MITSUBISHI
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TOOLS NEWS

2009.10Update B066G

Small Diameter Radius End Mill

ARX

Expanded New Insert Grade

Long straight shank for variable depth machining.

Small diameter end mill with high radial tolerance for a wider range of machining operations.

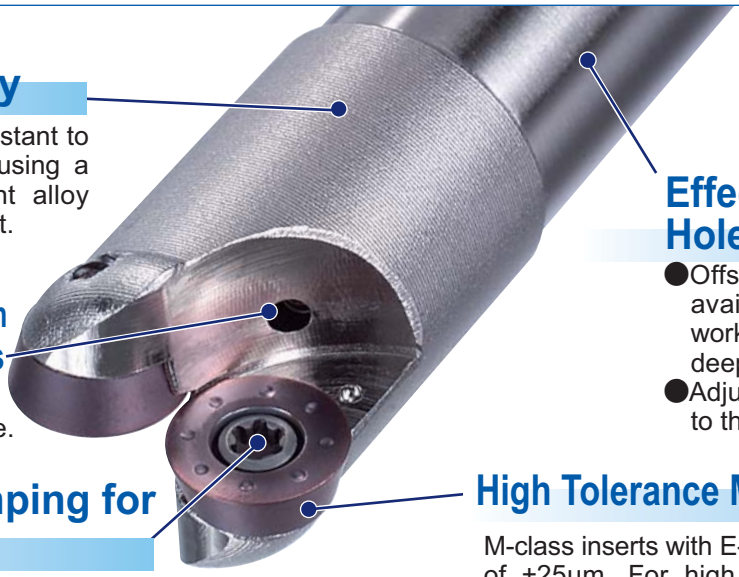
■ New insert grade MP8010 for hardened steel machining is added.

Small Diameter Radius End Mill

ARX

Applications	**Roughing and Semi-finishing**	
Tool Diameter and Radius	**(Shank type)**	**Holder : ϕ10–ϕ25 Insert : R2.5 , R3.0 , R3.5**
	(Screw-in type)	**Holder : ϕ16–ϕ25 Insert : R2.5 , R3.0**

Features



Highly Rigid Body

The cutter body is made resistant to corrosion and abrasion by using a superior high heat resistant alloy and special surface treatment.

All Bodies Standardized with Through Air & Coolant holes

For effective cooling, lubrication and chip discharge.

Highly Rigid Clamping for Stable Machining

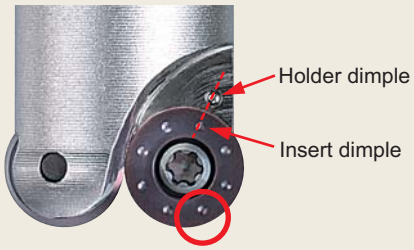
Strong insert clamping by using a Torx plus® clamp screw system.

Effective for Deep Hole Machining

- Offset, long shank type available for preventing workpiece interference on deep walled components.
- Adjustable overhang due to the long straight shank.

High Tolerance M-class Inserts

M-class inserts with E-class, close tolerance of ±25µm. For high precision workpiece surfaces obtained with low tooling costs.



The body and insert has a dimple marking that enables the insert to be rotated to ensure full usage of the cutting edges.

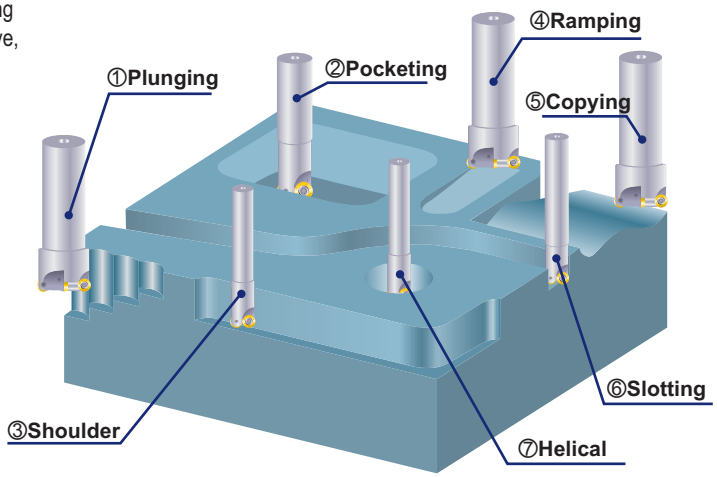
O = Contact with workpiece (Example: With the cutting edge contact at 45 degrees, the insert can be indexed 8 times.)

Effective for Varied Machining

The **ARX** series is available in 2 variations, centre cutting and non-centre cutting (multi-tooth). For restricted space milling the centre cutting type is effective, whereas the multi-tooth type is capable of a large pick feed.

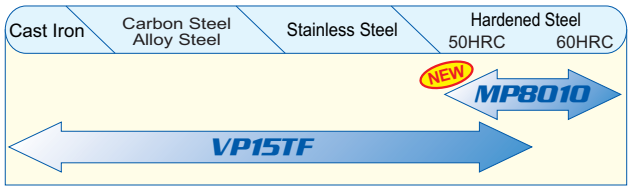
Centre cutting edge type.

