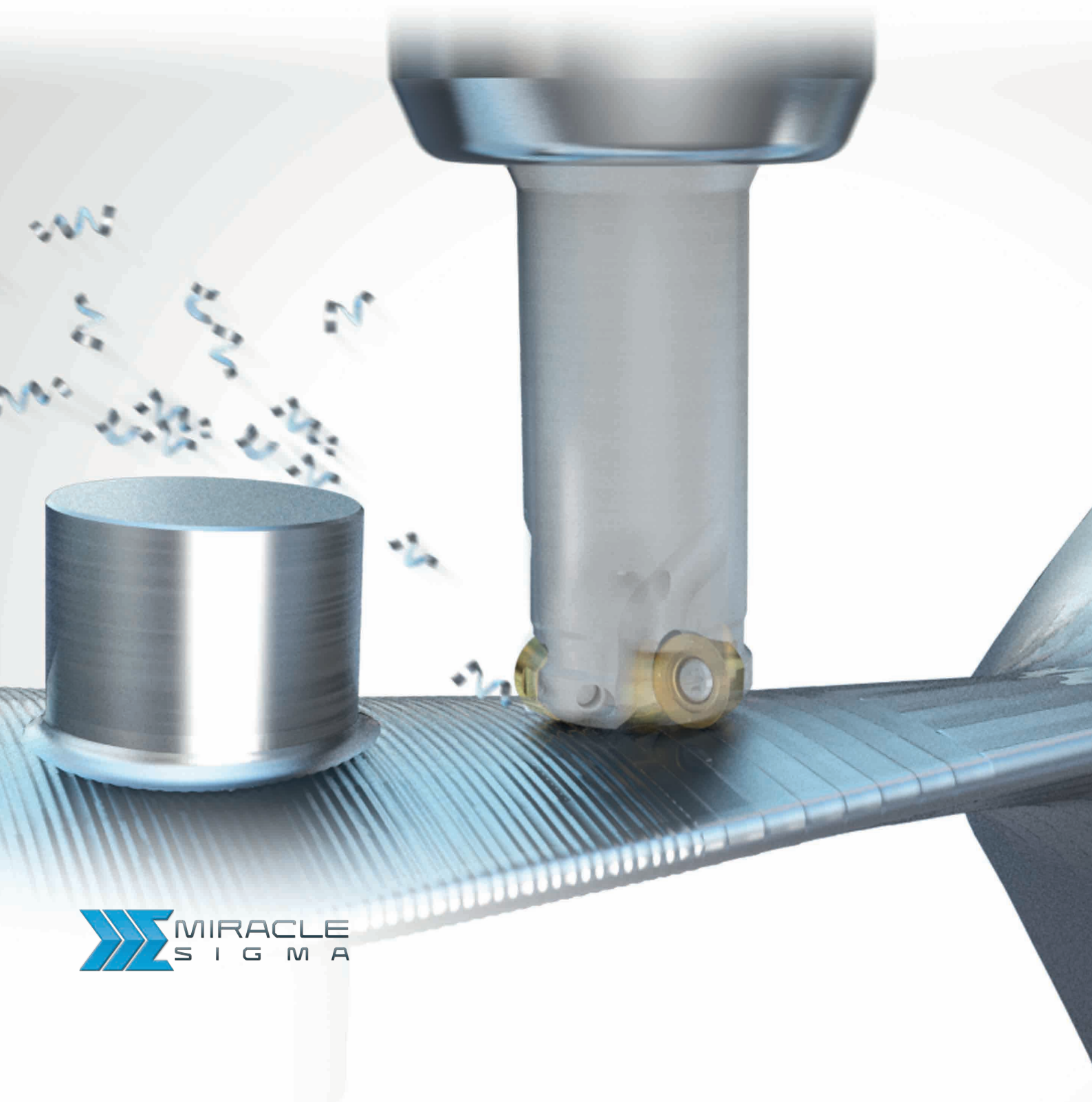


Round insert cutter for difficult-to-cut materials

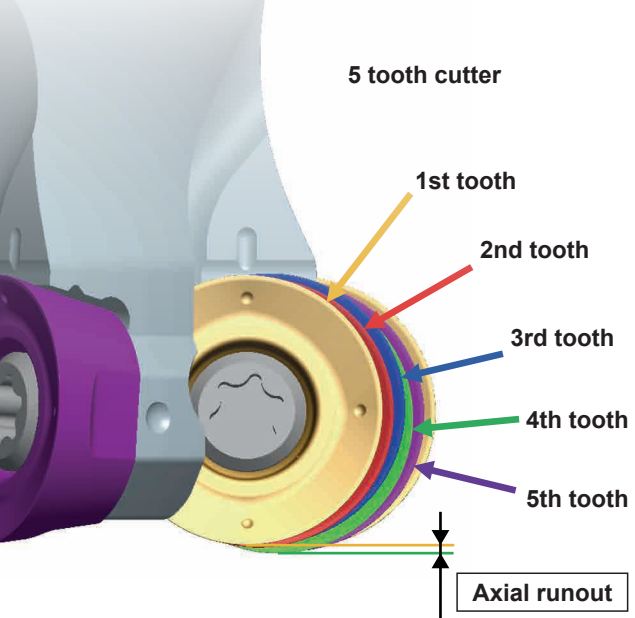
ARP

High accuracy run-out provides efficient machining



ARP

Round insert cutter for difficult-to-cut materials
Highest level of run-out accuracy
increases tool life.



Highly accurate seating realises minimal change of run-out accuracy when indexing the inserts.

