

**Indexable**  
**Milling**  
Modular Series

and **Milling**  
**Chucks**

No. 328

# Indexable Modular Series



Ø 8 - 42 mm · Roughing - Finishing

## Chucks & Extensions



**Indexable Milling Tools – Modular Types**

**CONTENT** | Indexable Modular Milling Tools, Chucks & Extensions

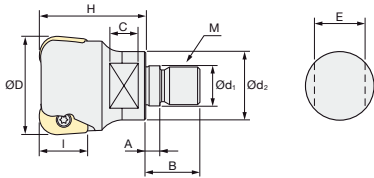
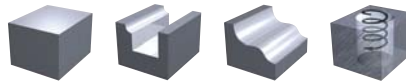
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**Indexable Milling Tools – Modular Types**

**AHRM | Mini – Advanced Heavy Roughing – Modular**

<b>Q max</b> High Efficient	<b>Jet</b> Air Hole	<b>▽</b> Roughing	<b>HRC</b> 62	<b>No. of Teeth</b> 3~4
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Tolerance	ØD -0.1/-0.2
Torque on screw	3.0 Nm

ID Code	Item Code	Flutes	ØD	H	Ød <sub>1</sub>	M	Ød <sub>2</sub>	A	B	C	E	I	Inserts
FH149	<b>AHRM-4035R-3-M16</b>	3	<b>35</b>	45	17	M16	29	6	23	12	22	18	ZDNW...
FH150	<b>AHRM-4042R-4-M16</b>	4	<b>42</b>										ZDMT...

Wrench Size

**INSERTS AHR | Mini – Advanced Heavy Roughing – Modular**

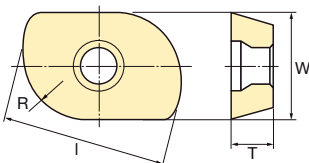


Fig.1: ZDNW Standard Shape

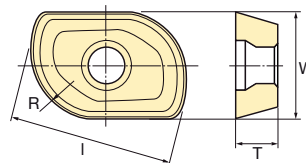


Fig.2: ZDMT with Breaker



**PVD Main grade**  
**PVD Thick layer for soft materials + Wet Cutting and Stainless Steels**  
**PVD Tough grade for pre-hardened steels**

ID Code	Item Code	Tolerance Class	JX Coated				JS Coated JS4060	JP Coated JP4020	Size (mm)				Shape
			JX1005	JX1015	JX1045	JX1060			R	I	T	W	
WF674	<b>ZDNW1204080TR JX1005</b>	N	•						8	21.5	4.76	12.7	Fig.1
WF675	<b>ZDNW1204080TR JX1015</b>			•									
WF677	<b>ZDNW1204080TR JX1045</b>				•								
WF678	<b>ZDNW1204080TR JX1060</b>					•							
WF679	<b>ZDNW1204080TR JS4060</b>						•						
WF680	<b>ZDNW1204080TR JP4020</b>							•					
WF681	<b>ZDMT1204080TR JX1005</b>	M	•					8	21.5	4.76	12.7	Fig.2	
WF682	<b>ZDMT1204080TR JX1015</b>			•									
WF684	<b>ZDMT1204080TR JX1045</b>				•								
WF685	<b>ZDMT1204080TR JX1060</b>					•							
WF686	<b>ZDMT1204080TR JS4060</b>						•						
WF687	<b>ZDMT1204080TR JP4020</b>												•

Parts	Clamp Screw		Clamp Piece Set		Wrench	
<b>Cutter body</b>	<b>ID Code</b>	<b>Item Code</b>	<b>ID Code</b>	<b>Item Code</b>	<b>ID Code</b>	<b>Item Code</b>
<b>AHRM-40 ...</b>	ET048	<b>262-142</b>	-	-	ET049	<b>105-T15</b>

Indexable Milling Tools – Modular Types

**BCFM** | Roughing Ball - Modular Type

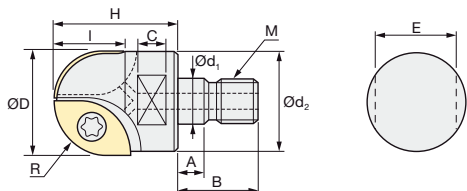
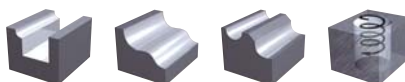
**Q max**  
High Efficient

**▽**  
Roughing

**▽▽**  
Semi-Finishing

**HRC**  
50

**No. of Teeth**  
2



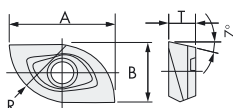
Tolerance	R	± 0.05
	ØD	0/-0.15

ID Code	Item Code	Flutes	ØD	R	H	I	Ød <sub>1</sub>	Ød <sub>2</sub>	A	B	C	E	M	Inserts x1	Inserts x1
FH522	<b>BCFM-20</b>	2	<b>20</b>	<b>10</b>	38	18	10.5	17.8	5.5	19	10	15	M10	ZCEW100CE*	ZCEW100SE*
FH523	<b>BCFM-25</b>		<b>25</b>	<b>12.5</b>		23	12.5	20.8		22		17	M12	ZCEW125CE*	ZCEW125SE*
FH524	<b>BCFM-32</b>		<b>32</b>	<b>16</b>		43	28	17	28.8	6		23	12	M16	ZCET160CE

\* or ZCET

**INSERTS** | Roughing Ball - Modular Type

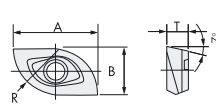
1



1a



2



2a



ID Code	Item Code	Grade	C-Coated CY9020	G-Coated HC844	R	A	T	B	Figure
WF583	<b>ZCET100CE</b>	CY9020	•		10	18.3	4.74	10	1a
WF132	<b>ZCEW100CE</b>	HC844		•		16.7	4.24	8.1	1
WF588	<b>ZCET100SE</b>	CY9020	•			2a			2
WF135	<b>ZCEW100SE</b>	HC844		•					1
WF584	<b>ZCET125CE</b>	CY9020	•		12.5	23.1	6.1	12.3	1a
WF138	<b>ZCEW125CE</b>	HC844		•		20.8	5.4	9.3	1
WF589	<b>ZCET125SE</b>	CY9020	•			2a			2
WF141	<b>ZCEW125SE</b>	HC844		•					1
WF586	<b>ZCET160CE</b>	CY9020	•		16	28.8	7.45	15.4	1a
WF539	<b>ZCET160CE</b>	HC844		•		26.3	6.96	12.4	1a
WF591	<b>ZCET160SE</b>	CY9020	•			2a			2a
WF540	<b>ZCET160SE</b>	HC844		•					2a

• = Available insert and grade combination

Parts	Clamp Screw		Wrench	
Body	ID Code	Item Code	ID Code	Item Code
<b>BCFM-20</b>	ET034	<b>261-141</b>	ET011	<b>104-T10</b>
<b>BCFM-25</b>	ET035	<b>262-141</b>	ET012	<b>104-T15</b>
<b>BCFM-32</b>	ET036	<b>263-141</b>	ET014	<b>105-T20</b>

**Indexable Milling Tools – Modular Types**

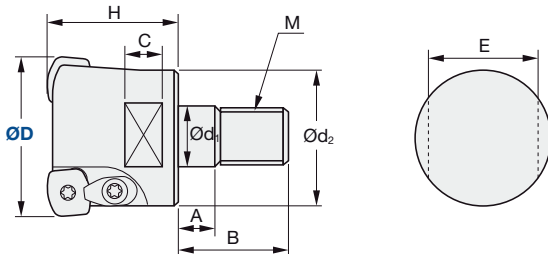
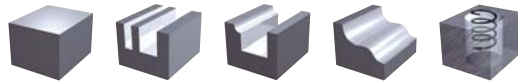
**ASRM** | Turbo Maximum Volume End Mill – Modular