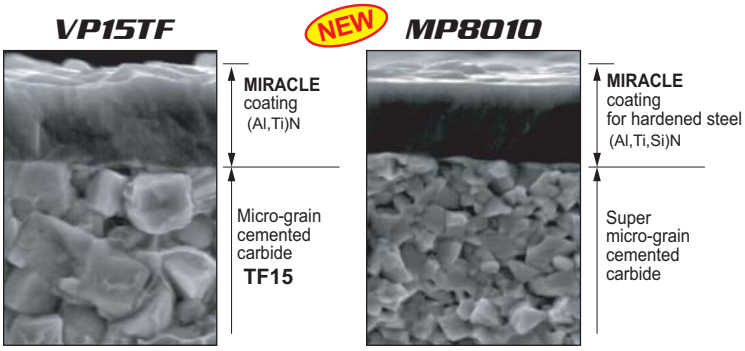
Non-centre cutting edge type (multi-tooth)



Insert grades

In addition to **VP15TF** that is superior in versatility, the new PVD coated carbide grade **MP8010** showing the overwhelming cutting performance for the hardened steel machining appears.
It is possible to correspond to the machining of various work materials.





According to the combination of MIRACLE coat that is superior heat and wear resistance, and the tough micro-grain cemented carbide TF15, it is achieved to the stable machining without fracture even if the adverse cutting condition.

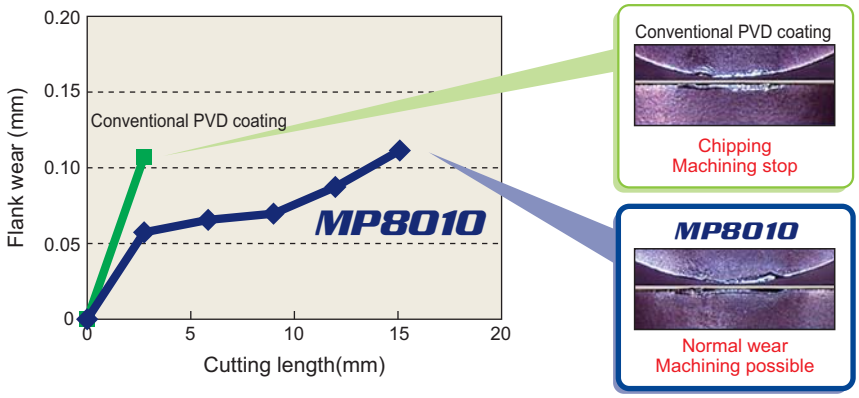
It is fusion by two new technologies of the super micro-grain cemented carbide that possesses hardness of the world's best level and MIRACLE coat arrenged for the hardened steel machining.
The high efficiency machining of the hardened steel that hardness exceeds 50HRC is achieved.

Cutting Performance

By the addition of MP8010, machining of the hardened steel at the hardness 60HRC that was not able to respond conventionally is attained.

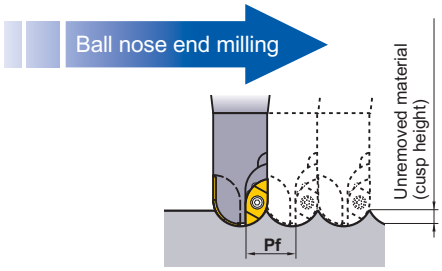
<Cutting conditions>

Work material	: SKD11(60HRC)
Tool	: ARX30R203M10A30 + SC16M08S100SW
Cutting speed	: 80m/min
Feed per tooth	: 0.2mm/tooth
Depth of cut	: 0.2mm
Width of cut	: 10mm
Coolant	: Air blow
Single insert	

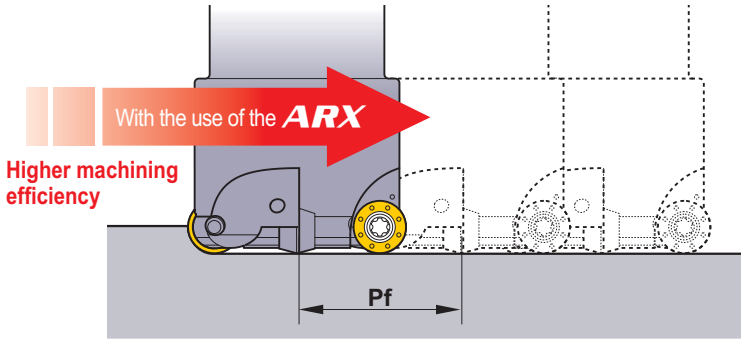


Using the ARX Effectively (Reducing Unremoved Material)

●When Milling Even Surfaces

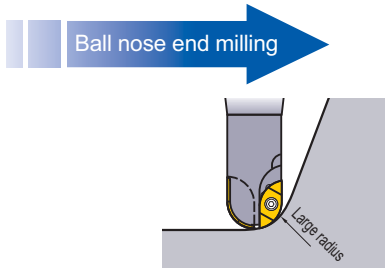


To reduce unremoved material, the pick feed needs to be reduced. (Machining efficiency will decrease.)