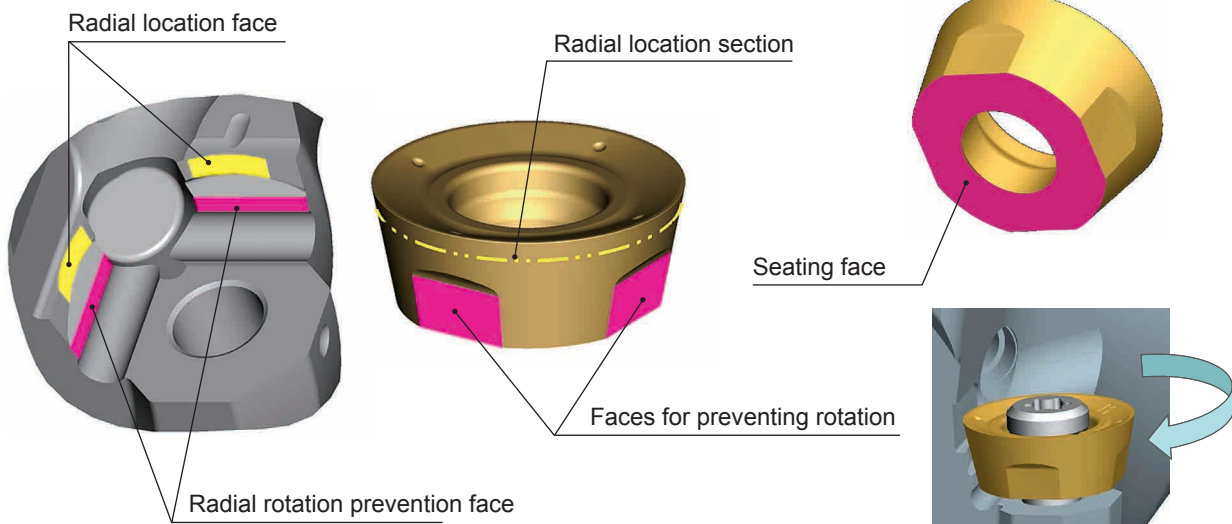
Compared to conventional tools

Axial runout
25%
improvement



Strong clamping system

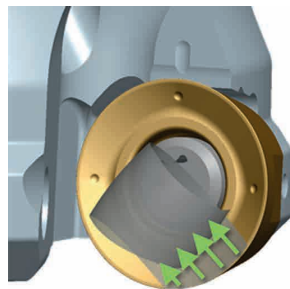
A wide seating face and 2 side location faces prevent inserts from moving during cutting.



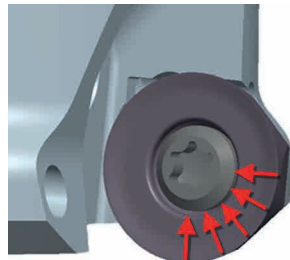
Easy indexing - No need to completely remove the clamping screw

Optimised chip flow for low cutting resistance

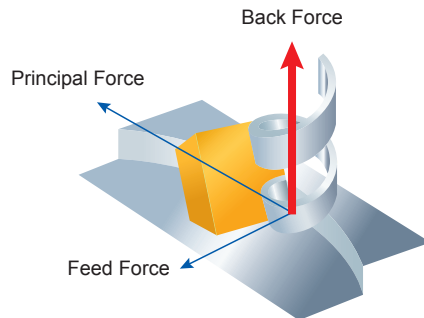
Special rake face on each quadrant of the insert provides the smooth chip flow for low cutting resistance.



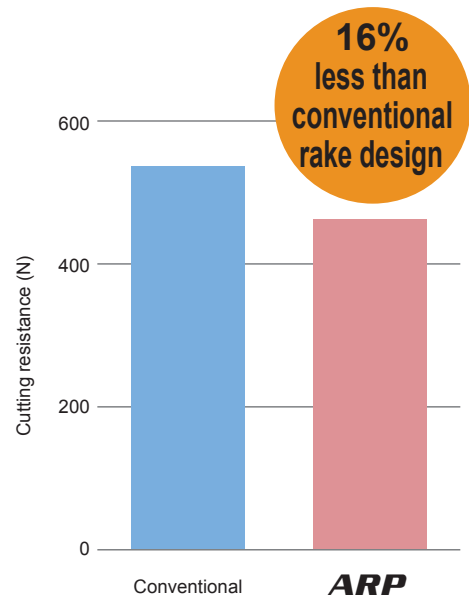
Even chip flow



Conventional insert chip flow compressed towards the centre.



[Comparison of back force]



Cutting of DIN X5CrNi189

Advice for high efficiency machining

Fine and super fine pitch cutters improve efficiency by 10-20% when compared to a regular pitch type.

■ Arbor type

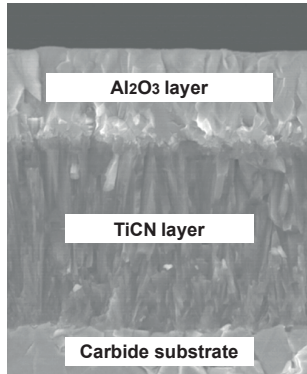
DC (mm)	ARPS		ARP6	
	Fine Pitch	Extra Fine Pitch	Fine Pitch	Extra Fine Pitch
40 mm	5		4	
42 mm	5	6		
50, 52 mm	6	7	5	6
63, 66 mm	7	8	6	7
80 mm			8	9
100 mm			9	11

Efficiency
**10-20%
UP**

CVD coated grade for machining of stainless steel

NEW MC7020

MC7020 has excellent wear, chipping and thermal crack resistance. These features prevent the problems usually associated with machining stainless steel over prolonged periods



Structure of **MC7020**

Reduced abnormal damage

An extremely smooth black super-smooth coating prevents abnormal damage such as weld chipping.

Improved wear resistance

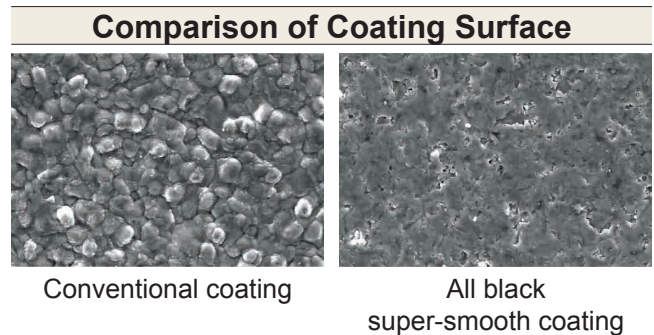
The micro-grain wear resistant Al₂O₃ and fibrous TiCN layers deliver excellent wear resistance when milling a wide range of stainless steel.

