

 **ASRF TURBO4**

The ASRF with economical 4-corner specification for increased processing efficiency ensures stable high-performance machining with constant load – even for deep cutting operations.

 **ASRF TURBO4**

Der ASRF mit wirtschaftlicher 4-seitiger Schneidplattengeometrie für höchste Effizienz ermöglicht Hochleistungs-Bearbeitungen mit konstantem Vorschub – auch bei großen Schnitttiefen.

 **ASRF TURBO4**

Il ASRF, nella conveniente versione a 4 angoli per una migliore efficienza di lavoro, assicura una lavorazione stabile di elevate prestazioni con un carico costante, anche per operazioni di taglio profondo.

 **ASRF TURBO4**

El ASRF con especificación económica de 4 esquinas para aumento de eficiencia de procesamiento, asegura un estable funcionamiento de máquina con constante carga – aún para operaciones de corte profundas.

 **ASRF TURBO4**

Le ASRF, avec ses plaquettes spécifiques dotées de quatre arrêtes de coupe, permet des usinages hautes performances grâce à sa stabilité et la constance de la charge requise. Ceci même lors d'usinages avec de forts porte-à-faux.

 **ASRF TURBO4**

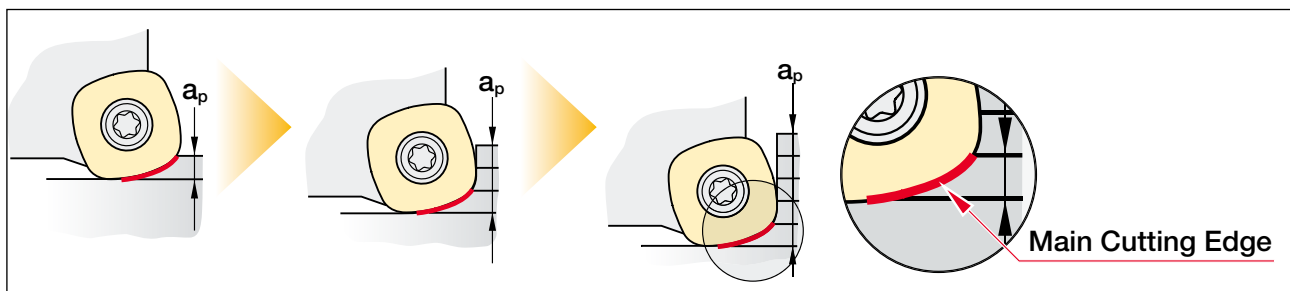
A ASRF Turbo 4 com a económica especificação de 4 arestas para uma maior eficiência de processamento, assegura um funcionamento estável da máquina com carga constante – até em operações de corte mais profundas.

**Recommended Selection of MMC Hitachi's Roughing Series**

	<b>ASR Pico</b> D 16–66mm	<b>ASRF</b> D 35–100mm	<b>ASF</b> D 63–315mm
<b>Application Field</b>	<b>HFM</b> High Feed Machining	<b>HPC</b> High Performance Cutting	<b>HVC</b> High Volume Cutting
<b>Machine-spindle</b>	ISO40/HSK63 ASR Pico	ASRF	ISO50/HSK100 ASF
<b>f<sub>z</sub> mm</b>	0.5 ~ 1.5	0.5 ~ 2.5	0.5 ~ 3.5
<b>V<sub>f</sub> mm/min</b>	2,000 ~ 20,000	1,000 ~ 10,000	500 ~ 5,000
<b>a<sub>p</sub> mm</b>	0.35 ~ 0.75 (max. 1)	0.5 ~ 1.5 (max. 2)	0.75 ~ 2 (max. 3)
<b>CAM R</b>	R2	R4.5	R5

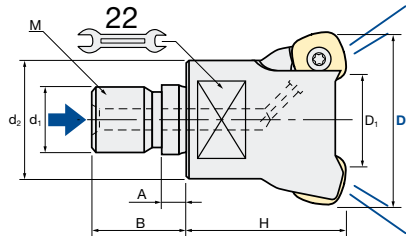
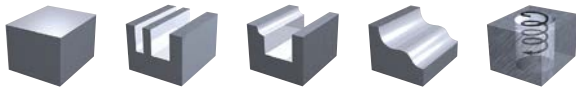
  

Way to achieve Q (cm <sup>3</sup> )		
<b>V<sub>c</sub></b>	Less	More
<b>f<sub>z</sub></b>	Less	More
<b>a<sub>p</sub></b>	Less	More



