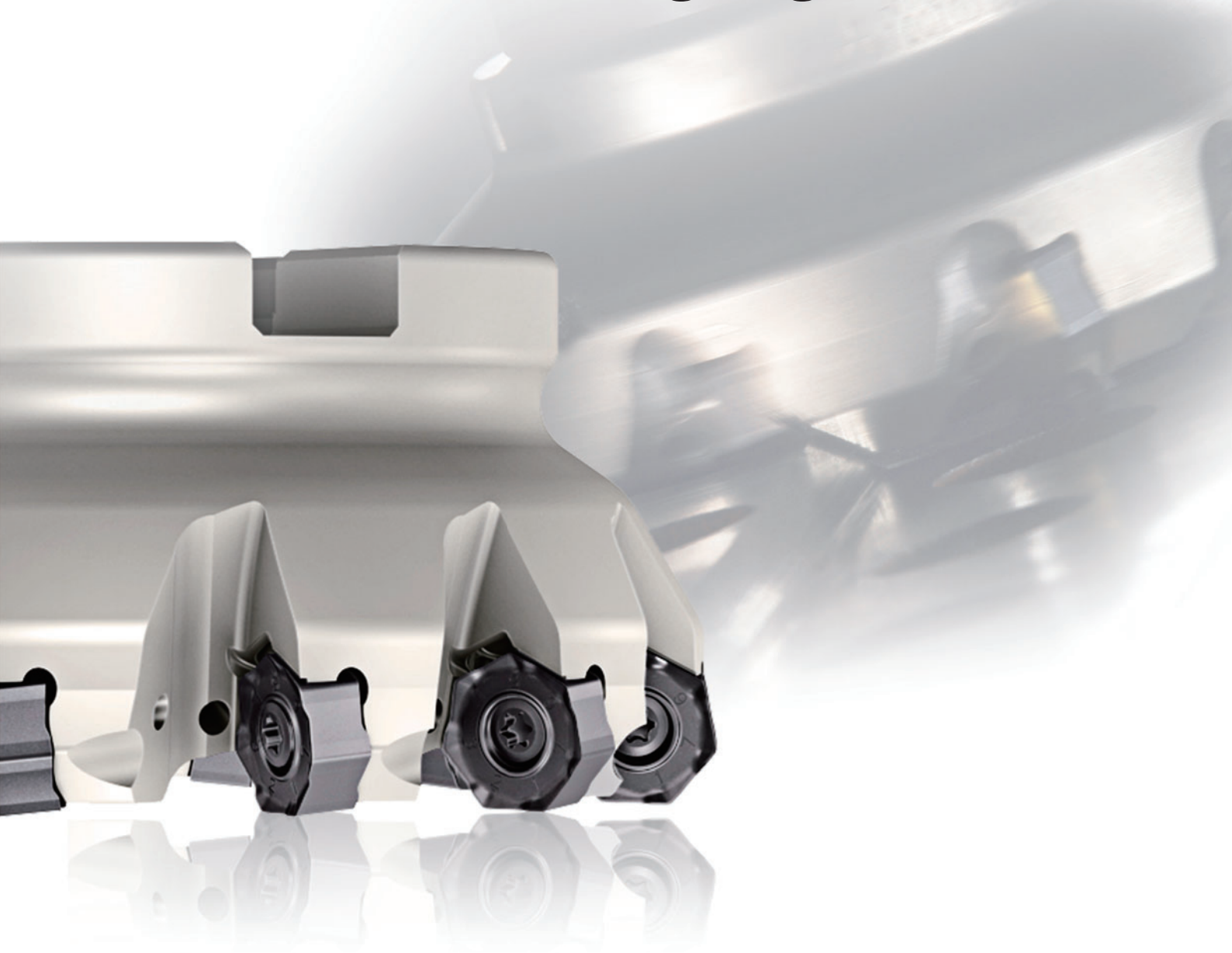


General Purpose Multi Corner Insert Type Face Milling Cutter

AHX Series

Series
Expansion

**Heptagonal double sided insert.
Economical 14 cutting edge inserts.**



General Purpose Multi Corner Insert Type Face Milling Cutter

AHX Series

Unique 14 Cornered Insert

Economical Heptagonal Double Sided Insert

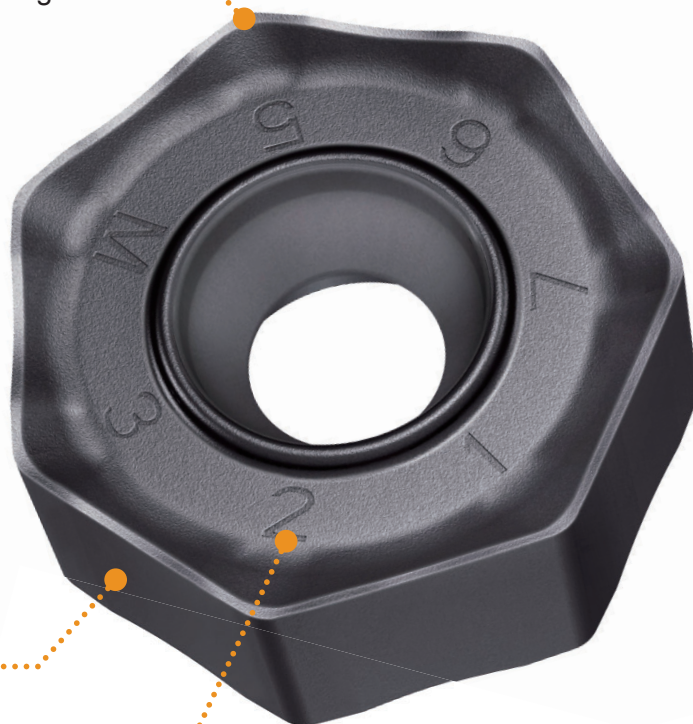
Double positive cutting edge geometry offers lower cutting resistance for improved machining efficiency.

(mm)		
Tool Holder Number	IC	APMX
AHX440S	13.4	3.0
NEW AHX475S	13.4	1.6
AHX640S	20.0	6.0

The above "APMX" will vary depending on the breaker insert.

High Rigidity by Increasing the Thickness of the Inserts

Corner Number is Clearly Shown



A Unique Face Mill for Machining of Steel, Stainless Steel and Cast Iron

AHX440S

AHX475S NEW

AHX475S is not compatible with stainless steel.

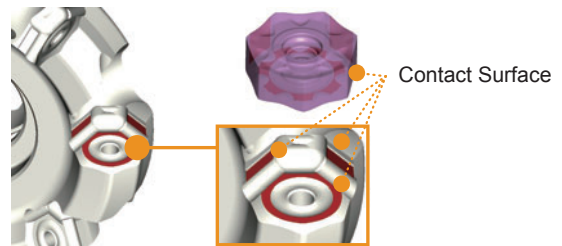
AHX640S

Designed to Control Abnormal Insert Breakage and Body Damage



The unique conical insert seat and Anti Fly mechanism (A.F.I.) hold the insert securely. The outer edge of the insert is not in contact with the body, thereby preventing damage if sudden fracturing occurs.

The thick insert negates the need for a shim.



Through Coolant Holes

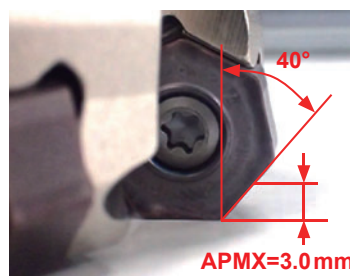
Improves chip discharge and prevents chip welding.



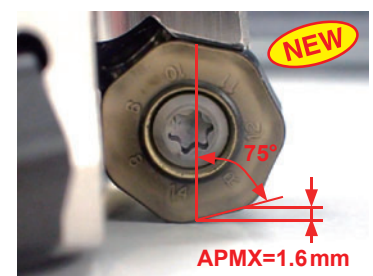
NEW AHX475S For High Feed Machining

High feed is possible with AHX440S by setting an RE = 3.2 mm insert to be used in a cutting body with a corner angle of 75° (KAPR15°).

The maximum depths of cut (APMX) will be limited to 1.6 mm.



AHX440S L Breaker



AHX475S

AHX Steel Series

Selection Reference Table (Cutting Edge Count and Cutting Conditions)

(mm)

DC	Type	Number of Teeth	AHX440S			AHX475S			AHX640S		
			General Cutting			High Feed Machining			General Cutting		
			Stock	fr (mm/rev)	APMX	Stock	fr (mm/rev)	APMX	Stock	fr (mm/rev)	APMX
40	Fine Pitch	3	●	0.6—1.2	3						
	Extra Fine Pitch	4	●	0.8—1.6	3						
50	Fine Pitch	4	●	0.8—1.6	3	●	2.4—4.0	1.6			
	Extra Fine Pitch	5	●	1.0—2.0	3	●	3.0—5.0	1.6			
	Super Extra Fine Pitch	6	●	1.2—2.4	3						
63	Coarse Pitch	4							●	0.8—1.6	6
	Fine Pitch	5	●	1.0—2.0	3	●	3.0—5.0	1.6	●	1.0—2.0	6
	Extra Fine Pitch	6	●	1.2—2.4	3	●	3.6—6.0	1.6			
	Super Extra Fine Pitch	8	●	1.6—3.2	3						
80	Coarse Pitch	4							●	0.8—1.6	6
	Fine Pitch	6	●	1.2—2.4	3	●	3.6—6.0	1.6	●	1.2—2.4	6
	Extra Fine Pitch	8	●	1.6—3.2	3	●	4.8—8.0	1.6			
	Super Extra Fine Pitch	10	●	2.0—4.0	3						
100	Coarse Pitch	5							●	1.0—2.0	6
	Fine Pitch	7	●	1.4—2.8	3	●	4.2—7.0	1.6	●	1.4—2.8	6
		9				●	5.4—9.0	1.6			
	Extra Fine Pitch	10	●	2.0—4.0	3						
	Super Extra Fine Pitch	12	●	2.4—4.8	3						
125	Coarse Pitch	6							●	1.2—2.4	6
	Fine Pitch	8	●	1.6—3.2	3	●	4.8—8.0	1.6	●	1.6—3.2	6
		10				●	6.0—10.0	1.6			
	Extra Fine Pitch	12	●	2.4—4.8	3						
	Super Extra Fine Pitch	14	●	2.8—5.6	3						
160	Coarse Pitch	7							●	1.4—2.8	6
	Fine Pitch	10	●	2.0—4.0	3	●	6.0—10.0	1.6	●	2.0—4.0	6
		12				●	7.2—12.0	1.6			
	Extra Fine Pitch	14	●	2.8—5.6	3						
	Super Extra Fine Pitch	16	●	3.2—6.4	3						
200	Coarse Pitch	8							●	1.6—3.2	6
	Fine Pitch	12							●	2.4—4.8	6

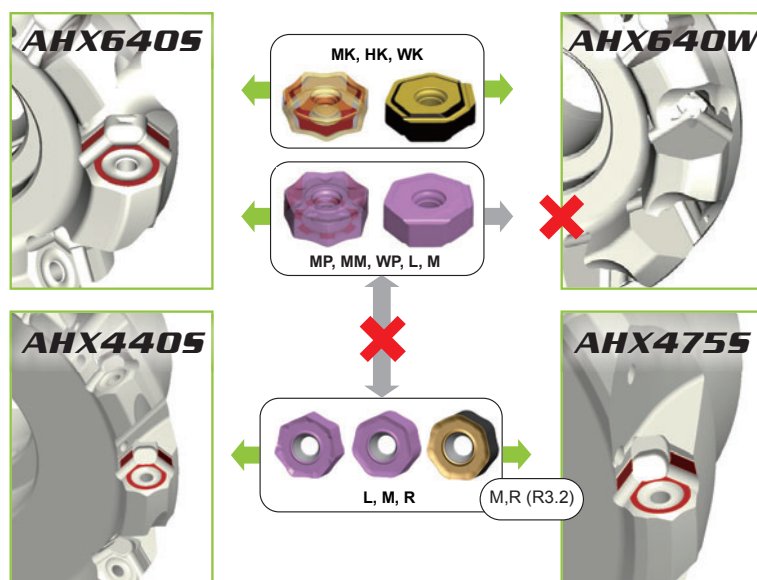
(Note 1) fr: Feed rate per revolution (AHX475S: the feed rate per cutter (fz) will be limited by the cutting width ae. Please refer to page 15 for details.)

(Note 2) APMX: Maximum depths of cut (AHX440S: the maximum depths of cut will vary depending on the breaker)

(Note 3) The depths of cut and feed rate are identical to the recommended conditions for carbon steel and alloy steel.

