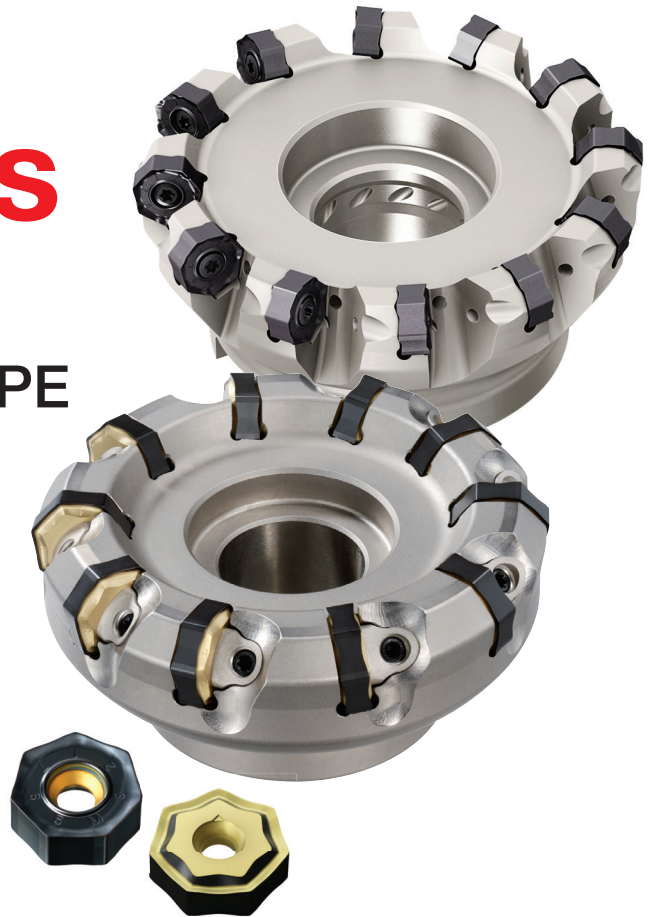


AHX Series

GENERAL PURPOSE
MULTI-CORNER INSERT TYPE
FACE MILLING CUTTER



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.

(inch)

Tool Holder Number	IC	APMX
AHX440S	.528	.118
AHX475S	.528	.063
AHX640S	.787	.236

“APMX” of AHX will vary depending on the chipbreaker of the insert.

High Rigidity Created by Increasing the Thickness of the Inserts

Corner Number is Clearly Shown

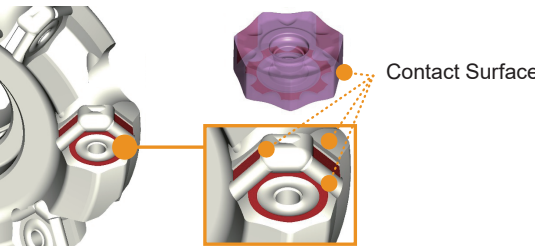
A Unique Face Mill for Machining of Steel, Stainless Steel and Cast Iron

AHX440S
AHX475S
AHX640S

AHX475S is not compatible with stainless steel.

Designed to Control Abnormal Insert Breakage and Body Damage

The unique conical insert shim and Anti-Fly Insert (A.F.I.) mechanism hold the insert securely. The outer edge of the insert is not in contact with the body, thereby preventing damage when sudden fracturing occurs. The thick insert negates the need for a shim.

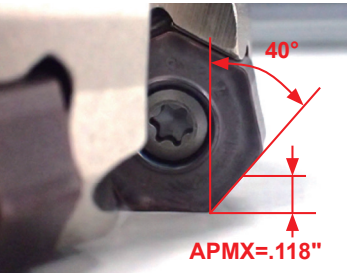


Through Coolant Through

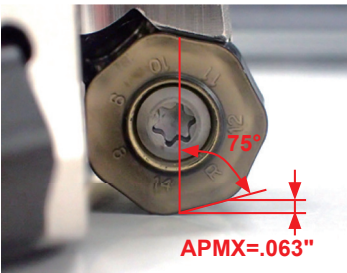
Improves chip discharge and prevents chip welding.