**Q max**  
High Efficient

**▽**  
Roughing

**HRC**  
50

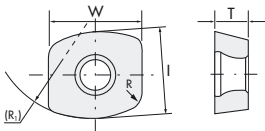
**No. of Teeth**  
2 ~ 4



Tolerance      ØD 0/-0.2

ID Code	Item Code	Flutes	ØD	H	Ød <sub>1</sub>	Ød <sub>2</sub>	A	B	C	E	M	Inserts x1
FH494	<b>ASRM0020-2</b>	2	<b>20</b>	30	10.5	18	6	19	10	15	M10	EPNW-0803TN-10
FH495	<b>ASRM0025-2</b>	2	<b>25</b>	35	12.5	21	7	22	10	17	M12	EDNW-10T3TN-10
FH496	<b>ASRM0032-3</b>	3	<b>32</b>	40	17	29	7	23	12	22	M16	EDNW-10T3TN-10
FH497	<b>ASRM0040-4</b>	4	<b>40</b>	40	17	29	7	23	12	22	M16	EDNW-10T3TN-10

**INSERTS ASRM** | Turbo Maximum Volume End Mill – Modular



**C-Coated**      **PVD Hybrid Coating**

ID Code	Item No.	C-Coated CY250	New Coating TiBON TB6045	R	R1	I	T	W
WF569	<b>EPNW-0803TN-10</b>	•		3	10	8.1	3.18	7.94
WF572	<b>EDNW-10T3TN-10</b>	•				10	3.97	10
WF627	<b>EDNW-13T4TN-10</b>		•		15	13.5	5.56	12.7
WF576	<b>EDNW-13T4TN-15</b>	•			10	15	5.56	14
WF629	<b>EDNW-15T4TN-10</b>		•		10			
WF578	<b>EDNW-15T4TN-15</b>	•			15			

Programming Radius



NEW SHAPE AND NEW COATED INSERTS FOR INTERRUPT CUTTING									
ID Code	Item No.		TB6045	R	R1	I(A)	T	W(B)	
WF628	<b>EDNW-13T4TN-15Z</b>		•	3	15	13.5	5.56	12.7	
WF630	<b>EDNW-15T4TN-15Z</b>		•			15			14

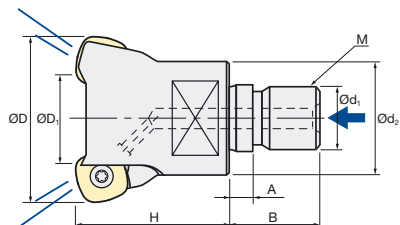
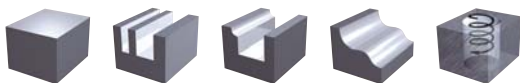
Programming Radius

Parts	Clamp Screw		Clamp Piece Set		Wrench	
Body	ID Code	Item Code	ID Code	Item Code	ID Code	Item Code
<b>ASRM-0020-2</b>	ET32	<b>242-141</b>	-	-	ET12	<b>104-T15</b>
<b>ASRM-0025-2</b>						
<b>ASRM-0032-3</b>	ET38	<b>412-141</b>	ET163	<b>CM3,5-141</b>		
<b>ASRM-0040-4</b>						

**Indexable Milling Tools – Modular Types**

**ASRFM | Turbo4 Modular**

<b>Q max</b> High Efficient	<b>Jet</b> Air Hole	<b>▽</b> Roughing	<b>▽▽</b> Semi-Finishing	<b>HRC</b> 50 (60)	<b>No. of Teeth</b> 3 ~ 4
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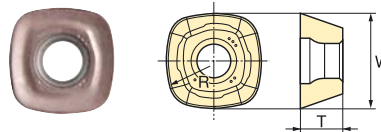
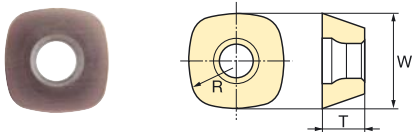
<b>Programming radius</b>	<b>4.5 mm</b>
Tolerance	ØD 0/-0.2
Torque on screw	3.0 Nm
Runout	0.02 mm

ID Code	Item Code	Flutes	ØD	ØD <sub>1</sub>	H	Ød <sub>1</sub>	M	Ød <sub>2</sub>	A	B	Inserts
FH114	<b>ASRFM-4035R-3-M16</b>	3	<b>35</b>	17	40	17	16	29	6	23	SD..1205ZDTN-R15
FH115	<b>ASRFM-4042R-4-M16</b>	4	<b>42</b>	24							

**INSERTS ASRFM | High-Feed Ultra End Mill Modular**

**Type A – Standard type**

**Type B – Low-resistance breaker type**



ID Code	Item Code	Grade	R	T	W	Chipbreaker	Type
WF172	<b>SDNW1205ZDTN-R15</b>	JX1005	15	5.56	12.7	no	A
WF173		JX1020					
WF174		JX1045					
WF175		JX1060					
WF176		GX2030					
WF177	<b>SDMT1205ZDTN-R15</b>	JX1005	15	5.56	12.7	yes	B
WF178		JX1020					
WF179		JX1045					
WF180		JX1060					
WF181		GX2030					

**JX1005 – 1060** PVD Coating / Dry Cutting  
**GX2030** CVD Coating / Wet Cutting

Grade Overview														
ISO														
P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30	K40
	JX1005									JX1005				
	JX1020						JX1020				JX1020			
		JX1045					JX1045					JX1045		
		JX1060					JX1060						JX1060	
		GX2030											GX2030	
N01	N10	N20	N30	N40	S01	S10	S20	S30	S40	H01	H10	H20	H30	H40
										JX1005				
											JX1020			
		GX2030												
							GX2030							

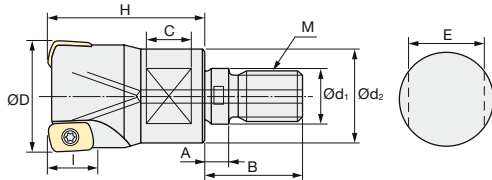
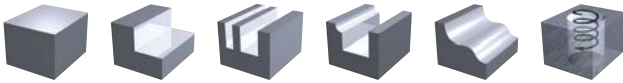
Parts	Clamp Screw		Wrench	
<b>Body</b>	<b>ID Code</b>	<b>Item Code</b>	<b>ID Code</b>	<b>Item Code</b>
<b>ASRFM</b>	ET048	<b>262-142</b>	ET049	<b>105-T15</b>



**Indexable Milling Tools – Modular Types**

**ASRM** | Pico Maxi – Turbo Metric Series – Modular Type

<b>Q max</b> High Efficient	<b>Jet</b> Air Hole	<b>▽</b> Roughing	<b>▽▽</b> Semi-Finishing	<b>HRC</b> 62	<b>No. of Teeth</b> 2-6
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<b>Programming radius</b>	<b>3 mm</b>
Tolerance	ØD -0.1/-0.2
Torque on screw	2.0 Nm

ID Code	Item Code	Flutes	ØD	H	Ød <sub>1</sub>	M	Ød <sub>2</sub>	A	B	C	E	I	Inserts
FH180	<b>ASRM-3020R-2-M10</b>	2	<b>20</b>	30	10.5	M10	18	5.5	19	10	15	13	EPNW08T3TN-10 EPMT08T3TN-10
FH181	<b>ASRM-3025R-3-M12</b>	3	<b>25</b>	35	12.5	M12	21	5.5	22	10	17	13	
FH173	<b>ASRM-3032R-4-M16</b>	4	<b>32</b>	40	17	M16	29	6	23	12	22	13	
FH174	<b>ASRM-3035R-4-M16</b>	4	<b>35</b>										
FH175	<b>ASRM-3042R-6-M16</b>	6	<b>42</b>										

Wrench Size

**INSERTS ASRM/ASRB** | Pico Maxi – Turbo Metric Series – Modular/Bore Type

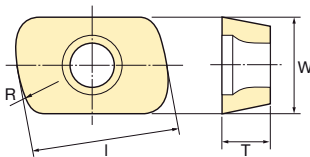


Fig.1: EPNW Standard Shape

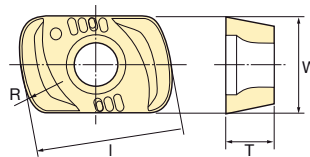


Fig.2: EPMT with Breaker



**PVD Thick layer for soft materials + Wet Cutting and Stainless Steels**

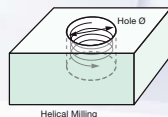
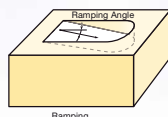
**PVD Main grade**