**ASRFM | Turbo4 Modular**

<b>Q max</b> High Efficient	<b>Jet</b> Air Hole	<b>▽</b> Roughing	<b>▽▽</b> Semi-Finishing	<b>HRC</b> 60	<b>No. of Teeth</b> 3 ~ 4
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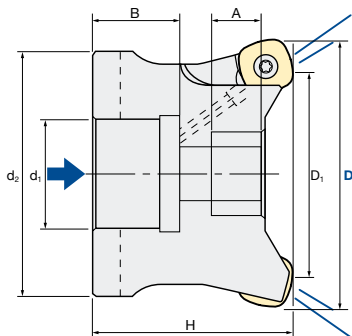
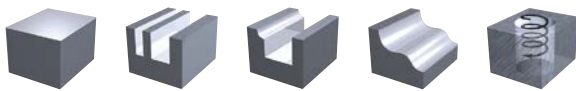
Diameter Holder only [mm]	CAM Radius:	Fastening Torque [Nm]
<b>0/-0.2 mm</b>	<b>4.5 mm</b>	<b>2.9Nm</b>

Modular Type												
ID Code	Item Code	Flutes	D	D <sub>1</sub>	H	d <sub>1</sub>	M	d <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								

**ASC | Carbide Shanks for Modular Mills & AS | Steel Shanks for Modular Mills: page 8**

**ASRF | Turbo4**

<b>Q max</b> High Efficient	<b>Jet</b> Air Hole	<b>▽</b> Roughing	<b>▽▽</b> Semi-Finishing	<b>HRC</b> 60	<b>No. of Teeth</b> 4 ~ 8
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Diameter Holder only [mm]	CAM Radius:	Fastening Torque [Nm]
<b>0/-0.2 mm</b>	<b>4.5 mm</b>	<b>2.9Nm</b>

Bore Type												
ID Code	Item Code	Flutes	D	D <sub>1</sub>	H	d <sub>1</sub>	M	d <sub>2</sub>	A	B	Inserts	
FH108	<b>ASRF-4042RM-4-16</b>	4	<b>42</b>	24	40	16	8*	35	3	18	SD..1205ZDTN-R15	
FH217	<b>ASRF-4050RM-4-22</b>		<b>50</b>	32								
FH273	<b>ASRF-4050RM-5-22</b>	5	<b>52</b>	34	50	22	10	40	16.5	20		
FH109	<b>ASRF-4052RM-5-22</b>											
FH113	<b>ASRF-4052RM-5-27</b>											
FH219	<b>ASRF-4063RM-5-27</b>	6	<b>63</b>	45	70	27	12	60	13	22		
FH110	<b>ASRF-4066RM-5-27</b>											
FH111	<b>ASRF-4080RM-6-27</b>	6	<b>80</b>	62	70	32	16	70	25	25.5		
FH112	<b>ASRF-4100RM-8-32</b>	8	<b>100</b>	82								

**\* Special Screw**

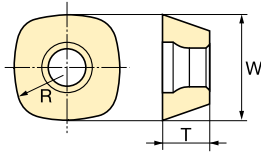
**Cutting Conditions | Schnittwerte | Condizioni di taglio | Condiciones de Corte | Conditions de coupe | Valores de corte:**

D 35 (Z3) – D 42 (Z4) modular & bore type      Page 5      D 50 (Z4) – D 100 (Z8) bore type      Page 6–7



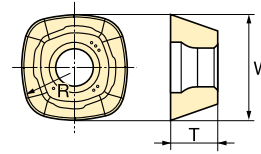
**INSERTS ASRF / M** | Turbo4 / Turbo4 Modular

