	325	11									
M Stainless steel	ferritic/martensitic	annealed	200	12									
	martensitic	tempered	240	13									
	austenitic	quench hardened	180	14									
	austenitic-ferritic		230	15									
K Grey cast iron Cast iron with spheroidal graphite Malleable cast iron	perlitic/ferritic		180	16									
	perlitic (martensitic)		260	17									
	ferritic		160	18									
	perlitic		250	19									
	ferritic		130	20									
	perlitic		230	21									
N Aluminium wrought alloys Cast aluminium alloys Copper and copper alloys (bronze/brass)	cannot be hardened		60	22									
	hardenable	hardened	100	23									
	$\leq 12\%$ Si, cannot be hardened		75	24									
	$\leq 12\%$ Si, hardenable	hardened	90	25									
	$> 12\%$ Si, cannot be hardened		130	26									
	machining steel, PB> 1%		110	27									
S Heat-resistant alloys Titanium alloys	CuZn, CuSnZn		90	28									
	CuSn, Pb-free copper, electrolytic copper		100	29									
	Fe-based alloys	annealed	200	30	45	55	85	10	–	85	90	10	
		hardened	280	31	25	30	45	10	–	45	50	10	
		Ni or Co bass	annealed	250	32	45	55	85	10	–	85	90	10
			hardened	350	33	25	30	45	10	–	45	50	10
	cast	320	34	25	30	45	10	–	45	50	10		
	pure titanium		$R_m$ 400	35	75	90	135	10	–	135	145	10	
$\alpha$ and $\beta$ alloys		hardened	$R_m$ 1050	36	45	55	85	10	–	85	90	10	
H Hardened steel Hard cast iron Hardened cast iron	hardened and tempered	55 HRC	37										
	hardened and tempered	60 HRC	38										
	cast	400	39										
	hardened and tempered	55 HRC	40										
X Non-metallic materials	Thermoplasts			41									
	Thermosetting plastics			42									
	Plastic, glass-fibre reinforced GFRP			43									
	Plastic, carbon fibre reinforced CFRP			44									
	Graphite			45									
	Wood			46									

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.  
Feed rate recommendations on page B522.  
For examples of material for cutting tool groups view page D11.



## End mill – PM series

Material group	Composition / structure / heat treatment	Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]									
				PM-2E PM-2ES / PM-2EP / PM-2RP PM-4E PM-4E-G					PM-4EL PM-4EL-G PM-4EX-G				
				Slot milling		Shoulder milling			Slot milling		Shoulder milling		
				$\emptyset$ [mm]	$a_{p\max}$	$\emptyset$ [mm]	$a_{e\max}$	$f$ -group	$\emptyset$ [mm]	$a_{p\max}$	$\emptyset$ [mm]	$a_{e\max}$	$f$ -group
P Unalloyed steel	approx. 0,15 % C	annealed	125	1	165	220	300	1	140	190	255	1	
	approx. 0,45 % C	annealed	190	2	160	210	285	1	135	185	245	1	
	approx. 0,45 % C	tempered	250	3	120	155	210	1	100	135	180	1	
	approx. 0,75 % C	annealed	270	4	100	135	180	1	85	115	155	1	
	approx. 0,75 % C	tempered	300	5	95	125	165	1	80	105	145	1	
	Low-alloyed steel	annealed	180	6	125	165	225	1	110	145	195	1	
		tempered	275	7	100	135	180	1	85	115	155	1	
		tempered	300	8	95	125	165	1	80	105	145	1	
		tempered	350	9	90	115	160	1	75	100	135	1	
	High-alloyed steel and high-alloyed tool steel	annealed	200	10	120	155	210	1	100	135	180	1	
hardened and tempered		325	11	90	120	160	1	75	105	140	1		
M Stainless steel	ferritic/martensitic	annealed	200	12	55	75	100	1	45	65	85	1	
	martensitic	tempered	240	13	50	65	85	1	40	55	75	1	
	austenitic	quench hardened	180	14	60	75	105	1	50	65	90	1	
	austenitic-ferritic		230	15	50	65	85	1	40	55	75	1	
K Grey cast iron	perlite/ferritic		180	16	125	165	220	1	105	140	190	1	
	perlite (martensitic)		260	17	100	135	180	1	85	115	155	1	
	Cast iron with spheroidal graphite	ferritic		160	18	150	200	270	1	130	175	230	1
		perlite		250	19	120	155	210	1	100	135	180	1
	Malleable cast iron	ferritic		130	20	165	220	300	1	145	190	255	1
		perlite		230	21	135	180	240	1	115	155	205	1
N Aluminium wrought alloys	cannot be hardened		60	22									
	hardenable	hardened	100	23									
	Cast aluminium alloys	$\leq 12\%$ Si, cannot be hardened		75	24								
		$\leq 12\%$ Si, hardenable	hardened	90	25								
		$> 12\%$ Si, cannot be hardened		130	26								
Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27									
	CuZn, CuSnZn		90	28									
	CuSn, Pb-free copper, electrolytic copper		100	29									
S Heat-resistant alloys	Fe-based alloys	annealed	200	30									
		hardened	280	31									
	Ni or Co base	annealed	250	32									
		hardened	350	33									
		cast	320	34									
	Titanium alloys	pure titanium	$R_m$ 400	35									
$\alpha$ and $\beta$ alloys		hardened	$R_m$ 1050	36									
H Hardened steel		hardened and tempered	55 HRC	37	80	105	140	1	65	90	120	1	
		hardened and tempered	60 HRC	38	-	-	-	-	-	-	-	-	
	Hard cast iron	cast	400	39	105	140	185	1	85	120	160	1	
	Hardened cast iron	hardened and tempered	55 HRC	40	-	-	-	-	-	-	-	-	
X Non-metallic materials	Thermoplasts			41									
	Thermosetting plastics			42									
	Plastic, glass-fibre reinforced GFRP			43									
	Plastic, carbon fibre reinforced CFRP			44									
	Graphite			45									
	Wood			46									

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 Feed rate recommendations on page B522.  
 For examples of material for cutting tool groups view page D11.

Starting values for cutting speed $v_c$ [m/min]																			
PM-6E				PM-6EL				PM-2B PM-2BS / PM-2BP PM-4B				PM-2BL PM-2BFP PM-4BL				PM-2BC			
		Shoulder milling				Shoulder milling													
		$\varnothing$ [mm]	$a_{p \max}$			$\varnothing$ [mm]	$a_{p \max}$												
		$0 < x \leq 20$	$0.15 \times D$			$0 < x \leq 20$	$0.15 \times D$												
KMG405				KMG405				KMG405				KMG405				KMG405			
$a_e / D$				$a_e / D$				$a_e / D$				$a_e / D$				$a_e / D$			
1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group	1/1	1/10	1/20	f-group	1/1	1/10	1/20	f-group	1/1	1/10	1/20	f-group
-	220	300	1	-	190	255	1	-	270	300	5	-	230	255	5	-	230	255	5
-	210	285	1	-	185	245	1	-	260	285	5	-	220	245	5	-	220	245	5
-	155	210	1	-	135	180	1	-	190	210	5	-	165	180	5	-	165	180	5
-	135	180	1	-	115	155	1	-	165	180	5	-	140	155	5	-	140	155	5
-	125	165	1	-	105	145	1	-	150	165	5	-	130	145	5	-	130	145	5
-	165	225	1	-	145	195	1	-	205	225	5	-	175	195	5	-	175	195	5
-	135	180	1	-	115	155	1	-	165	180	5	-	140	155	5	-	140	155	5
-	125	165	1	-	105	145	1	-	150	165	5	-	130	145	5	-	130	145	5
-	115	160	1	-	100	135	1	-	145	160	5	-	120	135	5	-	120	135	5
-	155	210	1	-	135	180	1	-	190	210	5	-	165	180	5	-	165	180	5
-	120	160	1	-	105	140	1	-	145	160	5	-	125	140	5	-	125	140	5
-	75	100	1	-	65	85	1	-	90	100	5	-	75	85	5	-	75	85	5
-	65	85	1	-	55	75	1	-	80	85	5	-	65	75	5	-	65	75	5
-	75	105	1	-	65	90	1	-	95	105	5	-	80	90	5	-	80	90	5
-	65	85	1	-	55	75	1	-	80	85	5	-	65	75	5	-	65	75	5
-	165	220	1	-	140	190	1	-	200	220	5	-	170	190	5	-	170	190	5
-	135	180	1	-	115	155	1	-	165	180	5	-	140	155	5	-	140	155	5
-	200	270	1	-	175	230	1	-	245	270	5	-	210	230	5	-	210	230	5
-	155	210	1	-	135	180	1	-	190	210	5	-	165	180	5	-	165	180	5
-	220	300	1	-	190	255	1	-	270	300	5	-	230	255	5	-	230	255	5
-	180	240	1	-	155	205	1	-	220	240	5	-	185	205	5	-	185	205	5
-	105	140	1	-	90	120	1	-	125	140	5	-	110	120	5	-	110	120	5
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	140	185	1	-	120	160	1	-	165	185	1	-	145	160	1	-	145	160	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index