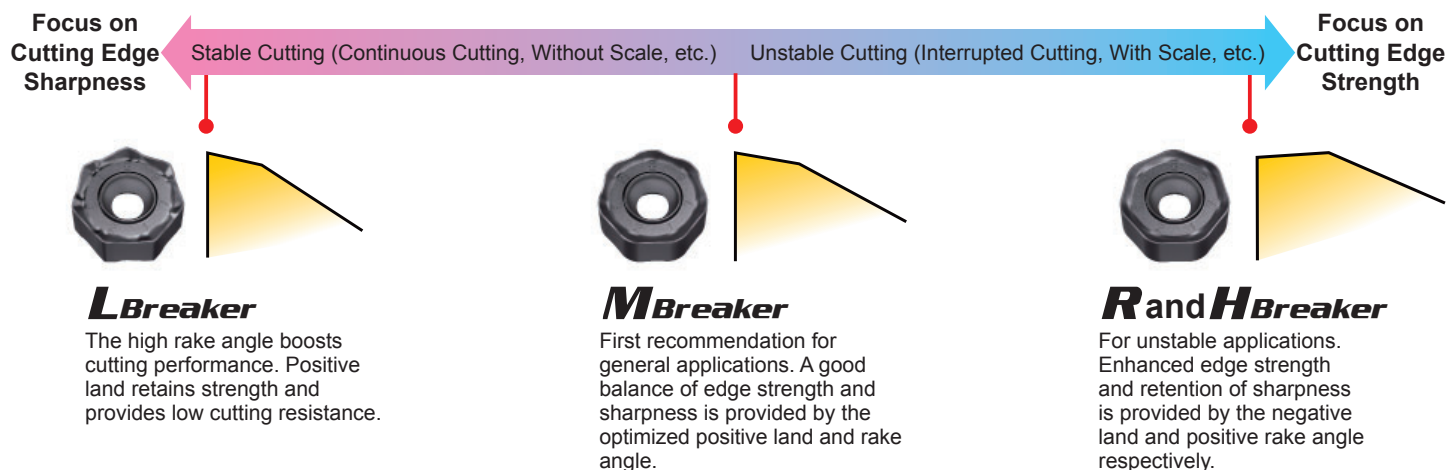
Compatibility with Inserts for AHX Series

The RE = 3.2 mm insert for use with AHX440S can be mounted on AHX475S. All inserts for use with AHX640 can be mounted on AHX640S (note, however, that the set height will differ). The inserts for mounting on AHX640W are the MK, HK, and WK breakers for casting.



Breaker System

Breaker Series for Varied Cutting Conditions



Work Material	Cutting Conditions		
	Stable Cutting	General Cutting	Unstable Cutting
P	AHX440S	M (R3.2) Shared with AHX475	R Shared with AHX475
	L With Wiper	M (R0.8) With Wiper	
M	AHX640S	M	
		MP	
K	AHX440S	M (R3.2)	R
	L With Wiper	M (R0.8) With Wiper	
K	AHX640S	MM	
		M (R3.2) Shared with AHX475	R Shared with AHX475
K	AHX640S	MK	HK
		L With Wiper	

Wiper Insert of AHX640S

Based on the number of inserts and the cutting conditions, use of wiper inserts can improve overall surface finishes.



WP + combination with **MP**
Right-hand 2 corners, left-hand 2 corners.



WK + combination with **MK**
Right-hand 2 corners, left-hand 2 corners.



Face Milling Cutter for High Efficiency Machining of Cast Irons

AHX640W

High Rigidity Inserts Suitable for High Feed Milling of Cast Irons

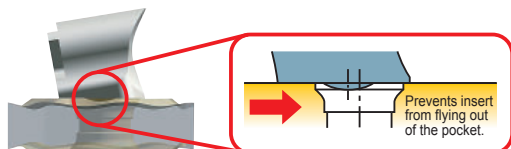


Sloped cutting edge and large rake angle



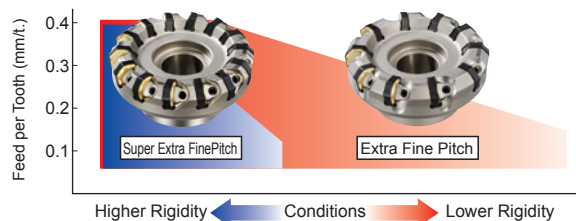
Innovative Clamp System

New wedge geometry developed to increase the permissible number of teeth.
Unique wedge geometry uses a protruding section that fits inside the insert hole acts as an Anti-Fly Insert (AFI) mechanism.



2 Variations for Different Applications

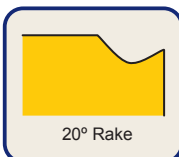
Extra fine pitch and super extra fine pitch types allow high efficiency milling under various machining conditions. Additionally, left hand type for use on special machines are also available as standard. Inserts can be used with both right and left hand type cutters.



Insert Applications

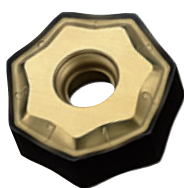


MK General-purpose Insert



High tolerance M-class insert.
Neutral, double sided 14 corners.
20° rake angle for low cutting resistance.
First recommendation for roughing and finishing.

HK Strong Cutting Edge Insert



High tolerance M-class insert.
Neutral, double sided 14 corners.
High cutting edge strength to prevent fracturing of the cutting edge during unstable machining of non-uniform workpieces and high feed machining.

WK Wiper Insert



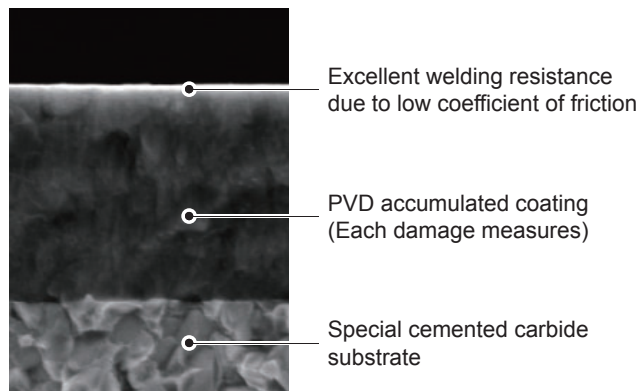
Improved Surface Finish

Right-hand 2 corners, left-hand 2 corners.
Based on the number of inserts and the cutting conditions, by using the wiper inserts it is possible to improve the overall surface finish.

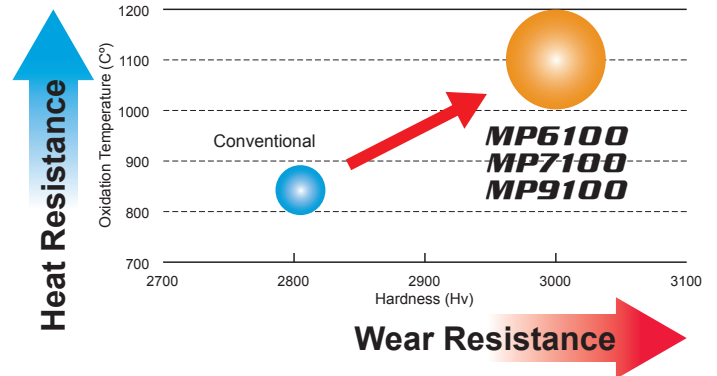
The insert for AHX640W is compatible with AHX640S.

Insert Grades for a Wide Range of Materials

MIRACLE SIGMA Accumulated Al-Ti-Cr-N Based PVD Coating



Dramatically Improving the Heat and Wear Resistance



Excellent Welding Resistance due to Low Coefficient Friction

	Work Material	Grade	Coefficient of Friction		
			Measured at 600 Degrees		
			AISI 1055	AISI 304	Ti-6Al-4V
P	Carbon Steel, Alloy Steel	MP6100	0.4		
M	Stainless Steel	MP7100		0.5	
S	Titanium Alloy, Heat Resistant Alloy	MP9100			0.3
	Conventional		0.7	0.7	0.7

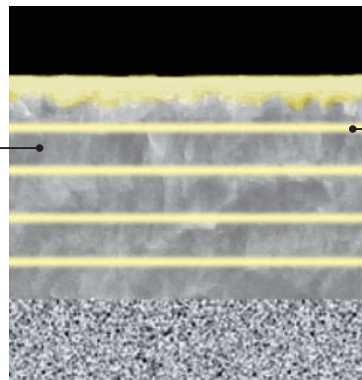
TOUGH-Σ Technology

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

PVD Accumulated Coating

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.



*Graphical Representation.

Each Grade has a Layer Suitable for Each Application Area

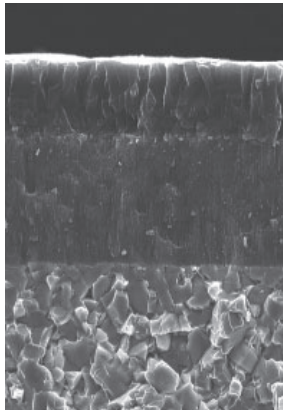
P		(Al,Cr)N	Tough Against Thermal Cracks
M		TiN	Tough Against Notching
S		CrN	Tough! Resistant Chipping

Selection Standard

ISO		PVD		ISO		PVD		ISO			CVD		PVD		ISO		PVD		ISO		PVD			
Steel P	10				Stainless Steel M	10					Cast Iron K	10				Heat Resistant Alloy • Ti Alloy S	10				Hardened Steel H	10		
	20			20						20					20					20				
	30			30						30					30					30				
	40			40						40					40					40				
	40			40						40					40					40				

MC5020

MC5020 has excellent wear, chipping and thermal crack resistance. These features prevent the problems usually associated with machining cast irons over prolonged periods.



Structure of
MC5020

Improved Wear Resistance

The micro-grain wear resistant Al_2O_3 and fibrous TiCN layers deliver excellent wear resistance when milling a wide range of cast irons.

Improved Fracture Resistance

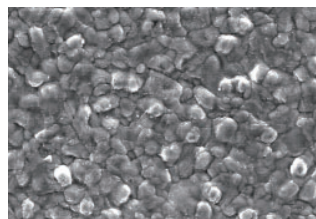
Use of a specially developed cemented carbide that provides superior resistance to fracture and thermal cracking prevents the cutting edge from sudden fracturing.

Reduced Abnormal Damage

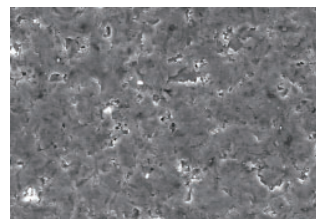
A black super-smooth coating prevents abnormal damage such as weld chipping.

Black Super-smooth Coating

Comparison of Coating Surface



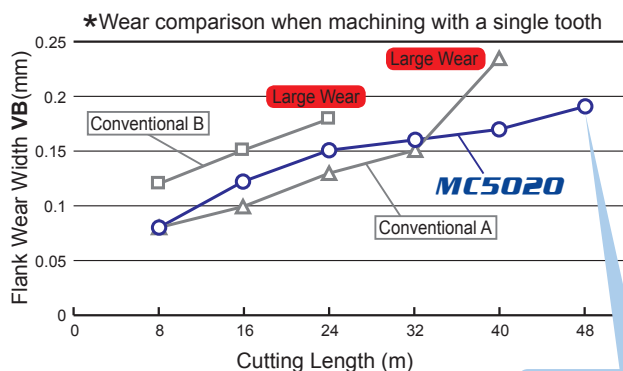
Conventional Coating



Black Super-smooth Coating

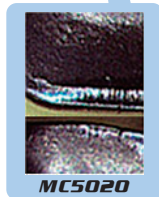
Cutting Performance

Wear Resistance

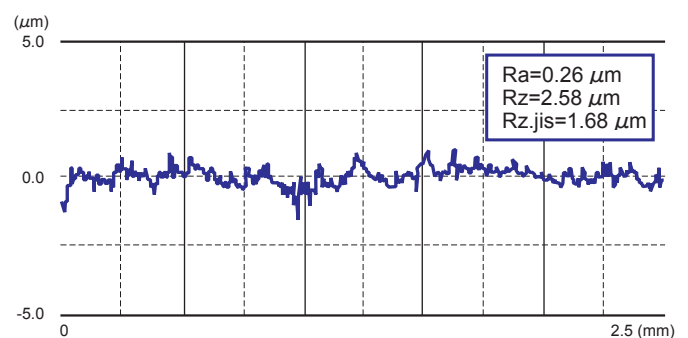


<Cutting Conditions>

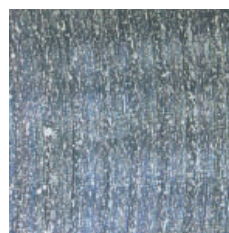
Work Material : AISI No45B
Tool : AHX640WR10010D
Insert : NNMU200608ZEN-MK (1 piece)
Cutting Speed : 300 m/min
Feed per Tooth : 0.3 mm/t.
Depth of Cut : $a_p=5$ mm
Cutting Mode : Dry Cutting
Single Insert



Surface Finish



<Finish Condition>



<Cutting Conditions>

Work Material : AISI 100-70-03
Tool : AHX640WR10014D
Insert : NNMU200608ZEN-MK (13 piece)
Wiper Insert : WNEU2006ZEN7C-WK (1 piece)
Cutting Speed : 350 m/min
Feed per Tooth : 0.1 mm/t.
Depth of Cut : $a_p=0.4$ mm
 $a_e=80$ mm
Cutting Mode : Air Blow

FACE MILLING

<GENERAL CUTTING>

40°



Finishing



Roughing



AHX440S

P

M

K

N

S

H



Fig. 1

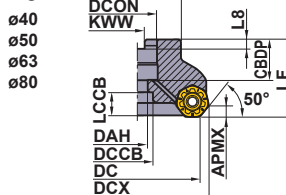


Fig. 2

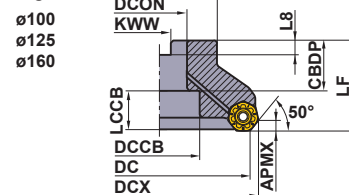
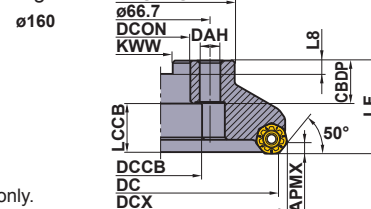


Fig. 3



KAPR : 50° T : 15° (When using the M breaker insert)

GAMP : -6° I : 5°

GAMF : -7°

DC = mm size, DCON = Inch size

Right hand tool holder only.

