

Advanced
Engineering

Hitachi Tool

HITACHI
Inspire the Next

No. 327

Indexable
Milling
+ Modular Series

NEW

ASPV Polish Mill Vertical Type Modular & Bore Types Multi Function High Speed End Mill

Multi-Function End Mill
for bottom & vertical wall finishing
of high quality surfaces

CR
0.4
0.8
2.0

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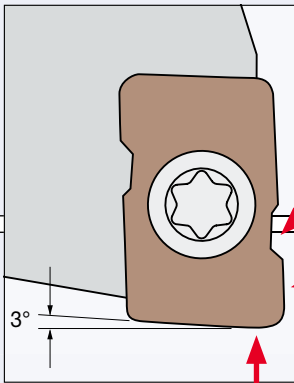
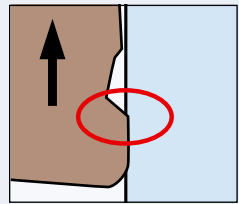
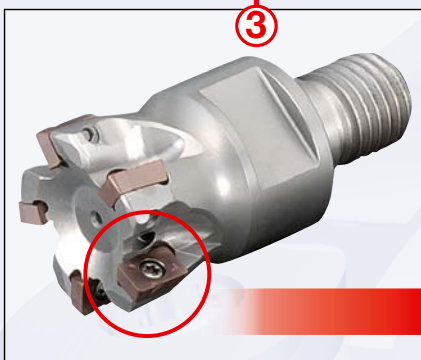

Indexable Milling Tools

FEATURES

- Ideal cutter for applications finishing structural parts of bottom, side, etc.
- Multi-flute specifications enable higher feed rates for more efficient finishing.
- Vertical machining in which cutting feed is in the direction of the machine's main axis can also be performed.
- Comprehensive lineup of insert materials enables machining of a wide range of materials from carbon steel to quenched steel, as well as aluminium, etc.
- For small machines, use in combination with weak spindles creates a high-rigidity system and improves machining stability.
- Use in combination with a carbide shank improves machining accuracy when machining with long overhangs.
- In addition to improving durability by using special steel in the cutter body, a PVD coating is applied to the modular type and bore type holder to improve abrasion resistance.

BESONDERHEITEN

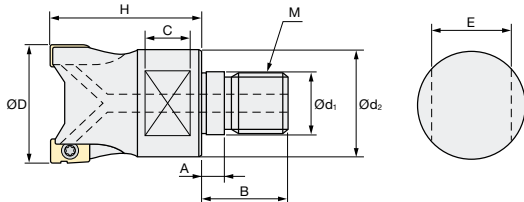
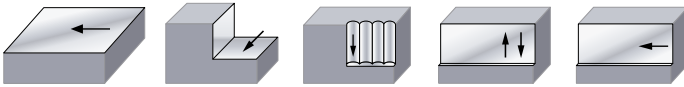
- Das ideale Werkzeug zum Schlichten von Flächen an Werkstücken (Boden, Seiten, usw.).
- Mehrschneidige Ausführung ermöglicht höhere Vorschubraten und effizienteres Schlichten.
- Vertikalbearbeitung mit Vorschub in Richtung der Maschinenhauptachse möglich.
- Umfangreiche Schneidplatten-Auswahl für die Bearbeitung eines breiten Materialspektrums von Carbonstahl über vergüteten Stahl bis hin zu Aluminium, usw.
- Hochstabile Bearbeitung selbst mit kleinen Maschinen und schwächeren Spindeln.
- Schafffräshalter aus Vollhartmetall bieten höhere Bearbeitungsgenauigkeit bei großen Auskraglängen.
- Zusätzlich zur Verwendung von Spezialstahl sind die Fräshalter PVD-beschichtet für noch höhere Verschleißfestigkeit.

<p>Flute tip has 3 cutting edges: Fräser mit 3 Schneidkanten:</p> 		<p>Feed direction: Vorschubrichtung:</p> 	
<p>1 Cutting edge for reciprocating machining Used as the cutting edge when performing reciprocating finishing vertical machining.</p>		<p>1 Schneidkante für oszillierende Bearbeitung Für vertikale Schlichtoperationen mit wechselnder Richtung.</p>	
<p>2 Peripheral cutting edge Used as the peripheral cutting edge when performing side machining.</p>		<p>2 Äußere Schneidkante Für die Seitenbearbeitung.</p>	
<p>3 Face cutting edge Used when bottom finishing. Used as the reciprocating cutting edge when performing vertical machining.</p>		<p>3. Stirnschneidkante Zum Schlichten der Bodenflächen. Schneidkante für vertikales Schlichten mit wechselnder Richtung.</p>	
		<p>Insert with supplementary cutting edge: For increased feed rates</p> <p>Schneidplatte mit zusätzlicher Schneidkante: Für höhere Vorschubraten.</p>	
<p>MPHW0603..ZEL 0.5 MPHW0603..ZEL 1.5</p>		<p>Insert without supplementary cutting edge: For bottom machining, suitable for long overhang (L/Dc=5 or more) machining or for handling low rigidity in main axis direction. For vertical machining, inserts without supplementary cutting edge are recommended.</p>	
		<p>Schneidplatte ohne zusätzliche Schneidkante: Für die Bearbeitung der Bodenflächen, geeignet für große Auskraglängen (L/Dc=5 und mehr) oder bei geringer Stabilität in der Hauptachse. Für Vertikalbearbeitung sind diese Schneidplatten besonders geeignet.</p>	
<p>MPHW0603..ZEL</p>			