Improved fracture resistance

Use of a specially developed cemented carbide that provides superior resistance to fracture and thermal cracking prevents the cutting edge from sudden fracturing.

All black super smooth coating

This smooth outer layer helps to prevent weld chipping.

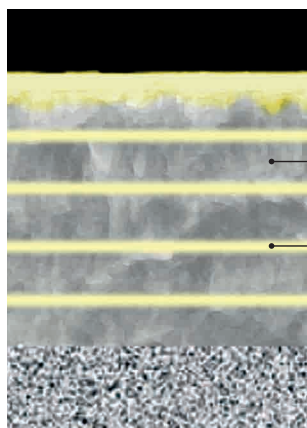


With accumulated Al-Ti-Cr-N based PVD coating

MP7100, MP9100

TOUGH-Σ Technology

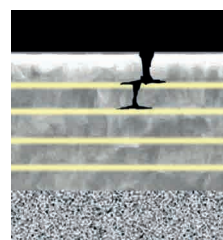
A fusion of the separate coating technologies; PVD and multi-layering realises extra toughness.



*Graphical representation.

Base layer
High Al-(Al, Ti)N
The new technology Al-(Al, Ti)N coating provides stabilisation of the high hardness phase and succeeds in dramatically improving wear, crater and welding resistance.

Each grade has a layer suitable for each application area



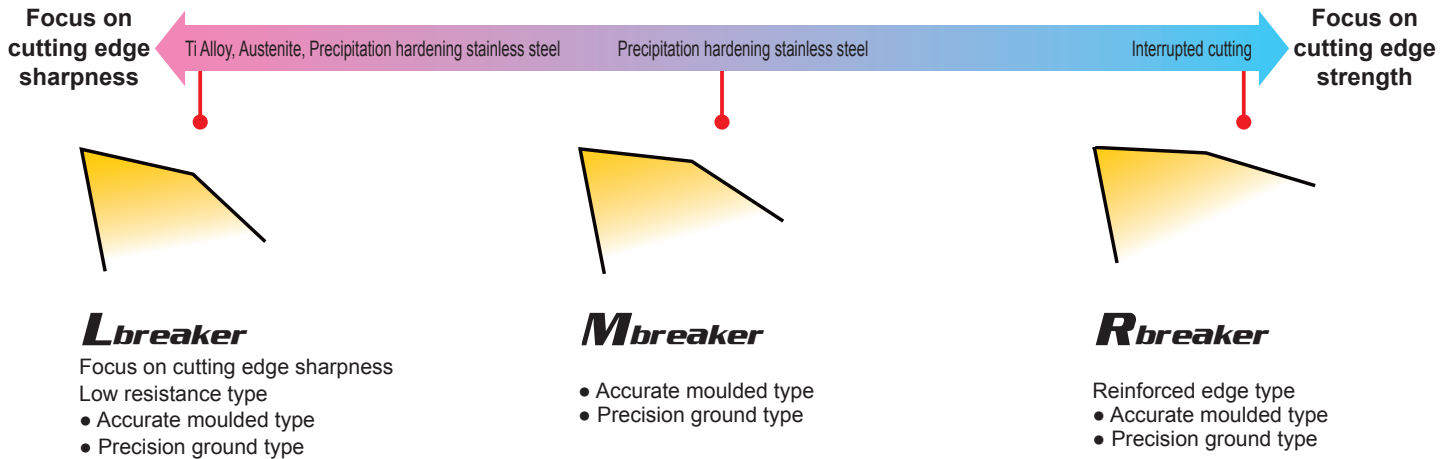
*Graphical representation.

Multi-layering of the coating prevents any cracks penetrating through to the substrate.

M 	TiN	 Sample of notch wear
	Tough against notching	
S 	CrN	 Sample of weld chipping
	Tough against chipping	

Breaker system

Breaker series for various applications



Work Material	Cutting Condition		
	Light	General	Heavy
M			
S			

	ISO	Application range	
		CVD	PVD
Stainless Steel	M10		
	M20		
	M30		
	M40		

	ISO	Application range
		PVD
Heat Resistant Alloy • TiAlloy	S10	
	S20	
	S30	
	S40	

ROUND INSERT CUTTER FOR DIFFICULT-TO-CUT MATERIALS

MULTI FUNCTIONAL MILLING



ARP5/6

P M K N S H



For metric arbors

The cutter bore diameter DCON is indicated in millimeters.

Fig.1

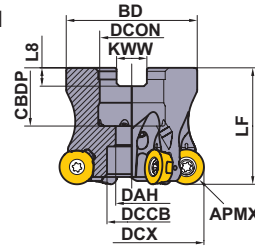
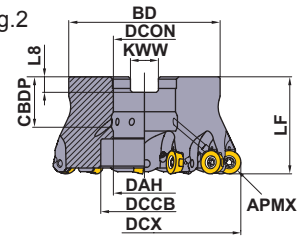


Fig.2



Right hand tool holder only.