AHX475S For High Feed Machining

High feed is possible with AHX440S by setting an RE = .126 inch insert to be used in a cutter body with a corner angle of 75° (KAPR15°). The maximum depth of cut (APMX) will be limited to .063 inch.



AHX440S L Chipbreaker



AHX475S

Face Milling Cutter for High Efficiency Machining of Cast Iron

AHX640W

High Rigidity Inserts
Suitable for High Feed
Milling of Cast Iron

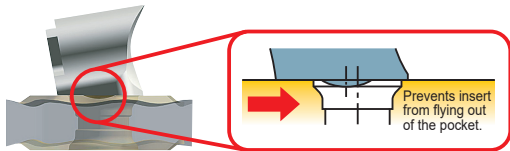


Sloped cutting edge and large rake angle



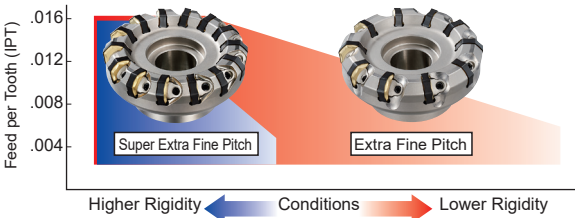
Innovative Clamp System

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

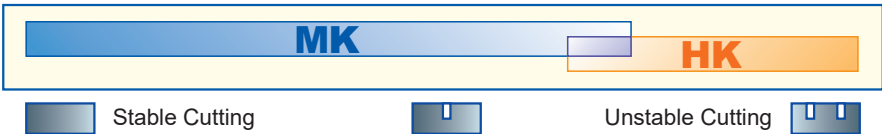


2 Variations for
Different Applications

Extra fine pitch and super extra fine pitch types allow high efficiency milling under various machining conditions. Additionally, left hand types 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



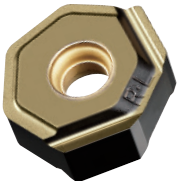
High tolerance M-class insert.
Neutral, double-sided 14 corners.
20° rake angle for low cutting resistance.
First recommendation for roughing and finishing.

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.

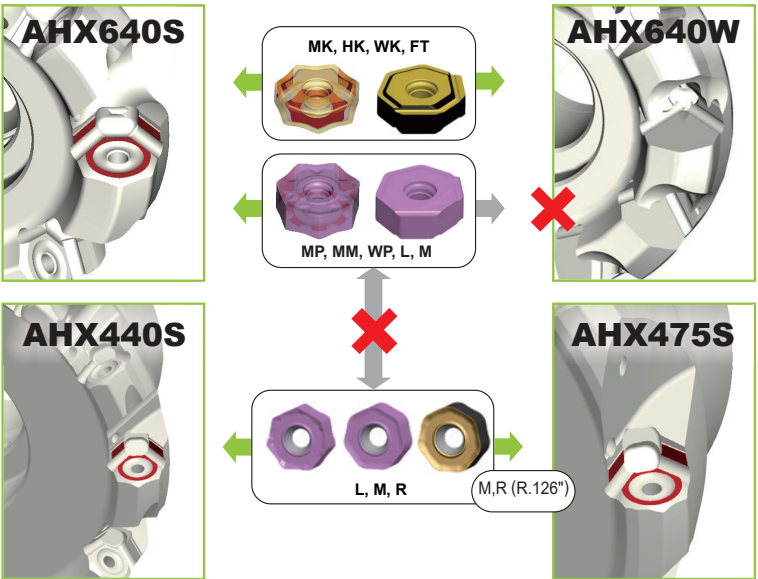
The insert for AHX640W is compatible with AHX640S.
Please refer to P12, P13 for the proper use of the XC5010 insert.