Starting values for cutting speed $v_c$ [m/min]									
PM-4H PM-4HL					VPM-4E				
Shoulder milling									
		$\varnothing$ [mm]	$a_{e\ max}$						
		$0 < x \leq 20$	$0.15 \times D$		$0 < x < 3$	$0.5 \times D$	$0 < x < 3$	$0.15 \times D$	
					$3 \leq x < 12$	$1.5 \times D$	$3 \leq x < 20$	$0.5 \times D$	
					$12 \leq x \leq 20$	$2.0 \times D$			
KMG405					KMG406				
$a_e / D$					$a_e / D$				
1/1	1/2	1/10	f-group		1/1	1/2	1/10		
-	210	270	6		230	280	350	9	
-	200	260	6		220	270	340	9	
-	150	190	6		160	190	250	9	
-	130	165	6		140	160	210	9	
-	120	150	6		130	150	200	9	
-	160	205	6		180	215	270	9	
-	130	165	6		130	170	220	9	
-	120	150	6		125	150	190	9	
-	110	145	6		120	150	190	9	
-	150	190	6		160	190	250	9	
-	115	145	6		115	140	190	9	
-	70	90	6		70	90	110	9	
-	60	80	6		60	80	100	9	
-	75	95	6		75	90	120	9	
-	60	80	6		65	80	100	9	
-	155	200	6		160	200	260	9	
-	130	165	6		140	170	220	9	
-	190	245	6		215	250	330	9	
-	150	190	6		160	200	250	9	
-	210	270	6		230	280	360	9	
-	170	220	6		180	230	290	9	
-	100	125	1		100	120	150	9	
-	-	-	-		-	-	-	-	
-	130	165	1		110	150	180	9	
-	-	-	-		-	-	-	-	

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

## End mills – EPM series

Material group	Composition / structure / heat treatment	Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]									
				EPM-2E EPM-4E				EPM-2EL EPM-4EL					
				Slot milling		Shoulder milling		Slot milling		Shoulder milling			
				$\emptyset$ [mm]	$a_{p\max}$	$\emptyset$ [mm]	$a_{e\max}$	$\emptyset$ [mm]	$a_{p\max}$	$\emptyset$ [mm]	$a_{e\max}$		
				$0 < x < 3$	$0,15 \times D$	$0 < x \leq 20$	$0,15 \times D$	$0 < x < 3$	$0,15 \times D$	$0 < x \leq 20$	$0,15 \times D$		
P Unalloyed steel Low-alloyed steel High-alloyed steel and high-alloyed tool steel	approx. 0,15 % C annealed approx. 0,45 % C annealed approx. 0,45 % C tempered approx. 0,75 % C annealed approx. 0,75 % C tempered	125	1	165	220	300	1	140	190	255	1		
		190	2	160	210	285	1	135	185	245	1		
		250	3	120	155	210	1	100	135	180	1		
		270	4	100	135	180	1	85	115	155	1		
		300	5	95	125	165	1	80	105	145	1		
		annealed	180	6	125	165	225	1	110	145	195	1	
		tempered	275	7	100	135	180	1	85	115	155	1	
		tempered	300	8	95	125	165	1	80	105	145	1	
		tempered	350	9	90	115	160	1	75	100	135	1	
	annealed	200	10	120	155	210	1	100	135	180	1		
hardened and tempered		325	11	90	120	160	1	75	105	140	1		
M Stainless steel	ferritic/martensitic	annealed	200	12	55	75	100	1	45	65	85	1	
	martensitic	tempered	240	13	50	65	85	1	40	55	75	1	
	austenitic	quench hardened	180	14	60	75	105	1	50	65	90	1	
	austenitic-ferritic		230	15	50	65	85	1	40	55	75	1	
K Grey cast iron Cast iron with spheroidal graphite Malleable cast iron	perlitic/ferritic		180	16	125	165	220	1	105	140	190	1	
	perlitic (martensitic)		260	17	100	135	180	1	85	115	155	1	
	ferritic		160	18	150	200	270	1	130	175	230	1	
	perlitic		250	19	120	155	210	1	100	135	180	1	
	ferritic		130	20	165	220	300	1	145	190	255	1	
	perlitic		230	21	135	180	240	1	115	155	205	1	
N Aluminium wrought alloys Cast aluminium alloys Copper and copper alloys (bronze/brass)	cannot be hardened		60	22									
	hardenable	hardened	100	23									
	$\leq 12\% \text{ Si}$ , cannot be hardened		75	24									
	$\leq 12\% \text{ Si}$ , hardenable	hardened	90	25									
	$> 12\% \text{ Si}$ , cannot be hardened		130	26									
S Heat-resistant alloys Titanium alloys	machining steel, PB > 1%		110	27									
	Fe-based alloys	annealed	200	30									
		hardened	280	31									
	Ni or Co bass	annealed	250	32									
hardened		350	33										
cast		320	34										
pure titanium		$R_m$ 400	35										
	$\alpha$ and $\beta$ alloys	hardened	$R_m$ 1050	36									
H Hardened steel Hard cast iron Hardened cast iron	hardened and tempered		55 HRC	37	80	105	140	1	65	90	120	1	
	hardened and tempered		60 HRC	38	-	-	-	-	-	-	-	-	
	cast		400	39	105	140	185	1	85	120	160	1	
hardened and tempered		55 HRC	40										
X Non-metallic materials	Thermoplasts			41									
	Thermosetting plastics			42									
	Plastic, glass-fibre reinforced GFRP			43									
	Plastic, carbon fibre reinforced CFRP			44									
	Graphite			45									
	Wood			46									

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.  
Feed rate recommendations on page B522.  
For examples of material for cutting tool groups view page D11.



## End mill – HPC series, UM/UMC series, VSM series

Material group	Composition / structure / heat treatment	Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]									
				5501R38414GM (-R) 5502R38414GM (-R) 5602R38414GM (-R)					5501R38414GM 5502R38414GM 5602R38414GM				
				Slot milling		Shoulder milling			Slot milling		Shoulder milling		
				$\varnothing$ [mm]	$a_p$ max	$\varnothing$ [mm]	$a_e$ max	$\varnothing$ [mm]	$a_p$ max	$\varnothing$ [mm]	$a_e$ max		
$0 < x < 3$	$0,3 \times D$	$0 < x < 3$	$0,15 \times D$	$0 < x < 3$	$0,3 \times D$	$0 < x < 3$	$0,15 \times D$						
$3 \leq x < 12$	$0,7 \times D$	$3 \leq x < 20$	$0,3 \times D$	$3 \leq x < 12$	$0,7 \times D$	$3 \leq x < 20$	$0,3 \times D$						
$12 \leq x \leq 20$	$1,5 \times D$			$12 \leq x \leq 20$	$1,5 \times D$								
KMG405					KMG406								
$a_e / D$					$a_e / D$								
1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group						
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	250	300	380	9	230	280	350	9
		approx. 0,45 % C	annealed	190	2	240	285	365	9	220	270	340	9
		approx. 0,45 % C	tempered	250	3	175	210	270	9	160	190	250	9
		approx. 0,75 % C	annealed	270	4	150	180	230	9	140	160	210	9
		approx. 0,75 % C	tempered	300	5	140	165	210	9	130	150	200	9
	Low-alloyed steel		annealed	180	6	190	225	285	9	180	215	270	9
			tempered	275	7	150	180	230	9	130	170	220	9
			tempered	300	8	140	165	210	9	125	150	190	9
			tempered	350	9	130	160	200	9	120	150	190	9
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	175	210	270	9	160	190	250	9
		hardened and tempered	325	11	135	160	205	9	115	140	190	9	
M	Stainless steel	ferritic/martensitic	annealed	200	12	80	100	125	9	70	90	110	9
		martensitic	tempered	240	13	70	85	110	9	60	80	100	9
		austenitic	quench hardened	180	14	85	105	130	9	75	90	120	9
		austenitic-ferritic		230	15	70	85	110	9	65	80	100	9
K	Grey cast iron	perlitic/ferritic		180	16	185	220	280	9	160	200	260	9
		perlitic (martensitic)		260	17	150	180	230	9	140	170	220	9
	Cast iron with spheroidal graphite	ferritic		160	18	225	270	345	9	215	250	330	9
		perlitic		250	19	175	210	270	9	160	200	250	9
	Malleable cast iron	ferritic		130	20	250	300	380	9	230	280	360	9
		perlitic		230	21	200	240	305	9	180	230	290	9
N	Aluminium wrought alloys	cannot be hardened		60	22								
		hardenable	hardened	100	23								
	Cast aluminium alloys	$\leq 12\% \text{ Si}$ , cannot be hardened		75	24								
		$\leq 12\% \text{ Si}$ , hardenable	hardened	90	25								
		$> 12\% \text{ Si}$ , cannot be hardened		130	26								
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%			110	27							
CuZn, CuSnZn			90	28									
CuSn, Pb-free copper, electrolytic copper			100	29									
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
		cast	320	34									
	Titanium alloys	pure titanium		$R_m$ 400	35								
$\alpha$ and $\beta$ alloys		hardened	$R_m$ 1050	36									
H	Hardened steel		hardened and tempered	55 HRC	37	115	140	175	9	100	120	150	9
			hardened and tempered	60 HRC	38	-	-	-	-	-	-	-	-
	Hard cast iron		cast	400	39	135	165	205	9	110	150	180	9
	Hardened cast iron		hardened and tempered	55 HRC	40	-	-	-	-	-	-	-	-
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions. The values have to be adapted in individual cases. Feed rate recommendations on page B522. For examples of material for cutting tool groups view page D11.