**PVD Tough grade for pre-hardened steels**

ID Code	Item Code	Tolerance Class	JX Coated	JS Coated	JP Coated	Size (mm)				Shape
			JX1045	JS4060	JP4020	R	I	T	W	
WF203	<b>EPNW08T3TN-10 JP4020</b>	N			•	10	12.648	3.97	8.25	Fig.1
WF205	<b>EPNW08T3TN-10 JX1045</b>		•							
WF204	<b>EPNW08T3TN-10 JS4060</b>			•						
WF200	<b>EPMT08T3TN-10 JP4020</b>	M			•					Fig.2
WF202	<b>EPMT08T3TN-10 JX1045</b>		•							
WF201	<b>EPMT08T3TN-10 JS4060</b>			•						

Parts	Clamp Screw		Wrench	
<b>Body</b>	<b>ID Code</b>	<b>Item Code</b>	<b>ID Code</b>	<b>Item Code</b>
<b>ASRM-30 ...</b>	<b>ET152</b>	<b>265-141</b>	<b>ET011</b>	<b>104-T10</b>

**Ramping / Helical Milling**

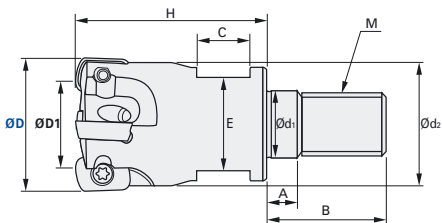
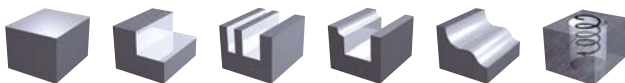


Tool diameter Ø mm	Ø 32	Ø 35	Ø 42	Ø 52	Ø 66	Ø 80	Ø 100
<b>Max. ramp angle °</b>	<b>4.5°</b>	<b>3.5</b>	<b>2.5°</b>	<b>1.5°</b>	<b>1°</b>	<b>0.5°</b>	<b>0.5°</b>
<b>Helical Milling / Hole Dia. (mm)</b>	<b>50 ~ 62</b>	<b>56 ~ 68</b>	<b>70 ~ 82</b>	<b>90 ~ 102</b>	<b>118 ~ 130</b>	<b>146 ~ 158</b>	<b>186 ~ 198</b>

Indexable Milling Tools – Modular Types

ASR PICO | Turbo Metric Series – Modular

<b>Q max</b> High Efficient	<b>▽</b> Roughing	<b>▽▽</b> Semi-Finishing	<b>HRC</b> 54 (62)	<b>No. of Teeth</b> 2 - 8
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<b>Programming radius</b>	<b>2 mm</b>
Tolerance	ØD 0 / -0.2

ID Code	Item Code	Flutes	ØD	ØD <sub>1</sub>	H	Ød <sub>1</sub>	M	Ød <sub>2</sub>	A	B	C	E	Inserts
FH 529	ASRM-2016R-2	2	16	6.2	25	8.5	M8	13	5.5	17		10	EPNW0603TN-8 EPMT0603TN-8
FH 530	ASRM-2020R-3	3	20	10.2	30	10.5	M10	18	6	19	10	15	
FH 531	ASRM-2025R-4	4	25	15.2	35	12.5	M12	21		22		17	
FH 532	ASRM-2032R-5	5	32	22.2	40	17	M16	29	7	23	12	22	
FH 533	ASRM-2040R-6	6	40	30.2									

INSERTS ASR PICO | Turbo Metric Series – Modular

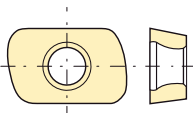


Fig.1: EPNW Standard Shape

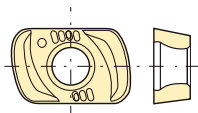


Fig.2: EPMT with Breaker



PVD Hybrid Coating

PVD Tough grade for pre-hardened steels

PVD Thick layer for soft materials + Wet Cutting

Inserts		TB Coated			JP Coated	JS Coated	R	Insert Shape	One Insert-size for all diameters Ø 16 mm ~ Ø 66 mm
ID Code	Item Code	TB6005	TB6020	TB6045	JP4020	JS4060			
WF641	EPNW0603TN-8	•					2	Fig.1	
WF642	EPNW0603TN-8		•						
WF643	EPNW0603TN-8			•			2	Fig.2	
WF208	EPNW0603TN-8				•				
WF209	EPNW0603TN-8					•			
WF206	EPMT0603TN-8				•				
WF207	EPMT0603TN-8					•			

CAM Radius



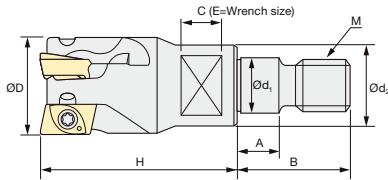
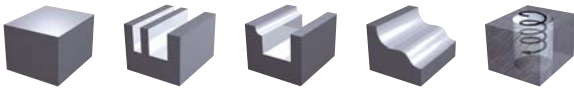
Parts	Clamp Screw		Wrench	
<b>Body</b>	<b>ID Code</b>	<b>Item Code</b>	<b>ID Code</b>	<b>Item Code</b>
ASRM-20...	ET175	250-141(A)	ET13	104-T8



**Indexable Milling Tools – Modular Types**

**ASM | Modular**

<b>Q max</b> High Efficient	<b>Jet</b> Air Hole	<b>▽</b> Roughing	<b>▽▽</b> Semi-Finishing	<b>▽▽▽</b> Finishing	<b>HRC</b> 45 (50)	<b>No. of Teeth</b> 1 ~ 8
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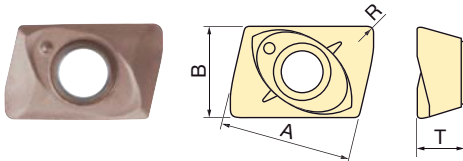


<b>With Airhole:</b>	<b>Ø 16 – 32</b>
Max. Torque on screw	0.5 Nm

	ID Code	Item Code	Flutes	ØD	H	Ød <sub>1</sub>	M	Ød <sub>2</sub>	A	B	C	E	Inserts
Without Airhole	FH126	ASMM-0708R-1	1	8	20	6.5	M6	9.8	5.5	14.5	5	7	JDMT0702..R EDMT070220R (-T)
	FH127	ASMM-0710R-2	2	10		6.5		9.4					
	FH128	ASMM-0712R-3	3	12		6.5		9.8					
With Airhole	FH129	ASMM-0716R-4	4	16	25	8.5	M8	12.8	5.5	17	8	10	
	FH130	ASMM-0720R-5	5	20		10.5		17.8					
	FH135	ASMM-0725R-6	6	25		12.5		20.8					
	FH136	ASMM-0732R-8	8	32		17		28.8					

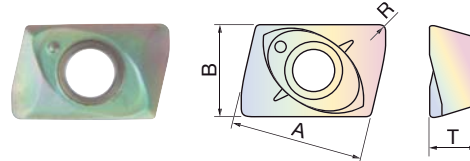
**INSERTS ASM/AHU | Mini**

**JDMT07020..R**



Insert with 5 mm flute length for shoulder cutting ( $a_{p \max} = 5.0 \text{ mm}$ )

**JDMT07020..R DLC Coated**



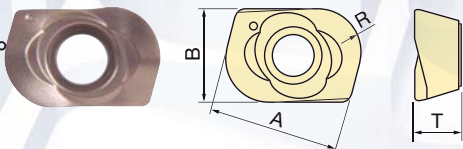
Insert with 5 mm flute length for shoulder cutting ( $a_{p \max} = 5.0 \text{ mm}$ )

ID Code	Item Code	Tolerance Class	Grade			Size			
			JX1020	PTH30E	SD5010	A	B	R	T
WF665	JDMT070202R JX1020	M	•			6.4	4.3	0.4	2.45
WF666	JDMT070202R PTH30E			•					
WF671	JDMT070202R SD5010				•				
WF667	JDMT070204R JX1020		•						
WF668	JDMT070204R PTH30E			•					
WF672	JDMT070204R SD5010				•				
WF669	JDMT070208R JX1020		•			0.8			
WF670	JDMT070208R PTH30E			•					
WF673	JDMT070208R SD5010				•				