(mm)

DC	Order Number	Stock	Coolant Hole	No.T	LF	DCX	DCON	Fig.	WT(kg)	APMX
40	AHX440S-040A03AR	●	○	3	40	48.4	16	1	0.3	3
	AHX440S-040A04AR	●	○	4	40	48.4	16	1	0.2	3
50	AHX440S-050A04AR	●	○	4	40	58.4	22	1	0.4	3
	AHX440S-050A05AR	●	○	5	40	58.4	22	1	0.4	3
	AHX440S-050A06AR	●	○	6	40	58.4	22	1	0.4	3
63	AHX440S-063A05AR	●	○	5	40	71.4	22	1	0.6	3
	AHX440S-063A06AR	●	○	6	40	71.4	22	1	0.6	3
	AHX440S-063A08AR	●	○	8	40	71.4	22	1	0.5	3
80	AHX440SR08006CA	●	○	6	50	88.4	25.4	1	1.1	3
	AHX440SR08008CA	●	○	8	50	88.4	25.4	1	1.1	3
	AHX440SR08010CA	●	○	10	50	88.4	25.4	1	1.1	3
100	AHX440SR10007DA	●	○	7	50	108.4	31.75	2	1.6	3
	AHX440SR10010DA	●	○	10	50	108.4	31.75	2	1.6	3
	AHX440SR10012DA	●	○	12	50	108.3	31.75	2	1.6	3
125	AHX440SR12508EA	●	○	8	63	133.4	38.1	2	3.0	3
	AHX440SR12512EA	●	○	12	63	133.4	38.1	2	3.0	3
	AHX440SR12514EA	●	○	14	63	133.3	38.1	2	2.9	3
160	AHX440SR16010FA	●	○	10	63	168.4	50.8	2	4.8	3
	AHX440SR16014FA	●	○	14	63	168.4	50.8	2	4.6	3
	AHX440SR16016FA	●	○	16	63	168.4	50.8	2	4.7	3

(Note 1) The cutter body does not have a set bolt for an arbor. Please refer to page 9, when ordering.

(Note 2) The above "APMX" will vary depending on the breaker insert.

★ Number of Teeth

Spare Parts

Tool Holder Number	★	
	Clamp Screw	Wrench (Insert)
AHX440S	TS35R	TKY15T

★ Clamp Torque (N · m) : TS35R=3.5

General Purpose Multi Corner Insert Type Face Milling Cutter

Metric Standard

KAPR :50° T :15° (When using the M breaker insert)

GAMP:-6° I :5°

GAMF :-7°

DC=mm size, DCON=mm size

(mm)

DC	Order Number	Stock	Coolant Hole	* No.T	LF	DCX	DCON	Fig.	WT(kg)	APMX
40	AHX440S-040A03AR	●	○	3	40	48.4	16	1	0.3	3
	AHX440S-040A04AR	●	○	4	40	48.4	16	1	0.2	3
50	AHX440S-050A04AR	●	○	4	40	58.4	22	1	0.4	3
	AHX440S-050A05AR	●	○	5	40	58.4	22	1	0.4	3
	AHX440S-050A06AR	●	○	6	40	58.4	22	1	0.4	3
63	AHX440S-063A05AR	●	○	5	40	71.4	22	1	0.6	3
	AHX440S-063A06AR	●	○	6	40	71.4	22	1	0.6	3
	AHX440S-063A08AR	●	○	8	40	71.4	22	1	0.5	3
80	AHX440S-080A06AR	●	○	6	50	88.4	27	1	1.1	3
	AHX440S-080A08AR	●	○	8	50	88.4	27	1	1.1	3
	AHX440S-080A10AR	●	○	10	50	88.4	27	1	1.1	3
100	AHX440S-100B07AR	●	○	7	50	108.4	32	2	1.6	3
	AHX440S-100B10AR	●	○	10	50	108.4	32	2	1.6	3
	AHX440S-100B12AR	●	○	12	50	108.3	32	2	1.6	3
125	AHX440S-125B08AR	●	○	8	63	133.4	40	2	3.0	3
	AHX440S-125B12AR	●	○	12	63	133.4	40	2	3.0	3
	AHX440S-125B14AR	●	○	14	63	133.3	40	2	2.9	3
160	AHX440S-160C10NR	●	—	10	63	168.4	40	3	4.8	3
	AHX440S-160C14NR	●	—	14	63	168.4	40	3	4.6	3
	AHX440S-160C16NR	●	—	16	63	168.4	40	3	4.7	3

(Note 1) The cutter body does not have a set bolt for an arbor. Please refer to the table below, when ordering.

(Note 2) The above "APMX" will vary depending on the breaker insert.

* Number of Teeth

Optional Parts

(mm)

Tool Holder Number	Set Bolt		Fig.	Reference Dimensions								Geometry
	With Coolant Hole	With Coolant Hole		a	b	c	d	e	f	g		
	Order Number	Order Number										
AHX440S-040A	HSC08025H	HSC08040	1	13	M8×1.25	33	8	5	—	—	Fig.1	
AHX440S-050A	HSC10030H	HSC10035	1	16	M10×1.5	40	10	6	—	—		
AHX440S-063A	HSC10030H	HSC10035	1	16	M10×1.5	40	10	6	—	—		
AHX440S-080A	HSC12035H	HSC12035 HSC12045	1	18	M12×1.75	47 57	12	10	—	—		
AHX440S-100B	MBA16033H	—	2	40	M16×2	43	10	14	6	23	Fig.2	
AHX440S-125B	MBA20040H	—	2	50	M20×2.5	54	14	17	6	27		
AHX440S-160C	No coolant hole	—	2	50	M20×2.5	54	14	17	6	27		
AHX440SR080	HSC12035H	HSC12035 HSC12045	1	18	M12×1.75	47 57	12	10	—	—		
AHX440SR100	MBA16033H	—	2	40	M16×2	43	10	14	6	23		
AHX440SR125	MBA20040H	—	2	50	M20×2.5	54	14	17	6	27		
AHX440SR160	MBA24045H	—	2	65	M24×3	59	14	17	10	37		

(Note 1) Internal coolant is necessary with the set bolt.

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

MOUNTING DIMENSION > P25

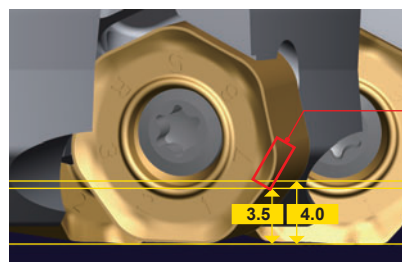
CUTTING CONDITIONS > P11,12

Inserts

(mm)

Application	Shape	Order Number	Class	Honing	Coated					IC	RE	BS	S	APMX	Geometry	
					MP6120	MP6130	MP7130	MP7140	MC5020							VP15TF
Stable Cutting		NNMU130508ZER-L	M	E	●	●	●	●	●	●	13.4	0.8	1	5.77	3	
General Cutting		NNMU130508ZEN-M	M	E	●	●	●	●	●	●	13.4	0.8	1	5.57	*4	
		NNMU130532ZEN-M	M	E	●	●	●	●	●	●	13.4	3.2	—	5.57	*4	
Unstable Cutting		NNMU130532ZEN-R	M	E	●	●	●	●	●	●	13.4	3.2	—	5.47	*4	

* When not using the Wiper, APMX = 3.5mm



Corner R on Opposite Side

If using corner R on the opposite side, APMX = 4.0 mm

If not using the opposite corner, APMX = 3.5 mm

Wiper Inserts

(mm)

Application	Shape	Order Number	Class	Honing	Coated					IC	RE	BS	S	APMX	Geometry
					MP6120	MC5020	VP15TF								
Finish Cutting		WNEU1305ZEN4C-M	E	E	●	●	●			13.4	2.7	4	5.1	0.5	

Instructions for Use of Wiper inserts

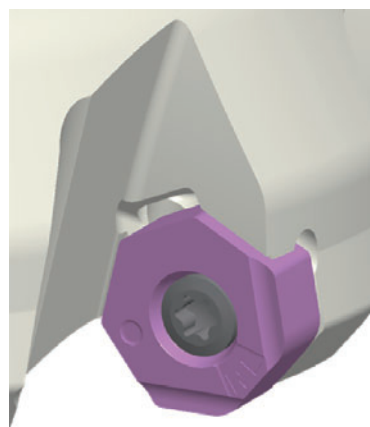


Fig.1



Fig.2

(Note 1) The specifications for these wipers are right hand body 2 corners and left hand body 2 corners. Refer to Figure 1.

(Note 2) A satisfactory finish surface can be achieved with one wiper insert.

However, if the feed rate per revolution will be equal to or greater than the width of the wiper edge, it is recommended to install the second and further wiper inserts spaced evenly within the cutting body.

General Purpose Multi Corner Insert Type Face Milling Cutter

Recommended Cutting Conditions

Dry Cutting

(mm)

	Work Material	Hardness	Grade	vc (m/min)	fz (mm/t.)	ap
P	Mild Steel	$\leq 180\text{HB}$	MP6120,VP15TF	250 (200—300)	0.3 (0.2—0.4)	≤ 3
			MP6130	240 (190—290)	0.3 (0.2—0.4)	≤ 3
	Carbon Steel, Alloy Steel	180—280HB	MP6120,VP15TF	220 (170—270)	0.3 (0.2—0.4)	≤ 3
			MP6130	200 (150—250)	0.3 (0.2—0.4)	≤ 3
	Carbon Steel, Alloy Steel	280—350HB	MP6120,VP15TF	140 (100—180)	0.3 (0.2—0.4)	≤ 3
			MP6130	120 (90—150)	0.3 (0.2—0.4)	≤ 3
	Alloy Tool Steel	$\leq 350\text{HB}$ (annealing)	MP6120,VP15TF	140 (100—180)	0.15 (0.1—0.2)	≤ 1
			MP6130	120 (90—150)	0.15 (0.1—0.2)	≤ 1
M	Austenitic Stainless Steel	$\leq 200\text{HB}$	MP6120,VP15TF	140 (100—180)	0.15 (0.1—0.2)	≤ 1
			MP6130	120 (90—150)	0.15 (0.1—0.2)	≤ 1
		$> 200\text{HB}$	MP6120,VP15TF	140 (100—180)	0.15 (0.1—0.2)	≤ 1
			MP6130	120 (90—150)	0.15 (0.1—0.2)	≤ 1
	Ferritic and Martensitic Stainless Steel	$\leq 200\text{HB}$	MP6120,VP15TF	140 (100—180)	0.15 (0.1—0.2)	≤ 1
			MP6130	120 (90—150)	0.15 (0.1—0.2)	≤ 1
		$> 200\text{HB}$	MP6120,VP15TF	140 (100—180)	0.15 (0.1—0.2)	≤ 1
			MP6130	120 (90—150)	0.15 (0.1—0.2)	≤ 1
K	Gray Cast Iron	Tensile Strength $\leq 350\text{MPa}$	MP6120,VP15TF	140 (100—180)	0.15 (0.1—0.2)	≤ 1
			MP6130	120 (90—150)	0.15 (0.1—0.2)	≤ 1
	Ductile Cast Iron	Tensile Strength $\leq 450\text{MPa}$	MP6120,VP15TF	140 (100—180)	0.15 (0.1—0.2)	≤ 1
			MP6130	120 (90—150)	0.15 (0.1—0.2)	≤ 1
	Ductile Cast Iron	Tensile Strength $\leq 800\text{MPa}$	MP6120,VP15TF	140 (100—180)	0.15 (0.1—0.2)	≤ 1
			MP6130	120 (90—150)	0.15 (0.1—0.2)	≤ 1
	Precipitation Hardening Stainless Steel	$< 450\text{HB}$	MP6120,VP15TF	140 (100—180)	0.15 (0.1—0.2)	≤ 1
			MP6130	120 (90—150)	0.15 (0.1—0.2)	≤ 1
H	Austenitic Stainless Steel	$\leq 200\text{HB}$	MP7130,VP15TF	200 (150—250)	0.2 (0.1—0.3)	≤ 3
			MP7140	180 (120—230)	0.2 (0.1—0.3)	≤ 3
	Austenitic Stainless Steel	$> 200\text{HB}$	MP7130,VP15TF	150 (100—200)	0.2 (0.1—0.3)	≤ 3
			MP7140	130 (80—180)	0.2 (0.1—0.3)	≤ 3
	Ferritic and Martensitic Stainless Steel	$\leq 200\text{HB}$	MP7130,VP15TF	200 (150—250)	0.2 (0.1—0.3)	≤ 3
			MP7140	180 (120—230)	0.2 (0.1—0.3)	≤ 3
		$> 200\text{HB}$	MP7130,VP15TF	150 (100—200)	0.2 (0.1—0.3)	≤ 3
			MP7140	130 (80—180)	0.2 (0.1—0.3)	≤ 3
K	Two-phase Stainless Steel	$\leq 280\text{HB}$	MP7130,VP15TF	140 (100—180)	0.15 (0.05—0.25)	≤ 3
			MP7140	120 (80—160)	0.15 (0.05—0.25)	≤ 3
	Precipitation Hardening Stainless Steel	$< 450\text{HB}$	MP7130,VP15TF	130 (100—160)	0.15 (0.05—0.25)	≤ 3
			MP7140	110 (80—140)	0.15 (0.05—0.25)	≤ 3
	Gray Cast Iron	Tensile Strength $\leq 350\text{MPa}$	MC5020	220 (150—300)	0.3 (0.2—0.4)	≤ 3
			VP15TF	180 (130—230)	0.3 (0.2—0.4)	≤ 3
	Ductile Cast Iron	Tensile Strength $\leq 450\text{MPa}$	MC5020	200 (150—250)	0.2 (0.1—0.3)	≤ 3
			VP15TF	170 (120—220)	0.2 (0.1—0.3)	≤ 3
H	Ductile Cast Iron	Tensile Strength $\leq 800\text{MPa}$	MC5020	170 (150—200)	0.2 (0.1—0.3)	≤ 3
			VP15TF	140 (100—180)	0.2 (0.1—0.3)	≤ 3
	Hardened Steel	40—55HRC	VP15TF	80 (60—100)	0.15 (0.1—0.2)	≤ 1
			VP15TF	80 (60—100)	0.15 (0.1—0.2)	≤ 1