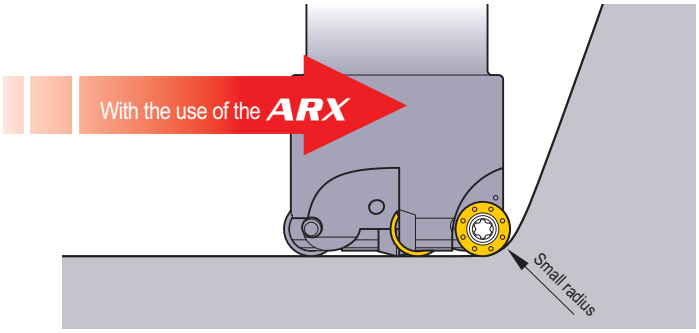


Even with a large pick feed, no unremoved material will remain.

●When Milling Corner Radius



To machine small corner radii, the tool diameter needs to be reduced.
(Tool rigidity will decrease.)



A large shank diameter offering high rigidity can also machine small corner radii.
(The cutting load of a subsequent finishing tool will be decreased thereby lengthening its' tool life. Surface finish quality will be improved.)

Small Diameter Radius End Mill

ARX

Steel Shank

Fig. 1 (Type with the centre cutting edge)

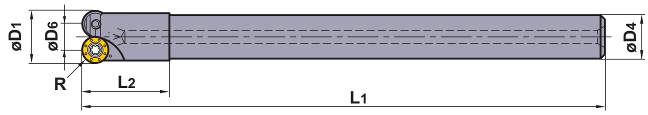
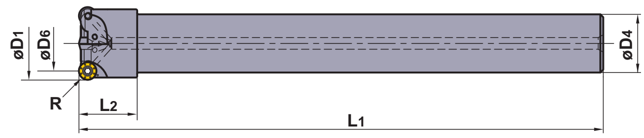


Fig. 2 (Type without the centre cutting edge (multi-tooth))



Light Alloy	Cast Iron	Carbon Steel Alloy Steel	Stainless Steel	Hardened Steel

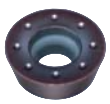
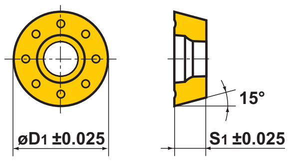
Right hand tool holder only.

Type	Order Number	Stock R	Coolant Hole	Number of Teeth	R	D1	D4	D6	L1	L2	Fig.	Clamp Screw *	Wrench	Inserts
With the Centre Cutting Edge	ARX25R102SA10S	●	○	2	2.5	10	10	5	120	20	1	TPS20	TIP06F	RDMW0517M0E
	30R122SA10S	●	○	2	3.0	12	10	6	120	20	1	TPS22S	TIP07FS	RDMW0620M0E
	35R142SA12S	●	○	2	3.5	14	12	7	140	20	1	TPS22	TIP07FS	RDMW0724M0E
Without the Centre Cutting Edge (Multi-tooth)	ARX25R122SA10S	●	○	2	2.5	12	10	7	120	20	2	TPS20	TIP06F	RDMW0517M0E
	25R163SA16S	●	○	3	2.5	16	16	11	180	20	2	TPS20	TIP06F	RDMW0517M0E
	30R163SA16S	●	○	3	3.0	16	16	10	180	20	2	TPS22	TIP07FS	RDMW0620M0E
	25R173SA16S	●	○	3	2.5	17	16	12	180	20	2	TPS20	TIP06F	RDMW0517M0E
	30R173SA16S	●	○	3	3.0	17	16	11	180	20	2	TPS22	TIP07FS	RDMW0620M0E
	25R204SA20S	●	○	4	2.5	20	20	15	180	20	2	TPS20	TIP06F	RDMW0517M0E
	30R203SA20S	●	○	3	3.0	20	20	14	180	20	2	TPS22	TIP07FS	RDMW0620M0E
	25R224SA20S	●	○	4	2.5	22	20	17	180	20	2	TPS20	TIP06F	RDMW0517M0E
	30R224SA20S	●	○	4	3.0	22	20	16	180	20	2	TPS22	TIP07FS	RDMW0620M0E
	25R255SA20S	●	○	5	2.5	25	20	20	180	20	2	TPS20	TIP06F	RDMW0517M0E
	30R254SA20S	●	○	4	3.0	25	20	19	180	20	2	TPS22	TIP07FS	RDMW0620M0E

Dimensions (mm): R, D1, D4, D6, L1, L2

* Clamp Torque (N • m) : TPS20=0.6, TPS22S=0.6, TPS22=0.6

Inserts

Shape	Order Number	Grade MP8010 (NEW)	Grade VP15TF	D1	S1	Geometry
	RDMW0517M0E	●	●	5.0	1.70	
	0620M0E	●	●	6.0	1.99	
	0724M0E	●	●	7.0	2.38	

