

Advanced  
Engineering

Hitachi Tool

**HITACHI**  
Inspire the Next

No. 330

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

**NEW**

**APHP** Advanced **Pico Hard** Precision

Ø 8 ~ Ø 32 · High Hardness Cutting (HHC) **HRC 62**  
High Feed Cutting (HFC)



**APHP Insert**  
CAM Radius: **R2**

**New Grades:**  
**PJP-Coating**  
**D-Coating**



**PJP: Micro Grain  
PVD Coating**

**Diamond Coating**  
for Graphite

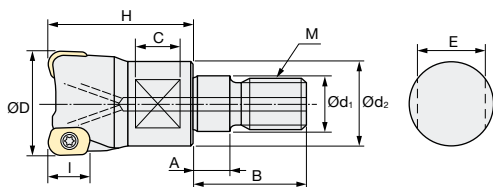
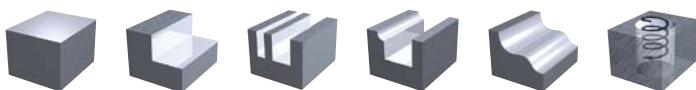


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[www.high-feed-cutting.com](http://www.high-feed-cutting.com)

**Indexable Milling Tools**

**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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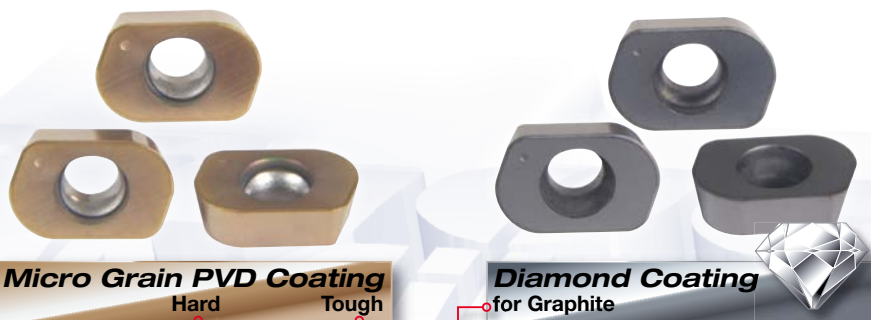
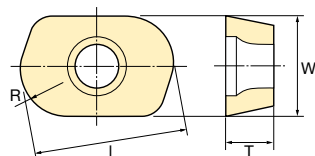


Torque on screw: <b>0.5 Nm</b>	<b>CAM Radius:</b> <b>2 mm</b> ØD -0.046/-0.096
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Modular Type													
ID Code	Item Code	Flutes	ØD	H	Ød <sub>1</sub>	M	Ød <sub>2</sub>	A	B	C	E	I	Inserts
FH182	<b>APHP-1008R-1-M6</b>	1	<b>8</b>	19	6.5	M6	9.4	5.5	14.5	5	7	6.215	EPHW0402TN-2
FH183	<b>APHP-1010R-2-M6</b>	2	<b>10</b>	17	6.5								
FH184	<b>APHP-1012R-3-M6</b>	3	<b>12</b>	17	6.5								
FH185	<b>APHP-1016R-4-M8</b>	4	<b>16</b>	22	8.5	M8	12.8						
FH186	<b>APHP-1020R-5-M10</b>	5	<b>20</b>	25	10.5	M10	17.8						
FH187	<b>APHP-1025R-6-M12</b>	6	<b>25</b>	25	12.5	M12	20.8	22	10	15	17		
FH188	<b>APHP-1032R-8-M16</b>	8	<b>32</b>	27	17	M16	28.8	6	23	12	22		