AHX Steel Series
Selection Reference Table (Cutting Edge Count and Cutting Conditions)

DC	Type	Number of Teeth	AHX440S			AHX475S			AHX640S		
			General Cutting			High Feed Machining			General Cutting		
			Stock	fr (IPR)	APMX	Stock	fr (IPR)	APMX	Stock	fr (IPR)	APMX
1.500" 40mm	Fine Pitch	3	●	.024 — .047	.118						
	Extra Fine Pitch	4	●	.031 — .063	.118						
2.000" 50mm	Fine Pitch	4	●	.031 — .063	.118	●	.094 — .157	.063			
	Extra Fine Pitch	5	●	.039 — .079	.118	●	.118 — .197	.063			
	Super Extra Fine Pitch	6	●	.047 — .094	.118						
2.500" 63mm	Coarse Pitch	4							●	.031 — .063	.236
	Fine Pitch	5	●	.039 — .079	.118	●	.118 — .197	.063	●	.039 — .079	.236
	Extra Fine Pitch	6	●	.047 — .094	.118	●	.142 — .236	.063			
	Super Extra Fine Pitch	8	●	.063 — .126	.118						
3.000" 80mm	Coarse Pitch	4							●	.031 — .063	.236
	Fine Pitch	6	●	.047 — .094	.118	●	.142 — .236	.063	●	.047 — .094	.236
	Extra Fine Pitch	8	●	.063 — .126	.118	●	.189 — .315	.063			
	Super Extra Fine Pitch	10	●	.079 — .157	.118						
4.000" 100mm	Coarse Pitch	5							●	.039 — .079	.236
	Fine Pitch	7	●	.055 — .110	.118	●	.165 — .276	.063	●	.055 — .110	.236
	Extra Fine Pitch	9				●	.213 — .354	.063			
	Super Extra Fine Pitch	10	●	.079 — .157	.118						
5.000" 125mm	Coarse Pitch	6							●	.047 — .094	.236
	Fine Pitch	8	●	.063 — .126	.118	●	.189 — .315	.063	●	.063 — .126	.236
	Extra Fine Pitch	10				●	.236 — .394	.063			
	Super Extra Fine Pitch	12	●	.094 — .189	.118						
6.000" 160mm	Coarse Pitch	7							●	.055 — .110	.236
	Fine Pitch	10	●	.079 — .157	.118	●	.236 — .394	.063	●	.079 — .157	.236
	Extra Fine Pitch	12				●	.283 — .472	.063			
	Super Extra Fine Pitch	14	●	.110 — .220	.118						
8.000" 200mm	Coarse Pitch	8							●	.063 — .126	.236
	Fine Pitch	12							●	.094 — .189	.236

(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 25 for details).
(Note 2) APMX: Maximum depths of cut (AHX440S: the maximum depths of cut will vary depending on the chipbreaker)
(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



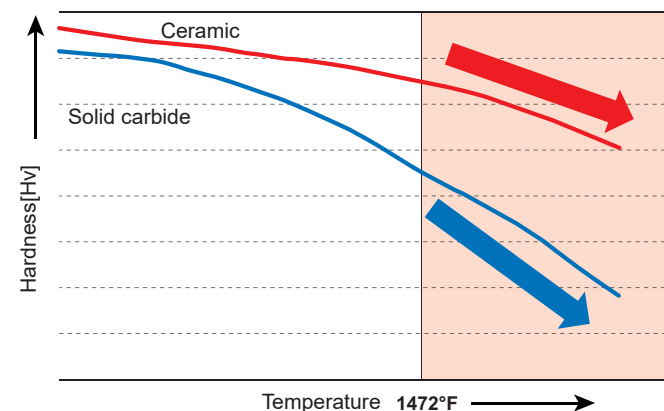
The RE = .126 inch insert for use with AHX440S can be mounted on AHX475S. All inserts for use with AHX640 can be mounted on AHX640S (note, however, that the set height will differ). The inserts for mounting on AHX640W are the MK, HK, WK and FT for casting.