Cutter Diameter DC	Set Bolt	Geometry
φ40	HSC08025H	
φ50, φ52, φ63	HSC10030H	
φ66, φ80	HSC12035H	
φ100	MBA16033H	

ARBOR TYPE

GAMP: +4°
GAMF: -6°

Type	R (APMX)	Order Number	Stock R	Coolant	Teeth	DCX	BD	LF	DCON	CBDP	DAH	DCCB	KWW	L8	WT* (kg)	Max. Depth of Cut (mm)			RMPX	Fig.
																APMX	AE1	AZ		
Fine Pitch	5	ARP5P-040A05AR	●	○	5	40	34	40	16	18	9	14	8.4	5.6	0.15	5.0	2.0	1.30	2.8°	1
		ARP5P-042A05AR	●	○	5	42	34	40	16	18	9	14	8.4	5.6	0.16	5.0	2.5	1.40	2.8°	1
		ARP5P-050A06AR	●	○	6	50	45	40	22	20	11	17	10.4	6.3	0.27	5.0	2.0	1.85	2.9°	1
		ARP5P-052A06AR	●	○	6	52	45	40	22	20	11	17	10.4	6.3	0.29	5.0	2.5	2.00	3.0°	1
		ARP5P-063A07AR	●	○	7	63	50	40	22	20	11	17	10.4	6.3	0.46	5.0	2.5	2.50	3.0°	1
Extra Fine Pitch	5	ARP5P-042A06AR	●	○	6	42	34	40	16	18	9	14	8.4	5.6	1.6	5.0	2.5	1.40	2.8°	1
		ARP5P-050A07AR	●	○	7	50	45	40	22	20	11	17	10.4	6.3	0.27	5.0	2.0	1.85	2.9°	1
		ARP5P-052A07AR	●	○	7	52	45	40	22	20	11	17	10.4	6.3	0.29	5.0	2.5	2.00	3.0°	1
		ARP5P-063A08AR	●	○	8	63	50	40	22	20	11	17	10.4	6.3	0.46	5.0	2.5	2.50	3.0°	1
Fine Pitch	6	ARP6P-040A04AR	●	○	4	40	34	40	16	18	9	13.4	8.4	5.6	0.15	6.0	2.0	1.15	2.7°	1
		ARP6P-050A05AR	●	○	5	50	45	40	22	20	11	17	10.4	6.3	0.26	6.0	2.0	1.70	2.9°	1
		ARP6P-052A05AR	●	○	5	52	45	40	22	20	11	17	10.4	6.3	0.28	6.0	2.5	1.80	2.9°	1
		ARP6P-063A06AR	●	○	6	63	50	40	22	20	11	17	10.4	6.3	0.44	6.0	2.5	2.50	3.1°	1
		ARP6P-066X06AR	●	○	6	66	56	50	27	23	13	20	12.4	7	0.64	6.0	2.5	2.50	2.9°	1
		ARP6P-080A08AR	●	○	8	80	56	50	27	23	13	20	12.4	7	0.88	6.0	2.5	2.50	2.3°	1
Extra Fine Pitch	6	ARP6P-100B09AR	●	○	9	100	78	50	32	26	45	32	14.4	8	1.47	6.0	2.5	2.50	1.7°	2
		ARP6P-050A06AR	●	○	6	50	45	40	22	20	11	17	10.4	6.3	0.25	6.0	2.0	1.70	2.9°	1
		ARP6P-052A06AR	●	○	6	52	45	40	22	20	11	17	10.4	6.3	0.27	6.0	2.5	1.80	2.9°	1
		ARP6P-063A07AR	●	○	7	63	50	40	22	20	11	17	10.4	6.3	0.44	6.0	2.5	2.50	3.1°	1
		ARP6P-066X07AR	●	○	7	66	56	50	27	23	13	20	12.4	7	0.64	6.0	2.5	2.50	2.9°	1
		ARP6P-080A09AR	●	○	9	80	56	50	27	23	13	20	12.4	7	0.88	6.0	2.5	2.50	2.3°	1
ARP6P-100B11AR	●	○	11	100	78	50	32	26	45	32	14.4	8	1.45	6.0	2.5	2.50	1.7°	2		

* WT : Tool Weight

SPARE PARTS

Tool Holder Number	*				
	Insert Screw	Wrench	Anti-seize Lubricant	Coolant Nozzle	Insert
ARP5	TPS351B	TIP10D	MK1KS	HSD04004H	RPMT1040M0E4-○
ARP6	TPS4	TIP15D	MK1KS	HSD04004H	RPMT1248M0E4-○

* Clamp Torque (N • m) : TPS351B=2.5, TPS4=3.5

● : Inventory maintained. ★ : Inventory maintained in Japan.

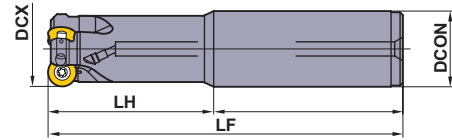


Fig.1

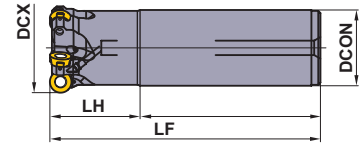


Fig.2






SHANK TYPE

GAMP: +4°
GAMF: -6°--7°

Type	R (APMX)	Order Number	Stock R	Coolant	Teeth	DCX	DCON	LF	LH	B2	WT* (kg)	Max. Depth of Cut (mm)			RMPX	Fig.
												APMX	AE1	AZ		
Standard	5	ARP5PR2503SA25M	★	○	3	25	25	140	60	1.10°	0.42	5.0	1.0	0.40	1.8°	1
		ARP5PR3204SA32M	★	○	4	32	32	150	70	0.92°	0.77	5.0	1.0	0.65	1.9°	1
Long	5	ARP5PR2502SA25L	★	○	2	25	25	180	80	0.80°	0.56	5.0	1.0	0.40	1.8°	1
		ARP5PR3203SA32L	★	○	3	32	32	200	120	0.51°	1.01	5.0	1.0	0.65	1.9°	1
Standard	6	ARP6PR3203SA32M	★	○	3	32	32	150	70	0.94°	0.76	6.0	1.0	0.60	2.0°	1
		ARP6PR4004SA32M	★	○	4	40	32	150	50	—	0.85	6.0	2.5	1.15	2.7°	2
		ARP6PR5005SA42M	★	○	5	50	42	150	50	—	1.47	6.0	2.5	1.70	2.9°	2
Long	6	ARP6PR3202SA32L	★	○	2	32	32	200	120	0.52°	1.00	6.0	1.0	0.60	2.0°	1
		ARP6PR4003SA32L	★	○	3	40	32	250	50	—	1.48	6.0	2.5	1.15	2.7°	2
		ARP6PR5004SA42L	★	○	4	50	42	250	50	—	2.53	6.0	2.5	1.70	2.9°	2