Dimensions (mm): D1, S1

● : Inventory maintained.(10 inserts in a case)

Carbide Shank

Fig. 1

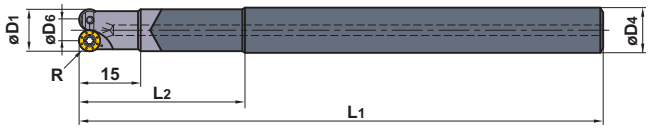


Fig. 2

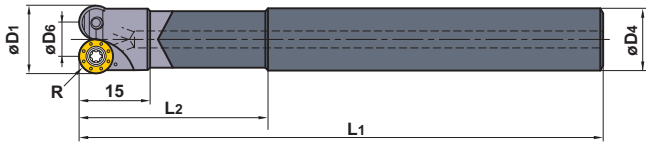
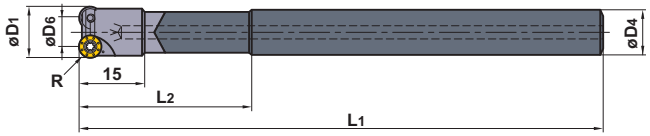


Fig. 3

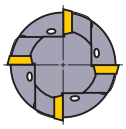


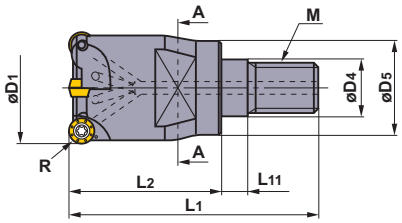
Right hand tool holder only.

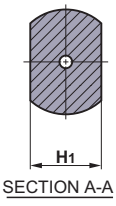
Type	Order Number	Stock	Coolant Hole	Number of Teeth	Dimensions (mm)						Fig.	* Clamp Screw	Wrench	Inserts
		R			R	D1	D4	D6	L1	L2				
With the Centre Cutting Edge	**ARX25R102SA10LW**	●	○	2	2.5	10	10	5	150	40	1	TPS20	TIP06F	RDMW0517M0E
	30R122SA10LW	●	○	2	3.0	12	10	6	150	40	1	TPS22S	TIP07FS	RDMW0620M0E
	35R142SA12LW	●	○	2	3.5	14	12	7	170	40	2	TPS22	TIP07FS	RDMW0724M0E
Without the Centre Cutting Edge (Multi-tooth)	**ARX25R122SA10LW**	●	○	2	2.5	12	10	7	150	40	3	TPS20	TIP06F	RDMW0517M0E

* Clamp Torque (N • m) : TPS20=0.6, TPS22S=0.6, TPS22=0.6

Screw-in Type







Right hand tool holder only.

Order Number	Stock	Coolant Hole	Number of Teeth	Dimensions (mm)									Mass (kg)	* Clamp Screw	Wrench	Insert
	R			R	D1	D4	D5	L1	L2	L11	H1	M				
ARX25R163M08A30	●	○	3	2.5	16	8.5	14.7	48	30	6	10	M8	0.1	TPS20	TIP06F	RDMW0517M0E
173M08A30	●	○	3	2.5	17	8.5	14.5	48	30	6	10	M8	0.1	TPS20	TIP06F	RDMW0517M0E
204M10A30	●	○	4	2.5	20	10.5	18.6	49	30	6	14	M10	0.2	TPS20	TIP06F	RDMW0517M0E
224M10A30	●	○	4	2.5	22	10.5	18.5	49	30	6	14	M10	0.2	TPS20	TIP06F	RDMW0517M0E
255M12A35	●	○	5	2.5	25	12.5	23.6	57	35	6	19	M12	0.2	TPS20	TIP06F	RDMW0517M0E
ARX30R163M08A30	●	○	3	3.0	16	8.5	14.6	48	30	6	10	M8	0.1	TPS22	TIP07FS	RDMW0620M0E
173M08A30	●	○	3	3.0	17	8.5	14.5	48	30	6	10	M8	0.1	TPS22	TIP07FS	RDMW0620M0E
203M10A30	●	○	3	3.0	20	10.5	18.5	49	30	6	14	M10	0.2	TPS22	TIP07FS	RDMW0620M0E
224M10A30	●	○	4	3.0	22	10.5	18.5	49	30	6	14	M10	0.2	TPS22	TIP07FS	RDMW0620M0E
254M12A35	●	○	4	3.0	25	12.5	23.4	57	35	6	19	M12	0.2	TPS22	TIP07FS	RDMW0620M0E

* Clamp Torque (N • m) : TPS20=0.6, TPS22=0.6

Recommended Cutting Conditions

* The cutting conditions below are a guide only.Please make adjustments according to the machining conditions.
* Please note the follows when machining the hardened steel by using MP8010.
  - Please shorten the overhang length as much as possible.
  - Use with carbide shank recommended.
  - Please note the setting of the depth of cut especially to prevent the fracture.
  - The first recommended grade when machining hardened steel of less than 50HRC is VP15TF.