Wet Cutting

(mm)

	Work Material	Hardness	Grade	vc (m/min)	fz (mm/t.)	ap
M	Austenitic Stainless Steel	$\leq 200\text{HB}$	MP7130,VP15TF	125 (100—150)	0.15 (0.1—0.2)	≤ 3
			MP7140	100 (80—140)	0.15 (0.1—0.2)	≤ 3
		$> 200\text{HB}$	MP7130,VP15TF	100 (75—125)	0.15 (0.1—0.2)	≤ 3
			MP7140	80 (55—105)	0.15 (0.1—0.2)	≤ 3
	Ferritic and Martensitic Stainless Steel	$\leq 200\text{HB}$	MP7130,VP15TF	125 (100—150)	0.15 (0.1—0.2)	≤ 3
			MP7140	100 (80—140)	0.15 (0.1—0.2)	≤ 3
		$> 200\text{HB}$	MP7130,VP15TF	100 (75—125)	0.15 (0.1—0.2)	≤ 3
			MP7140	80 (55—105)	0.15 (0.1—0.2)	≤ 3
	Two-phase Stainless Steel	$\leq 280\text{HB}$	MP7130,VP15TF	80 (60—100)	0.1 (0.05—0.15)	≤ 3
			MP7140	60 (40—80)	0.1 (0.05—0.15)	≤ 3
	Precipitation Hardening Stainless Steel	$< 450\text{HB}$	MP7130,VP15TF	70 (50—90)	0.1 (0.05—0.15)	≤ 3
			MP7140	50 (30—70)	0.1 (0.05—0.15)	≤ 3

Cutting Conditions with Wiper Insert

(mm)

	Work Material	Hardness	Grade	vc (m/min)	fz (mm/t.)	ap
P	Mild Steel	≤180HB	MP6120,VP15TF	250(200—300)	0.3(0.2—0.4)	≤0.5
	Carbon Steel, Alloy Steel	180—280HB	MP6120,VP15TF	220(170—270)	0.3(0.2—0.4)	≤0.5
		280—350HB	MP6120,VP15TF	140(100—180)	0.3(0.2—0.4)	≤0.5
	Alloy Tool Steel	≤350HB (annealing)	MP6120,VP15TF	140(100—180)	0.15(0.1—0.2)	≤0.5
	Pre-hardened Steel	35—45HRC	MP6120,VP15TF	140(100—180)	0.15(0.1—0.2)	≤0.5
M	Austenitic Stainless Steel	≤200HB	VP15TF	125(100—150)	0.15(0.1—0.2)	≤0.5
		> 200HB	VP15TF	100(75—125)	0.15(0.1—0.2)	≤0.5
	Ferritic and Martensitic Stainless Steel	≤200HB	VP15TF	125(100—150)	0.15(0.1—0.2)	≤0.5
		> 200HB	VP15TF	100(75—125)	0.15(0.1—0.2)	≤0.5
	Two-phase Stainless Steel	≤280HB	VP15TF	80(60—100)	0.1(0.05—0.15)	≤0.5
	Precipitation Hardening Stainless Steel	< 450HB	VP15TF	70(50—90)	0.1(0.05—0.15)	≤0.5
K	Gray Cast Iron	Tensile Strength ≤350MPa	MC5020	320(250—400)	0.3(0.2—0.4)	≤0.5
			VP15TF	220(150—300)	0.3(0.2—0.4)	≤0.5
	Ductile Cast Iron	Tensile Strength ≤450MPa	MC5020	250(200—300)	0.2(0.1—0.3)	≤0.5
			VP15TF	200(150—250)	0.2(0.1—0.3)	≤0.5
		Tensile Strength ≤800MPa	MC5020	220(200—250)	0.2(0.1—0.3)	≤0.5
			VP15TF	170(150—200)	0.2(0.1—0.3)	≤0.5
H	Hardened Steel	40—55HRC	VP15TF	80(60—100)	0.15(0.1—0.2)	≤0.5

(Note 1) Refer to the above table and set up cutting conditions according to cutting applications.

(Note 2) When placing emphasis on surface finish quality, wet cutting is recommended. (tool life is lowered as compared to dry cutting)

(Note 3) The recommended depth of cut differs according to insert geometry.

(Note 4) When clamp rigidity is low and tool overhang is long, we recommended to reduce the cutting speed and the feed rate by 30%.

(Note 5) Recommended wet cutting for good surface finishing of stainless steel. (Tool life is short compared to wet cutting.)

General Purpose Multi Corner Insert Type Face Milling Cutter

FACE MILLING

<HIGH FEED CUTTING FOR CAST IRON>

75°



Finishing



Roughing



AHX475S

P M **K** N S H



Fig.1

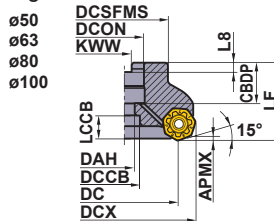
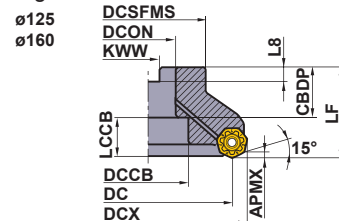


Fig.2



Right hand tool holder only.

KAPR :15° T :16° (When using the R breaker insert)

GAMP:-6° I :9°

GAMF:-10°

DC=mm size, DCON =Inch size

(mm)

DC	Order Number	Stock	Coolant Hole	No.T	LF	DCX	DCON	Fig.	WT(kg)	APMX
50	AHX475S-050A04AR	●	○	4	50	65.7	22	1	0.6	1.6
	AHX475S-050A05AR	●	○	5	50	65.7	22	1	0.6	1.6
63	AHX475S-063A05AR	●	○	5	50	78.7	22	1	1.0	1.6
	AHX475S-063A06AR	●	○	6	50	78.7	22	1	1.0	1.6
80	AHX475SR08006DA	●	○	6	63	95.6	31.75	1	2.0	1.6
	AHX475SR08008DA	●	○	8	63	95.6	31.75	1	2.0	1.6
100	AHX475SR10007DA	●	○	7	63	115.6	31.75	1	3.2	1.6
	AHX475SR10009DA	●	○	9	63	115.6	31.75	1	3.2	1.6
125	AHX475SR12508EA	●	○	8	63	140.6	38.1	2	4.0	1.6
	AHX475SR12510EA	●	○	10	63	140.6	38.1	2	4.0	1.6
160	AHX475SR16010FA	●	○	10	63	175.6	50.8	2	5.5	1.6
	AHX475SR16012FA	●	○	12	63	175.6	50.8	2	5.5	1.6

(Note 1) The cutter body does not have a set bolt for an arbor. Please refer to page 14, when ordering.

* Number of Teeth

Metric Standard

KAPR :15° T :16° (When using the R breaker insert)

GAMP:-6° I :9°

GAMF:-10°

DC=mm size, DCON =mm size

(mm)

DC	Order Number	Stock	Coolant Hole	No.T	LF	DCX	DCON	Fig.	WT(kg)	APMX
50	AHX475S-050A04AR	●	○	4	50	65.7	22	1	0.6	1.6
	AHX475S-050A05AR	●	○	5	50	65.7	22	1	0.6	1.6
63	AHX475S-063A05AR	●	○	5	50	78.7	22	1	1.0	1.6
	AHX475S-063A06AR	●	○	6	50	78.7	22	1	1.0	1.6
80	AHX475S-080A06AR	●	○	6	50	95.6	27	1	1.6	1.6
	AHX475S-080A08AR	●	○	8	50	95.6	27	1	1.6	1.6
100	AHX475S-100A07AR	●	○	7	63	115.6	32	1	3.3	1.6
	AHX475S-100A09AR	●	○	9	63	115.6	32	1	3.3	1.6
125	AHX475S-125B08AR	●	○	8	63	140.6	40	2	4.0	1.6
	AHX475S-125B10AR	●	○	10	63	140.6	40	2	4.0	1.6
160	AHX475S-160B10AR	●	○	10	63	175.6	40	2	6.0	1.6
	AHX475S-160B12AR	●	○	12	63	175.6	40	2	6.0	1.6

(Note 1) The cutter body does not have a set bolt for an arbor. Please refer to page 14, when ordering.

* Number of Teeth

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

MOUNTING DIMENSION > P25

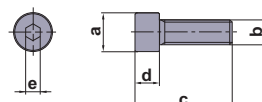
CUTTING CONDITIONS > P15

Spare Parts

Tool Holder Number		
	Clamp Screw	Wrench (Insert)
AHX475S	TS35R	TKY15T

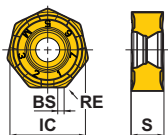
* Clamp Torque (N · m) : TS35R=3.5

Optional Parts

Tool Holder Number	Set Bolt		Fig.	Reference Dimensions								Geometry
	With Coolant Hole	Without Coolant Hole		a	b	c	d	e	f	g		
	Order Number	Order Number										
AHX475S-050A○○○AR	HSC10030H	HSC10035	1	16	M10×1.5	40	10	6	—	—	Fig.1 	
AHX475S-063A○○○AR	HSC10030H	HSC10035	1	16	M10×1.5	40	10	6	—	—		
AHX475S-080A○○○AR	HSC12035H	HSC12035 HSC12045	1	18	M12×1.75	47 57	12	10	—	—		
AHX475S-100B○○○AR	HSC16040H	—	1	24	M16×2	56	16	14	—	—		
AHX475S-125B○○○AR	MBA20040H	—	2	50	M20×2.5	54	14	17	6	27		
AHX475S-160C○○○AR	MBA20040H	—	2	50	M20×2.5	54	14	17	6	27		
AHX475SR080○○○DA	HSC16040H	—	1	24	M16×2	56	16	14	—	—		
AHX475SR100○○○DA	HSC16040H	—	1	24	M16×2	56	16	14	—	—		
AHX475SR125○○○EA	MBA20040H	—	2	50	M20×2.5	54	14	17	6	27		
AHX475SR160○○○FA	MBA24045H	—	2	65	M24×3	59	14	17	10	37		

(Note 1) Internal coolant is necessary with the set bolt.

Inserts

Application	Shape	Order Number	Class	Honing	Coated					IC	RE	BS	S	APMX	Geometry
					MP6120	MP6130	MC5020	VP15TF							
General Cutting		NNMU130532ZEN-M	M	E	●	●	●	●		13.4	3.2	—	5.57	1.6	
Unstable Cutting		NNMU130532ZEN-R	M	E	●	●	●	●		13.4	3.2	—	5.47	1.6	

General Purpose Multi Corner Insert Type Face Milling Cutter

Recommended Cutting Conditions

Dry Cutting

(mm)

	Work Material	Hardness	Grade	Breaker	vc (m/min)	fz (mm/t.)	ap	ae
P	Mild Steel	≤180HB	MP6120	R	150(100—200)	0.6	≤1.6	≤0.5DC
			MP6120	R	150(100—200)	0.8	≤1.6	0.5—0.8DC
			MP6120	M	150(100—200)	1	≤1.6	0.8—1DC
			MP6130	R	130(80—180)	0.6	≤1.6	≤0.5DC
			MP6130	R	130(80—180)	0.8	≤1.6	0.5—0.8DC
			MP6130	M	130(80—180)	1	≤1.6	0.8—1DC
	Carbon Steel, Alloy Steel	180—280HB	MP6120	R	130(80—180)	0.6	≤1.6	≤0.5DC
			MP6120	R	130(80—180)	0.8	≤1.6	0.5—0.8DC
			MP6120	M	130(80—180)	1	≤1.6	0.8—1DC
			MP6130	R	110(60—160)	0.6	≤1.6	≤0.5DC
			MP6130	R	110(60—160)	0.8	≤1.6	0.5—0.8DC
			MP6130	M	110(60—160)	1	≤1.6	0.8—1DC
	Carbon Steel, Alloy Steel	280—350HB	MP6120	R	100(50—150)	0.5	≤1.6	≤0.5DC
			MP6120	R	100(50—150)	0.6	≤1.6	0.5—0.8DC
			MP6120	R	100(50—150)	0.7	≤1.6	0.8—1DC
			MP6130	R	80(30—130)	0.5	≤1.6	≤0.5DC
			MP6130	R	80(30—130)	0.6	≤1.6	0.5—0.8DC
			MP6130	R	80(30—130)	0.7	≤1.6	0.8—1DC
	Alloy Tool Steel	≤350HB (annealing)	MP6120	R	100(50—150)	0.5	≤1.6	≤0.5DC
			MP6120	R	100(50—150)	0.6	≤1.6	0.5—0.8DC
			MP6120	R	100(50—150)	0.7	≤1.6	0.8—1DC
			MP6130	R	80(30—120)	0.5	≤1.6	≤0.5DC
			MP6130	R	80(30—120)	0.6	≤1.6	0.5—0.8DC
			MP6130	R	80(30—120)	0.7	≤1.6	0.8—1DC
	Pre-hardened Steel	35—45HRC	MP6120	R	100(70—130)	0.5	≤1.6	≤0.5DC
			MP6120	R	100(70—130)	0.6	≤1.6	0.5—0.8DC
			MP6120	R	100(70—130)	0.7	≤1.6	0.8—1DC
			MP6130	R	80(50—110)	0.5	≤1.6	≤0.5DC
			MP6130	R	80(50—110)	0.6	≤1.6	0.5—0.8DC
			MP6130	R	80(50—110)	0.7	≤1.6	0.8—1DC
K	Gray Cast Iron	Tensile Strength ≤350MPa	MC5020	R	150(100—200)	0.6	≤1.6	≤0.5DC
			MC5020	R	150(100—200)	0.8	≤1.6	0.5—0.8DC
			MC5020	M	150(100—200)	1	≤1.6	0.8—1DC
			VP15TF	M	120(80—160)	0.6	≤1.6	≤0.5DC
			VP15TF	M	120(80—160)	0.8	≤1.6	0.5—0.8DC
			VP15TF	M	120(80—160)	1	≤1.6	0.8—1DC
	Ductile Cast Iron	Tensile Strength ≤450MPa	MC5020	R	150(100—200)	0.6	≤1.6	≤0.5DC
			MC5020	R	150(100—200)	0.8	≤1.6	0.5—0.8DC
			MC5020	M	150(100—200)	1	≤1.6	0.8—1DC
			VP15TF	R	120(80—160)	0.6	≤1.6	≤0.5DC
			VP15TF	R	120(80—160)	0.8	≤1.6	0.5—0.8DC
			VP15TF	M	120(80—160)	1	≤1.6	0.8—1DC
	Ductile Cast Iron	Tensile Strength ≤800MPa	MC5020	R	150(100—200)	0.5	≤1.6	≤0.5DC
			MC5020	R	150(100—200)	0.6	≤1.6	0.5—0.8DC
			MC5020	R	150(100—200)	0.7	≤1.6	0.8—1DC
			VP15TF	R	120(80—160)	0.5	≤1.6	≤0.5DC
			VP15TF	R	120(80—160)	0.6	≤1.6	0.5—0.8DC
			VP15TF	R	120(80—160)	0.7	≤1.6	0.8—1DC
H	Hardened Steel	40—55HRC	VP15TF	R	70(50—90)	0.4	≤1.6	≤0.5DC
			VP15TF	R	70(50—90)	0.5	≤1.6	0.5—0.8DC
			VP15TF	R	70(50—90)	0.6	≤1.6	0.8—1DC