CVD Coated Ceramic Grade XC5010

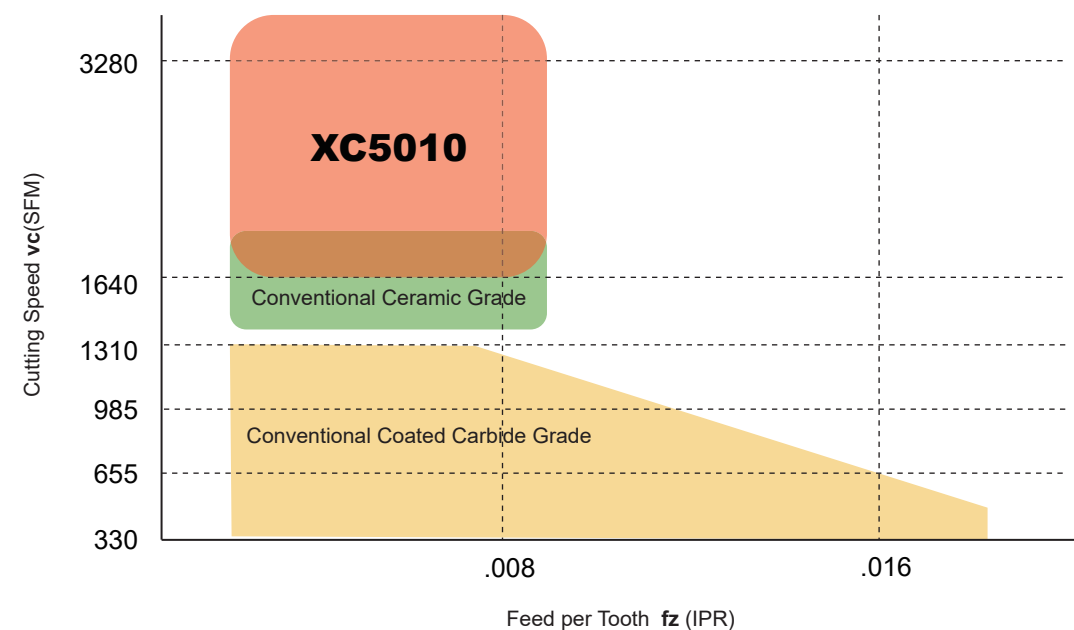
The strength of ceramics allows for stable machining even when cutting at high-speeds.

High Temperature Hardness of Cemented Carbide and Ceramic

Cemented carbide inserts are significantly reduced in strength when exceeding 1472 degrees. However, the strength of ceramic inserts is not affected at these high temperatures, therefore can be used at the high-speeds and depths of cut required to generate sufficient heat to enable machining.

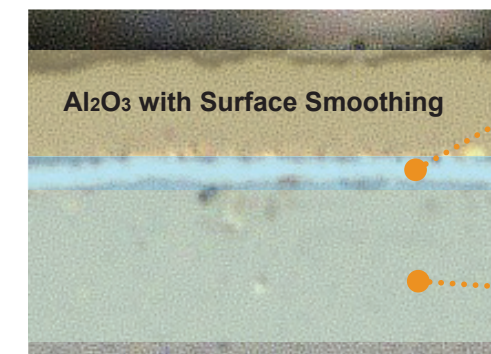


The combination of the unique shape and the coated ceramic grade achieves stable machining even at a cutting speeds of 1000 m/min.



Surface-smoothing Al_2O_3 coating suppresses the transmission of cutting heat

By applying an Al_2O_3 coating, which suppresses the transmission of cutting heat to the ceramic substrate, and together with a surface smoothing treatment, abnormal wear and adhesion of the workpiece material are suppressed.



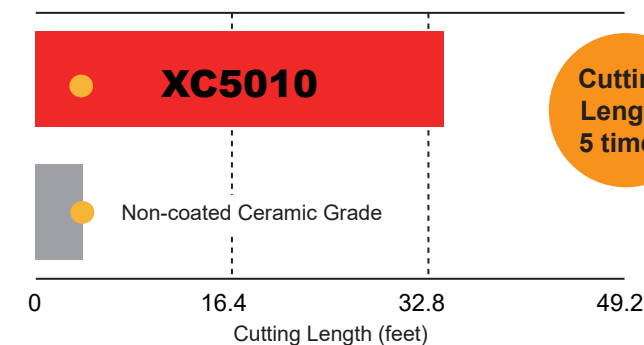
Technology Improves Adhesion Strength

Mitsubishi Materials' own adhesion technology has greatly improved the adhesion between the ceramic base material and the coating layer.