Shoulder • Pocket • Ramping • Copying

	Work Material	Hardness	Grade	Cutting Speed **vc** (m/min)	ARX25R□□□SA□□S ARX25R□□□M□□A□□		ARX30R□□□SA□□S ARX30R□□□M□□A□□		ARX35R□□□SA□□S	
					Depth of Cut **ap** (mm)	Feed per Tooth **fz** (mm/tooth)	Depth of Cut **ap** (mm)	Feed per Tooth **fz** (mm/tooth)	Depth of Cut **ap** (mm)	Feed per Tooth **fz** (mm/tooth)
P	Mild Steel	≤180HB	**VP15TF**	180 (150—220)	≤1.0	≤0.5	≤1.2	≤0.5	≤1.5	≤0.5
	Carbon Steel Alloy Steel	180—350HB	**VP15TF**	160 (120—200)	≤0.7	≤0.3	≤0.9	≤0.3	≤1.2	≤0.3
M	Stainless Steel	≤270HB	**VP15TF**	150 (120—180)	≤0.7	≤0.3	≤0.9	≤0.3	≤1.2	≤0.3
K	Cast Iron	Tensile strength ≤350MPa	**VP15TF**	180 (150—220)	≤1.0	≤0.5	≤1.2	≤0.5	≤1.5	≤0.5
	Ductile Cast Iron	Tensile strength ≤800MPa	**VP15TF**	120 (80—160)	≤1.0	≤0.5	≤1.2	≤0.5	≤1.5	≤0.5
H	Hardened Steel	<50HRC	**VP15TF**	80 (50—120)	≤0.5	≤0.2	≤0.7	≤0.2	≤1.0	≤0.2
		50HRC≤	**MP8010**	80 (50—120)	≤0.3	≤0.2	≤0.4	≤0.2	≤0.5	≤0.2

Note) When ramping, refer to the machining limits below.

Slotting

	Work Material	Hardness	Grade	Cutting Speed **vc** (m/min)	ARX25R□□□SA□□S ARX25R□□□M□□A□□		ARX30R□□□SA□□S ARX30R□□□M□□A□□		ARX35R□□□SA□□S	
					Depth of Cut **ap** (mm)	Feed per Tooth **fz** (mm/tooth)	Depth of Cut **ap** (mm)	Feed per Tooth **fz** (mm/tooth)	Depth of Cut **ap** (mm)	Feed per Tooth **fz** (mm/tooth)
P	Mild Steel	≤180HB	**VP15TF**	180 (150—220)	≤1.0	≤0.4	≤1.2	≤0.4	≤1.5	≤0.4
	Carbon Steel Alloy Steel	180—350HB	**VP15TF**	160 (120—200)	≤0.7	≤0.2	≤0.9	≤0.2	≤1.2	≤0.2
M	Stainless Steel	≤270HB	**VP15TF**	150 (120—180)	≤0.7	≤0.2	≤0.9	≤0.2	≤1.2	≤0.2
K	Cast Iron	Tensile strength ≤350MPa	**VP15TF**	180 (150—220)	≤1.0	≤0.4	≤1.2	≤0.4	≤1.5	≤0.4
	Ductile Cast Iron	Tensile strength ≤800MPa	**VP15TF**	120 (80—160)	≤1.0	≤0.4	≤1.2	≤0.4	≤1.5	≤0.4
H	Hardened Steel	<50HRC	**VP15TF**	80 (50—120)	≤0.5	≤0.1	≤0.7	≤0.1	≤1.0	≤0.1
		50HRC≤	**MP8010**	80 (50—120)	≤0.3	≤0.1	≤0.4	≤0.1	≤0.5	≤0.1

Plunging

	Work Material	Hardness	Grade	Cutting Speed **vc** (m/min)	ARX25R□□□SA□□S ARX25R□□□M□□A□□		ARX30R□□□SA□□S ARX30R□□□M□□A□□		ARX35R□□□SA□□S	
					Width of Cut **ae** (mm)	Feed per Tooth **fz** (mm/tooth)	Width of Cut **ae** (mm)	Feed per Tooth **fz** (mm/tooth)	Width of Cut **ae** (mm)	Feed per Tooth **fz** (mm/tooth)
P	Mild Steel	≤180HB	**VP15TF**	180 (150—220)	≤2.5	≤0.3	≤3.0	≤0.3	≤3.5	≤0.3
	Carbon Steel Alloy Steel	180—350HB	**VP15TF**	160 (120—200)	≤2.5	≤0.2	≤3.0	≤0.2	≤3.5	≤0.2
M	Stainless Steel	≤270HB	**VP15TF**	150 (120—180)	≤2.5	≤0.2	≤3.0	≤0.2	≤3.5	≤0.2
K	Cast Iron	Tensile strength ≤350MPa	**VP15TF**	180 (150—220)	≤2.5	≤0.3	≤3.0	≤0.3	≤3.5	≤0.3
	Ductile Cast Iron	Tensile strength ≤800MPa	**VP15TF**	120 (80—160)	≤2.5	≤0.3	≤3.0	≤0.3	≤3.5	≤0.3
H	Hardened Steel	<50HRC	**VP15TF**	80 (50—120)	≤2.5	≤0.1	≤3.0	≤0.1	≤3.5	≤0.1
		50HRC≤	**MP8010**	80 (50—120)	≤2.5	≤0.1	≤3.0	≤0.1	≤3.5	≤0.1