## Deburring cutters – FM series

	Material group	Composition / structure / heat treatment	Brinell hardness HB	Machining group	Starting values for cutting speed $v_c$ [m/min]					
					5501 / 5601 5501 / 5601 5601					
					KMG303					
					$a_e / D$					
					1/1	1/2	1/10	f-group		
<b>P</b>	Unalloyed steel	approx. 0,15 % C	annealed	125	1	-	-	230	11	
		approx. 0,45 % C	annealed	190	2	-	-	220	11	
		approx. 0,45 % C	tempered	250	3	-	-	165	11	
		approx. 0,75 % C	annealed	270	4	-	-	140	11	
		approx. 0,75 % C	tempered	300	5	-	-	130	11	
<b>P</b>	Low-alloyed steel		annealed	180	6	-	-	175	11	
			tempered	275	7	-	-	140	11	
			tempered	300	8	-	-	130	11	
			tempered	350	9	-	-	120	11	
<b>P</b>	High-alloyed steel and high-alloyed tool steel		annealed	200	10	-	-	165	11	
			hardened and tempered	325	11	-	-	125	11	
<b>M</b>	Stainless steel	ferritic/martensitic	annealed	200	12	-	-	75	11	
			tempered	240	13	-	-	65	11	
		austenitic	quench hardened	180	14	-	-	80	11	
		austenitic-ferritic		230	15	-	-	65	11	
<b>K</b>	Grey cast iron	perlitic/ferritic		180	16	-	-	170	11	
		perlitic (martensitic)		260	17	-	-	140	11	
<b>K</b>	Cast iron with spheroidal graphite	ferritic		160	18	-	-	210	11	
		perlitic		250	19	-	-	165	11	
<b>K</b>	Malleable cast iron	ferritic		130	20	-	-	230	11	
		perlitic		230	21	-	-	185	11	
<b>N</b>	Aluminium wrought alloys	cannot be hardened		60	22	-	-	1200	11	
		hardenable	hardened	100	23	-	-	720	11	
	Cast aluminium alloys	$\leq 12\% \text{ Si}$ , cannot be hardened		75	24	-	-	480	11	
		$\leq 12\% \text{ Si}$ , hardenable	hardened	90	25	-	-	600	11	
		$> 12\% \text{ Si}$ , cannot be hardened		130	26	-	-	180	11	
Copper and copper alloys (bronze/brass)	machining steel, PB $>$ 1%			110	27	-	-	360	11	
	CuZn, CuSnZn			90	28	-	-	420	11	
	CuSn, Pb-free copper, electrolytic copper			100	29	-	-	360	11	
<b>S</b>	Heat-resistant alloys	Fe-based alloys	annealed	200	30					
			hardened	280	31					
		Ni or Co bass	annealed	250	32					
			hardened	350	33					
	Titanium alloys	cast	320	34						
pure titanium			R <sub>m</sub> 400	35						
<b>H</b>	Hardened steel		hardened and tempered	55 HRC	37					
			hardened and tempered	60 HRC	38					
<b>H</b>	Hard cast iron		cast	400	39					
			hardened and tempered	55 HRC	40					
<b>X</b>	Non-metallic materials	Thermoplasts			41					
		Thermosetting plastics			42					
		Plastic, glass-fibre reinforced GFRP			43					
		Plastic, carbon fibre reinforced CFRP			44					
		Graphite			45					
		Wood			46					

Note: The given cutting values are guide values, which were determined under ideal conditions.  
 The values have to be adapted in individual cases.  
 Feed rate recommendations on page B522.  
 For examples of material for cutting tool groups view page D11.









## Recommended feed rate

### Solid carbide milling group 1 – Square shoulder mills PM series, QCH series, EPM series

	a <sub>e</sub> / D	Feed rate per cutting edge (f <sub>z</sub> ) [mm]																			
		Ø0,5	Ø0,8	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20					
<b>P</b>	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,05	0,07	0,08	0,08	0,09	0,10					
	1/2	0,01	0,03	0,03	0,03	0,03	0,03	0,04	0,04	0,06	0,09	0,10	0,10	0,12	0,12	0,13					
	1/10	0,02	0,05	0,05	0,05	0,05	0,05	0,07	0,07	0,09	0,14	0,16	0,16	0,18	0,18	0,20					
<b>M</b>	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,07	0,08					
	1/2	0,01	0,02	0,02	0,02	0,02	0,02	0,04	0,04	0,05	0,07	0,08	0,08	0,10	0,10	0,11					
	1/10	0,02	0,04	0,04	0,04	0,04	0,04	0,05	0,05	0,07	0,11	0,13	0,13	0,15	0,15	0,16					
<b>K</b>	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,05	0,07	0,08	0,08	0,09	0,09	0,10					
	1/2	0,01	0,03	0,03	0,03	0,03	0,03	0,04	0,04	0,06	0,09	0,10	0,10	0,12	0,12	0,13					
	1/10	0,02	0,05	0,05	0,05	0,05	0,05	0,07	0,07	0,09	0,14	0,16	0,16	0,18	0,18	0,20					
<b>H</b>	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,07	0,08					
	1/2	0,01	0,02	0,02	0,02	0,02	0,02	0,04	0,04	0,05	0,07	0,08	0,08	0,10	0,10	0,11					
	1/10	0,02	0,04	0,04	0,04	0,04	0,04	0,05	0,05	0,07	0,11	0,13	0,13	0,15	0,15	0,16					

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

### Solid carbide milling group 2 – Square shoulder mills GM series

	a <sub>e</sub> / D	Feed rate per cutting edge (f <sub>z</sub> ) [mm]																			
		Ø0,5	Ø0,8	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20					
<b>P</b>	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09					
	1/2	0,01	0,03	0,03	0,03	0,03	0,03	0,04	0,04	0,05	0,08	0,09	0,09	0,10	0,10	0,12					
	1/10	0,02	0,04	0,04	0,04	0,04	0,04	0,06	0,06	0,08	0,12	0,14	0,14	0,16	0,16	0,18					
<b>M</b>	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,03	0,05	0,06	0,06	0,06	0,06	0,07					
	1/2	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09					
	1/10	0,02	0,03	0,03	0,03	0,03	0,03	0,05	0,05	0,06	0,10	0,11	0,11	0,13	0,13	0,15					
<b>K</b>	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09					
	1/2	0,01	0,03	0,03	0,03	0,03	0,03	0,04	0,04	0,05	0,08	0,09	0,09	0,10	0,10	0,12					
	1/10	0,02	0,04	0,04	0,04	0,04	0,04	0,06	0,06	0,08	0,12	0,14	0,14	0,16	0,16	0,18					

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

### Solid carbide milling group 3 – Square shoulder mills HM series, QCH series

	a <sub>e</sub> / D	Feed rate per cutting edge (f <sub>z</sub> ) [mm]																			
		Ø0,5	Ø0,8	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20					
<b>H</b>	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,03	0,05	0,06	0,06	0,06	0,06	0,07					
	1/2	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09					
	1/10	0,02	0,03	0,03	0,03	0,03	0,03	0,05	0,05	0,06	0,10	0,11	0,11	0,13	0,13	0,15					

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

### Solid carbide milling group 4 – Square shoulder mills AL series, NM series

	a <sub>e</sub> / D	Feed rate per cutting edge (f <sub>z</sub> ) [mm]																			
		Ø0,5	Ø0,8	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20					
<b>N</b>	1/1	0,02	0,03	0,03	0,03	0,03	0,03	0,05	0,05	0,06	0,09	0,11	0,11	0,12	0,12	0,14					
	3/4	0,02	0,04	0,04	0,04	0,04	0,04	0,06	0,06	0,08	0,12	0,14	0,14	0,16	0,16	0,18					
	1/10	0,03	0,06	0,06	0,06	0,06	0,06	0,09	0,09	0,12	0,19	0,22	0,22	0,25	0,25	0,28					
	1/20	0,04	0,08	0,08	0,08	0,08	0,08	0,12	0,12	0,16	0,23	0,27	0,27	0,31	0,31	0,35					