Silicon Nitride Ceramic Substrate

By adopting a high toughness silicon nitride ceramic substrate as the base material, ultra-high-speed milling of ductile cast iron can be achieved even at high temperatures with minimal loss of strength.

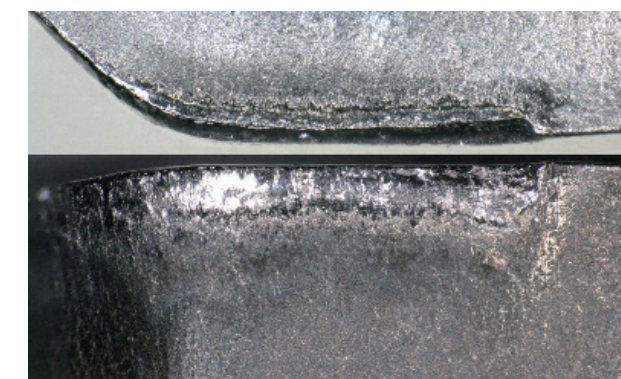
Achieves 5 times the cutting length of non-coated ceramic grade when used at high-speeds.



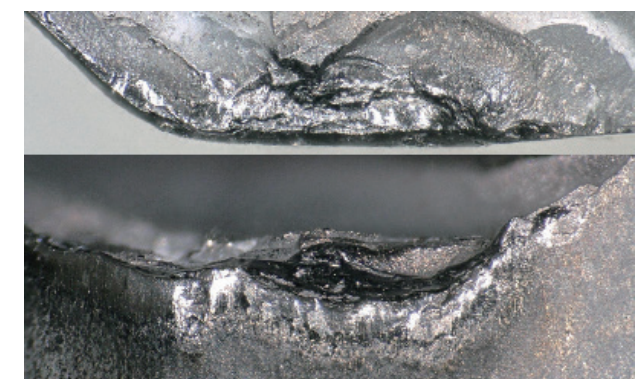
<Cutting Conditions>

Material : JIS FCD600
Tool : AHX640S DC=3.150 inch
Cutting Speed : $vc=3280$ SFM
Feed per Tooth : $fz=.004$ IPT
Depth of Cut : $ap=.079$ inch
 $ae=1.969$ inch
Cutting Mode : Dry Cutting

After 6.6 feet Machining



XC5010



Non-coated Ceramic Grade



Machining video at $VC=3935$ SFM

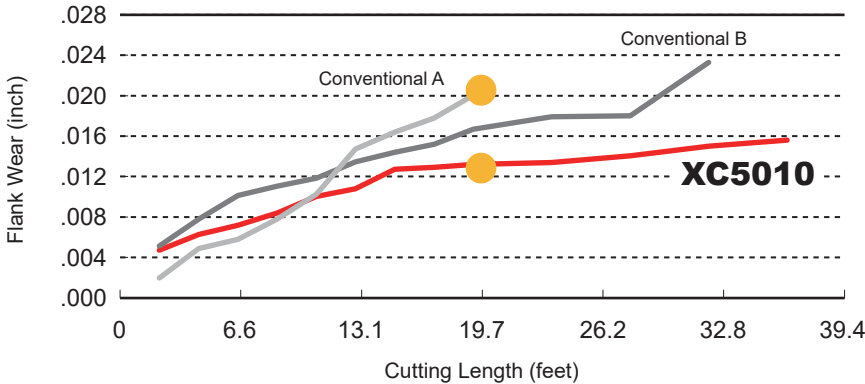


YouTube

Cutting Performance

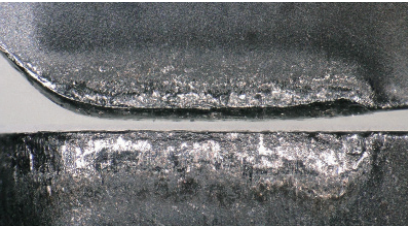
Comparison of Wear when machining 100-70-03 vc=3280 SFM

Achieves a level of wear resistance that greatly surpasses carbide grades when high-speed roughing.