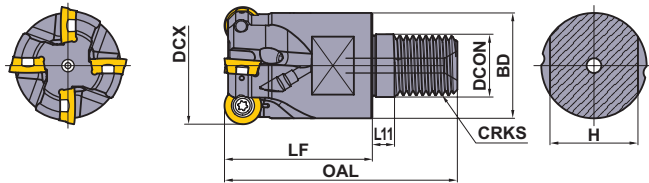
* WT : Tool Weight

SPARE PARTS

Tool Holder Number	 *				
	Insert Screw	Wrench	Anti-seize Lubricant	Coolant Nozzle	Insert
ARP5	TPS351B	TIP10D	MK1KS	HSD04004H	RPMT1040M0E4-○
ARP6	TPS4	TIP15D	MK1KS	HSD04004H	RPMT1248M0E4-○

* Clamp Torque (N · m) : TPS351B=2.5, TPS4=3.5

● : Inventory maintained. (10 inserts in one case) ★ : Inventory maintained in Japan.



SCREW IN TYPE

GAMP: +4°
GAMF: -6° ~ -7°

Type	R (APMX)	Order Number	Stock	Coolant	Teeth	DCX	DCON	BD	OAL	LF	L11	H	CRKS	WT* (kg)	Max. Depth of Cut (mm)			RMPX
															APMX	AE1	AZ	
Standard	5	ARP5PR2502AM1235	●	○	2	25	12.5	23.5	57	35	6	19	M12	0.10	5.0	-	0.40	1.8°
		ARP5PR3203AM1640	●	○	3	32	17.0	28.5	63	40	6	24	M16	0.16	5.0	1.0	0.65	1.9°
Long	5	ARP5PR2503AM1235	●	○	3	25	12.5	23.5	57	35	6	19	M12	0.09	5.0	-	0.40	1.8°
		ARP5PR3204AM1640	●	○	4	32	17.0	28.5	63	40	6	24	M16	0.15	5.0	1.0	0.65	1.9°
Standard	6	ARP6PR3202AM1640	●	○	2	32	17.0	28.5	63	40	6	24	M16	0.18	6.0	1.0	0.60	2.0°
		ARP6PR4003SA32M	●	○	3	40	17.0	28.5	63	40	6	24	M16	0.20	6.0	2.5	1.15	2.7°
Long	6	ARP6PR3203SA32L	●	○	3	32	17.0	28.5	63	40	6	24	M16	0.17	6.0	1.0	0.60	2.0°
		ARP6PR4004SA32L	●	○	4	40	17.0	28.5	63	40	6	24	M16	0.20	6.0	2.5	1.15	2.7°

* WT : Tool Weight

INSERTS

Work Material	P Steel		M Stainless Steel		K Cast Iron		N Non-ferrous Metal		S Heat-resistant Alloy, Titanium Alloy		H Hardened Steel		Cutting Conditions (Guide) :			
													● : Stable Cutting ● : General Cutting ✖ : Unstable Cutting			
												Honing :				
												E : Round T : Chamfer				
Shape	Order Number	Class	Honing	Coated			Dimensions (mm)		Geometry							
				MC7020	MP7130	MP9130	IC	S								
Ground	RPHT1040M0E4-L	H	E	●	●	●	10	3.97								
	RPHT1248M0E4-L	H	E	●	●	●	12	4.76								
	RPHT1040M0E4-M	H	E	●	●	●	10	3.97								
	RPHT1248M0E4-M	H	E	●	●	●	12	4.76								
	RPHT1040M0E4-R	H	E	●	●	●	10	3.97								
	RPHT1248M0E4-R	H	E	●	●	●	12	4.76								
Sintered	RPMT1040M0E4-L	M	E	●	●	●	10	3.97								
	RPMT1248M0E4-L	M	E	●	●	●	12	4.76								
	RPMT1040M0E4-M	M	E	●	●	●	10	3.97								
	RPMT1248M0E4-M	M	E	●	●	●	12	4.76								
	RPMT1040M0E4-R	M	E	●	●	●	10	3.97								
	RPMT1248M0E4-R	M	E	●	●	●	12	4.76								

RECOMMENDED CUTTING CONDITIONS

Dry cutting

	Work Material	Hardness	Grade	vc (m/min)	fz (mm/t)
M	Austenitic Stainless Steel	≤200HB	MC7020	220 (170–270)	0.2 (0.1–0.35)
			MP7130	200 (150–250)	0.2 (0.1–0.35)
	Austenitic Stainless Steel	>200HB	MC7020	190 (140–240)	0.2 (0.1–0.35)
			MP7130	170 (120–220)	0.2 (0.1–0.35)
	Two-phase Stainless Steel	≤280HB	MC7020	180 (130–230)	0.2 (0.1–0.35)
			MP7130	160 (110–210)	0.2 (0.1–0.35)
	Ferritic and Martensitic Stainless Steel	>200HB	MC7020	240 (190–290)	0.2 (0.1–0.35)
			MP7130	200 (150–250)	0.2 (0.1–0.35)
	Ferritic and Martensitic Stainless Steel	>200HB	MC7020	240 (190–290)	0.2 (0.1–0.35)
			MP7130	200 (150–250)	0.2 (0.1–0.35)
	Ferritic and Martensitic Stainless Steel	<450HB	MC7020	170 (120–220)	0.2 (0.1–0.35)
			MP7130	150 (100–200)	0.2 (0.1–0.35)