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

## Recommended feed rate

### Solid carbide milling group 5 – Ball nose cutters GM series, QCH series, EPM series

	a <sub>e</sub> / D	Feed rate per cutting edge (f <sub>z</sub> ) [mm]														
		Ø0,5	Ø0,8	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20
<b>P</b>	1/1															
	1/10	0,02	0,05	0,05	0,05	0,05	0,05	0,07	0,07	0,09	0,14	0,16	0,16	0,18	0,18	0,20
	1/20	0,03	0,06	0,06	0,06	0,06	0,06	0,08	0,08	0,11	0,17	0,20	0,20	0,23	0,23	0,25
<b>M</b>	1/1															
	1/10	0,02	0,04	0,04	0,04	0,04	0,04	0,05	0,05	0,07	0,11	0,13	0,13	0,15	0,15	0,16
	1/20	0,02	0,05	0,05	0,05	0,05	0,05	0,07	0,07	0,09	0,14	0,16	0,16	0,18	0,18	0,21
<b>K</b>	1/1															
	1/10	0,02	0,05	0,05	0,05	0,05	0,05	0,07	0,07	0,09	0,14	0,16	0,16	0,18	0,18	0,20
	1/20	0,03	0,06	0,06	0,06	0,06	0,06	0,08	0,08	0,11	0,17	0,20	0,20	0,23	0,23	0,25
<b>H</b>	1/1															
	1/10	0,02	0,04	0,04	0,04	0,04	0,04	0,05	0,05	0,07	0,11	0,13	0,13	0,15	0,15	0,16
	1/20	0,02	0,05	0,05	0,05	0,05	0,05	0,07	0,07	0,09	0,14	0,16	0,16	0,18	0,18	0,21

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

### Solid carbide milling group 6 – High feed mills PM series

	a <sub>e</sub> / D	Feed rate per cutting edge (f <sub>z</sub> ) [mm]							
		Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	
<b>P</b>	1/1								
	1/10								
	1/20	0,15	0,25	0,28	0,33	0,44	0,55	0,66	
<b>M</b>	1/1								
	1/10								
	1/20	0,12	0,22	0,25	0,30	0,41	0,52	0,63	
<b>K</b>	1/1								
	1/10								
	1/20	0,15	0,25	0,28	0,33	0,44	0,55	0,66	
<b>H</b>	1/1								
	1/10								
	1/20	0,12	0,22	0,25	0,30	0,41	0,52	0,63	

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

### Solid carbide milling group 7 – Ball nose cutters HM series, QCH series

	a <sub>e</sub> / D	Feed rate per cutting edge (f <sub>z</sub> ) [mm]														
		Ø0,5	Ø0,8	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20
<b>H</b>	1/1															
	1/2	0,02	0,04	0,04	0,04	0,04	0,04	0,05	0,05	0,07	0,11	0,13	0,13	0,15	0,15	0,16
	1/10	0,02	0,05	0,05	0,05	0,05	0,05	0,07	0,07	0,09	0,14	0,16	0,16	0,18	0,18	0,21

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

### Solid carbide milling group 8 – High feed mills AL series, ALP/ALG series

	a <sub>e</sub> / D	Feed rate per cutting edge (f <sub>z</sub> ) [mm]							
		Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20
<b>N</b>	1/1	0,04	0,05	0,08	0,09	0,11	0,13	0,16	0,18
	3/4	0,05	0,07	0,10	0,12	0,14	0,16	0,20	0,23
	1/10	0,08	0,11	0,16	0,19	0,22	0,25	0,31	0,36

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index

## Recommended feed rate

### Solid carbide milling group 9 – Square shoulder mills UM/UMC series, VPM series HSC/HPC

	a <sub>e</sub> / D	Feed rate per cutting edge (f <sub>z</sub> ) [mm]																	
		Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20								
<b>P</b>	1/1	0,06	0,06	0,06	0,07	0,07	0,07	0,07	0,08	0,08	0,08								
	1/2	0,08	0,08	0,08	0,09	0,09	0,09	0,09	0,10	0,10	0,10								
	1/10	0,14	0,14	0,16	0,18	0,22	0,25	0,27	0,3	0,32	0,36								
<b>M</b>	1/1	0,05	0,05	0,05	0,05	0,05	0,05	0,05	0,06	0,06	0,06								
	1/2	0,06	0,06	0,06	0,07	0,07	0,07	0,07	0,08	0,08	0,08								
	1/10	0,10	0,10	0,10	0,12	0,12	0,14	0,16	0,16	0,18	0,18								
<b>K</b>	1/1	0,06	0,06	0,06	0,07	0,07	0,07	0,07	0,08	0,08	0,08								
	1/2	0,08	0,08	0,08	0,09	0,09	0,09	0,09	0,10	0,10	0,10								
	1/10	0,14	0,14	0,16	0,18	0,22	0,25	0,27	0,3	0,32	0,36								
<b>H</b>	1/1	0,045	0,045	0,045	0,053	0,053	0,053	0,053	0,06	0,06	0,06								
	1/2	0,06	0,06	0,06	0,07	0,07	0,07	0,07	0,08	0,08	0,08								
	1/10	0,10	0,10	0,10	0,12	0,12	0,14	0,16	0,16	0,18	0,18								

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

### Solid carbide milling group 10 – Square shoulder mills VSM series, TM series

	a <sub>e</sub> / D	Feed rate per cutting edge (f <sub>z</sub> ) [mm]																	
		Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20								
<b>P</b>	1/1	0,03	0,04	0,05	0,05	0,05	0,05	0,06	0,06	0,07	0,08								
	1/2	0,04	0,06	0,07	0,07	0,07	0,07	0,08	0,09	0,10	0,11								
	1/10	0,05	0,08	0,09	0,09	0,09	0,09	0,11	0,12	0,14	0,15								
<b>M</b>	1/1	0,02	0,03	0,04	0,04	0,04	0,04	0,04	0,05	0,05	0,06								
	1/2	0,03	0,05	0,05	0,05	0,05	0,05	0,06	0,07	0,08	0,08								
	1/10	0,04	0,06	0,07	0,07	0,07	0,07	0,08	0,09	0,10	0,11								
<b>S</b>	1/1	0,02	0,03	0,04	0,04	0,04	0,04	0,04	0,05	0,05	0,06								
	1/2	0,03	0,05	0,05	0,05	0,05	0,05	0,06	0,07	0,08	0,08								
	1/10	0,04	0,06	0,07	0,07	0,07	0,07	0,08	0,09	0,10	0,11								

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

### Solid carbide milling group 11 – Deburring cutters FM series

	a <sub>e</sub> / D	Feed rate per cutting edge (f <sub>z</sub> ) [mm]																	
		Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20							
<b>P</b>	1/1																		
	1/2																		
	1/10	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09							
<b>M</b>	1/1																		
	1/2																		
	1/10	0,02	0,02	0,02	0,02	0,03	0,05	0,06	0,06	0,06	0,06	0,07							
<b>K</b>	1/1																		
	1/2																		
	1/10	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09							
<b>N</b>	1/1																		
	1/2																		
	1/10	0,03	0,03	0,05	0,05	0,06	0,09	0,11	0,11	0,12	0,12	0,14							

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

**Recommended feed rate**

**Solid carbide milling group 12 – ALP-1EP single-edged cutters**

	a <sub>e</sub> / D	Feed rate per cutting edge (f <sub>z</sub> ) [mm]															
		Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10									
<b>N</b>	1/1	0,03	0,05	0,07	0,09	0,11	0,14	0,18									
	1/2	0,04	0,07	0,10	0,13	0,15	0,20	0,25									
	1/10	0,06	0,11	0,15	0,19	0,23	0,29	0,38									

Note: The given cutting values are guide values, which were determined under ideal conditions.  
The values have to be adapted in individual cases.