(Note 1) When clamp rigidity is low and tool overhang is long, we recommended to reduce the cutting speed and the feed rate by 30%.



FACE MILLING

<GENERAL CUTTING>

40°



Finishing



Roughing

AHX640S

P

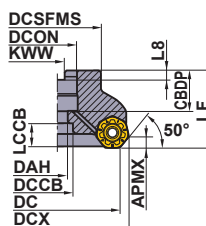
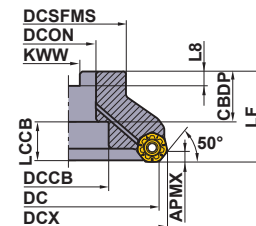
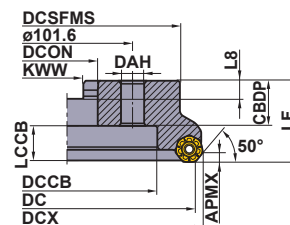
M

K

N

S

H

Fig. 1
ø63
ø80Fig. 2
ø100
ø125
ø160Fig. 3
ø200

Right hand tool holder only.

KAPR : 50° T : 10° (When using the MK breaker insert)
 GAMP : -6° T : 20° (When using MP, MM breaker inserts)
 GAMF : -5° I : +9° — +10°
 DC=mm size, DCON=Inch size

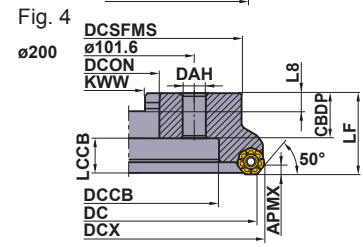
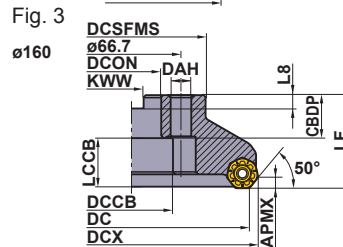
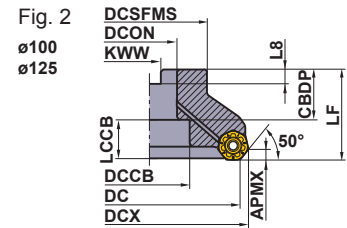
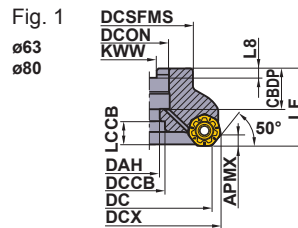
DC	Set Bolt	Geometry	
ø63	HSC10030H		
ø80	HSC12035H		
ø100	MBA16033H		
ø125	MBA20040H		
ø160	MBA24045H		
ø200	—		

(mm)

DC	Order Number	Stock	Coolant Hole	No.T	LF	DCX	DCON	Fig.	WT(kg)	APMX
63	AHX640S-063A04AR	●	○	4	50	75.55	22	1	0.7	6
	AHX640S-063A05AR	●	○	5	50	75.55	22	1	0.6	6
80	AHX640SR08004CA	●	○	4	50	92.55	25.4	1	1.1	6
	AHX640SR08006CA	●	○	6	50	92.55	25.4	1	1.0	6
100	AHX640SR10005DA	●	○	5	50	112.55	31.75	2	1.7	6
	AHX640SR10007DA	●	○	7	50	112.55	31.75	2	1.5	6
125	AHX640SR12506EA	●	○	6	63	137.55	38.1	2	3.0	6
	AHX640SR12508EA	●	○	8	63	137.55	38.1	2	2.9	6
160	AHX640SR16007FA	●	○	7	63	172.55	50.8	2	4.9	6
	AHX640SR16010FA	●	○	10	63	172.55	50.8	2	4.7	6
200	AHX640SR20008KN	●	—	8	63	212.55	47.625	3	8.2	6
	AHX640SR20012KN	●	—	12	63	212.55	47.625	3	7.9	6

* Number of Teeth

General Purpose Multi Corner Insert Type Face Milling Cutter



Right hand tool holder only.

DC	Set Bolt	Geometry	
ø63	HSC10030H	①	
ø80	HSC12035H		
ø100	MBA16033H	②	
ø125	MBA20040H		
ø160	—	—	—
ø200	—	—	—

(mm)

Metric Standard

KAPR :50° T :10° (When using the MK breaker insert)
 GAMP :-6° T :20° (When using MP, MM breaker inserts)
 GAMF :-5° I :+9°—+10°
 DC=mm size, DCON=mm size

DC	Order Number	Stock	Coolant Hole	* No.T	LF	DCX	DCON	Fig.	WT(kg)	APMX
63	AHX640S-063A04AR	●	○	4	50	75.55	22	1	0.7	6
	AHX640S-063A05AR	●	○	5	50	75.55	22	1	0.6	6
80	AHX640S-080A04AR	●	○	4	50	92.55	27	1	1.1	6
	AHX640S-080A06AR	●	○	6	50	92.55	27	1	1.0	6
100	AHX640S-100B05AR	●	○	5	50	112.55	32	2	1.7	6
	AHX640S-100B07AR	●	○	7	50	112.55	32	2	1.6	6
125	AHX640S-125B06AR	●	○	6	63	137.55	40	2	3.1	6
	AHX640S-125B08AR	●	○	8	63	137.55	40	2	3.0	6
160	AHX640S-160C07NR	●	—	7	63	172.55	40	3	5.4	6
	AHX640S-160C10NR	●	—	10	63	172.55	40	3	5.2	6
200	AHX640S-200C08NR	●	—	8	63	212.55	60	4	7.8	6
	AHX640S-200C12NR	●	—	12	63	212.55	60	4	7.5	6

* Number of Teeth

Spare Parts

Tool Holder Number		
	Clamp Screw	Wrench (Insert)
AHX640S	CS5015060T	TKY20T

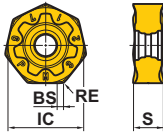
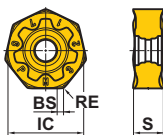
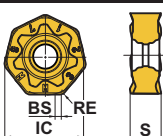
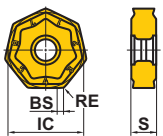
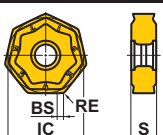
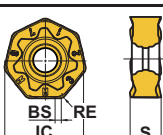
* Clamp Torque (N・m) : CS5015060T=5.0

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

MOUNTING DIMENSION > P25
 CUTTING CONDITIONS > P20,21

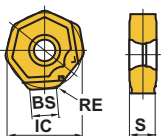
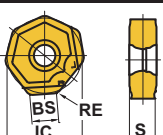
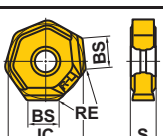
Inserts

(mm)

Application	Shape	Order Number	Class	Honing	Coated								IC	RE	BS	S	APMX	Geometry
					MP6120	MP6130	MP7030	MP9120	MP9130	MC5020	VP15TF	VP20TF						
For Steel General Cutting		NNMU200708ZEN-M	M	E	●	●							20	0.8	1	8	6	
For Steel General Cutting		NNMU200708ZEN-MP	M	E							●		20	0.8	1	8	6	
For Stainless Steel		NNMU200712ZER-MM	M	E			●						20	1.2	1	8	6	
For Cast Iron General Cutting		NNMU200608ZEN-MK	M	E						●	●	●	20	0.8	1	6.55	6	
For Cast Iron Strong Cutting Edge Type		NNMU200608ZEN-HK	M	E						●	●	●	20	0.8	1	6.55	6	
For Titanium Alloy and Heat Resistant Alloy		NNMU200712ZER-L	M	E				●	●				20	1.2	1	8	6	

Wiper Inserts

(mm)

Application	Shape	Order Number	Class	Honing	Coated								IC	RE	BS	S	APMX	Geometry
					MP6120	MP6130	MP7030	MP9120	MP9130	MC5020	VP15TF	VP20TF						
For Steel		WNEU2007ZEN7C-M	E	E	●								20	0.8	7.2	6.9	0.5	
General Cutting		WNEU2007ZEN7C-WP	E	E							●		20	0.8	7.1	6.9	0.5	
For Cast Iron		WNEU2006ZEN7C-WK	E	E						●			20	0.8	7.4	6.55	0.5	

(Note) The height of cutter when setting MK, HK inserts are different from when setting MP, MM inserts.

■ Instructions for Use of Wiper Inserts

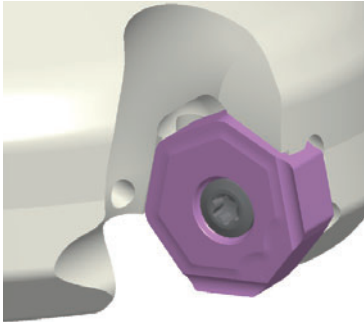


Fig.1

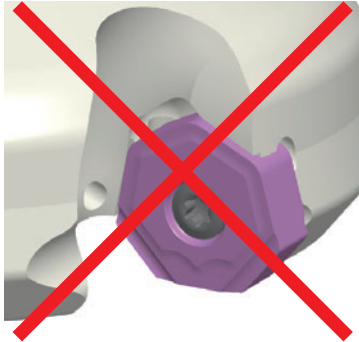


Fig.2

(Note 1) The specifications for these wipers are right hand body 2 corners and left hand body 2 corners. Refer to Figure 1.

(Note 2) A satisfactory finish surface can be achieved with one wiper insert.

However, if the feed rate per revolution will be equal to or greater than the width of the wiper edge, it is recommended to install the second and further wiper inserts spaced evenly within the cutting body.