Wet cutting

	Work Material	Hardness	Grade	vc (m/min)	fz (mm/t)
M	Austenitic Stainless Steel	≤200HB	MC7020	150 (100–200)	0.2 (0.1–0.35)
			MP7130	130 (80–180)	0.2 (0.1–0.35)
	Austenitic Stainless Steel	>200HB	MC7020	120 (70–170)	0.2 (0.1–0.35)
			MP7130	100 (80–150)	0.2 (0.1–0.35)
	Two-phase Stainless Steel	≤280HB	MC7020	120 (70–170)	0.2 (0.1–0.35)
			MP7130	100 (80–150)	0.2 (0.1–0.35)
	Ferritic and Martensitic Stainless Steel	>200HB	MC7020	170 (120–220)	0.2 (0.1–0.35)
			MP7130	130 (80–180)	0.2 (0.1–0.35)
	Ferritic and Martensitic Stainless Steel	>200HB	MC7020	170 (120–220)	0.2 (0.1–0.35)
			MP7130	130 (80–180)	0.2 (0.1–0.35)
	Ferritic and Martensitic Stainless Steel	<450HB	MC7020	110 (60–160)	0.2 (0.1–0.35)
			MP7130	90 (50–140)	0.2 (0.1–0.35)
S	Titanium Alloy	—	MP9130	45 (30–55)	0.1 (0.05–0.15)
	Heat Resistant Alloy	—	MP9130	35 (15–45)	0.1 (0.05–0.15)

* Actual cutting conditions are estimated to avoid chatter vibration with high rigidity of a machine or workpiece.

Make appropriate adjustments when chatter and/or insert chipping occurs during cutting.

Use with lowered conditions when there is a big overhang and/or when pocket-cutting.

* The setting level for feeding 1 blade is $a_p = 2.5\text{mm}$ with ARP5 axial cutting. With ARP6, use $a_p = 3\text{mm}$.

Use while matching the a_p fluctuation and correction value F of the respective table.

Ex. Feed for the recommended 1 blade when ARP5, SUS304, MP7130, $a_p=1$: $0.2\text{ mm/t} \times 1.5$ (correction value F) = 0.3 mm/t .

* For grooving, use feed at the recommended 70% level. For ramping, drilling, and plunging, use 50% level.

* Internal coolant is recommended in titanium alloy and heat resistant alloy cutting.

When the coolant nozzle of separately sold is used, it is more effective.

Correction level F feed amount for 1 blade, based on axial cutting a_p fluctuation

	$a_p=0.5\text{mm}$	$a_p=1\text{mm}$	$a_p=1.5\text{mm}$	$a_p=2\text{mm}$	$a_p=2.5\text{mm}$	$a_p=3\text{mm}$	$a_p=3.5\text{mm}$	$a_p=4\text{mm}$	$a_p=5\text{mm}$	$a_p=6\text{mm}$
ARP5	2.3	1.5	1.2	1.1	1.0	0.9	0.8	0.8	0.8	—
ARP6	2.5	1.7	1.3	1.1	1.0	1.0	0.9	0.9	0.8	0.8