**JX1020** JX Coating  
**PTH30E** TH Coating  
**SD5010** DLC Coating

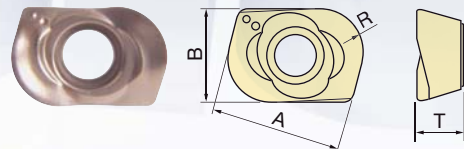
**NEW**

**EDMT070220R - T Standard Type**



Insert with 2.0mm corner R for low-depth, high-feed-rate cutting ( $a_{p \max} = 0.3 \text{ mm}$ )

**EDMT070220R Low-resistance breaker type**



Insert with 2.0mm corner R for low-depth, high-feed-rate cutting ( $a_{p \max} = 0.3 \text{ mm}$ )

ID Code	Item Code	Tolerance Class	Grade			Size				Shape
			JX1020	PTH30E	SD5010	A	B	R	T	
WF663	EDMT070220R JX1020	M	•			6.4	4.3	2	2.5	Low-resistance type Standard type
WF664	EDMT070220R-T JX1020		•							

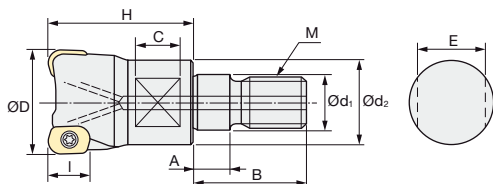
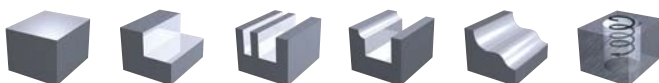
**JX1020** JX Coating

Parts	Clamp Screw	Wrench
Body	ID Code	ID Code
ASMM-07...	ET052	ET053
	Item Code	Item Code
	240-140	106-T6

**Indexable Milling Tools – Modular Types**

**APHP** | Advanced Pico Hard Precision – Modular Type

<b>Q max</b> High Efficient	<b>Jet</b> Air Hole	<b>▽</b> Roughing	<b>▽▽</b> Semi-Finishing	<b>HRC</b> 62	<b>No. of Teeth</b> 1-8
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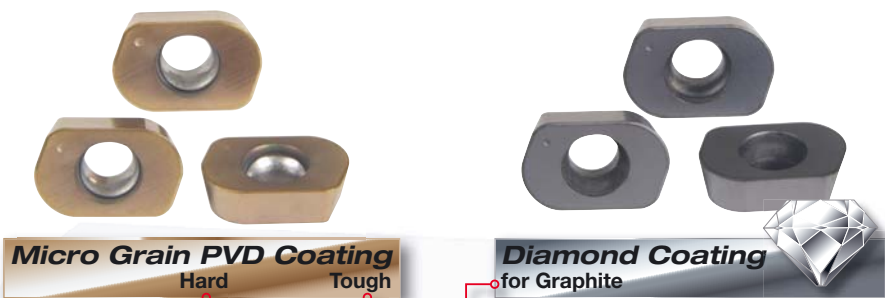
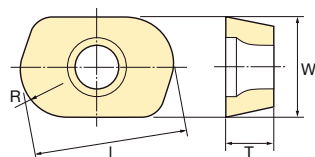


<b>Programming radius</b>	<b>2 mm</b>
Tolerance	ØD -0.046/-0.096
Torque on screw	0.5 Nm

ID Code	Item Code	Flutes	ØD	H	Ød1	M	Ød2	A	B	C	E	I	Inserts
FH182	APHP-1008R-1-M6	1	8	19	6.5	M6	9.4	5.5	14.5	5	7	6.215	EPHW0402TN-2
FH183	APHP-1010R-2-M6	2	10	17	6.5								
FH184	APHP-1012R-3-M6	3	12	17	6.5	9.8							
FH185	APHP-1016R-4-M8	4	16	22	8.5	M8	12.8		17	8	10		
FH186	APHP-1020R-5-M10	5	20	25	10.5	M10	17.8		19	10	15		
FH187	APHP-1025R-6-M12	6	25	25	12.5	M12	20.8	22	10	17			
FH188	APHP-1032R-8-M16	8	32	27	17	M16	28.8	6	23	12	22		

Wrench Size

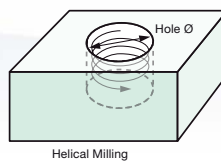
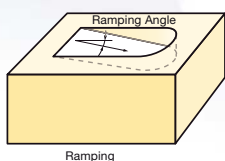
**INSERTS APHP** | Advanced Pico Hard Precision – Modular Type



ID Code	Item Code	Tolerance Class	Coating			Size (mm)			
			PJP Coated	PJP Coated	D Coated	R	I	T	W
WF210	EPHW0402TN-2 PJP08M	H	•			2	6.215	2	4.2
WF211	EPHW0402TN-2 PJP15M			•					
WF212	EPHW0402TN-2 D08M				•				

Parts Shape	Clamp Screw		Wrench	
	ID-Code	Item-Code	ID-Code	Item-Code
APHP-10...	ET052	240-140	104-T6	

**Ramping / Helical Milling**



Tool diameter Ø mm	Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
Max. ramp angle °	1.0° (recommended <0.5°)						
Helical Milling / Hole Dia. (mm)	10-15	13-19	17-23	25-31	33-39	43-49	57-63

**Indexable Milling Tools – Modular Types**

**ABPF-M | Ball High Precision Finish Modular**

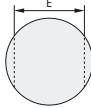
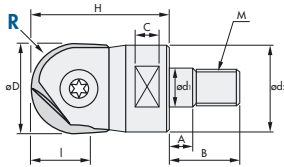
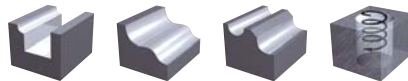
<b>V max</b>
High Speed

<b>▽</b>
Semi Finishing

<b>▽▽</b>
Finishing

<b>HRC</b>
65

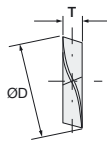
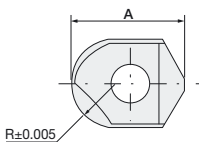
<b>No. of Teeth</b>
2



Tolerance	R	± 0.005
	ØD	± 0.01

ID Code	Item Code	Flutes	ØD	R	I	H	Ød <sub>1</sub>	M	Ød <sub>2</sub>	A	B	C	E	Inserts
FH 510	<b>ABPFM-10</b>	2	10	5	5.5	26	6.5	M6	9.8	5	14.5	5	7	ZPFG100
FH 511	<b>ABPFM-12</b>		12	6	6.6									ZPFG120
FH 512	<b>ABPFM-16</b>		16	8	8.8	32	8.5	M8	12.8	6	17	8	10	ZPFG160
FH 513	<b>ABPFM-20</b>		20	10	11									M10
FH 514	<b>ABPFM-25</b>		25	12.5	13.7	43	12.5	M12	20.8	7	22	10	17	ZPFG250
FH 515	<b>ABPFM-32</b>		32	16	17.6									M16

**INSERTS | Ball High Precision Finish Modular**



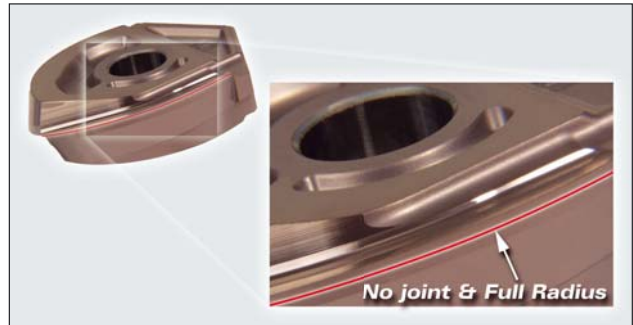
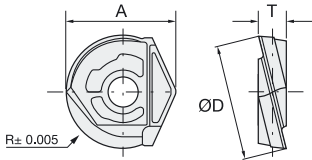
ID Code	Item Code	Grade	C-Coated PCA08M	C-Coated PCA12M	TH-Coated PTH08M	R	A	T	ØD
WF645	<b>ZPFG-080</b>	PTH08M			•	4	9.7	2.1	8
WF594	<b>ZPFG-080</b>	PCA08M	•						
WF547	<b>ZPFG-080</b>	PCA12M		•		5	12.1	2.7	10
WF646	<b>ZPFG-100</b>	PTH08M			•				
WF595	<b>ZPFG-100</b>	PCA08M	•			6	14.6	3.2	12
WF548	<b>ZPFG-100</b>	PCA12M		•					
WF647	<b>ZPFG-120</b>	PTH08M			•	8	16.6	4.2	16
WF596	<b>ZPFG-120</b>	PCA08M	•						
WF549	<b>ZPFG-120</b>	PCA12M		•		10	20.3	5.2	20
WF648	<b>ZPFG-160</b>	PTH08M			•				
WF597	<b>ZPFG-160</b>	PCA08M	•			12.5	24.1	6.2	25
WF598	<b>ZPFG-160</b>	PCA12M		•					
WF649	<b>ZPFG-200</b>	PTH08M			•	16	30	7.2	32
WF599	<b>ZPFG-200</b>	PCA08M	•						
WF600	<b>ZPFG-200</b>	PCA12M		•					
WF650	<b>ZPFG-250</b>	PTH08M			•				
WF601	<b>ZPFG-250</b>	PCA08M	•						
WF602	<b>ZPFG-250</b>	PCA12M		•					
WF651	<b>ZPFG-320</b>	PTH08M			•				
WF604	<b>ZPFG-320</b>	PCA12M		•					