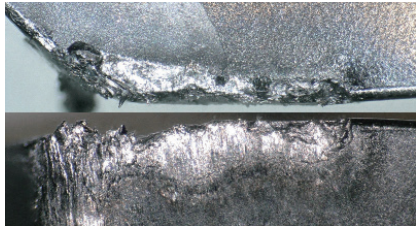


<Cutting Conditions>
Material : ASTM 100-70-03
Tool : AHX640S DC=3.150 inch
Cutting Speed : vc=3280 SFM
Feed per Tooth : fz=.004 IPT
Depth of Cut : ap=.079 inch
ae=1.575 inch
Cutting Mode : Dry Cutting
Single Insert

● After Machining 19.7 feet



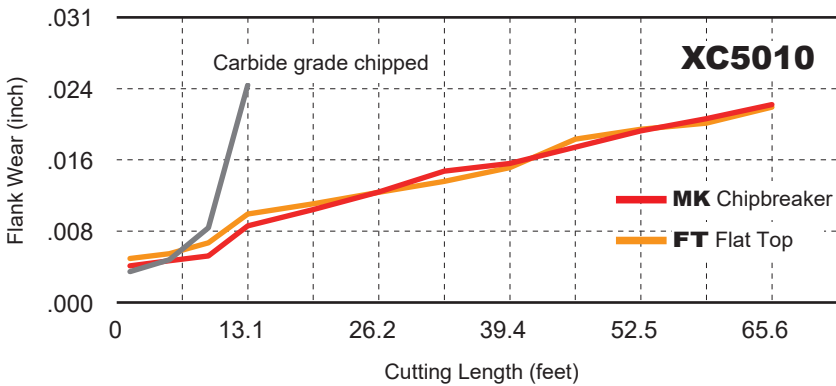
XC5010



Conventional A, Coated Carbide Grade

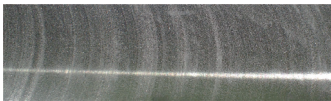
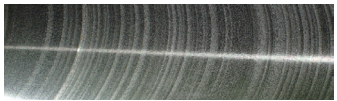
Comparison of finished surfaces when machining 100-70-03 at vc=3280 SFM

A high-quality machined surface is maintained even after a cutting length of 65.6 feet.

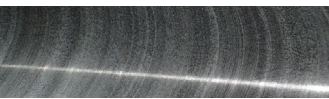
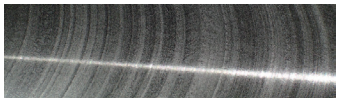


<Cutting Conditions>
Material : ASTM 100-70-03
Tool : AHX640S DC=4.921 inch
Cutting Speed : vc=3280 SFM
Feed per Tooth : fz=.004 IPT
Depth of Cut : ap=.079 inch
ae=3.937 inch
Cutting Mode : Dry Cutting

Cutting Length
13.1 feet



Cutting Length
65.6 feet



XC5010 MK

XC5010 FT

The conventional carbide grade chipped at a cutting length of 13.1 feet.