Helical Drilling

	Work Material	Hardness	Grade	Cutting Speed **vc** (m/min)	ARX25R□□□SA□□S ARX25R□□□M□□A□□		ARX30R□□□SA□□S ARX30R□□□M□□A□□		ARX35R□□□SA□□S	
					Depth of Cut Per Pass **ap** (mm/pass)	Feed per Tooth **fz** (mm/tooth)	Depth of Cut Per Pass **ap** (mm/pass)	Feed per Tooth **fz** (mm/tooth)	Depth of Cut Per Pass **ap** (mm/pass)	Feed per Tooth **fz** (mm/tooth)
P	Mild Steel	≤180HB	**VP15TF**	180 (150—220)	≤1.0	≤0.3	≤1.0	≤0.3	≤1.0	≤0.3
	Carbon Steel Alloy Steel	180—350HB	**VP15TF**	160 (120—200)	≤0.7	≤0.2	≤0.9	≤0.2	≤1.0	≤0.2
M	Stainless Steel	≤270HB	**VP15TF**	150 (120—180)	≤0.7	≤0.2	≤0.9	≤0.2	≤1.0	≤0.2
K	Cast Iron	Tensile strength ≤350MPa	**VP15TF**	180 (150—220)	≤1.0	≤0.3	≤1.0	≤0.3	≤1.0	≤0.3
	Ductile Cast Iron	Tensile strength ≤800MPa	**VP15TF**	120 (80—160)	≤1.0	≤0.3	≤1.0	≤0.3	≤1.0	≤0.3
H	Hardened Steel	<50HRC	**VP15TF**	80 (50—120)	≤0.5	≤0.1	≤0.7	≤0.1	≤1.0	≤0.1
		50HRC≤	**MP8010**	80 (50—120)	≤0.3	≤0.1	≤0.4	≤0.1	≤0.5	≤0.1

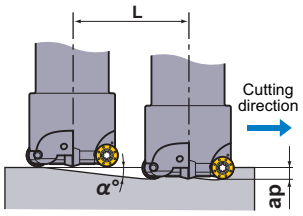
Note) When helical drilling, refer to the machining limits below.

Cutting Mode Maximum Capacities

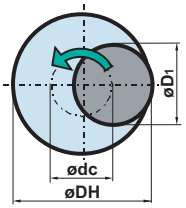
Ramping

Finding a cutters' distance moved **"L"** when depth of cut reaches **"ap"** at a ramping angle of **"α°"**.

L=ap/tan α (mm)



Helical Drilling



- Setting a tool's centre excursion

ødc = øDH - øD1

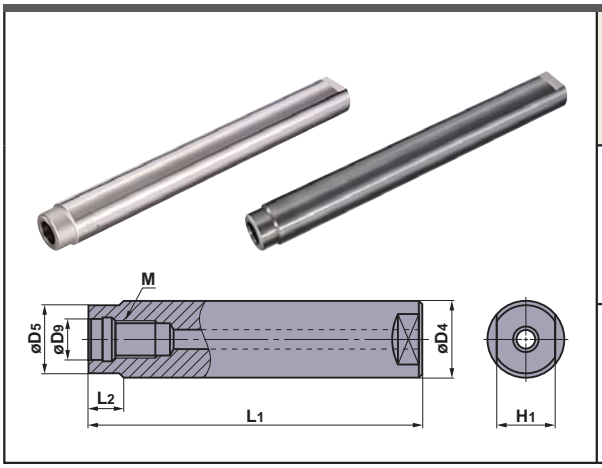
Tool's center excursion | Required bore diameter | Tool's cutting diameter

- For the depth of cut per pass, refer to the cutting conditions above for helical drilling.
- Set the machine spindle revolution so that the tool is rotating and cutting in a down cut direction.