**ZDFG | W Type Inserts for ABPF: p. 12**



**Indexable Milling Tools – Modular Types**

**ZDFG I W Type Inserts for ABPF**



**Hardened Steel:**  
Strong edge for  
long tool life

**Mild Steel, Cast Iron:**  
Sharp edge for  
best surface quality

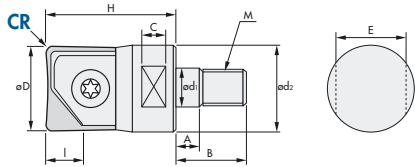
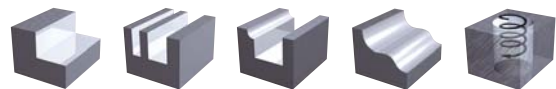
ID Code	Item Code	Grade	ATH-Coated ATH80D	ACS-Coated ACS05E	R	A	ØD	T
WF164	ZDFG-160-WH	ATH80D	•		8	16.6	16	4.2
WF168	ZDFG-160-WF	ACS05E		•				
WF165	ZDFG-200-WH	ATH80D	•		10	20.3	20	5.2
WF169	ZDFG-200-WF	ACS05E		•				
WF166	ZDFG-250-WH	ATH80D	•		12.5	24.1	25	6.2
WF170	ZDFG-250-WF	ACS05E		•				
WF167	ZDFG-320-WH	ATH80D	•		16	30.2	32	7.2
WF171	ZDFG-320-WF	ACS05E		•				

Parts	Clamp Screw		Wrench	
	ID Code	Item Code	ID Code	Item Code
<b>ABPFM-10</b>	ET154	<b>581-142</b>	ET11	<b>104-T10</b>
<b>ABPFM-12</b>	ET155	<b>581-143</b>	ET14	<b>105-T20</b>
<b>ABPFM-16</b>	ET156	<b>581-144</b>	ET14	<b>105-T20</b>
<b>ABPFM-20</b>	ET157	<b>581-145</b>	ET9	<b>101-T25S</b>
<b>ABPFM-25</b>	ET168	<b>581-146</b>	ET167	<b>105-T30A</b>
<b>ABPFM-32</b>	ET169	<b>581-147</b>		

**Indexable Milling Tools – Modular Types**

**ARPF-M | Radius High Precision Finish Modular**

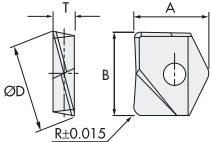
<b>V max</b> High Speed	<b>▽</b> Semi Finishing	<b>▽▽</b> Finishing	<b>HRC</b> 62	<b>No. of Teeth</b> 2
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Tolerance	CR	± 0.015
	Set-up	± 0.010

ID Code	Item Code	Flutes	ØD	I	H	Ød <sub>1</sub>	M	Ød <sub>2</sub>	A	B	C	E	Inserts
FH 516	<b>ARPFM-10</b>	2	10	3	26	6.5	M6	9.8	5	14.5	5	7	ZCFW100-R....
FH 517	<b>ARPFM-12</b>		12	4									ZCFW120-R....
FH 518	<b>ARPFM-16</b>		16	5	32	8.5	M8	12.8	6	17	8	10	ZCFW160-R....
FH 519	<b>ARPFM-20</b>		20	6	38	10.5	M10	17.8					ZCFW200-R....
FH 520	<b>ARPFM-25</b>		25	8		12.5	M12	20.8	7	22	10	17	ZCFW250-R....
FH 521	<b>ARPFM-32</b>		32	10	43	17	M16	28.8					ZCFW320-R....

**INSERTS | Radius High Precision Finish Modular**



ID Code	Item Code	C-Coated PCA12M	CR	A	T	ØD
WF553	<b>ZCFW-100-03</b>	C-Coated PCA12M	0.3	12	2.7	10
WF606	<b>ZCFW-100-05</b>		0.5			
WF554	<b>ZCFW-100-10</b>		1			
WF555	<b>ZCFW-100-15</b>		1.5			
WF556	<b>ZCFW-100-20</b>		2			
WF557	<b>ZCFW-120-03</b>		0.3			
WF607	<b>ZCFW-120-05</b>	0.5	14.6	3.2	12	
WF558	<b>ZCFW-120-10</b>	1				
WF559	<b>ZCFW-120-15</b>	1.5				
WF560	<b>ZCFW-120-20</b>	2				
WF652	<b>ZCFW-120-30</b>	3	16.6	4.2	16	
WF561	<b>ZCFW-160-03</b>	0.3				
WF608	<b>ZCFW-160-05</b>	0.5				
WF562	<b>ZCFW-160-10</b>	1				
WF563	<b>ZCFW-160-15</b>	1.5				
WF564	<b>ZCFW-160-20</b>	2				
WF653	<b>ZCFW-160-30</b>	3				

ID Code	Item Code	C-Coated PCA12M	CR	A	T	ØD
WF565	<b>ZCFW-200-03</b>	C-Coated PCA12M	0.3	19.9	5.2	20
WF609	<b>ZCFW-200-05</b>		0.5			
WF566	<b>ZCFW-200-10</b>		1			
WF567	<b>ZCFW-200-15</b>		1.5			
WF568	<b>ZCFW-200-20</b>		2			
WF654	<b>ZCFW-200-30</b>		3			
WF610	<b>ZCFW-250-03</b>	0.3	22.6	6.2	25	
WF611	<b>ZCFW-250-05</b>	0.5				
WF612	<b>ZCFW-250-10</b>	1				
WF613	<b>ZCFW-250-20</b>	2				
WF655	<b>ZCFW-250-30</b>	3	27.2	7.2	32	
WF614	<b>ZCFW-320-03</b>	0.3				
WF615	<b>ZCFW-320-05</b>	0.5				
WF616	<b>ZCFW-320-10</b>	1				
WF617	<b>ZCFW-320-20</b>	2				
WF656	<b>ZCFW-320-30</b>	3				

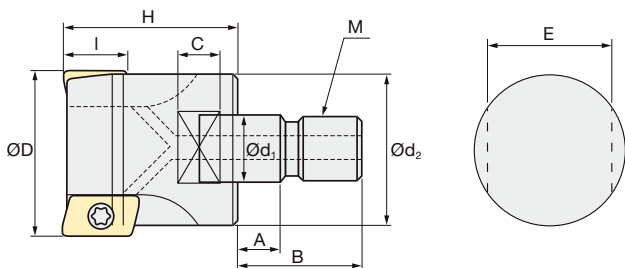
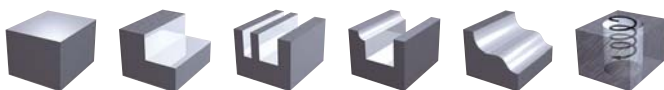
ISO   Grade Overview															
P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30	K40	
PCA12M					PCA12M					PCA12M					
N01	N10	N20	N30	N40	S01	S10	S20	S30	S40	H01	H10	H20	H30	H40	
												PCA12M			