Recommended Cutting Conditions

Dry Cutting

(mm)

	Work Material	Hardness	Grade	Breaker	vc (m/min)	fz (mm/t.)	ap	ae
P	Mild Steel	≤180HB	MP6120	M	250 (200—300)	0.3 (0.2—0.4)	≤5	≤0.8DC
			VP15TF	MP	250 (200—300)	0.3 (0.2—0.4)	≤5	≤0.8DC
			MP6130	M	220 (170—270)	0.4 (0.3—0.5)	≤5	≤0.8DC
	Carbon Steel, Alloy Steel	180—280HB	MP6120	M	220 (170—270)	0.3 (0.2—0.4)	≤5	≤0.8DC
			VP15TF	MP	220 (170—270)	0.3 (0.2—0.4)	≤5	≤0.8DC
			MP6130	M	190 (140—240)	0.4 (0.3—0.5)	≤5	≤0.8DC
	Carbon Steel, Alloy Steel	280—350HB	MP6120	M	140 (100—180)	0.3 (0.2—0.4)	≤5	≤0.8DC
			VP15TF	MP	140 (100—180)	0.3 (0.2—0.4)	≤5	≤0.8DC
			MP6130	M	110 (70—150)	0.4 (0.3—0.5)	≤5	≤0.8DC
	Alloy Tool Steel	≤350HB (annealing)	MP6120	M	140 (100—180)	0.15 (0.1—0.2)	≤3	≤0.8DC
			VP15TF	MP	140 (100—180)	0.15 (0.1—0.2)	≤3	≤0.8DC
			MP6130	M	110 (70—150)	0.25 (0.2—0.3)	≤3	≤0.8DC
	Pre-hardened Steel	35—45HRC	MP6120	M	140 (100—180)	0.15 (0.1—0.2)	≤3	≤0.8DC
			VP15TF	MP	140 (100—180)	0.15 (0.1—0.2)	≤5	≤0.8DC
			MP6130	M	110 (70—150)	0.25 (0.2—0.3)	≤3	≤0.8DC
M	Austenitic Stainless Steel	≤200HB	MP7030	MM	200 (150—250)	0.2 (0.1—0.3)	≤5	≤0.8DC
	Austenitic Stainless Steel	> 200HB	MP7030	MM	150 (100—200)	0.2 (0.1—0.3)	≤5	≤0.8DC
	Two-phase Stainless Steel	≤280HB	MP7030	MM	140 (100—180)	0.15 (0.05—0.25)	≤5	≤0.8DC
	Ferritic and Martensitic Stainless Steel	≤200HB	MP7030	MM	200 (150—250)	0.2 (0.1—0.3)	≤5	≤0.8DC
	Ferritic and Martensitic Stainless Steel	> 200HB	MP7030	MM	150 (100—200)	0.2 (0.1—0.3)	≤5	≤0.8DC
	Precipitation Hardening Stainless Steel	< 450HB	MP7030	MM	130 (100—160)	0.15 (0.05—0.25)	≤5	≤0.8DC
K	Gray Cast Iron	Tensile Strength ≤350MPa	MC5020	MK, HK	220 (150—300)	0.3 (0.2—0.4)	≤5	≤0.8DC
			VP15TF, VP20RT	MK, HK	180 (130—230)	0.3 (0.2—0.4)	≤5	≤0.8DC
			VP15TF	MP	180 (130—230)	0.3 (0.2—0.4)	≤5	≤0.8DC
	Ductile Cast Iron	Tensile Strength ≤450MPa	MC5020	MK, HK	200 (150—250)	0.2 (0.1—0.3)	≤5	≤0.8DC
			VP15TF, VP20RT	MK, HK	170 (120—220)	0.2 (0.1—0.3)	≤5	≤0.8DC
			VP15TF	MP	170 (120—220)	0.2 (0.1—0.3)	≤5	≤0.8DC
	Ductile Cast Iron	Tensile Strength ≤800MPa	MC5020	MK, HK	170 (150—200)	0.2 (0.1—0.3)	≤5	≤0.8DC
			VP15TF, VP20RT	MK, HK	140 (100—180)	0.2 (0.1—0.3)	≤5	≤0.8DC
			VP15TF	MP	140 (100—180)	0.2 (0.1—0.3)	≤5	≤0.8DC
H	Hardened Steel	40—55HRC	VP15TF	MP	80 (60—100)	0.15 (0.1—0.2)	≤3	≤0.8DC

(Note1) Recommended wet cutting for good surface finishing of stainless steel. (Tool life is short compared to wet cutting.)

(Note2) We recommend wet cutting with internal coolant for titanium alloy and heat resistant alloy.

(Note3) When clamp rigidity is low and tool overhang is long, we recommended to reduce the cutting speed and the feed rate by 30%.

General Purpose Multi Corner Insert Type Face Milling Cutter

Wet Cutting

(mm)

	Work Material	Hardness	Breaker	Grade	vc (m/min)	fz (mm/t.)	ap	ae
M	Austenitic Stainless Steel	≤200HB	MP7030	MM	125(100—150)	0.15(0.1—0.2)	≤5	≤0.8DC
	Austenitic Stainless Steel	> 200HB	MP7030	MM	100(75—125)	0.15(0.1—0.2)	≤5	≤0.8DC
	Two-phase Stainless Steel	≤280HB	MP7030	MM	80(60—100)	0.1(0.05—0.15)	≤5	≤0.8DC
	Ferritic and Martensitic Stainless Steel	≤200HB	MP7030	MM	125(100—150)	0.15(0.1—0.2)	≤5	≤0.8DC
	Ferritic and Martensitic Stainless Steel	> 200HB	MP7030	MM	100(75—125)	0.15(0.1—0.2)	≤5	≤0.8DC
	Precipitation Hardening Stainless Steel	< 450HB	MP7030	MM	70(50—90)	0.1(0.05—0.15)	≤5	≤0.8DC
S	Titanium Alloy	—	MP7030	MM	40(20—50)	0.15(0.1—0.2)	≤3	≤0.6DC
		—	MP9120	L	60(50—70)	0.1(0.05—0.15)	≤3	≤0.6DC
		—	MP9130	L	40(20—50)	0.15(0.1—0.2)	≤3	≤0.6DC
	Heat Resistant Alloy	—	MP7030	MM	40(20—50)	0.15(0.1—0.2)	≤3	≤0.6DC
		—	MP9120	L	60(50—70)	0.1(0.05—0.15)	≤3	≤0.6DC
		—	MP9130	L	40(20—50)	0.15(0.1—0.2)	≤3	≤0.6DC

(Note1) Recommended wet cutting for good surface finishing of stainless steel. (Tool life is short compared to wet cutting.)

(Note2) We recommend wet cutting with internal coolant for titanium alloy and heat resistant alloy.

(Note3) When clamp rigidity is low and tool overhang is long, we recommended to reduce the cutting speed and the feed rate by 30%.

Cutting Conditions with Wiper Insert

(mm)

	Work Material	Hardness	Main Insert	Grade	Wiper Insert	Grade	vc (m/min)	fz (mm/t.)	ap	ae
P	Mild Steel	≤180HB	VP15TF	MP	VP15TF	WP	250(200—300)	0.3(0.2—0.4)	≤0.5	≤0.8DC
			MP6120	M	MP6120	M	250(200—300)	0.3(0.2—0.4)	≤0.5	≤0.8DC
	Carbon Steel, Alloy Steel	180—280HB	VP15TF	MP	VP15TF	WP	220(170—270)	0.3(0.2—0.4)	≤0.5	≤0.8DC
			MP6120	M	MP6120	M	220(170—270)	0.3(0.2—0.4)	≤0.5	≤0.8DC
	Carbon Steel, Alloy Steel	280—350HB	VP15TF	MP	VP15TF	WP	140(100—180)	0.3(0.2—0.4)	≤0.5	≤0.8DC
			MP6120	M	MP6120	M	140(100—180)	0.3(0.2—0.4)	≤0.5	≤0.8DC
K	Gray Cast Iron	Tensile Strength ≤350MPa	MC5020	MK, HK	MC5020	WK	320(250—400)	0.3(0.2—0.4)	≤0.5	≤0.8DC
			VP15TF	MP	VP15TF	WP	220(150—300)	0.3(0.2—0.4)	≤0.5	≤0.8DC
	Ductile Cast Iron	Tensile Strength ≤450MPa	MC5020	MK, HK	MC5020	WK	250(200—300)	0.2(0.1—0.3)	≤0.5	≤0.8DC
			VP15TF	MP	VP15TF	WP	200(150—250)	0.2(0.1—0.3)	≤0.5	≤0.8DC
	Ductile Cast Iron	Tensile Strength ≤800MPa	MC5020	MK, HK	MC5020	WK	220(200—250)	0.2(0.1—0.3)	≤0.5	≤0.8DC
			VP15TF	MP	VP15TF	WP	170(150—200)	0.2(0.1—0.3)	≤0.5	≤0.8DC
S	Heat Resistant Alloy	—	VP15TF	MP	VP15TF	WP	40(20—50)	0.15(0.1—0.2)	≤0.5	≤0.8DC
H	Hardened Steel	40—55HRC	VP15TF	MP	VP15TF	WP	80(60—100)	0.15(0.1—0.2)	≤0.5	≤0.8DC

(Note 1) When clamp rigidity is low and tool overhang is long, we recommended to reduce the cutting speed and the feed rate by 30%.

(Note 2) Please use WP geometry insert in combination with MP or M geometry inserts, and use WK geometry insert in combination with MK or HK geometry inserts

FACE MILLING

<HIGH FEED CUTTING FOR CAST IRON>

40°



Finishing



Roughing



AHX640W

P

M

K

N

S

H



KAPR :50°

GAMP:-6° T :+10°

GAMF:-4° I :+9°—+10° (T,I : When using the MK breaker insert)

Right Hand Tool Holder

DC=mm size, DCON=Inch size

Fig.1

ø80

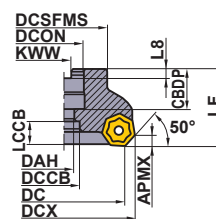


Fig.2

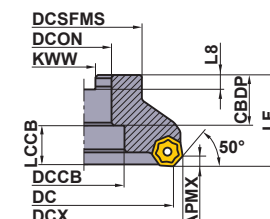
ø100
ø125
ø160

Fig.3

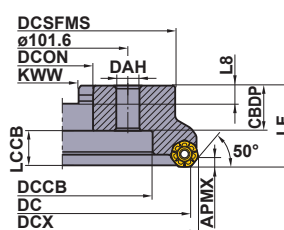
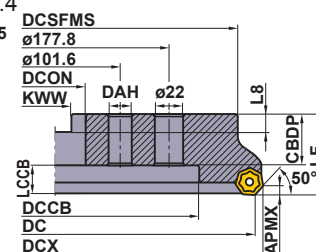
ø200
ø250

Fig.4

ø315



Right hand tool holder shown.

(mm)

DC	Order Number	Stock	Coolant Hole	No.T	LF	DCX	DCON	Fig.	WT(kg)	APMX
80	AHX640WR08008C	●	—	8	50	92.6	25.4	1	1.5	6
	AHX640WR08010C	●	—	10	50	92.6	25.4	1	1.5	6
100	AHX640WR10010D	●	—	10	50	112.6	31.75	2	2.1	6
	AHX640WR10014D	●	—	14	50	112.6	31.75	2	2.1	6
125	AHX640WR12512E	●	—	12	63	137.6	38.1	2	3.5	6
	AHX640WR12518E	●	—	18	63	137.6	38.1	2	3.5	6
160	AHX640WR16016F	●	—	16	63	172.6	50.8	2	5.6	6
	AHX640WR16022F	●	—	22	63	172.6	50.8	2	5.6	6
200	AHX640WR20020K	●	—	20	63	212.6	47.625	3	9.0	6
	AHX640WR20028K	●	—	28	63	212.6	47.625	3	9.0	6
250	AHX640WR25024K	●	—	24	63	262.6	47.625	3	14.4	6
	AHX640WR25036K	●	—	36	63	262.6	47.625	3	14.4	6
315	AHX640WR31528P	●	—	28	63	327.6	47.625	4	23.8	6
	AHX640WR31544P	●	—	44	63	327.6	47.625	4	23.8	6

Left Hand Tool Holder

DC=mm size, DCON=Inch size

(mm)

DC	Order Number	Stock	Coolant Hole	No.T	LF	DCX	DCON	Fig.	WT(kg)	APMX
80	AHX640WL08008C	●	—	8	50	92.6	25.4	1	1.5	6
	AHX640WL08010C	●	—	10	50	92.6	25.4	1	1.5	6
100	AHX640WL10010D	●	—	10	50	112.6	31.75	2	2.1	6
	AHX640WL10014D	●	—	14	50	112.6	31.75	2	2.1	6
125	AHX640WL12512E	●	—	12	63	137.6	38.1	2	3.5	6
	AHX640WL12518E	●	—	18	63	137.6	38.1	2	3.5	6
160	AHX640WL16016F	●	—	16	63	172.6	50.8	2	5.6	6
	AHX640WL16022F	●	—	22	63	172.6	50.8	2	5.6	6
200	AHX640WL20020K	●	—	20	63	212.6	47.625	3	9.0	6
	AHX640WL20028K	●	—	28	63	212.6	47.625	3	9.0	6
250	AHX640WL25024K	●	—	24	63	262.6	47.625	3	14.4	6
	AHX640WL25036K	●	—	36	63	262.6	47.625	3	14.4	6
315	AHX640WL31528P	●	—	28	63	327.6	47.625	4	23.8	6
	AHX640WL31544P	●	—	44	63	327.6	47.625	4	23.8	6

* Number of Teeth

General Purpose Multi Corner Insert Type Face Milling Cutter



Fig.1
ø80

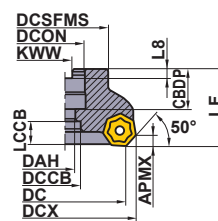


Fig.2
ø100
ø125

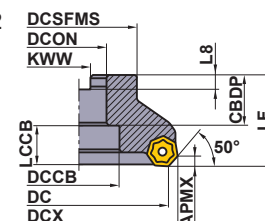


Fig.3
ø160

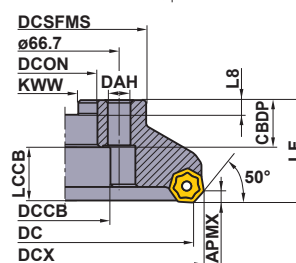


Fig.4
ø200
ø250

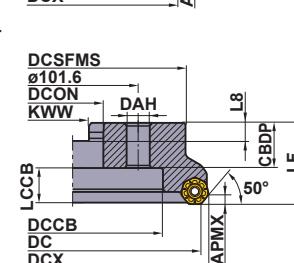
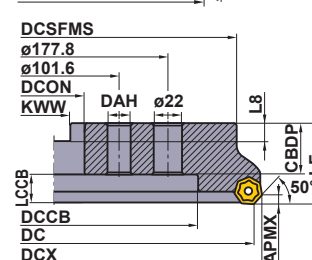


Fig.5
ø315



Metric Standard

KAPR :50°
GAMP:-6° T :+10°
GAMF:-4° I :+9°—+10° (T,I : When using the MK breaker insert)
Right Hand Tool Holder
DC=mm size, DCON=mm size

Right hand tool holder shown. (mm)