MAXIMUM CAPACITIES BY EACH CUTTING METHOD

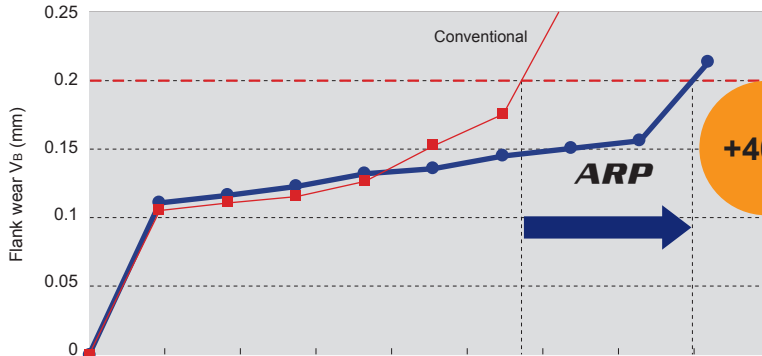
Cutting Edge	Maximum hole diameter	Order Number	Install	Type	ap (mm)	ae (mm)	Ramping	Helical Milling		Drilling Depth	Plunging
							RMPX(deg)	Smallest hole DH min.(mm)	Largest hole DH max.(mm)	Maximum AZ(mm)	AE1(mm)
APMX	DCX										
5.0	25	ARP5PR2502AM1235	Screw-in	Standard	≤2.5	≤1.00DCX	1.8	40	48	0.40	—
		ARP5PR2503AM1235	Screw-in	Fine Pitch	≤1.5	≤1.00DCX	1.8	40	48	0.40	—
		ARP5PR2503SA25M	Shank	Standard	≤1.5	≤1.00DCX	1.8	40	48	0.40	1.0
		ARP5PR2502SA25L	Shank	Long	≤1.5	≤1.00DCX	1.8	40	48	0.40	1.0
	32	ARP5PR3203AM1640	Screw-in	Standard	≤2.5	≤1.00DCX	1.9	54	62	0.65	1.0
		ARP5PR3204AM1640	Screw-in	Fine Pitch	≤2.5	≤1.00DCX	1.9	54	62	0.65	1.0
		ARP5PR3204SA32M	Shank	Standard	≤2.5	≤1.00DCX	1.9	54	62	0.65	1.0
		ARP5PR3203SA32L	Shank	Long	≤2.5	≤1.00DCX	1.9	54	62	0.65	1.0
	40	ARP5P-040A05AR	Arbor	Fine Pitch	≤2.5	≤1.00DCX	2.8	70	78	1.30	2.0
		ARP5P-042A05AR	Arbor	Fine Pitch	≤2.5	≤1.00DCX	2.8	74	82	1.40	2.5
	42	ARP5P-042A06AR	Arbor	Extra Fine Pitch	≤1.5	≤1.00DCX	2.8	74	82	1.40	2.5
		ARP5P-050A06AR	Arbor	Fine Pitch	≤2.5	≤1.00DCX	2.9	90	98	1.85	2.0
	50	ARP5P-050A07AR	Arbor	Extra Fine Pitch	≤1.5	≤1.00DCX	2.9	90	98	1.85	2.0
		ARP5P-052A06AR	Arbor	Fine Pitch	≤2.5	≤0.95DCX	3.0	94	102	2.00	2.5
	52	ARP5P-052A07AR	Arbor	Extra Fine Pitch	≤1.5	≤0.95DCX	3.0	94	102	2.00	2.5
		ARP5P-063A07AR	Arbor	Fine Pitch	≤2.5	≤0.75DCX	3.0	116	124	2.50	2.5
	63	ARP5P-063A08AR	Arbor	Extra Fine Pitch	≤1.5	≤0.75DCX	3.0	116	124	2.50	2.5
		32	ARP6PR3202AM1640	Screw-in	Standard	≤3.5	≤1.00DCX	2.0	52	62	0.60
	ARP6PR3203AM1640		Screw-in	Fine Pitch	≤3.5	≤1.00DCX	2.0	52	62	0.60	1.0
	ARP6PR3203SA32M		Shank	Standard	≤3.5	≤1.00DCX	2.0	52	62	0.60	1.0
ARP6PR3202SA32L	Shank		Long	≤3.5	≤1.00DCX	2.0	52	62	0.60	1.0	
40	ARP6PR4003AM1640	Screw-in	Standard	≤3.5	≤1.00DCX	2.7	68	78	1.15	2.5	
	ARP6PR4004AM1640	Screw-in	Fine Pitch	≤3.5	≤1.00DCX	2.7	68	78	1.15	2.5	
	ARP6PR4004SA32M	Shank	Standard	≤3.5	≤1.00DCX	2.7	68	78	1.15	2.5	
	ARP6PR4003SA32L	Shank	Long	≤3.5	≤1.00DCX	2.7	68	78	1.15	2.5	
	ARP6P-040A04AR	Arbor	Fine Pitch	≤3.5	≤1.00DCX	2.7	68	78	1.15	2.0	
50	ARP6PR5005SA42M	Shank	Standard	≤3.5	≤1.00DCX	2.9	88	98	1.70	2.5	
	ARP6PR5004SA42L	Shank	Long	≤3.5	≤1.00DCX	2.9	88	98	1.70	2.5	
	ARP6P-050A05AR	Arbor	Fine Pitch	≤3.5	≤1.00DCX	2.9	88	98	1.70	2.0	
	ARP6P-050A06AR	Arbor	Extra Fine Pitch	≤2.5	≤1.00DCX	2.9	88	98	1.70	2.0	
52	ARP6P-052A05AR	Arbor	Fine Pitch	≤3.5	≤0.95DCX	2.9	92	102	1.80	2.5	
	ARP6P-052A06AR	Arbor	Extra Fine Pitch	≤2.5	≤0.95DCX	2.9	92	102	1.80	2.5	
63	ARP6P-063A06AR	Arbor	Fine Pitch	≤3.5	≤0.75DCX	3.1	114	124	2.50	2.5	
	ARP6P-063A07AR	Arbor	Extra Fine Pitch	≤2.5	≤0.75DCX	3.1	114	124	2.50	2.5	
66	ARP6P-066X06AR	Arbor	Fine Pitch	≤3.5	≤0.75DCX	2.9	120	130	2.50	2.5	
	ARP6P-066X07AR	Arbor	Extra Fine Pitch	≤2.5	≤0.75DCX	2.9	120	130	2.50	2.5	
80	ARP6P-080A08AR	Arbor	Fine Pitch	≤3.5	≤0.60DCX	2.3	148	158	2.50	2.5	
	ARP6P-080A09AR	Arbor	Extra Fine Pitch	≤2.5	≤0.60DCX	2.3	148	158	2.50	2.5	
100	ARP6P-100B09AR	Arbor	Fine Pitch	≤3.5	≤0.50DCX	1.7	188	198	2.50	2.5	
	ARP6P-100B11AR	Arbor	Extra Fine Pitch	≤2.5	≤0.50DCX	1.7	188	198	2.50	2.5	

- * Tool body durability may weaken, when the amount of axial cutting exceeds ARP5=5mm and ARP6=6mm.
- * When drilling, be careful of long scattered cutting chips
- * When cutting helical holes, do not exceed the largest APMX cutting depth per one rotation.
- * Calculate using the following formula for center tool tracks and dc when cutting helical holes: Center tool tracks and dc=desired hole diameter & DH tool diameter & DCX
- * For preventing trouble with cutting chip biting, especially when grooving, ramping, helical cutting, and drilling, thoroughly eliminate cutting chips with an air blower or the like.
- * Cutting chip pockets are small for extra-multiple cutting and small diameter cutters. Use with caution the ae and ap feed due to the possibility of cutting blockage.
- * When cutting large ae with large diameter cutter, blockage from long cuttings is possible. Regulate ap and feed.

Cutting performance

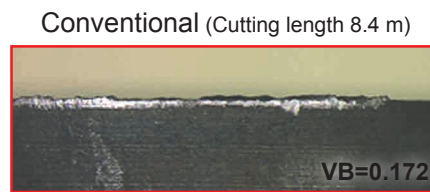
Cutting of DIN X20Cr13

Longer life of by at least 40% compared with conventional.



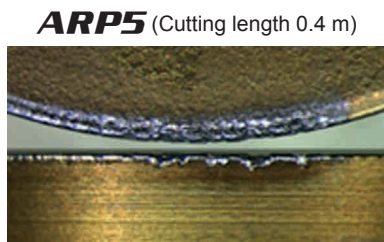
<Cutting conditions>
 Tool : ARP5P-050A06AR
 RPHT1040M0E4-R MC7020
 Cutting speed : 350 m/min
 Feed per tooth : 0.35 mm/t
 Depth of cut : ap=2.5 mm
 ae=25 mm
 Cutting mode : Dry
 Single insert

0	2	4	6	8	10	12	14	16	18	Cutting time (min)
0	1.6	3.1	4.7	6.2	7.8	9.4	10.9	12.5	14.0	Cutting length (m)



Cutting of DIN X7CrNiAl17-7

Implementation of stable processing compared to conventional products with precipitation hardening stainless steel.