Type	Order Number	D1 (mm)	R (mm)	Number of Teeth	Ramping			Helical Drilling	
					α°	ap max. (mm)	L (mm)	DH min. (mm)	DH max. (mm)
With the Centre Cutting Edge	ARX25R102SA10S	10	2.5	2	90	2.5	0	15	19
	25R102SA10LW	10	2.5	2	90	2.5	0	15	19
	30R122SA10S	12	3.0	2	90	3.0	0	18	23
	30R122SA10LW	12	3.0	2	90	3.0	0	18	23
	35R142SA12S	14	3.5	2	90	3.5	0	21	27
	35R142SA12LW	14	3.5	2	90	3.5	0	21	27
Without the Centre Cutting Edge (Multi-tooth)	ARX25R122SA10S	12	2.5	2	27.17	2.5	4.87	19	23
	25R122SA10LW	12	2.5	2	27.17	2.5	4.87	19	23
	25R163M08A30	16	2.5	3	13.70	2.5	10.76	27	31
	25R163SA16S	16	2.5	3	13.70	2.5	10.26	27	31
	30R163M08A30	16	3.0	3	21.25	3.0	7.71	26	31
	30R163SA16S	16	3.0	3	21.25	3.0	7.71	26	31
	25R173M08A30	17	2.5	3	12.22	2.5	11.54	29	33
	25R173SA16S	17	2.5	3	12.22	2.5	11.54	29	33
	30R173M08A30	17	3.0	3	18.42	3.0	9.01	28	33
	30R173SA16S	17	3.0	3	18.42	3.0	9.01	28	33
	30R203M10A30	20	3.0	3	13.21	3.0	12.78	34	39
	30R203SA20S	20	3.0	3	13.21	3.0	12.78	34	39
	25R204M10A30	20	2.5	4	9.23	2.5	15.38	35	39
	25R204SA20S	20	2.5	4	9.23	2.5	15.38	35	39
	25R224M10A30	22	2.5	4	7.94	2.5	17.92	39	43
	25R224SA20S	22	2.5	4	7.94	2.5	17.92	39	43
	30R224M10A30	22	3.0	4	11.13	3.0	15.25	38	43
	30R224SA20S	22	3.0	4	11.13	3.0	15.25	38	43
	30R254M12A35	25	3.0	4	9.01	3.0	18.92	44	49
	30R254SA20S	25	3.0	4	9.01	3.0	18.92	44	49
	25R255M12A35	25	2.5	5	6.57	2.5	21.71	45	49
	25R255SA20S	25	2.5	5	6.57	2.5	21.71	45	49

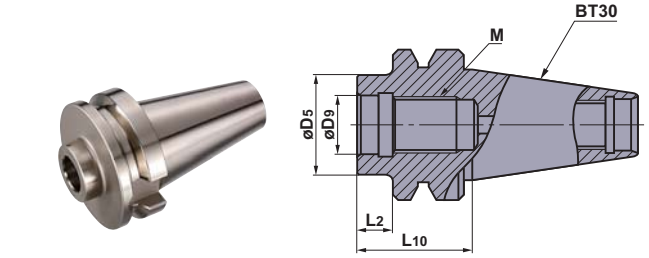
Screw-in arbor

Straight Shank Arbor



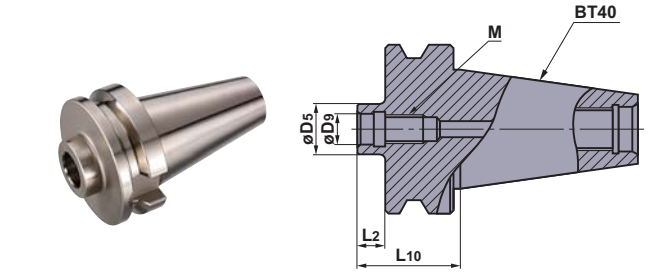
Type	Order Number	Stock	Dimensions (mm)						
			D9	D4	D5	L1	L2	H1	M
Steel Shank	SC16M08S100S	●	8.5	16	14.5	100	10	10	M8
	08S200L	●	8.5	16	14.5	200	10	10	M8
	SC20M10S120S	●	10.5	20	18.5	120	10	14	M10
	10S220L	●	10.5	20	18.5	220	10	14	M10
	SC25M12S125S	●	12.5	25	23.5	125	10	19	M12
	12S245L	●	12.5	25	23.5	245	10	19	M12
Carbide Shank	SC16M08S100SW	●	8.5	16	14.5	100	10	10	M8
	08S200LW	●	8.5	16	14.5	200	10	10	M8
	SC20M10S120SW	●	10.5	20	18.5	120	10	14	M10
	10S220LW	●	10.5	20	18.5	220	10	14	M10
	SC25M12S125SW	●	12.5	25	23.5	125	10	19	M12
	12S245LW	●	12.5	25	23.5	245	10	19	M12

BT30 Shank Arbor



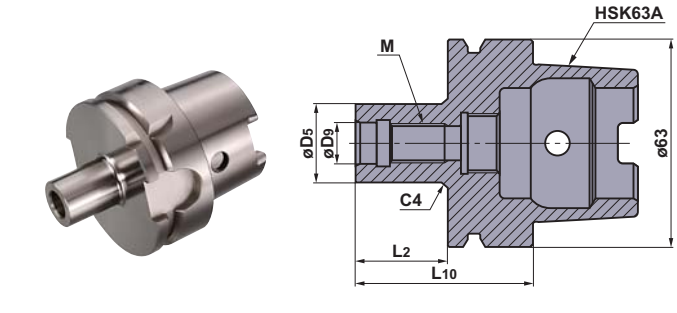
Order Number	Stock	Dimensions (mm)				
		D9	D5	L10	L2	M
SC16M08S10-BT30	●	8.5	14.5	32	10	M8
20M10S10-BT30	●	10.5	18.5	32	10	M10
25M12S10-BT30	●	12.5	23.5	32	10	M12