DC	Order Number	Stock	Coolant Hole	No.T	LF	DCX	DCON	Fig.	WT(kg)	APMX
80	AHX640W-080A08R	●	—	8	50	92.6	27	1	1.5	6
	AHX640W-080A10R	●	—	10	50	92.6	27	1	1.5	6
100	AHX640W-100B10R	●	—	10	50	112.6	32	2	2.1	6
	AHX640W-100B14R	●	—	14	50	112.6	32	2	2.1	6
125	AHX640W-125B12R	●	—	12	63	137.6	40	2	3.1	6
	AHX640W-125B18R	●	—	18	63	137.6	40	2	3.1	6
160	AHX640W-160C16R	●	—	16	63	172.6	40	3	5.6	6
	AHX640W-160C22R	●	—	22	63	172.6	40	3	5.6	6
200	AHX640W-200C20R	●	—	20	63	212.6	60	4	8	6
	AHX640W-200C28R	●	—	28	63	212.6	60	4	8	6
250	AHX640W-250C24R	●	—	24	63	262.6	60	4	12.6	6
	AHX640W-250C36R	●	—	36	63	262.6	60	4	12.6	6
315	AHX640W-315C28R	●	—	28	80	327.6	60	5	31.5	6
	AHX640W-315C44R	●	—	44	80	327.6	60	5	31.5	6

Left Hand Tool Holder
DC=mm size, DCON=mm size

(mm)

DC	Order Number	Stock	Coolant Hole	No.T	LF	DCX	DCON	Fig.	WT(kg)	APMX
80	AHX640W-080A08L	●	—	8	50	92.6	27	1	1.5	6
	AHX640W-080A10L	●	—	10	50	92.6	27	1	1.5	6
100	AHX640W-100B10L	●	—	10	50	112.6	32	2	2.1	6
	AHX640W-100B14L	●	—	14	50	112.6	32	2	2.1	6
125	AHX640W-125B12L	●	—	12	63	137.6	40	2	3.1	6
	AHX640W-125B18L	●	—	18	63	137.6	40	2	3.1	6
160	AHX640W-160C16L	●	—	16	63	172.6	40	3	5.6	6
	AHX640W-160C22L	●	—	22	63	172.6	40	3	5.6	6
200	AHX640W-200C20L	●	—	20	63	212.6	60	4	8.0	6
	AHX640W-200C28L	●	—	28	63	212.6	60	4	8.0	6
250	AHX640W-250C24L	●	—	24	63	262.6	60	4	12.6	6
	AHX640W-250C36L	●	—	36	63	262.6	60	4	12.6	6
315	AHX640W-315C28L	●	—	28	80	327.6	60	5	31.5	6
	AHX640W-315C44L	●	—	44	80	327.6	60	5	31.5	6

* Number of Teeth

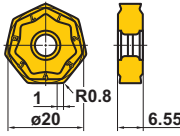
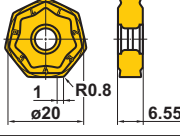
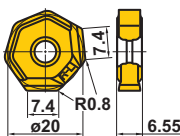
● : Inventory maintained in Japan. (10 inserts in one case)

MOUNTING DIMENSION > P27

CUTTING CONDITIONS > P24

Inserts

(mm)

Shape	Order Number	Class	Honing	Coated			Geometry
				MC5020	VP15TF	VP20RT	
 General Cutting	NNMU200608ZEN-MK	M	E	●	●	●	 1 R0.8 ø20 6.55
 Strong Cutting Edge Type	NNMU200608ZEN-HK	M	E	●	●	●	 1 R0.8 ø20 6.55
 Wiper	WNEU2006ZEN7C-WK	E	E	●			 7.4 R0.8 ø20 6.55

Spare Parts



Tool Holder Number		 *	
	Wedge	Clamp Screw	Wrench
AHX640W	CWAHX640WN	LS0622T	TKY15T

* Clamp Torque (N • m) : LS0622T=6.0

Recommended Cutting Conditions

Dry-Wet Cutting

(mm)

Work Material	Tensile Strength	Grade	vc (m/min)	fz (mm/t.)
K Gray Cast Iron	≤350MPa	MC5020	220 (150—300)	0.3 (0.2—0.4)
		VP15TF	180	0.3
		VP20RT	(130—250)	(0.2—0.4)
	≤450MPa	MC5020	200 (150—250)	0.2 (0.1—0.3)
		VP15TF	170	0.2
		VP20RT	(120—220)	(0.1—0.3)
Ductile Cast Iron	≤800MPa	MC5020	170 (150—200)	0.2 (0.1—0.3)
		VP15TF	140	0.2
		VP20RT	(100—180)	(0.1—0.3)

*Please use 2-3 pcs of Wiper inserts in case of 'over 6mm/rev'.

Finishing (Use of Wiper Inserts)

(mm)

Work Material	Grade	ap	vc (m/min)	fz (mm/t.)
K Gray Cast Iron	MC5020	<0.5	320 (250—400)	0.2 (0.1—0.3)
		0.5—3	270 (200—350)	
		<0.5	270 (200—350)	
		0.5—3	220 (200—250)	
Ductile Cast Iron				

(Note) With reference to the above examples, adjust the cutting conditions according to the use environment.

(Note) Tool life when wet cutting is short compared to dry cutting.

AHX440S, AHX475S, AHX640S Mounting Dimensions

Fig. 1

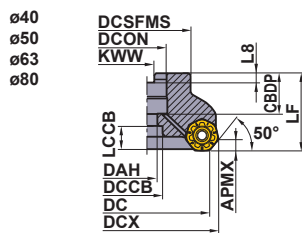


Fig. 2

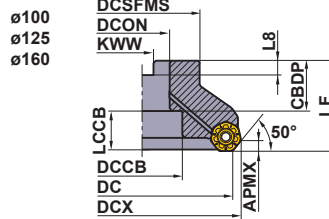
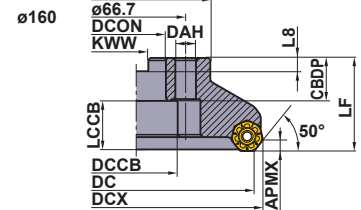


Fig. 3



Right hand tool holder only.

(mm)

DCON	DC	Order Number	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
16	40	AHX440S-040A03AR	18	9	14	13.9	37	8.4	5.6	1
16	40	AHX440S-040A04AR	18	9	14	13.9	37	8.4	5.6	1
22	50	AHX440S-050A04AR	20	11	17	11.9	47	10.4	6.3	1
22	50	AHX440S-050A05AR	20	11	17	11.9	47	10.4	6.3	1
22	50	AHX440S-050A06AR	20	11	17	11.9	47	10.4	6.3	1
22	50	AHX475S-050A04AR	20	11	17	16.7	47	10.4	6.3	5
22	50	AHX475S-050A05AR	20	11	17	16.7	47	10.4	6.3	5
22	63	AHX440S-063A05AR	20	11	17	11.9	50	10.4	6.3	1
22	63	AHX440S-063A06AR	20	11	17	11.9	50	10.4	6.3	1
22	63	AHX440S-063A08AR	20	11	17	11.9	50	10.4	6.3	1
22	63	AHX475S-063A05AR	20	11	17	16.7	60	10.4	6.3	5
22	63	AHX475S-063A06AR	20	11	17	16.7	60	10.4	6.3	5
22	63	AHX640S-063A04AR	20	11	17	16.2	50	10.4	6.3	1
22	63	AHX640S-063A05AR	20	11	17	16.2	50	10.4	6.3	1
25.4	80	AHX440SR08006CA	26	13	20	14.9	56	9.5	6	1
25.4	80	AHX440SR08008CA	26	13	20	14.9	56	9.5	6	1
25.4	80	AHX440SR08010CA	26	13	20	14.9	56	9.5	6	1
25.4	80	AHX640SR08004CA	26	13	20	14.2	56	9.5	6	1
25.4	80	AHX640SR08006CA	26	13	20	14.2	56	9.5	6	1
27	80	AHX440S-080A06AR	23	13	20	14.9	56	12.4	7	1
27	80	AHX440S-080A08AR	23	13	20	14.9	56	12.4	7	1
27	80	AHX440S-080A10AR	23	13	20	14.9	56	12.4	7	1
27	80	AHX475S-080A06AR	23	13	20	14.7	76	12.4	7	5
27	80	AHX475S-080A08AR	23	13	20	14.7	76	12.4	7	5
27	80	AHX640S-080A04AR	23	13	20	15.2	56	12.4	7	1
27	80	AHX640S-080A06AR	23	13	20	15.2	56	12.4	7	1
31.75	80	AHX475SR08006DA	32	17	26	19.7	76	12.7	8	5
31.75	80	AHX475SR08008DA	32	17	26	19.7	76	12.7	8	5
31.75	100	AHX440SR10007DA	37	—	45	11.9	70	12.7	8	2
31.75	100	AHX440SR10010DA	37	—	45	11.9	70	12.7	8	2
31.75	100	AHX440SR10012DA	37	—	45	11.9	70	12.7	8	2
31.75	100	AHX475SR10007DA	32	17	26	19.7	96	12.7	8	5
31.75	100	AHX475SR10009DA	32	17	26	19.7	96	12.7	8	5
31.75	100	AHX640SR10005DA	35	—	45	13.2	70	12.7	8	2
31.75	100	AHX640SR10007DA	35	—	45	13.2	70	12.7	8	2

Fig. 4
ø200

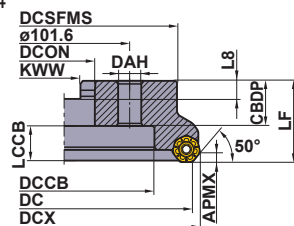


Fig.5

ø50
ø63
ø80
ø100

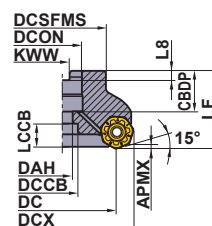
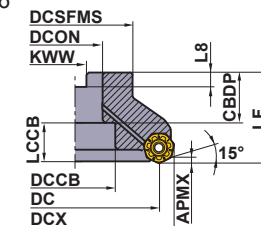


Fig.6

ø125
ø160



Right hand tool holder only.

(mm)

DCON	DC	Order Number	CDBP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
32	100	AHX440S-100B07AR	32	—	45	16.9	78	14.4	8	2
32	100	AHX440S-100B10AR	32	—	45	16.9	78	14.4	8	2
32	100	AHX440S-100B12AR	32	—	45	16.9	78	14.4	8	2
32	100	AHX475S-100A07AR	26	17	26	25.7	96	14.4	8	5
32	100	AHX475S-100A09AR	26	17	26	25.7	96	14.4	8	5
32	100	AHX640S-100B05AR	32	—	45	16.2	78	14.4	8	2
32	100	AHX640S-100B07AR	32	—	45	16.2	78	14.4	8	2
38.1	125	AHX440SR12508EA	42	—	56	19.9	80	15.9	10	2
38.1	125	AHX440SR12512EA	42	—	56	19.9	80	15.9	10	2
38.1	125	AHX440SR12514EA	42	—	56	19.9	80	15.9	10	2
38.1	125	AHX475SR12508EA	42	—	56	19.7	100	15.9	10	6
38.1	125	AHX475SR12510EA	42	—	56	19.7	100	15.9	10	6
38.1	125	AHX640SR12506EA	42	—	56	19.2	80	15.9	10	2
38.1	125	AHX640SR12508EA	42	—	56	19.2	80	15.9	10	2
40	125	AHX440S-125B08AR	40	—	56	21.9	89	16.4	9	2
40	125	AHX440S-125B12AR	40	—	56	21.9	89	16.4	9	2
40	125	AHX440S-125B14AR	40	—	56	21.9	89	16.4	9	2
40	125	AHX475S-125B08AR	40	—	56	21.7	100	16.4	9	6
40	125	AHX475S-125B10AR	40	—	56	21.7	100	16.4	9	6
40	125	AHX640S-125B06AR	42	—	56	19.2	89	16.4	9	2
40	125	AHX640S-125B08AR	42	—	56	19.2	89	16.4	9	2
40	160	AHX440S-160C10NR	40	14	56	21.9	100	16.4	9	3
40	160	AHX440S-160C14NR	40	14	56	21.9	100	16.4	9	3
40	160	AHX440S-160C16NR	40	14	56	21.9	100	16.4	9	3
40	160	AHX475S-160B10AR	40	—	56	21.7	100	16.4	9	6
40	160	AHX475S-160B12AR	40	—	56	21.7	100	16.4	9	6
40	160	AHX640S-160C07NR	29	14	56	32.2	120	16.4	9	3
40	160	AHX640S-160C10NR	29	14	56	32.2	120	16.4	9	3
47.625	200	AHX640SR20008KN	35	18	140	26.2	175	25.4	14.22	4
47.625	200	AHX640SR20012KN	35	18	140	26.2	175	25.4	14.22	4
50.8	160	AHX440SR16010FA	45	—	72	16.9	100	19.1	11	2
50.8	160	AHX440SR16014FA	45	—	72	16.9	100	19.1	11	2
50.8	160	AHX440SR16016FA	45	—	72	16.9	100	19.1	11	2
50.8	160	AHX475SR16010FA	45	—	72	16.7	100	19.1	11	6
50.8	160	AHX475SR16012FA	45	—	72	16.7	100	19.1	11	6
50.8	160	AHX640SR16007FA	43	—	72	18.2	100	19.1	11	2
50.8	160	AHX640SR16010FA	43	—	72	18.2	100	19.1	11	2
60	200	AHX640S-200C08NR	32	18	140	29.2	175	25.7	14.22	4
60	200	AHX640S-200C12NR	32	18	140	29.2	175	25.7	14.22	4

AHX640W Mounting Dimensions

Fig.1

ø80

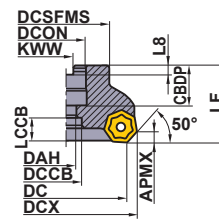
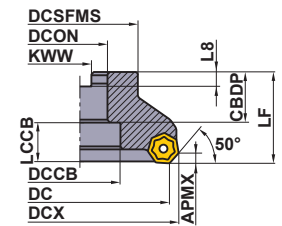


Fig.2

ø100
ø125
ø160



Right hand tool holder shown.