Parts Shape	Clamp Screw		Wrench	
<b>Cutter body</b>	<b>ID Code</b>	<b>Item Code</b>	<b>ID Code</b>	<b>Item Code</b>
<b>ARPFM-10</b>	ET154	<b>581-142</b>	ET11	<b>104-T10</b>
<b>ARPFM-12</b>	ET155	<b>581-143</b>	ET14	<b>105-T20</b>
<b>ARPFM-16</b>	ET156	<b>581-144</b>	ET14	<b>105-T20</b>
<b>ARPFM-20</b>	ET157	<b>581-145</b>	ET9	<b>101-T25S</b>
<b>ARPFM-25</b>	ET168	<b>581-146</b>	ET167	<b>105-T30A</b>
<b>ARPFM-32</b>	ET169	<b>581-147</b>		

**Indexable Milling Tools – Modular Types**

**AHUM15 | High Feed Ultra Modular Type**

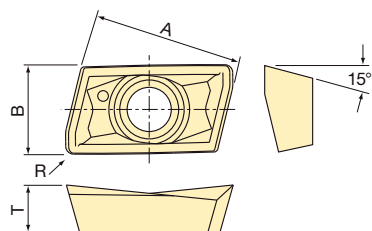
<b>Q max</b> High Efficient	<b>Jet</b> Air Hole	<b>▽</b> Roughing	<b>▽▽</b> Finishing	<b>HRC</b> 50	<b>No. of Teeth</b> 3 - 4
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Tolerance	ØD 0/-0.2
Torque on screw	3 Nm

ID Code	Item Code	Flutes	ØD	H	Ød <sub>1</sub>	M	Ød <sub>2</sub>	A	B	C	E	I	Inserts
FH066	AHUM-1532R-3-M16	3	32	40	17	16	28.8	6	23	12	22	14	JDMT1505..R.. JX10..
FH176	AHUM-1535R-3-M16		35										
FH067	AHUM-1540R-4-M16	4	40										
FH177	AHUM-1542R-4-M16		42										

**INSERTS AHUM15 | High Feed Ultra Modular Type**



JDMT-150530-R



JDMT-150504-R-FW

ID Code	Item Code	Grade	A	B	T	R
WF182	JDMT150504R-FW JX1045	JX1045	16	9.12	5	0.4
WF183	JDMT150508R-FW JX1020	JX1020				0.8
WF184	JDMT150508R-FW JX1045	JX1045				2.0
WF185	JDMT150508R-FW JX1060	JX1060				3.0
WF186	JDMT150520R JX1045	JX1045				
WF199	JDMT150520R-FW JX1045	JX1045				
WF187	JDMT150530R JX1045	JX1045				

**Note:** By using insert R3.0 modification of body is required.

**Achtung:** Zur Verwendung der R3.0 Schneidplatte ist eine Modifikation des Fräshalters erforderlich.

Grade Overview														
ISO														
P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30	K40
	JX1020						JX1020				JX1020			
		JX1045					JX1045						JX1045	
			JX1060					JX1060						JX1060
N01	N10	N20	N30	N40	S01	S10	S20	S30	S40	H01	H10	H20	H30	H40
	JX1020								JX1060			JX1020		

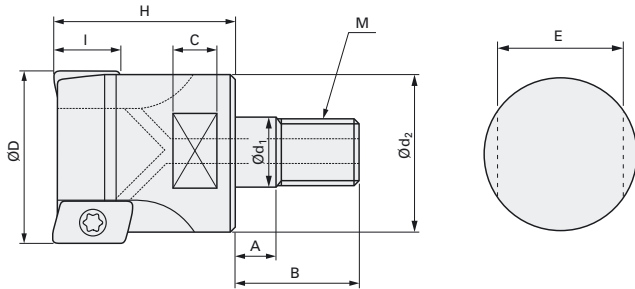
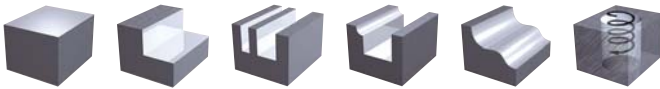
Parts	Clamp Screw		Wrench	
	ID Code	Item Code	ID Code	Item Code
AHUM-15	ET038	412-141	ET049	105-T15



**Indexable Milling Tools – Modular Types**

**AHUM | High-Feed Ultra End Mill Modular**

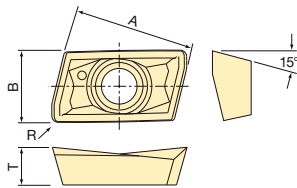
<b>Q max</b> High Efficient	<b>Jet</b> Air Hole	<b>▽</b> Roughing	<b>HRC</b> 50	<b>No. of Teeth</b> 2 ~ 5
--------------------------------	------------------------	----------------------	------------------	------------------------------



Tolerance	ØD	-0.05 / -0.2
Torque on screw	CR	+0.08 / -0.08

ID Code	Item Code	Flutes	ØD	I	H	Ød <sub>1</sub>	M	Ød <sub>2</sub>	A	B	C	E	Inserts					
FH525	AHUM-1016R-2	2	16	9	30	8.5	M8	13	5.5	17	8	10	JDMT1003. .R					
FH526	AHUM-1020R-3	3	20										10.5	M10	18	19	15	JDMT1003. .R
FH527	AHUM-1025R-4	4	25										12.5	M12	21	17	17	JDMT1003. .R
FH528	AHUM-1032R-5	5	32										17	M16	29	6	23	12

**INSERTS AHUM | High-Feed Ultra End Mill Modular**



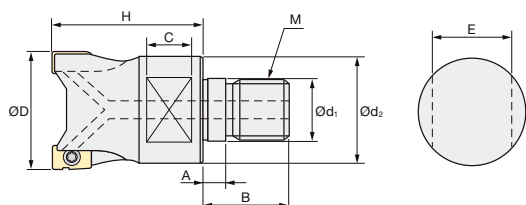
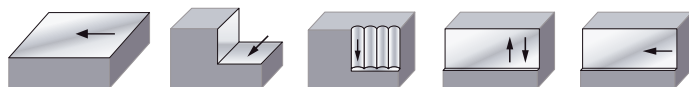
ID Code	Item No.	Grade	Nano PVD Coating			Hybrid Coating	Tolerance Class	Size			
			PTH13S	PTH30E	PTH40H	TB6045		A	B	T	R
WF637	JDMT100304R	PTH13S	•				M	11	6.1	3.5	0.4
WF633	JDMT100304R	PTH30E		•							
WF634	JDMT100304R	TB6045				•					
WF638	JDMT100308R	PTH13S	•								
WF631	JDMT100308R	PTH30E		•							
WF636	JDMT100308R	PTH40H			•						
WF635	JDMT100308R	TB6045				•					
WF632	JDMT100320R	PTH30E		•							2.0

Parts	Clamp Screw		Wrench	
Body	ID Code	Item Code	ID Code	Item Code
AHUM-1016R-2	ET033	250-141	ET013	104-T8
AHUM-1020R-3	ET033	250-141	ET013	104-T8
AHUM-1025R-4	ET033	250-141	ET013	104-T8
AHUM-1032R-5	ET033	250-141	ET013	104-T8

Cutting edge Ø (mm)	16	20	25	32	40	50	63
Ramp Angle	4°	3°	2.5°	2°	1.5°	1°	1°
Hole Ø (mm)	21~29	29~37	39~47	53~61	68~80	85~100	107~126

Indexable Milling Tools – Modular Types

ASPVM | Polish Mill V-Type / Modular



Tolerance for master insert	ØD 0/-0.1
Torque on screw	1.1 Nm

ID Code	Item Code	Flutes	ØD	H	Ød <sub>1</sub>	M	Ød <sub>2</sub>	A	B	C	E	Inserts
FH161	ASPVM-2016R-2-M8	2	16	25	8.5	M8	12.8	5.5	17	8	10	MPHW06.... 
FH162	ASPVM-2020R-3-M10	3	20	30	10.5	M10	17.8		19	10	15	
FH163	ASPVM-2025R-4-M12	4	25	35	12.5	M12	20.8		22		17	
FH164	ASPVM-2032R-5-M16	5	32	40	17	M16	28.8	6	23	12	22	
FH165	ASPVM-2035R-5-M16		35									
FH166	ASPVM-2042R-6-M16	6	42									