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical Information

**E**

Index



## Technical information

Trouble shooting – milling

B528

Technical information – milling

B529-B540

Special tools – milling

B541

# B

**A**

Turning

**B**

Milling

**C**

Drilling

**D**

Technical  
Information

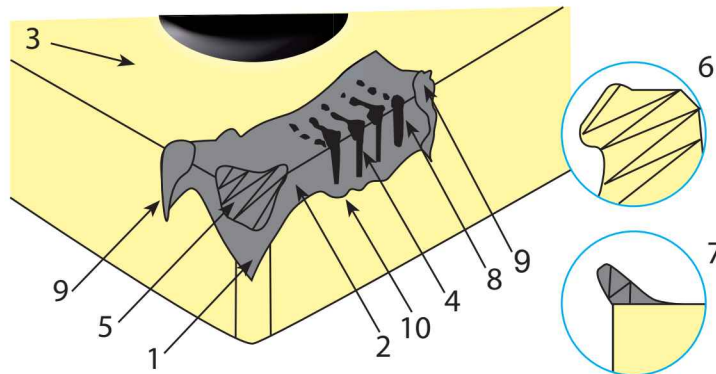
**E**

Index



## Trouble shooting – indexable milling

Fig.	Type of wear	Effects	Reason	Countermeasure
1+2	Flank wear	<ul style="list-style-type: none"> <li>– Bad surface quality and dimensional stability</li> <li>– Increase of cutting force</li> </ul>	<ul style="list-style-type: none"> <li>– Grade not wear-resistant enough</li> <li>– Cutting speed too high</li> <li>– Clearance angle too small</li> <li>– Feed rate too low</li> </ul>	<ul style="list-style-type: none"> <li>– Grade with higher wear-resistance</li> <li>– Reduce cutting speed</li> <li>– Increase clearance angle</li> <li>– Reduce feed rate</li> </ul>
3	Crater wear	<ul style="list-style-type: none"> <li>– Bad surface quality and chip control</li> </ul>	<ul style="list-style-type: none"> <li>– Grade not wear-resistant enough</li> <li>– Cutting speed too high</li> <li>– Feed rate too low</li> </ul>	<ul style="list-style-type: none"> <li>– Grade with higher wear-resistance</li> <li>– Reduce cutting speed</li> <li>– Reduce feed rate</li> </ul>
4	Chipping	<ul style="list-style-type: none"> <li>– Unstable tool life</li> <li>– Sudden breakage of cutting edge</li> </ul>	<ul style="list-style-type: none"> <li>– Grade too hard</li> <li>– Feed rate too high</li> <li>– Cutting edge not stable enough</li> <li>– Stability of the holder or tension insufficient</li> </ul>	<ul style="list-style-type: none"> <li>– Grade with higher toughness</li> <li>– Reduce feed rate</li> <li>– Change honing of cutting edge</li> <li>– Use a more stable tool holder</li> </ul>
5	Breakage	<ul style="list-style-type: none"> <li>– Increase of cutting force</li> <li>– Bad surface quality and dimensional stability</li> </ul>	<ul style="list-style-type: none"> <li>– Grade too hard</li> <li>– Feed rate too high</li> <li>– Cutting edge not stable enough</li> <li>– Stability of the holder or tension insufficient</li> </ul>	<ul style="list-style-type: none"> <li>– Grade with higher toughness</li> <li>– Reduce feed rate</li> <li>– Change honing of cutting edge</li> <li>– Use a more stable tool holder</li> </ul>
6	Plastic deformation	<ul style="list-style-type: none"> <li>– Bad dimensional stability</li> <li>– Damage to cutting edge</li> </ul>	<ul style="list-style-type: none"> <li>– Grade not wear-resistant enough</li> <li>– Cutting speed too high</li> <li>– Cutting depth and/or feed rate too high</li> <li>– Temperature on the cutting edge too high</li> </ul>	<ul style="list-style-type: none"> <li>– Grade with higher toughness</li> <li>– Reduce cutting speed</li> <li>– Reduce cutting depth and feed rate</li> <li>– Grade with higher heat-resistance</li> </ul>
7	Welding	<ul style="list-style-type: none"> <li>– Increase of cutting force</li> <li>– Bad surface quality</li> </ul>	<ul style="list-style-type: none"> <li>– Cutting speed too low</li> <li>– Cutting edge not sharp enough</li> <li>– Grade not suitable</li> </ul>	<ul style="list-style-type: none"> <li>– Increase cutting speed</li> <li>– Increase rake angle</li> <li>– Use a more suitable grade</li> </ul>
8	Thermal cracks	<ul style="list-style-type: none"> <li>– Breakage due to thermal interaction, often caused when cutting is interrupted (milling)</li> </ul>	<ul style="list-style-type: none"> <li>– Temperature fluctuation when machining</li> <li>– Grade too hard</li> </ul>	<ul style="list-style-type: none"> <li>– Dry machining</li> <li>– Grade with higher toughness</li> </ul>
9	Notch wear	<ul style="list-style-type: none"> <li>– Burr formation</li> <li>– Increase of cutting force</li> </ul>	<ul style="list-style-type: none"> <li>– Damage through chips (jagged edges)</li> <li>– Feed rate and cutting speed too high</li> </ul>	<ul style="list-style-type: none"> <li>– Grade with higher wear-resistance</li> <li>– Increase rake angle to get a sharper cutting edge</li> <li>– Reduce cutting speed</li> </ul>
10	Flaking (coating)	<ul style="list-style-type: none"> <li>– Often appears when machining hardened materials or caused by vibration</li> </ul>	<ul style="list-style-type: none"> <li>– Cutting edge adhesion and chipping</li> <li>– Bad chip removal</li> </ul>	<ul style="list-style-type: none"> <li>– Increase rake angle to get a sharper cutting edge</li> <li>– Chip breaker with bigger chip space</li> </ul>



A

Turning

B

Milling

C

Drilling

D

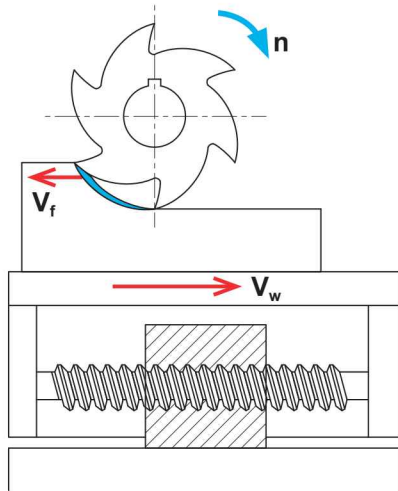
Technical Information

E

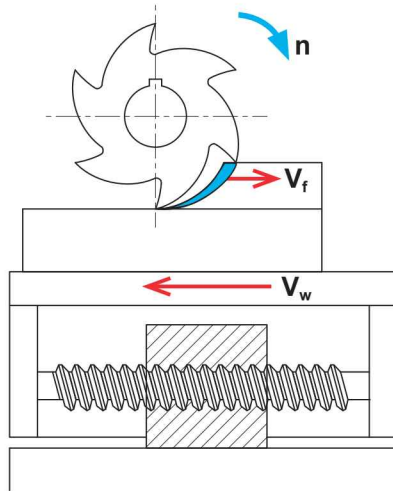
Index

## Indexable milling

Difference between up-milling and down-milling



Up-milling



Down-milling

$V_f$  Feed rate tool  
 $V_w$  Feed rate work piece  
 $n$  Rotation

Up-milling: the feed direction of the work piece is opposite to that of the milling rotation at the connecting position.

Down-milling: the feed direction of the work piece is the same as that of the milling rotation at the connecting position.

### Advantages and disadvantages

Direction	Advantages	Disadvantages
Up-milling	<ul style="list-style-type: none"> <li>- Prevents hooking of tool</li> <li>- More smooth cut</li> </ul>	<ul style="list-style-type: none"> <li>- Bigger stress on cutting edge</li> <li>- Shorter tool life</li> </ul>
Down-milling	<ul style="list-style-type: none"> <li>- Higher tool life</li> <li>- Less thermal stress</li> </ul>	<ul style="list-style-type: none"> <li>- Hooking of tool possible</li> </ul>

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index




A

## Indexable milling

### Pitch selection

The pitch is the distance between one point on one cutting edge and the same point on the next edge. Milling cutters are mainly classified into wide, normal and fine pitches.

Turning

Operational stability		
L (low)	M (medium)	H (high)
Wide pitch	Normal pitch	Fine pitch
		
When the milling width is equal to the diameter of the cutter, the machining system is stable and main power of machine is sufficient, selecting a wide pitch can achieve high productive efficiency.	General milling function and multiple mixed productions.	When the milling width is less than the diameter of cutter, cutting by maximum edges can achieve high productive efficiency.

B

Milling

C

### Approach angle

The approach angle is composed by insert. Tool body, chip thickness, cutting forces and tool life are affected especially by the approach angle. Decreasing the approach angle reduces chip thickness and spreads the cutting area between cutting edge and work piece for a given feed rate. A smaller approach angle also guarantees stable entering or exiting the work piece, to protect the cutting edge and extend tool life. However this will increase higher axial cutting forces on the work piece, thus it is not suitable for machining thin work pieces such as thin plates.

Drilling

Approach angle	Feed rate per tooth	Max. cutting depth
90°	$f_z$	$h_{ex} = f_z \times \sin \kappa_r$
75°		$h_{ex} = 0,96 \times f_z$
60°		$h_{ex} = 0,86 \times f_z$
45°		$h_{ex} = 0,707 \times f_z$
Round		$h_{ex} = \frac{\sqrt{iC^2 \times (iC - 2a_p)^2}}{iC} \times f_z$

D

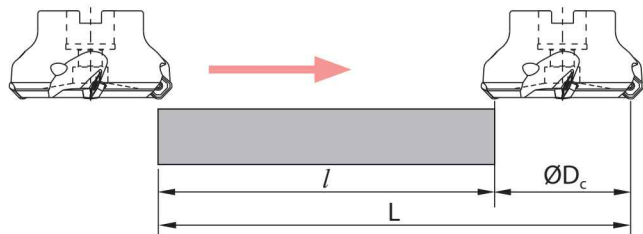
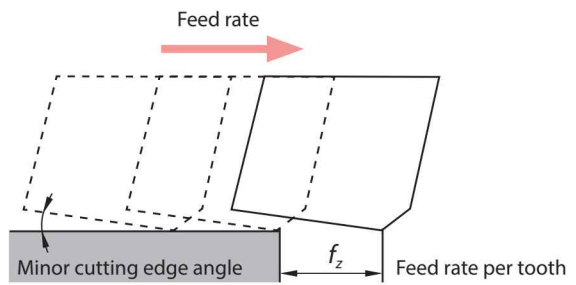
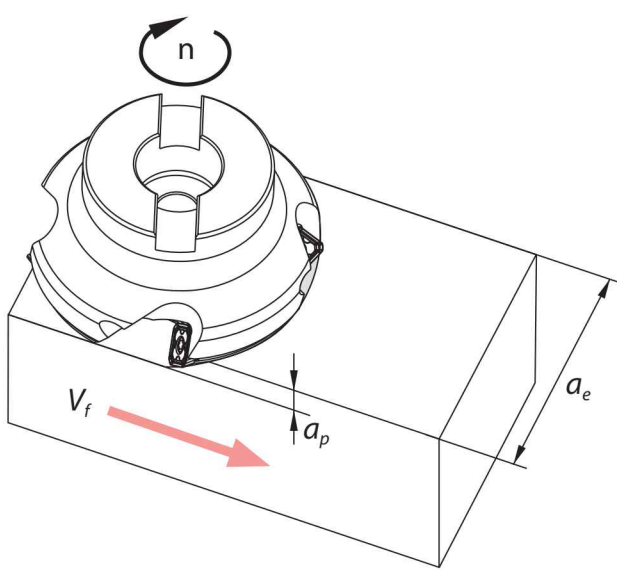
Technical Information