(mm)

DCON	DC	Order Number	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
25.4	80	AHX640WL08008C	26	13	20	14.8	56	9.5	6	1
25.4	80	AHX640WL08010C	26	13	20	14.8	56	9.5	6	1
25.4	80	AHX640WR08008C	26	13	20	14.8	56	9.5	6	1
25.4	80	AHX640WR08010C	26	13	20	14.8	56	9.5	6	1
27	80	AHX640W-080A08L	23	13	20	14.8	56	12.4	7	1
27	80	AHX640W-080A08R	23	13	20	14.8	56	12.4	7	1
27	80	AHX640W-080A10L	23	13	20	14.8	56	12.4	7	1
27	80	AHX640W-080A10R	23	13	20	14.8	56	12.4	7	1
31.75	100	AHX640WL10010D	32	—	45	16.8	70	12.7	8	2
31.75	100	AHX640WL10014D	32	—	45	16.8	70	12.7	8	2
31.75	100	AHX640WR10010D	32	—	45	16.8	70	12.7	8	2
31.75	100	AHX640WR10014D	32	—	45	16.8	70	12.7	8	2
32	100	AHX640W-100B10L	32	—	45	16.8	70	14.4	8	2
32	100	AHX640W-100B10R	32	—	45	16.8	70	14.4	8	2
32	100	AHX640W-100B14L	32	—	45	16.8	70	14.4	8	2
32	100	AHX640W-100B14R	32	—	45	16.8	70	14.4	8	2
38.1	125	AHX640WL12512E	35	—	56	26.8	80	15.9	10	2
38.1	125	AHX640WL12518E	35	—	56	26.8	80	15.9	10	2
38.1	125	AHX640WR12512E	35	—	56	26.8	80	15.9	10	2
38.1	125	AHX640WR12518E	35	—	56	26.8	80	15.9	10	2
40	125	AHX640W-125B12L	32	—	56	29.8	80	16.4	9	2
40	125	AHX640W-125B12R	32	—	56	29.8	80	16.4	9	2
40	125	AHX640W-125B18L	32	—	56	29.8	80	16.4	9	2
40	125	AHX640W-125B18R	32	—	56	29.8	80	16.4	9	2
40	160	AHX640W-160C16L	29	14	56	32.8	100	16.4	9	3
40	160	AHX640W-160C16R	29	14	56	32.8	100	16.4	9	3
40	160	AHX640W-160C22L	29	14	56	32.8	100	16.4	9	3
40	160	AHX640W-160C22R	29	14	56	32.8	100	16.4	9	3

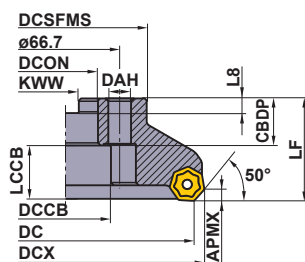
Fig.3
ø160


Fig.4

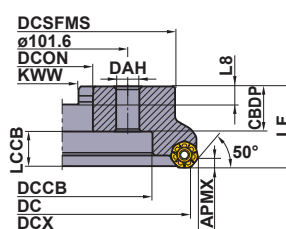
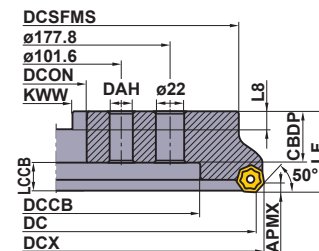
ø200
ø250


Fig.5

ø315



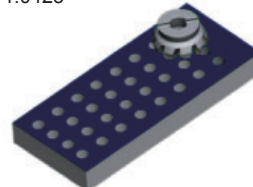
Right hand tool holder shown.

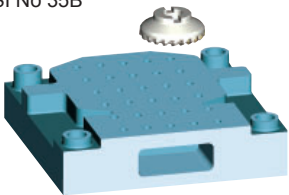
(mm)

DCON	DC	Order Number	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
47.625	200	AHX640WL20020K	35	18	140	26.8	175	25.4	14.22	4
47.625	200	AHX640WL20028K	35	18	140	26.8	175	25.4	14.22	4
47.625	200	AHX640WR20020K	35	18	140	26.8	175	25.4	14.22	4
47.625	200	AHX640WR20028K	35	18	140	26.8	175	25.4	14.22	4
47.625	250	AHX640WL25024K	35	18	180	26.8	220	25.4	14.22	4
47.625	250	AHX640WL25036K	35	18	180	26.8	220	25.4	14.22	4
47.625	250	AHX640WR25024K	35	18	180	26.8	220	25.4	14.22	4
47.625	250	AHX640WR25036K	35	18	180	26.8	220	25.4	14.22	4
47.625	315	AHX640WL31528P	40	18	225	21.8	285	25.4	14.22	5
47.625	315	AHX640WL31544P	40	18	225	21.8	285	25.4	14.22	5
47.625	315	AHX640WR31528P	40	18	225	21.8	285	25.4	14.22	5
47.625	315	AHX640WR31544P	40	18	225	21.8	285	25.4	14.22	5
50.8	160	AHX640WL16016F	38	—	72	23.8	100	19.1	11	2
50.8	160	AHX640WL16022F	38	—	72	23.8	100	19.1	11	2
50.8	160	AHX640WR16016F	38	—	72	23.8	100	19.1	11	2
50.8	160	AHX640WR16022F	38	—	72	23.8	100	19.1	11	2
60	200	AHX640W-200C20L	32	18	135	29.8	155	25.7	14	4
60	200	AHX640W-200C20R	32	18	135	29.8	155	25.7	14	4
60	200	AHX640W-200C28L	32	18	135	29.8	155	25.7	14	4
60	200	AHX640W-200C28R	32	18	135	29.8	155	25.7	14	4
60	250	AHX640W-250C24L	32	18	180	29.8	200	25.7	14	4
60	250	AHX640W-250C24R	32	18	180	29.8	200	25.7	14	4
60	250	AHX640W-250C36L	32	18	180	29.8	200	25.7	14	4
60	250	AHX640W-250C36R	32	18	180	29.8	200	25.7	14	4
60	315	AHX640W-315C28L	57	18	225	21.8	285	25.7	14	5
60	315	AHX640W-315C28R	57	18	225	21.8	285	25.7	14	5
60	315	AHX640W-315C44L	57	18	225	21.8	285	25.7	14	5
60	315	AHX640W-315C44R	57	18	225	21.8	285	25.7	14	5

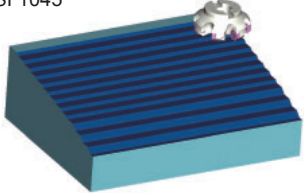
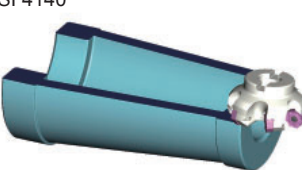
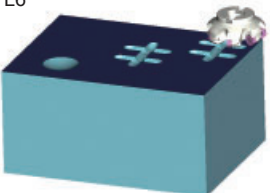
General Purpose Multi Corner Insert Type Face Milling Cutter

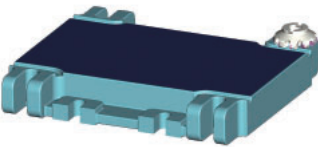
Application Example

Component		Parts for Turbo	Automobile Parts	Steel Plate for Pressure Containers
Workpiece		ASTM 309	AISI 80-55-06	W-nr 1.0425
				
		Tool		
		AHX440S-063A08AR		
		AHX440S-050A04AR		
Cutting Conditions		AHX440S-100B10AR		
Cutting Speed (m/min)		99		
Feed per Tooth (mm/t.)		141		
Depth of Cut ap (mm)		0.15		
Depth of Cut ae (mm)		0.8		
Cutting Mode		35		
Dry Cutting		80		
Results		Wet Cutting		
AHX440S achieved 1.4 times the tool life of conventional.		AHX440S achieved 1.4 times the tool life of conventional. 160min. could be expanded. The tool life was expanded 160 min in total of rough and finish cutting.		
AHX440S showed 1.3 times longer tool life than that of conventional in heavy interrupted cutting. Tool life was evaluated based on wheather burrs were generated around holes.				

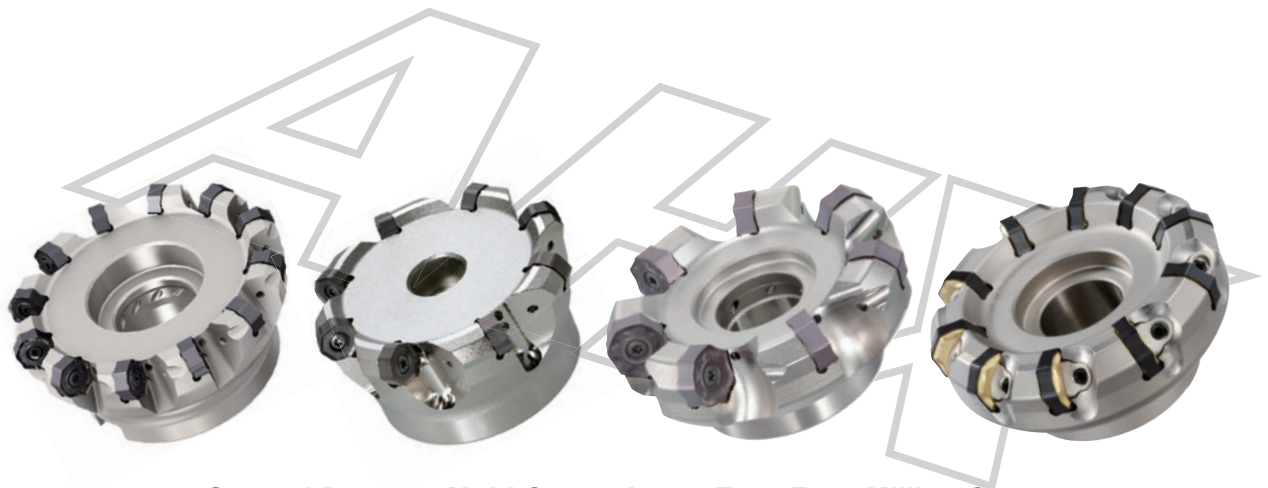
Component		Press Mold Base	Housing Case	Automotive Suspension Part
Workpiece		AISI No 35B 	AISI No 35B 	AISI 100-70-03 
Tool		AHX640WR16016F	AHX640WR12512E	AHX640WR10014D
Cutting Conditions	Cutting Speed (m/min)	240	150	240
	Table Feed (mm/min)	3060	500	3000
	Feed per Tooth (mm/t.)	0.4	0.1	0.28
	Depth of Cut ap (mm)	3–4	3	3–4
	Depth of Cut ae (mm)	160	40	80
Cutting Mode		Dry Cutting	Dry Cutting	Dry Cutting
Results		In comparison with the conventional insert that suffered sudden fracturing during machining of surface scale, AHX640W gave a stable performance even at 3 times higher table feeds, thus substantially improving machining efficiency and reliability.	In comparison with a conventional 8 corner insert that fractured while machining an unstable component, the AHX640W gave double tool life. In combination with the use of the extra cutting edges a substantial saving can be made.	Even when machining ductile cast irons, AHX640W gave double tool life compared to a conventional tool.

- With reference to the above examples, adjust the cutting conditions according to the machine specifications, workpiece geometry and clamping method used.

Component		Machine Parts		Machine Parts		Mold	
Workpiece		AISI 1045 		AISI 4140 		AISI L6 	
Tool		Conventional	AHX640SR10007DA	Conventional	AHX640SR10007DA	Conventional	AHX640SR10007DA
Cutting Conditions	Cutting Speed (m/min)	200	250	75	100	95	95
	Feed per Tooth (mm/t.)	0.19	0.22	0.05	0.17	0.2	0.26
	Depth of Cut ap (mm)	5	5	1	2	3	3
	Depth of Cut ae (mm)	75	75	70	70	60	60
Cutting Mode		Air Blow	Air Blow	Air Blow	Air Blow	Air Blow	Air Blow
Results		With older products, raising the cutting speed to 250 m/min caused chattering and damage to the inserts, but the AHX640S enables stable machining even when the feed is raised. In addition, the inserts have more usable corners, helping to reduce costs.		Previously, low rigidity workpiece clamping led to chattering, making it impossible to raise cutting conditions. However, with the low cutting resistance of the AHX640S, cutting conditions can be raised, achieving more than six times the efficiency of existing products.		With conventional products, insert wear occurred frequently. In contrast, the AHX640S with 30% higher feed enables stable cutting with no damage to the inserts.	

Component		Mold	
Workpiece		AISI No 45B 	
Tool		Conventional	AHX640SR16010FA
Cutting Conditions	Cutting Speed (m/min)	70	240
	Feed per Tooth (mm/t.)	1.5	0.3
	Depth of Cut ap (mm)	1	3
	Depth of Cut ae (mm)	100	100
Cutting Mode		Air Blow	Air Blow
Results		Compared with earlier tools for high feed milling, depth of cut is three times greater with the equivalent table feed. In addition, the inserts have more usable corners than earlier products, helping to reduce costs.	

- With reference to the above examples, adjust the cutting conditions according to the machine specifications, workpiece geometry and clamping method used.



General Purpose Multi Corner Insert Type Face Milling Cutter

AHX Series

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 driver. ●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.)