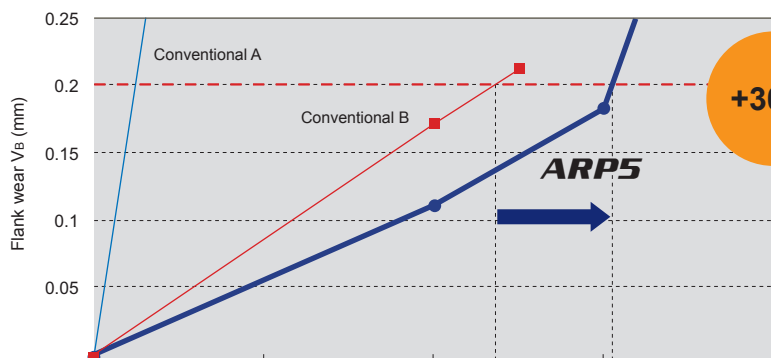
<Cutting conditions>
 Tool : ARP5P-050A06AR
 RPHT1040M0E4-L MP7130
 Cutting speed : 350 m/min
 Feed per tooth : 0.25 mm/t

Depth of cut : ap=2.5 mm
 ae=14 mm
 Cutting mode : Wet
 Single insert

Cutting performance

Cutting of DIN X5CrNi189

Longer tool life by 30% compared to conventional.



+30%

<Cutting conditions>

Tool : ARP5P-050A06AR
 RPHT1040M0E4-L MP7130
 Cutting speed : 220 m/min
 Feed per tooth : 0.35 mm/t
 Depth of cut : ap=2.5 mm
 ae=25 mm
 Cutting mode : Dry
 Single insert

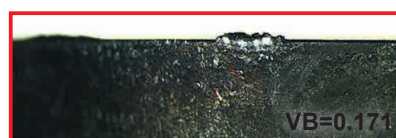
0	0.82	1.63	2.45	3.27	Cutting time (min)
0	0.4	0.8	1.2	1.6	Cutting length (m)



ARPS (Cutting length 0.8 m)



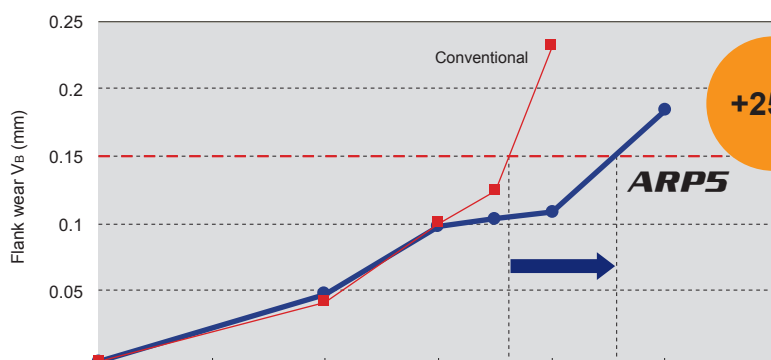
Conventional A (Cutting length 0.8 m)



Conventional B (Cutting length 0.8 m)

Cutting of DIN Ti-6Al-4V

Longer tool life by 25% compared to conventional.

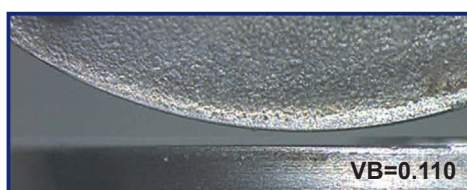


+25%

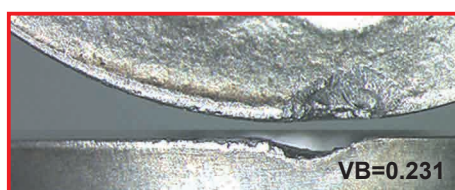
<Cutting conditions>

Tool : ARP5P-050A06AR
 RPHT1040M0E4-L MP9130
 Cutting speed : 60 m/min
 Feed per tooth : 0.1 mm/t
 Depth of cut : ap=2.5 mm
 ae=20 mm
 Cutting mode : Wet (Low pressure)
 Single insert

0	13.1	26.2	39.3	52.4	65.4	78.5	Cutting time (min)
0	0.5	1.0	1.5	2.0	2.5	3.0	Cutting length (m)



ARPS (Cutting length 2.0 m)






Conventional (Cutting length 2.0 m)

Memo

A series of horizontal dashed lines for writing, spanning the width of the page.

APPLICATION EXAMPLES

Cutter Body		ARP6P-050A05AR	ARP6P-050A06AR	ARP6P-050A06AR
Insert (Grade)		RPHT1248M0E4-M (MC7020)	RPMT1248M0E4-R (MP7130)	RPMT1248M0E4-L (MP7130)
Workpiece		DIN X7Cr13 	Martensitic stainless steel 	Martensitic stainless steel 
Component		Power generator parts	Power generator parts	Aerospace parts
Cutting Conditions	Cutting speed (m/min)	283	250	200
	Feed per tooth (mm/tooth)	0.25	0.45	0.25
	Depth of cut (mm)	ap=3 ae=30	ap=2.5 ae=40	ap=1 ae=20
Cutting mode		Air blow	MQL	Dry
Results		Even after cutting 2 x more than normal, stable cutting is possible.	Machining efficiency of current products improved by 20%, and insert life is also improved by 30%.	Success with improved cutting conditions for current products and preserving insert life. Cutting time reduced by 47%.



Round insert cutter for difficult-to-cut materials ARP Series



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