E

Index

## Indexable milling

### General formulas



- $V_c$ : Feed rate [m/min]
- $D_c$ : Nominal diameter of milling tool [mm]
- $n$ : Spindle speed [u/min]
- $z_n$ : Number of teeth
- $Q$ : Metal removal rate [cm<sup>3</sup>/min]

- $V_f$ : Feed rate of worktable (feed speed) [mm/min]
- $f_z$ : Feed rate per tooth [mm/z]
- $\pi$ : ~3,14
- $T_c$ : Machining time [min]
- $f_n$ : Feed rate per revolution [mm/u]

Cutting speed	$V_c = \frac{\pi \times D_c \times n}{1000} \text{ [m/min]}$
Spindle speed	$n = \frac{1000 \times V_c}{\pi \times D_c} \text{ [rev/min]}$
Feed rate of work table	$V_f = f_z \times n \times z_n \text{ [mm/min]}$
Feed rate per tooth	$f_z = \frac{V_f}{n \times z_n} \text{ [mm/z]}$
Feed rate per revolution	$f_n = \frac{V_f}{n} \text{ [mm/rev]}$
Machining time	$T_c = \frac{1000 \times V_c}{\pi \times D_c} \text{ [min]}$
Metal removal rate	$Q = \frac{a_p \times a_e \times V_f}{1000} \text{ [cm}^3\text{/min]}$

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

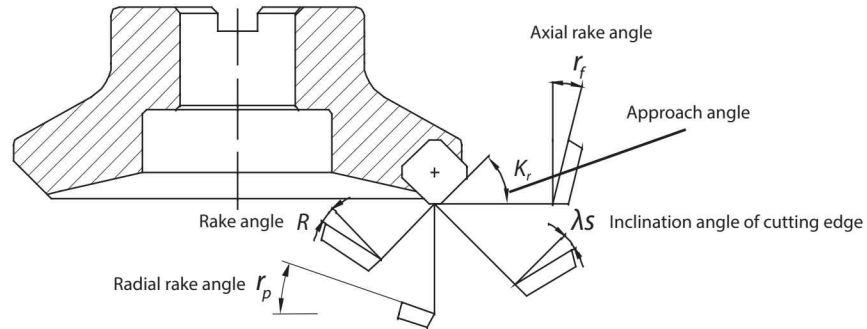
Index

A

Turning

## Indexable milling

### Function of angles when face milling



B

Milling

### Main angles

Angle	Feature	Effet		
Axial rake angle $r_f$	Influences chip direction	Negative angle, good chip removal		
Radial rake angle $r_p$	Influences cutting edge sharpness	Positive angle, good cutting performance		
Approach angle $K_r$	Influences chip thickness	$K_r \uparrow$ , chip thickness $\uparrow$ ; $K_r \downarrow$ , chip thickness $\downarrow$ ;		
Rake angle $R$	Influences cutting force	Poor cutting performance, stable cutting edge	$(-) \leftarrow 0 \rightarrow (+)$	Good cutting performance, unstable cutting edge
Inclination angle $\lambda_s$	Influences chip flow direction	Poor cutting performance, stable cutting edge	$(-) \leftarrow 0 \rightarrow (+)$	Good cutting performance, unstable cutting edge

C

Drilling

### Combination of different rake angles

		Double positive	Double negative	Positive/Negative
Negative rake angle				
Neutral angle				
Positive angle				
Axial rake angle $r_f$		+	-	+
Radial rake angle $r_p$		+	-	-
Application field	P	✓		✓
	M	✓		✓
	K		✓	✓
	N	✓		
	S	✓		✓

D

Technical Information

E

Index

Indexable milling

Cutting performances of different approach angles

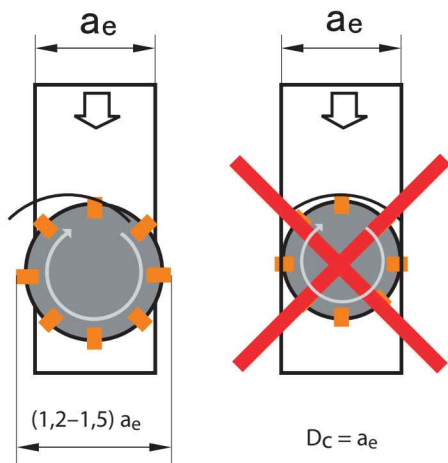
Approach angle	Depiction	Explanation
45°		Axial force is largest. It will bend when machining thin-wall work piece, and reduces the precision of work piece. It is benefit to avoid fringe breakage of work piece when machining cast iron.
75°		The main purpose is to resolve the radial cutting force, it is often used for general face milling.
90°		The axial force is zero in theory, suitable for milling thin plate workpiece.

Inserts with wiper

Using standard inserts	Using inserts with wiper
<p>Normal surface quality</p>	<p>High surface quality</p>

The wiper insert must protrude below the other inserts by 0.03–0.10 mm at axial direction, only that the wiping function can take into effect. Generally speaking, a cutter can assemble only one wiper insert. If the diameter of cutter is much bigger or cutter's feed rate per revolution is bigger than the length of wiper edge, 2 to 3 wiper inserts can be assembled.

Cutting width



Generally speaking, the relation between cutting width and tool cutting diameter is  $D_c = (1.2-1.5) a_e$ .

In the machining practice, it needs to avoid coincidence of tool center and workpiece center as much as possible.

$D_c$ : Tool diameter  
 $a_e$ : Lateral infeed

A

Turning

B

Milling

C

Drilling

D

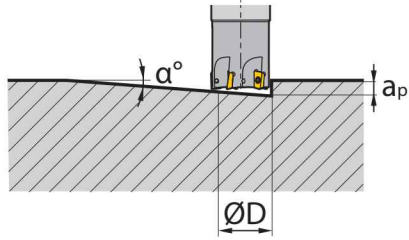
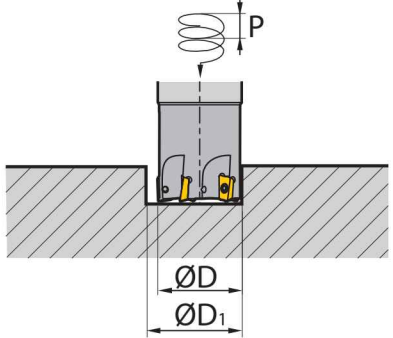
Technical Information

E

Index

## Indexable milling

### Plunging and circular milling with insert APKT

		Plunging		Circular milling	
					
		$L_m = \frac{a_p}{\tan \alpha}$ <p><math>\alpha</math> : Angle de plongée</p>		$P = \tan \alpha \times \pi \times D_1$ <p><math>\alpha</math> : Angle d'hélice</p>	
Insert	Diameter $\phi D$ [mm]	Max. cutting depth $a_p$ [mm]	Max. plunge angle $\alpha^\circ$	Min. diameter $\phi D_1$ [mm]	Max. diameter [mm]
AP**11**	16	10	10	20	30
	20	10	5	28	38
	25	10	4	40	48
	32	10	3	56	60
	40	10	2	70	76

Reduce the feed rate when plunging and circular milling.  
 For drilling operations (axial) set the feed rate under 0.2mm.  
 „Attention“ – drilling can form long chips.