Wrench Size

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

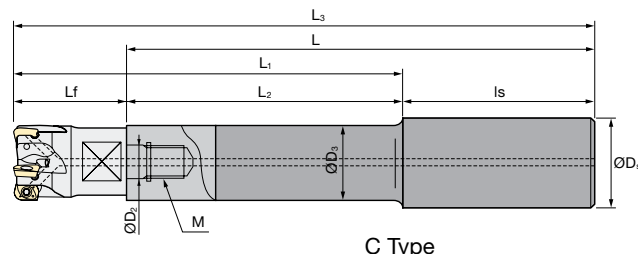
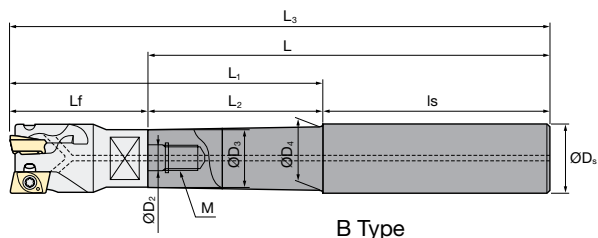
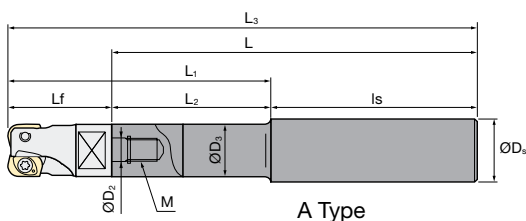


ID Code	Item Code	Tolerance Class	Coating			Size (mm)			
			PJP Coated	PJP Coated	D Coated	R	I	T	W
WF210	<b>EPHW0402TN-2 PJP08M</b>	<b>H</b>	•			2	6.215	2	4.2
WF211	<b>EPHW0402TN-2 PJP15M</b>			•					
WF212	<b>EPHW0402TN-2 D08M</b>				•				

	<b>Parts Shape</b>	<b>Clamp Screw</b>		<b>Wrench</b>	
	<b>Type</b>	<b>ID-Code</b>	<b>Item-Code</b>	<b>ID-Code</b>	<b>Item-Code</b>
Modular	Cutter body <b>APHP-10...</b>	ET052	<b>240-140</b>		<b>104-T6</b>

## Indexable Milling Tools

### 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>	Is	ØD <sub>3</sub>	ØD <sub>s</sub>	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						
	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	B	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	-	C	Ø20	
	FH144	ASC20-10.5-220-50			250	220		170								
	FH145	ASC25-12.5-145-65	175	145	80											
	FH146	ASC25-12.5-265-65	295	265	200											
	FH147	ASC32-17-160-80	17	M16	190	160	80	110	80	23	25	28	32	-	C	Ø25
	FH148	ASC32-17-310-80			340	310			230							

- SUPER Lock milling chucks or shrink-fit holders can be used.
- 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.

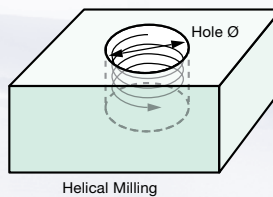
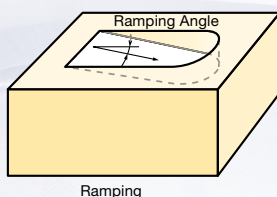
- SUPER Lock Aufnahmen oder Schrumpffutter können verwendet werden.
- Bitte beachten Sie, dass die Maße für L<sub>3</sub>, L<sub>f</sub>, und L<sub>1</sub> abweichen können, wenn andere modulare Aufnahmen verwendet werden, wie z.B. ASRM, AHUM, ARPFM, BCFM, ABPFM, usw.

For further information about Modular Chucks please see our AMC brochure No. 705.2

Weitere Informationen über Modulare Werkzeugaufnahmen finden Sie in unserem AMC Prospekt No. 705.2