BT40 Shank Arbor



Order Number	Stock	Dimensions (mm)				
		D9	D5	L10	L2	M
SC16M08S10-BT40	●	8.5	14.5	37	10	M8
20M10S10-BT40	●	10.5	18.5	37	10	M10
25M12S10-BT40	●	12.5	23.5	37	10	M12

HSK63A Shank Arbor



Order Number	Stock	Dimensions (mm)				
		D9	D5	L10	L2	M
SC16M08S22-HSK63A	●	8.5	14.5	48	22	M8
20M10S24-HSK63A	●	10.5	18.5	50	24	M10
25M12S27-HSK63A	●	12.5	23.5	53	27	M12

● : Inventory maintained.

How to Install the Screw-in Head

①Thoroughly clean the clamp section of the head and the arbor with an air blower or brush before installation.

②Tighten the head at the recommended torque and ensure that there is no gap between the head and arbor.

Screw Size	Recommended Torque (N • m)	Wrench Size (mm)
M8	23	10
M10	46	14
M12	80	19

- Cutting tools become extremely hot during cutting. Never touch them with bare hands after operation as this may produce risk of injuries or burns.
- Do not handle the cutting tools with bare hands as this may cause injuries.

Notes on Clamping

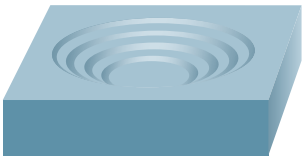
*When clamping inserts, follow the recommendations below.

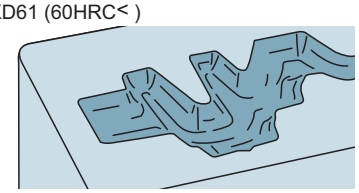
1. Clean the insert seat.
2. Fasten the clamp screw while pressing the insert against the insert seat.
3. For with-the-center-cutting-edge type, two inserts will slightly overlap near the center of the tool end. Set the second insert on the insert seat so as not to touch the first insert, while pressing the second insert, fasten the clamp screw.

To prevent inserts from touching each other, the **ARX** is designed so that inserts will fit below the centerline of the tool (positive radial rake). Therefore, slide the second insert in from the side to prevent contact between the first and second inserts.

ARX

Application Examples

Tool		ARX25R255SA20S	ARX25R102SA10S
Insert		RDMW0517M0E	RDMW0517M0E
Grade		VP15TF	VP15TF
Machine		Vertical type M/C	Vertical type M/C
Work Material		DH31-S 	DH31-S(48HRC) 
Cutting Mode		Cylindrical milling	Concave milling
Cutting Conditions	Cutting Speed (m/min)	196(2500min^{-1})	157(5000min^{-1})
	Table Feed (mm/min)	3000	3000
	Feed per Tooth (mm/tooth)	0.24	0.30
	Depth of Cut (mm)	0.5	0.5
	Width of Cut (mm)	15	6
Coolant		Water soluble	Mist
Results		Machining time could be reduced by 75% when compared to a competitor's solid ball nose end mill. Regrinding costs could also be reduced.	Machining time could be reduced by 75% when compared to a competitor's solid ball nose end mill. Due to inserts with a long tool life and high fracture resistance, automation has now become possible.

Tool		ARX30R163M08A30 + SC16M08S100SW	ARX30R254SA20S
Insert		RDMW0620M0E	RDMW0620M0E
Grade		MP8010	MP8010
Machine		Vertical type M/C	Vertical type M/C
Work Material		JIS SKD61 (60HRC<) 	JIS SKD61 (60HRC<) 
Cutting Mode		Face milling of flat part (Forging mould resinking)	Face milling of flat part (Forging mould resinking)
Cutting Conditions	Cutting Speed (m/min)	50	50
	Table Feed (mm/min)	600	360
	Feed per Tooth (mm/tooth)	0.2	0.2
	Depth of Cut (mm)	0.2	0.2
	Width of Cut (mm)	4.0	15.0
Coolant		Air blow	Air blow
Results		Removal of a surface nitrided layer could be changed from the conventional electric discharge to cutting. The machining time could be reduced greatly.	Removal of a surface nitrided layer could be changed from the conventional electric discharge to cutting. The machining time could be reduced and the machining cost could be decreased greatly.

Memo

For Your Safety
●Don't handle inserts and chips without gloves. ●Please machine within the recommended application range and exchange expired tools with new ones in advance of breakage. ●Please use safety covers and wear safety glasses. ●When using compounded cutting oils, please take fire precautions. ●When attaching inserts or spare parts, please use only the correct wrench or spanner. ●When using rotating tools, please make a trial run to check run-out, vibration and abnormal sounds etc.

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(Tools specifications subject to change without notice.)

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