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

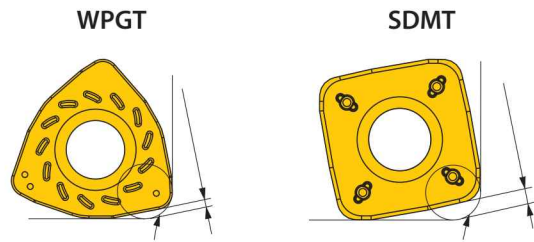
Index

## Indexable milling

Plunging and circular milling with insert WPGT or SDMT

Approx. programmed radius

Insert	approx. R [mm]	Residual material K [mm]
WPGT050315ZSR	2	0,5
WPGT060415ZSR	2,5	0,7
WPGT080615ZSR	2,5	0,7
WPGT090725ZSR	4,5	1,2
SDMT06T208	1,6	0,5
SDMT09T312	2,5	0,87
SDMT120412	4,0	0,93
SDMT150620	4,0	1,38



### Insert WPGT

Insert	Diameter ØD [mm]	Plunging		Circular milling	
		Max. cutting depth $a_p$ [mm]	Max. plunge angle $\alpha^\circ$	Min. diameter $\text{Ø}D_1$ [mm]	Max. diameter [mm]
WP**05**	20	1,5	12	24	37
	25	1,5	8,8	31	47
WP**06**	32	1,5	5	45	61
	40	1,5	3,2	61	77
	50	1,5	2,8	81	97
WP**08**	40	1,5	9	52	77
	50	1,5	5,4	71	97
	63	1,5	4,3	97	123
	80	1,5	2,9	131	157
	100	1,5	2,1	171	197
	125	1,5	1,3	221	247
WP**09**	160	1,5	1,1	291	317
	50	3,0	7,2	70	96
	63	3,0	4,5	96	122
	80	3,0	2,8	130	156
	100	3,0	2,2	170	196
	125	3,0	1,6	220	246
	160	3,0	1,2	290	316

Reduce the feed rate when plunging and circular milling.  
For drilling operations (axial) set the feed rate under 0.2mm.  
„Attention“ – drilling can form long chips.



## Indexable milling

### Insert SDMT

A

Turning

B

Milling

C

Drilling

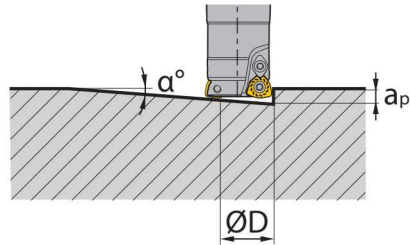
D

Technical Information

E

Index

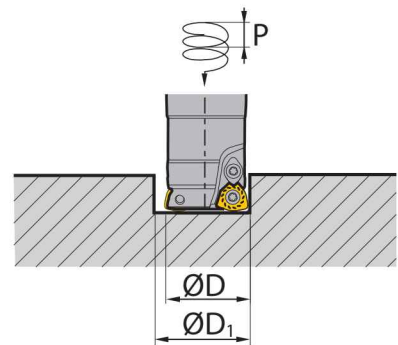
Plunging



$$L_m = \frac{a_p}{\tan \alpha}$$

$\alpha$ : Plunge angle

Circular milling



$$P = \tan \alpha \times \pi \times D_1$$

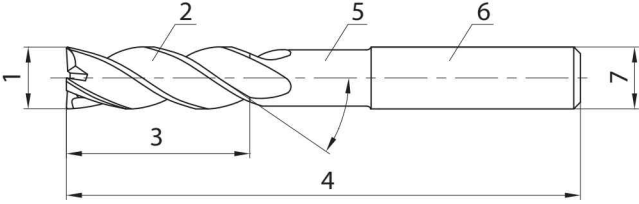
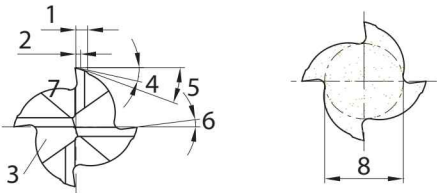
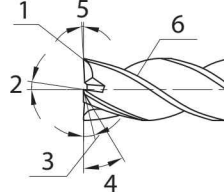
$\alpha$ : Helix angle

Insert	Diameter $\varnothing D$ [mm]	Max. cutting depth $a_p$ [mm]	Max. plunge angle $\alpha^\circ$	Min. diameter $\varnothing D_1$ [mm]	Max. diameter [mm]
SD**06**	20	0,8	3,6	30	38
	25	0,8	2,8	40	48
	32	0,8	1,6	52	60
	40	0,8	1,1	70	78
	50	0,8	0,8	90	98
	63	0,8	0,7	114	122
SD**09**	25	1,4	6,5	34	48
	32	1,4	4,5	48	62
	35	1,4	3,6	54	68
	50	1,4	1,8	84	98
	63	1,4	1,3	110	124
SD**12**	32	1,8	10,4	44	60
	40	1,8	5,7	60	76
	50	1,8	3,5	80	96
	63	1,8	2,5	106	122
	80	1,8	1,6	140	156
	100	1,8	1,2	180	196
SD**15**	40	2,2	7,3	54	76
	80	2,2	1,4	134	156
	100	2,2	1,0	174	196
	125	2,2	0,9	234	246
	160	2,2	0,6	304	316

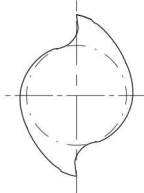
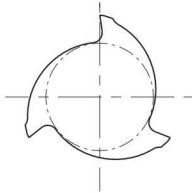
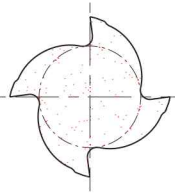
Reduce the feed rate when plunging and circular milling.  
For drilling operations (axial) set the feed rate under 0,2mm.  
„Attention“ – drilling can form long chips.

Solid carbide mills

Terminology

<p><b>A</b></p>		<ol style="list-style-type: none"> <li>1. Cutting edge diameter</li> <li>2. Chip pocket</li> <li>3. Length of cutting edge</li> <li>4. Total length</li> <li>5. Neck</li> <li>6. Shank</li> <li>7. Shank diameter</li> </ol>
<p><b>B</b></p>		<ol style="list-style-type: none"> <li>1. Chamfer width, main cutting edge</li> <li>2. Chamfer width, diameter</li> <li>3. Neck, front side</li> <li>4. Primary radial clearance angle</li> <li>5. Secondary radial clearance angle</li> <li>6. Radial rake angle</li> <li>7. Axial main cutting edge</li> <li>8. Core diameter</li> </ol>
<p><b>C</b></p>		<ol style="list-style-type: none"> <li>1. Cutting edge</li> <li>2. Axial rake angle</li> <li>3. Primary axial clearance angle</li> <li>4. Secondary axial clearance angle</li> <li>5. Inclination angle</li> <li>6. Radial cutting edge</li> </ol>

Teeth, chip pocket and tool rigidity

Teeth	2 flutes	3 flutes	4 flutes
Cross section			
Cutting edge ratio	54%	56%	60%
Advantages	<ul style="list-style-type: none"> <li>- Large chip pocket</li> <li>- Good chip removal</li> </ul>	<ul style="list-style-type: none"> <li>- Good chip removal</li> <li>- Good surface quality</li> </ul>	<ul style="list-style-type: none"> <li>- Good rigidity</li> <li>- Good surface</li> </ul>
Application	<ul style="list-style-type: none"> <li>- Slot milling</li> <li>- Square shoulder milling</li> <li>- Drilling</li> </ul>	<ul style="list-style-type: none"> <li>- Slot milling</li> <li>- Square shoulder milling</li> <li>- Finishing</li> </ul>	<ul style="list-style-type: none"> <li>- Slot milling (flat)</li> <li>- Square shoulder milling</li> <li>- Finishing</li> </ul>

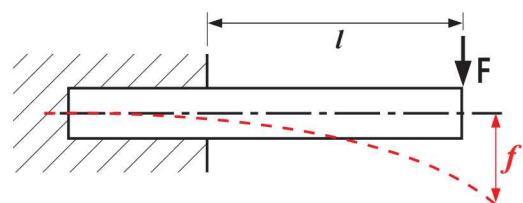
Length of cutting edge (overhang) and cutting diameter

The shorter the overhang, the stronger the rigidity. Thus isn't easy to generate. Bend and vibration in the cutting process may occur.

Length (overhang) increases by 1 time, the deflection degree (f) will be 8 times of the former one.

**Reduce the overhang by 20%  
the deflection degree (f) will decrease by 50%**

**Increase the diameter by 20%  
the deflection degree (f) will decrease by 50%**



$$f = \frac{F \times l^3}{3 \times E \times I} = \frac{F \times l^3 \times 64}{3 \times E \times I}$$

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

Index

A

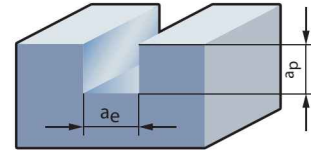
## Solid carbide mills

### Machining strategy – HPC/UM (HSC) milling cutters

Turning

**HPC = High Performance Cutting**

Machining with significantly increased metal removal rate through higher cutting speeds and feed rates compared with conventional machine cutting processes.



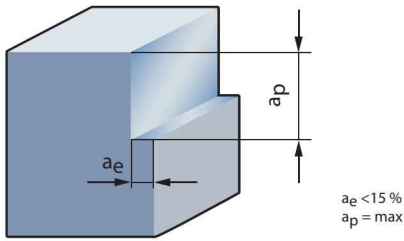
Full-slot milling

B

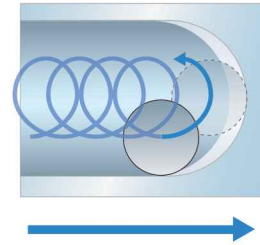
**HSC (UM) = High Speed Cutting**

High cutting speeds and feed rates in combination with low cutting depths lead to lower chip thickness as in normal machining.