INSERTS ASPV | Polish Mill V-Type

MPHW0603..ZEL/ZFL

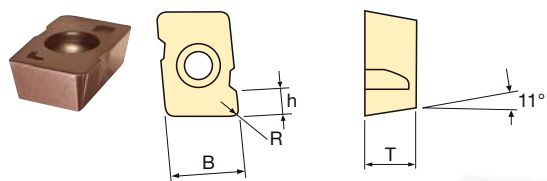


Fig. 1

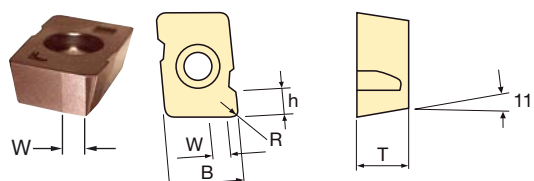



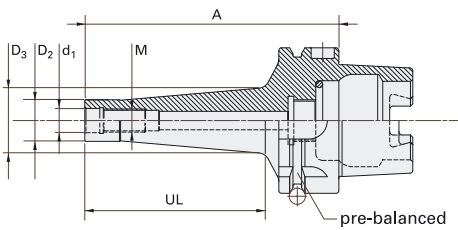
Fig. 2

R	ID Code	Item Code	Tolerance Class	Coating			Size (mm)						
				ATH Coated ATH08M	JX Coated JX1020 JX1045		DLC Coated SD5010	B	W	T	h	R	Shape
R 0.4	WF188	MPHW060304ZEL ATH08M	H	•			6.35	-	3.18	3	0.4	Fig-1	
	WF189	MPHW060304ZEL-0.5 ATH08M		•				0.5				Fig-2	
	WF190	MPHW060304ZFL SD5010				•						Fig-1	
R 0.8	WF191	MPHW060308ZEL ATH08M		•			6.35	-	3.18	3	0.8	Fig-1	
	WF192	MPHW060308ZEL JX1020			•			1.5					Fig-2
	WF193	MPHW060308ZEL JX1045				•							
	WF194	MPHW060308ZEL-1.5 ATH08M		•				-				Fig-1	
	WF195	MPHW060308ZEL-1.5 JX1020			•								
WF196	MPHW060308ZEL-1.5 JX1045				•								
R 2	WF197	MPHW060308ZFL SD5010				-	-	-	-	2	Fig-1		
	WF198	MPHW060320ZEL ATH08M	•										

Parts	Clamp Screw		Screw Driver	
Shape				
Cutter body	ID Code	Item Code	ID Code	Item Code
ASPVM20..R-	ET175	250-141	ET13	104-T8

**Indexable Milling Tools – Modular Types**

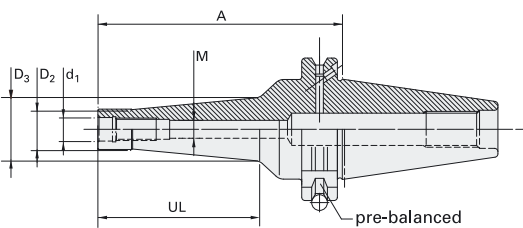
**HSK 63 MD | DIN 69893 HSK**



d <sub>1</sub>	+0
	+0.005

ID Code	Item Code	M	A	UL	d <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>
NT168	HKA063MD008025	8	60	25	8.5	13	15
NT184	HKA063MD008050		85	50			19
NT169	HKA063MD008075		110	75			22
NT185	HKA063MD008100		135	100			24
NT170	HKA063MD010025	10	60	25	10.5	18	23
NT186	HKA063MD010050		85	50			25
NT171	HKA063MD010075		110	75			28
NT187	HKA063MD010100		135	100			30
NT188	HKA063MD012025	12	60	25	12.5	21	24
NT172	HKA063MD012050		85	50			30
NT189	HKA063MD012075		110	75			32
NT173	HKA063MD012100		135	100			35
NT190	HKA063MD016025	16	60	25	17	29	29
NT174	HKA063MD016050		85	50			34
NT191	HKA063MD016075		110	75			37
NT175	HKA063MD016100		135	100			41

**SK 40 MD | DIN 69871**



d <sub>1</sub>	+0
	+0.005

ID Code	Item Code	M	A	UL	d <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>
NT192	SKB040MD008010	8	50	10	8.5	13	13
NT176	SKB040MD008030		70	30			15
NT193	SKB040MD008050		90	50			20
NT177	SKB040MD008070		110	70			22
NT194	SKB040MD010010	10	50	10	10.5	18	18
NT178	SKB040MD010030		70	30			20
NT195	SKB040MD010050		90	50			25
NT179	SKB040MD010070		110	70			28
NT196	SKB040MD012010	12	50	10	12.5	21	21
NT197	SKB040MD012030		70	30			24
NT180	SKB040MD012050		90	50			28
NT198	SKB040MD012070		110	70			31
NT181	SKB040MD012090	130	90	33			
NT199	SKB040MD016010	16	50	10	17	29	29
NT200	SKB040MD016030		70	30			34
NT182	SKB040MD016050		90	50			37
NT201	SKB040MD016070		110	70			40
NT183	SKB040MD016090	130	90				

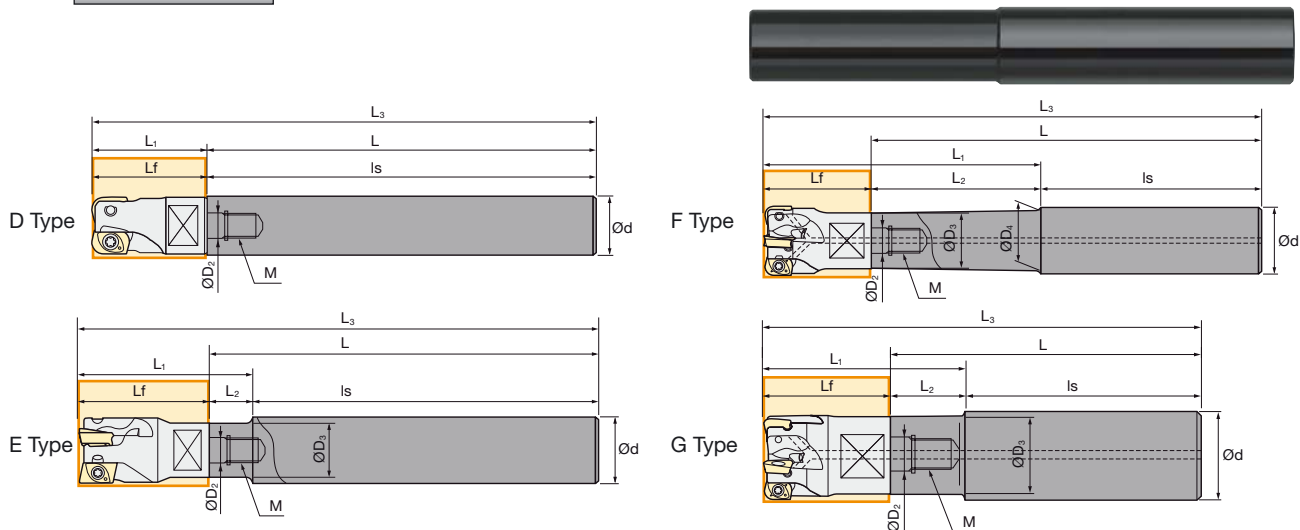
For further information about Modular Chucks please see our AMC brochure No. 705.3  
 Weitere Informationen über Modulare Werkzeugaufnahmen finden Sie in unserem AMC Prospekt No. 705.3