### Ramping / Helical Milling



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

## APHP | Recommended Cutting Conditions

Workpiece material	Insert Grade	Tool Ø / Flutes Parameter	Ø 8/Z1	Ø 10/Z2	Ø 12/Z3	Ø 16/Z4	Ø 20/Z5	Ø 25/Z6	Ø 32/Z8
			Hardened steel 45-55 HRC	PJP08M PJP15M	n min <sup>-1</sup>	4,380	3,500	2,920	2,190
V <sub>c</sub> m/min	110	110			110	110	110	110	110
V <sub>f</sub> mm/min	1,750	3,500			4,380	4,380	4,370	4,200	4,360
f <sub>z</sub> mm/t	0.4	0.5			0.5	0.5	0.5	0.5	0.5
a <sub>p</sub> mm	0.2	0.3			0.3	0.3	0.3	0.3	0.3
a <sub>e</sub> mm	4.5	6			7	9.5	12	15	19
Q cm <sup>3</sup> /min	1.6	6.3			9.2	12.5	15.7	18.9	24.9
Hardened steel 55-60 HRC	PJP08M	n min <sup>-1</sup>	2,990	2,390	1,990	1,490	1,190	960	750
		V <sub>c</sub> m/min	75	75	75	75	75	75	75
		V <sub>f</sub> mm/min	890	1,910	2,380	2,380	2,380	2,300	2,400
		f <sub>z</sub> mm/t	0.3	0.4	0.4	0.4	0.4	0.4	0.4
		a <sub>p</sub> mm	0.15	0.2	0.2	0.2	0.2	0.2	0.2
		a <sub>e</sub> mm	3	4	5	6.5	8	10	13
		Q cm <sup>3</sup> /min	0.4	1.5	2.4	3.1	3.8	4.6	6.2
Hardened steel 60-62 HRC	PJP08M	n min <sup>-1</sup>	2,590	2,070	1,730	1,290	1,040	830	650
		V <sub>c</sub> m/min	65	65	65	65	65	65	65
		V <sub>f</sub> mm/min	640	1,240	1,550	1,540	1,560	1,490	1,560
		f <sub>z</sub> mm/t	0.25	0.3	0.3	0.3	0.3	0.3	0.3
		a <sub>p</sub> mm	0.15	0.15	0.15	0.15	0.15	0.15	0.15
		a <sub>e</sub> mm	3	4	5	6.5	8	10	13
		Q cm <sup>3</sup> /min	0.3	0.7	1.2	1.5	1.9	2.2	3.0
Graphite	D08M	n min <sup>-1</sup>	up to 39,800	up to 31,800	up to 26,500	up to 19,900	up to 15,900	up to 12,700	up to 9,900
		V <sub>c</sub> m/min	up to 1,000	up to 1,000	up to 1,000	up to 1,000	up to 1,000	up to 1,000	up to 1,000
		V <sub>f</sub> mm/min	up to 15,900	up to 25,400	up to 31,800	up to 31,800	up to 31,800	up to 30,000	up to 31,600
		f <sub>z</sub> mm/t	up to 0.4	up to 0.4	up to 0.4	up to 0.4	up to 0.4	up to 0.4	up to 0.4
		a <sub>p</sub> mm	up to 1.0	up to 1.0	up to 1.0	up to 1.0	up to 1.0	up to 1.0	up to 1.0
		a <sub>e</sub> mm	up to 4	up to 5	up to 7	up to 11	up to 15	up to 20	up to 25
		Q cm <sup>3</sup> /min	up to 31.8	up to 63.5	up to 111.3	up to 174.9	up to 238.5	up to 300	up to 395

APHP Insert  
CAM Radius: R2New Grades:  
PJP-Coating  
D-Coating

## Product Range

Solid Carbide End Mills

microEndMill

Indexable Milling Tools

Indexable  
MillingESN  
Cubic Boron NitrideESM Speed End Mills  
EMC Power DrillsESM  
SPEED

MINIATURE

HD  
COATING

Milling Chucks

3D-Cut

Epoch21

Milling  
Chucks

## Hitachi Tool Engineering Europe GmbH

Itterpark 12 · 40724 Hilden · Germany · Phone +49 (0) 21 03-24 82-0 · Fax +49 (0) 21 03-24 82-30

e-Mail info@hitachitool-eu.com · Internet www.hitachitool-eu.com

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