Milling



Profiling



Trochoidal milling

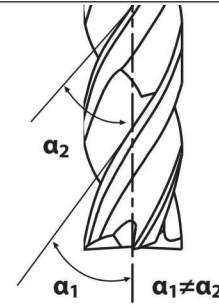
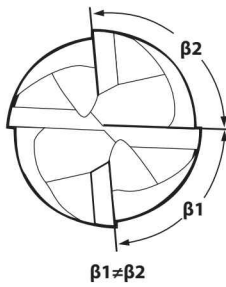
C

Drilling

The UM milling cutter is specifically optimised for HSC machining.

D

Technical Information



High metal removal rates can be realised with this tool.

Especially on highly dynamic machines with optimised tool paths this milling cutter shows its full potential.

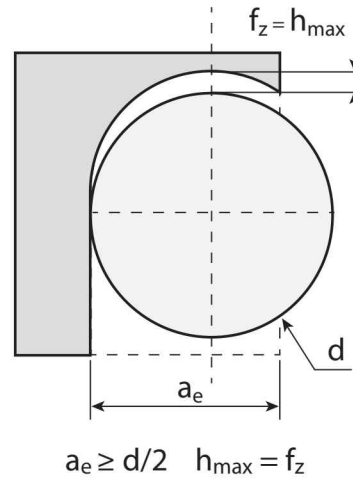
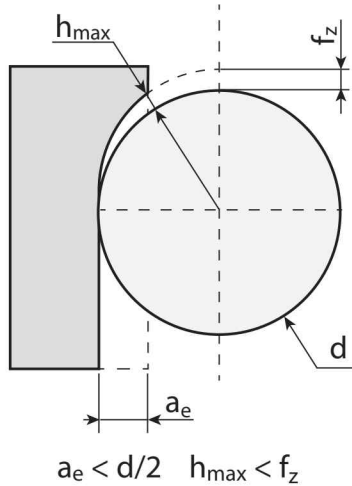
E

Index

### Solid carbide mills

#### HSC strategy

It's important to use the right strategy. When programming make sure the width of cut is kept. The width of cut is usually not higher than 15 %. Regarding the depth of cut, the total length of the cutting edge can be used.



$$h_{max} = 2f_z \sqrt{\frac{a_e}{d} \left(1 - \frac{a_e}{d}\right)}$$

When changing the width of cut the cutting data needs to be adjusted. As calculatory size applies a chip thickness from approx. 0.15–0.2 mm on basis of the usual steel types.

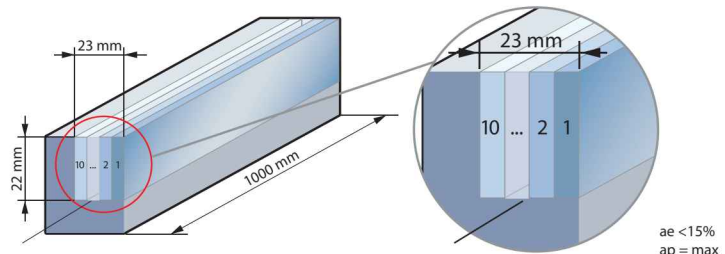
#### Example

##### Tool



UM-4E-D20.0-W KMG405

##### Machining



HSC strategy

##### Workpiece material

16MnCr5 (1.7131) ca. 700 N/mm<sup>3</sup>

##### Cutting data

$V_c$	550 m/min
$n$	8750 1/min
$f_z$	0,3 mm ( $h_{max} = 0,19$ mm)
$V_f$	10500 mm/min
$a_p$	22 mm
$a_e$	2,3 mm

##### Result

Chip removal rate **530 cm<sup>3</sup>/min!** Machining time 58 seconds! The maximum chip thickness is 0.19 mm.

A

Turning

B

Milling

C

Drilling

D

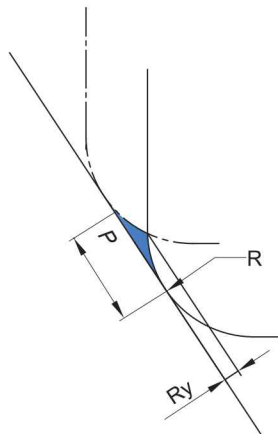
Technical Information

E

Index

## Solid carbide mills

Feed rate selecting table for profile machining with ball nose cutters and torus mills



$$R_y = R \times \{1 - \cos [\arcsin (fr/2R)]\}$$

R<sub>y</sub>: Theoretical values of surface quality

P: Feed rate

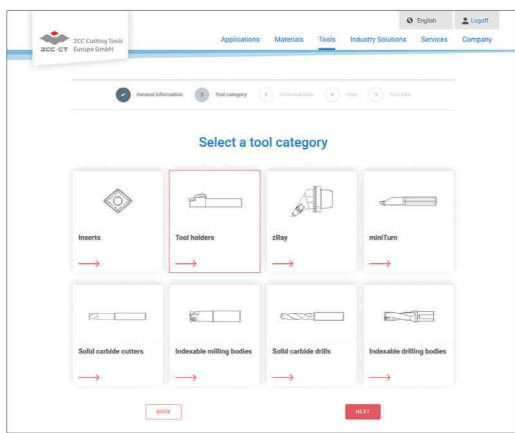
R: Radius of the ball nose cutter or torus mill

R	R <sub>y</sub>	Feed rate									
		0,1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9	1,0
0,5		0,003	0,010	0,023	0,042	0,067	0,100				
1,0		0,001	0,005	0,011	0,020	0,032	0,046	0,063	0,083	0,107	
1,5		0,001	0,003	0,008	0,013	0,021	0,030	0,041	0,054	0,069	0,086
2,0		0,001	0,003	0,006	0,010	0,015	0,023	0,031	0,040	0,051	0,064
2,5		0,001	0,002	0,005	0,008	0,013	0,018	0,025	0,032	0,041	0,051
3,0			0,001	0,004	0,007	0,010	0,015	0,020	0,027	0,034	0,042
4,0			0,001	0,003	0,005	0,008	0,011	0,015	0,020	0,025	0,031
5,0			0,001	0,002	0,004	0,006	0,009	0,012	0,016	0,020	0,025
6,0				0,002	0,003	0,005	0,008	0,010	0,013	0,017	0,021
8,0				0,001	0,003	0,004	0,006	0,008	0,010	0,013	0,016
10,0				0,001	0,002	0,003	0,005	0,006	0,008	0,010	0,013
12,5				0,001	0,002	0,003	0,004	0,005	0,006	0,008	0,010

R	R <sub>y</sub>	Feed rate									
		1,1	1,2	1,3	1,4	1,5	1,6	1,7	1,8	1,9	2,0
0,5											
1,0											
1,5	0,104										
2,0	0,077	0,092	0,109								
2,5	0,061	0,073	0,086	0,100							
3,0	0,051	0,061	0,071	0,083	0,095	0,109					
4,0	0,038	0,045	0,053	0,062	0,071	0,081	0,091	0,103			
5,0	0,030	0,036	0,042	0,049	0,057	0,064	0,073	0,082	0,091	0,101	
6,0	0,025	0,030	0,035	0,041	0,047	0,054	0,061	0,068	0,076	0,084	
8,0	0,019	0,023	0,026	0,031	0,035	0,040	0,045	0,051	0,057	0,063	
10,0	0,015	0,018	0,021	0,025	0,028	0,032	0,036	0,041	0,045	0,050	
12,5	0,012	0,014	0,017	0,020	0,023	0,026	0,029	0,032	0,036	0,040	

# Go directly to the special tool tailored for your milling applications

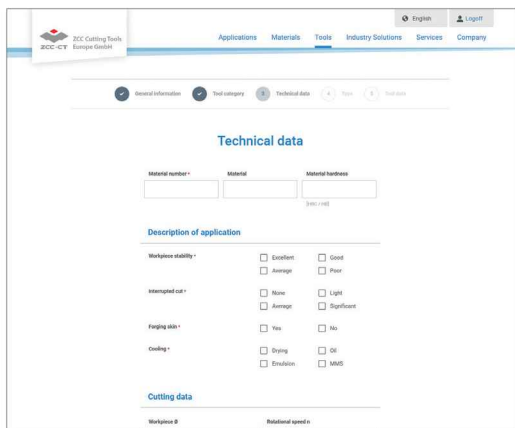
Are there milling applications at your company where having custom tools tailored to your unique needs would deliver real benefits both in terms of logistics and at a technical and commercial level? ZCC Cutting Tools Europe is there to advise and assist you during the planning, development and ordering process. Use our new online tool to request a special tool and get your personal quotation in just a few short steps (<https://www.zcct-europe.com/en/tools/special-tools>).



'Online tool for special tools' launch page where you can select the tool category

## Selecting the tool category

Scan the QR code on this page to go directly to the launch page of our online tool where you can request the special tool you need. You can begin by selecting the tool category you need. It's that easy.



Define the relevant tool parameters.

## Defining the tool parameters

You are now guided step by step through the process. You can also securely upload your drawings, diagrams and 3D models (where available).

It's the easy way to order your custom-made special tool from ZCC Cutting Tools Europe GmbH.



Now go directly to the new **special tool form** on our website and get started.