Indexable Milling Tools – Modular Types

AS | Steel Shanks for Modular Mills

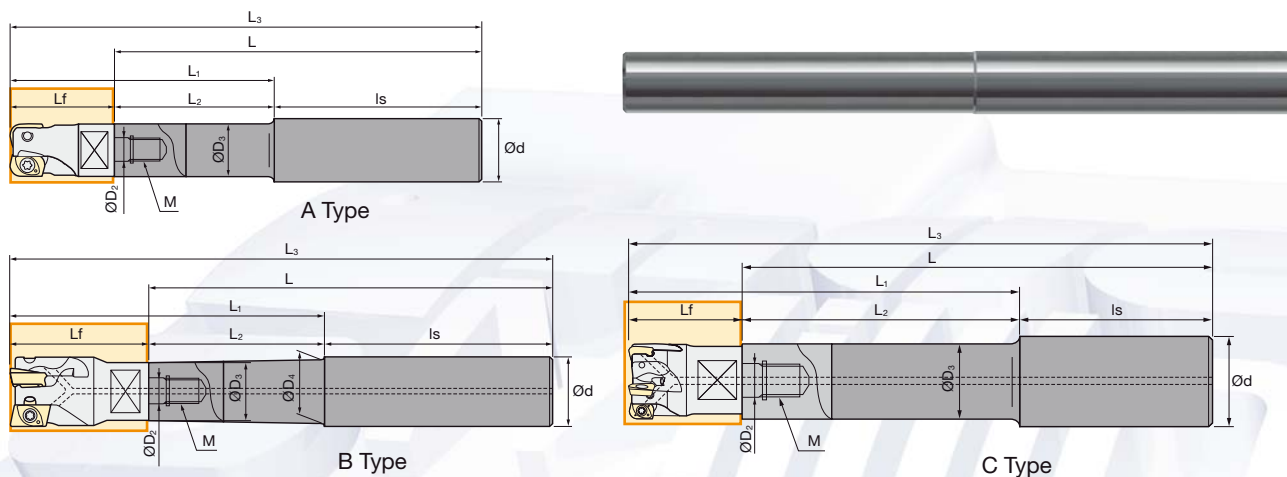


	ID Code	Item Code	ØD <sub>2</sub>	M	L <sub>3</sub>	L	L <sub>f</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>s</sub>	ØD <sub>3</sub>	Ød	ØD <sub>4</sub>	Type	Cutter body
Without Airhole	FH131	AS10-6.5-74-0	6.5	M6	94	74	20	-	20	74	-	10	-	D	Ø10
	FH132	AS12-6.5-84-4			104	84		4	24	80	11	12	-	E	Ø12
With Airhole	FH133	AS16-8.5-95-15	8.5	M8	120	95	25	15	40	80	14.5	16	15.5	F	Ø16
	FH134	AS20-10.5-100-20	10.5	M10	130	100	30	20	50	80	18	20	-	G	Ø20

1. SUPER Lock milling chucks can be used.
2. Please note that the dimensions for L<sub>3</sub>, L<sub>f</sub>, and L<sub>1</sub> may be different when attached to other modular-type holders such as ASRM, AHUM, ARPFM, BCFM, ABPFM, etc.

1. SUPER Lock Aufnahmen können verwendet werden.
2. Bitte beachten Sie, dass die Maße für L<sub>3</sub>, L<sub>f</sub>, und L<sub>1</sub> abweichen können, wenn andere modulare Fräshalter verwendet werden, wie z.B. ASRM, AHUM, ARPFM, BCFM, ABPFM, usw.

ASC | Carbide Shanks for Modular Mills



	ID Code	Item Code	ØD <sub>2</sub>	M	L <sub>3</sub>	L	L <sub>f</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>s</sub>	ØD <sub>3</sub>	Ød	ØD <sub>4</sub>	Type	Cutter body		
Without Airhole	FH137	ASC10-6.5-74-24	6.5	M6	94	74	20	24	44	50	9.3	10	-	A	Ø8, Ø10		
	FH138	ASC10-6.5-114-49			134	114		49	69	65							
	FH139	ASC12-6.5-74-24			94	74		24	44	50	11	12			11.5	B	Ø12
	FH140	ASC12-6.5-129-64			149	129		64	84	65							
With Airhole	FH141	ASC16-8.5-95-30	8.5	M8	120	95	25	30	55	65	14.5	16	15.5	C	Ø16		
	FH142	ASC16-8.5-140-75			165	140		75	100	65							
	FH143	ASC20-10.5-120-50	10.5	M10	150	120	30	50	80	70	18	20	-		Ø20		
	FH144	ASC20-10.5-220-50			250	220		170									
	FH145	ASC25-12.5-145-65	12.5	M12	175	145	30	65	95	80	23	25			Ø25		
	FH146	ASC25-12.5-265-65			295	265		200									
	FH147	ASC32-17-160-80	17	M16	190	160	30	80	110	80	28	32			Ø32		
	FH148	ASC32-17-310-80			340	310		230									

1. SUPER Lock milling chucks or shrink-fit holders can be used.
2. Please note that the dimensions for L<sub>3</sub>, L<sub>f</sub>, and L<sub>1</sub> may be different when attached to other modular-type holders such as ASRM, AHUM, ARPFM, BCFM, ABPFM, etc.

1. SUPER Lock Aufnahmen oder Schrumpffutter können verwendet werden.
2. Bitte beachten Sie, dass die Maße für L<sub>3</sub>, L<sub>f</sub>, und L<sub>1</sub> abweichen können, wenn andere modulare Aufnahmen verwendet werden, wie z.B. ASRM, AHUM, ARPFM, BCFM, ABPFM, usw.

**Indexable Milling Tools – Modular Types**

**CONTENT** | Indexable Modular Milling Tools, Chucks & Extensions

Short	Name	Type	Ø D mm	Brochure No.	Page
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<b>BCFM</b>	Heavy Roughing Ball - Modular Type		D = 20 – 32	No. 326 BCF	4
<b>ASRM</b>	Turbo Modular		D = 20 – 40	No. 317 ASR-M	5
<b>ASRFM</b>	Turbo4 Modular		D = 35 – 42	No. 321 ASRF/M Turbo4	6
<b>ASRM Pico Maxi</b>	Turbo Metric Series – Modular Type		D = 20 – 42	No. 329.2 ASR Pico Maxi	7
<b>ASRM Pico</b>	Turbo Metric Series – Modular Type		D = 16 – 40	No. 320.3 ASR Pico	8
<b>ASMM</b>	ASM/AHU Mini Modular Type		D = 8 – 32	No. 324 ASM/AHU Mini	9
<b>APHP</b>	Advanced Pico Hard Precision		D = 8 – 32	No. 330 APHP	10
<b>ABPF-M</b>	Ball High Precision Finish Modular		D = 10 – 32	No. 315.2 ABPF/M-ARPF/M	11–12
<b>ARPF-M</b>	Radius High Precision Finish Modular		D = 10 – 32	No. 315.2 ABPF/M-ARPF/M	13
<b>AHUM15</b>	High Feed Ultra Modular Type		D = 32 – 40	No. 323.2 AHUM15/AHUB15	14
<b>AHUM</b>	High-Feed Ultra End Mill Modular		D = 16 – 32	No. 319.2 AHU/M	15
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<b>AMC</b>	Modular Chucks – HSK & SK		M8 – M16	No. 705.3 AMC Modular Chucks	17
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<b>ASC</b>	Carbide Shanks for Modular Mills				18

## Product Range

### Solid Carbide End Mills



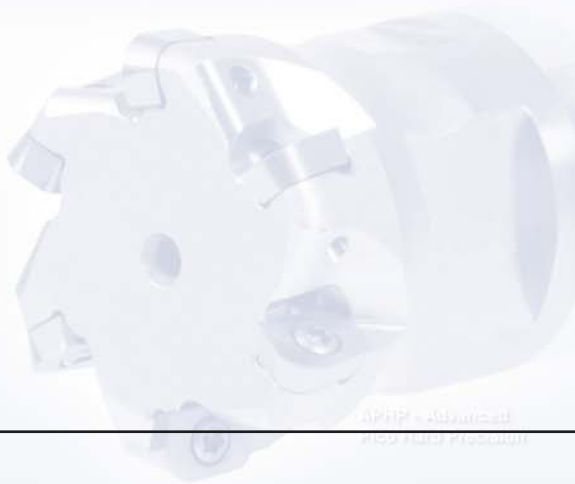
ABEM



BCER



ASRM



APHP - Advanced  
High Speed Product

micro**EndMill**

**CBN**  
Cubic Boron Nitride

**HD**  
COATING

**Epoch21**

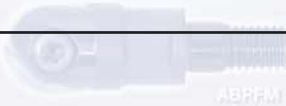
**MINIATURE**

**3D-Cut**

### Indexable Milling Tools



ABPFM



ARPFM

**Indexable  
Milling**

### ESM Speed End Mills

### EMC Power Drills

**ESM**  
**SPEED**

### Milling Chucks



ASBM-Pico Maxi



ASBM-Pico



ASBM-Mini



ASBM-Micro

**Milling  
Chucks**

HSK63



SK40



AS Steel Drill



AS50 Diamond Shank

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