**Type A**



Standard type

**Type B**



Low-resistance breaker type

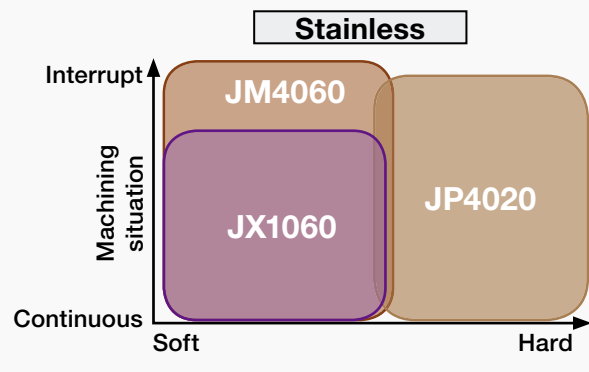
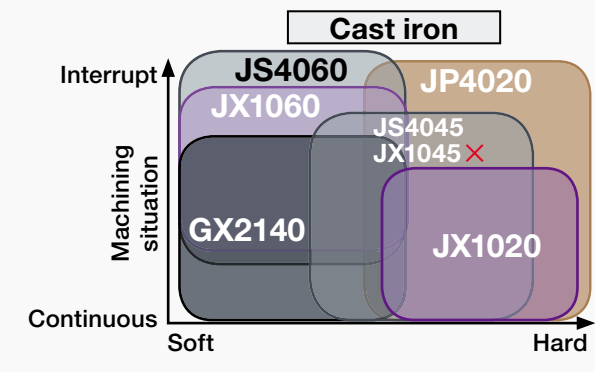
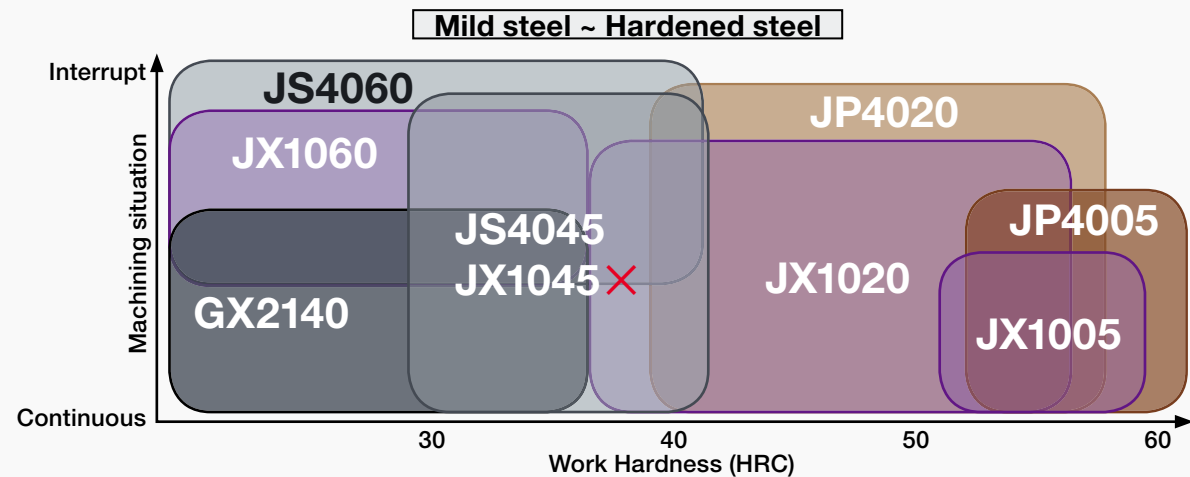


Inserts	Grade										Size (mm)			Chip-breaker	Type
	GX2140	JX1060	JM4060	JS4060	JX1045 X	JS4045	JX1020	JP4020	JX1005	JP4005	R	T	W		
Item Code	ID Code														
<b>SDNW-1205ZDTN-R15</b>	WF239	WF175	WF366	WF332	WF174 X	WF375	WF173	WF331	WF172	WF330	15	5.56	12.7	no	A
<b>SDMT-1205ZDTN-R15</b>	WF238	WF180	WF335	WF334	WF179 X	WF374	WF178	WF333	WF177					yes	B

- GX2140** CVD · For heavy roughing of mild steels | Recommended for dry cutting
- JX1060** PVD · For carbon steels < 35HRC
- JM4060** PVD · For stainless steels & carbon steels < 35HRC
- JS4060** PVD · For carbon steels < 35HRC

- JX1045** X to be replaced by JS4045
- JS4045** PVD · For general steels 30–40HRC
- JX1020** PVD · For pre-hardened steels 40–55HRC
- JP4020** PVD · For pre-hardened steels 40–55HRC
- JX1005** PVD · PVD Coating
- JP4005** PVD · For hardened steels > 50HRC

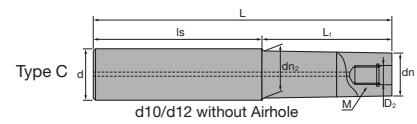
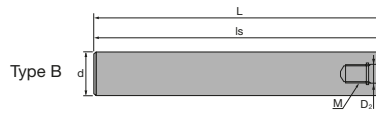
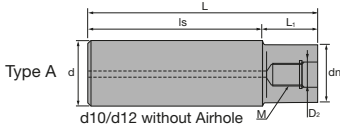
**ASRF Insert grade – target material**



Cutter Body / Parts		Clamp Screw ID-Code	Item-Code	Wrench ID-Code	Item-Code
<b>ASRFM</b>	<b>ASRF</b>	ET048	<b>262-142</b>	ET049	<b>105-T15</b>
<b>ASRF-4042RM-4-16</b>	<b>Special screw</b>	ET050	<b>K06-676</b>		