Indexable Milling Tools

ASPVM | Polish Mill V-Type / Modular

Jet Air Hole	▽ Roughing	▽▽ Finishing	HRC 62	No. of Teeth 2~6	90°	Mill-Ø tolerance for master insert 0 -0.1
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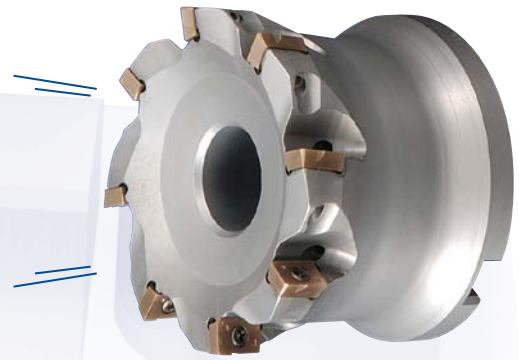
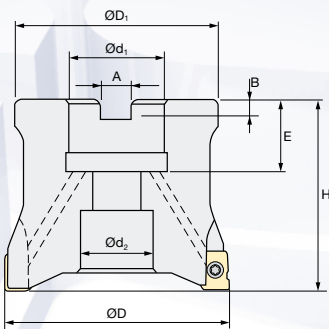
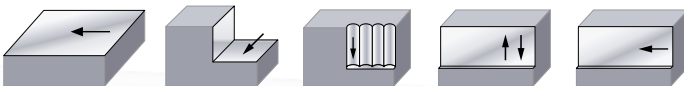


Torque on screw:
1.1 Nm


Modular Type												Inserts
ID Code	Item Code	Flutes	ØD	H	Ød ₁	M	Ød ₂	A	B	C	E	
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	10	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									

ASPVB | Polish Mill V-Type / Bore Type

Jet Air Hole	▽ Roughing	▽▽ Finishing	HRC 62	No. of Teeth 6~8	90°	Mill-Ø tolerance for master insert 0 -0.1
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Torque on screw:
1.1 Nm

Bore Type												Inserts
ID Code	Item Code	Flutes	ØD	H	Ød ₁	Ød ₂	M	ØD ₁	A	B	E	
FH157	ASPVB-2042RM-6-16	6	42	40	16	13.5	M8	35	8.4	5.6	18	MPHW06.... 
FH158	ASPVB-2052RM-7-22	7	52	50	22	17	M10	40	10.4	6.3	20	
FH159	ASPVB-2052RM-7-27	7	52		27	20	M12	45	12.4	7	22	
FH160	ASPVB-2066RM-8-27	8	66					60				

Note: Arbor screw is not included.

Indexable Milling Tools

INSERTS ASPV | Polish Mill V-Type

MPHW0603..ZEL/ZFL

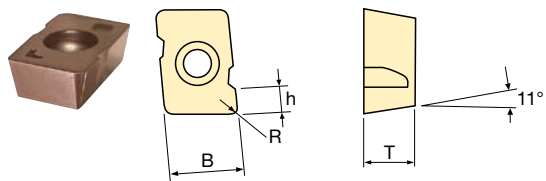


Fig. 1

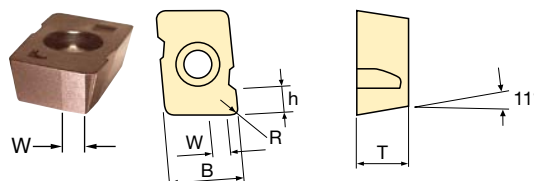


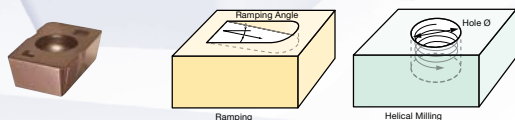
Fig. 2

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

Type	Parts		Clamp Screw		Screw Driver	
	Cutter body	Shape	ID-Code	Item-Code	ID-Code	Item-Code
Modular	ASPVM20..R-		ET175	250-141	ET13	104-T8
Bore Type	ASPVB20..RM-					