**ASC | Carbide Shanks** for Modular Mills

MMC Hitachi Tool Engineering Europe GmbH



Carbide Shank		ID Code	Item Code	D <sub>2</sub>	M	L	L <sub>1</sub>	Is	dn	dn <sub>2</sub>	d	Type			
Without Airhole	FH137	ASC10-6.5-74-24	6.5	M6	74	24	50	9.3	-	10	A				
	FH254	ASC10-6.5-84-34			84	34									
	FH255	ASC10-6.5-114-24			114	24						90			
	FH138	ASC10-6.5-114-49			49	65									
	FH139	ASC12-6.5-74-24			74	24	50					11	11.5	12	C
	FH256	ASC12-6.5-94-44			94	44									
	FH257	ASC12-6.5-129-24			129	24									
FH140	ASC12-6.5-129-64	64	65												
With Airhole	FH141	ASC16-8.5-95-30	8.5	M8	95	30	65	14.5	15.5	16	C				
	FH258	ASC16-8.5-120-55			120	55									
	FH142	ASC16-8.5-140-75			140	75									
	FH260	ASC16-8.5-160-30			160	30						130			
	FH259	ASC16-8.5-160-95			95	65									
	FH143	ASC20-10.5-120-50	10.5	M10	120	50	70	18	-	20	A				
	FH261	ASC20-10.5-170-90Z			170	90	80	18.5	19.5		C				
	FH144	ASC20-10.5-220-50			220	50	170	18	-		A				
	FH262	ASC20-10.5-220-120Z			120	100	18.5	19.5	20	C					
	FH263	ASC20-10.5-270-150Z			270	150					120				
	FH264	ASC20-10.5-270-50Z	50	220											
	FH145	ASC25-12.5-145-65	12.5	M12	145	65	80	23	-	25	A				
	FH146	ASC25-12.5-265-65			265		200								
	FH265	ASC25-12.5-215-115			215		115					100			
	FH266	ASC25-12.5-265-145			265	145	120								
	FH268	ASC25-12.5-315-65			315	65	250								
	FH267	ASC25-12.5-315-195			195	120									
FH147	ASC32-17-160-80	17	M16	160	80	80	28	-	32	A					
FH269	ASC32-17-260-140			260	140	120									
FH148	ASC32-17-310-80			310	80	230									
FH270	ASC32-17-360-240			360	240	120									

- SUPER Lock milling chucks or shrink-fit holders can be used.
- SUPER Lock Aufnahmen oder Schrumpffutter können verwendet werden.
- Possono essere utilizzati mandrini a forte serraggio SUPER Lock.

- Aptos para amarrar en portapinzas SUPER Lock.
- Les attachements SUPER Lock peuvent être utilisés.
- Cones hidráulicos de grande aperto e aperto térmico podem ser usados.

**AS | Steel Shanks** for Modular Mills


Steel Shank		ID Code	Item Code	D <sub>2</sub>	M	L	L <sub>1</sub>	Is	dn	dn <sub>2</sub>	d	Type
Without Airhole	FH131	AS10-6.5-74-0	6.5	M6	74	-	74	-	-	-	10	B
	FH132	AS12-6.5-84-4			84	4	80	11	-	12	A	
With Airhole	FH133	AS16-8.5-95-15	8.5	M8	95	15	80	14.5	15.5	16	C	
	FH134	AS20-10.5-100-20	10.5	M10	100	20		18	-	20	A	
	FH271	AS25-12.5-115-35	12.5	M12	115	35		23	23	25		
	FH272	AS32-17-110-30	17	M16	110	30		28	28	32		

- SUPER Lock milling chucks can be used.
- SUPER Lock Aufnahmen können verwendet werden.
- Possono essere utilizzati mandrini a forte serraggio SUPER Lock.

- Aptos para amarrar en portapinzas SUPER Lock.
- Les attachements SUPER Lock peuvent être utilisés.
- Cones hidráulicos de grande aperto e aperto térmico podem ser usados.

- For further information about modular chucks please see our brochure *Indexable Modular Series No. 328*
- Weitere Informationen über modulare Werkzeugaufnahmen finden Sie in unserem Prospekt: *Indexable Modular Series No. 328*
- Para obtener más información sobre conos modulares consulte nuestro folleto *Indexable Modular Series No. 328*
- Per maggiori informazioni riguardanti la gamma dei mandrini avvitali consultate il catalogo *Indexable Modular Series No. 328*

- Pour de plus amples informations concernant les attachements modulaires, voyez SVP notre brochure *Indexable Modular Series No. 328*
- Para mais informações sobre Conos Modulares consulte o nosso folheto *Indexable Modular Series No. 328*


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