ASPV | Polish Mill V-Type | Recommended Cutting Conditions

Ramping/Helical Milling



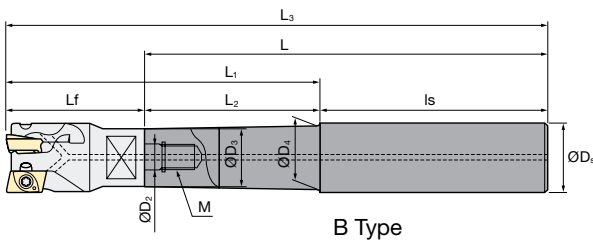
Inserts	MPHW0603..ZEL/ZFL							
Tool diameter Ø (mm)	Ø16	Ø20	Ø25	Ø32	Ø35	Ø42	Ø52	Ø66
Maximum ramp angle °	2.5°	2.5°	2.1°	1.6°	1.4°	1.2°	1°	0.5°
Helical Milling / Hole Dia. (mm)	22~30	30~38	40~48	54~62	60~68	74~82	94~102	122~130

1. The ramp angle should be set within the ranges listed above. Use at ramp angles of 0.5° is recommended.
2. For hole diameters outside the ranges listed above, a pilot hole should be drilled before milling.

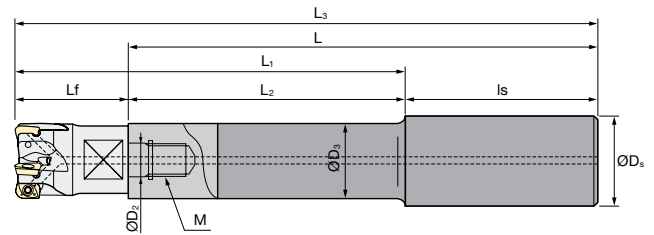
1. Der Rampenfräswinkel sollte innerhalb der oben aufgelisteten Bereiche sein. Empfohlen wird ein Winkel von 0,5°.
2. Für Bohrungen mit einem größeren Durchmesser als oben aufgeführt sollte vor dem Helikalfräsen eine Startbohrung durchgeführt werden.

Indexable Milling Tools

ASC | Carbide Shanks for Modular Mills



B Type



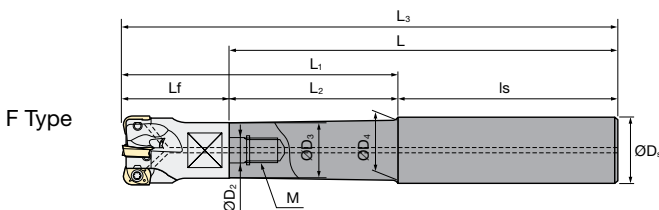
C Type

		Carbide Shank														
		ID Code	Item Code	ØD ₂	M	L ₃	L	Lf	L ₂	L ₁	ls	ØD ₃	ØD _s	ØD ₄	Type	Cutter body
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	80		170							
	FH145	ASC25-12.5-145-65		12.5	M12	175	145	80	65	95	80	23	25	-	C	Ø25
	FH146	ASC25-12.5-265-65			295	265	200									
	FH147	ASC32-17-160-80		17	M16	190	160	110	80	110	80	28	32	-	C	Ø32, 35, 42
	FH148	ASC32-17-310-80			340	310	230									

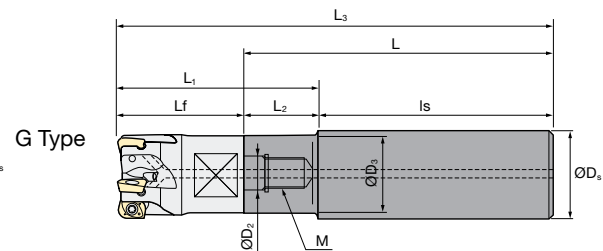
1. SUPER Lock milling chucks or shrink-fit holders can be used.
2. Please note that the dimensions for L₃, Lf, and L₁ may be different when attached to other modular-type holders such as ASRM, AHUM, ARPFM, BCFM, ABPFM, etc.

1. SUPER Lock Aufnahmen oder Schrumpffutter können verwendet werden.
2. Bitte beachten Sie, dass die Maße für L₃, Lf, und L₁ abweichen können, wenn andere modulare Aufnahmen verwendet werden, wie z.B. ASRM, AHUM, ARPFM, BCFM, ABPFM, usw.

AS | Steel Shanks for Modular Mills



F Type



G Type

		Steel Shank														
		ID Code	Item Code	ØD ₂	M	L ₃	L	Lf	L ₂	L ₁	ls	ØD ₃	ØD _s	ØD ₄	Type	Cutter body
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		18	20	-	G	Ø20

1. SUPER Lock milling chucks can be used.
2. Please note that the dimensions for L₃, Lf, and L₁ 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 L₃, Lf, und L₁ abweichen können, wenn andere modulare Fräshalter 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



Product Range

Solid Carbide End Mills

micro**EndMill**

CBN
Cubic Boron Nitride

HD
COATING

Epoch21

MINIATURE

3D-Cut

Indexable Milling Tools

Indexable
Milling

ESM Speed End Mills

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ESM
SPEED

Milling Chucks

*Multi-Function End Mill
for bottom & vertical wall finishing*

Milling
Chucks

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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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