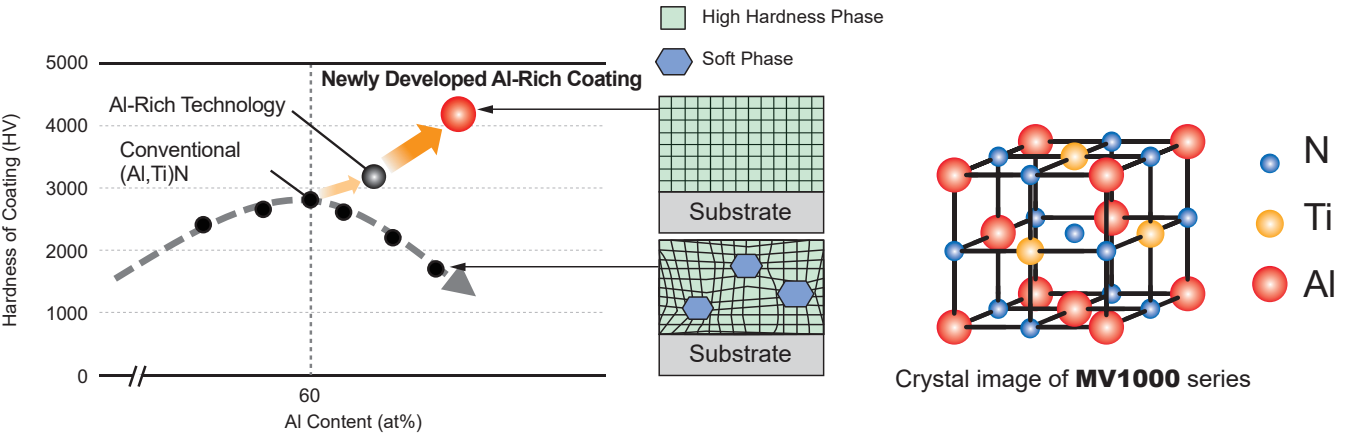
Coated Carbide Grade for Milling

MV1020/MV1030

Newly Developed Al-Rich Coating

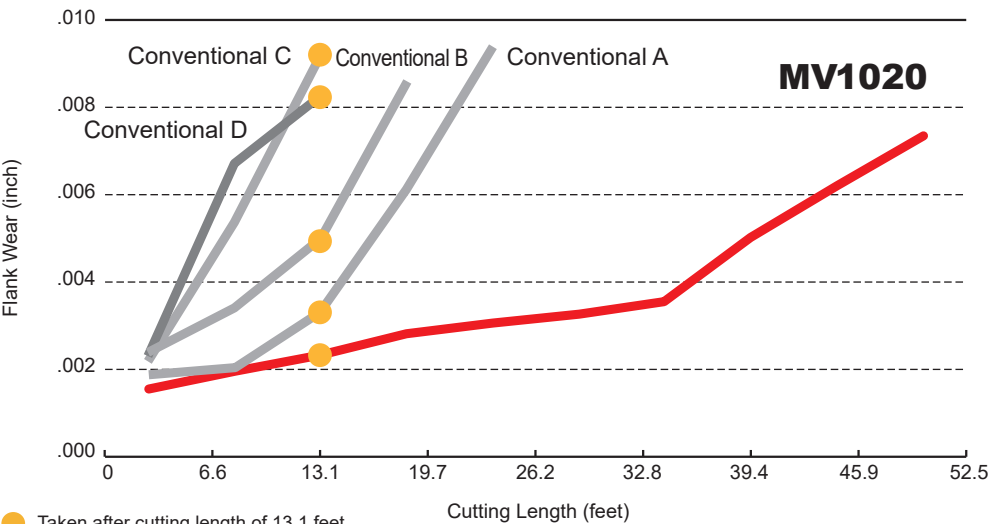
Advanced Wear and Thermal Shock Resistant

By adopting the newly developed Al-Rich coating technology, the (Al,Ti)N with a high Al content ratio displays a very high hardness. This greatly improves oxidation and wear resistance. The extreme heat resistance of this new series achieves amazing stability not only during dry cutting, but also when wet cutting where inserts are usually prone to thermal cracking. MV1020 offers overwhelmingly superior performance in high-speed cutting, and MV1030 achieves stable performance during interrupted and stainless steel machining.



Cutting Performance

Comparison of wear resistance when machining ductile cast iron 100-70-03

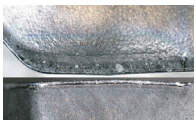


<Cutting Conditions>
Material : ASTM 100-70-03
Tool : AHX440
Inserts : NNMU130508ZEN-M
Cutting Speed : vc=985 SFM
Feed per Tooth : fz=.004 IPT
Depth of Cut : ap=.079 inch
Width of Cut : ae=2.047 inch
Cutting Mode : Dry Cutting
Single Insert

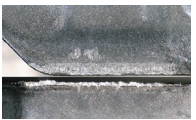
● Taken after cutting length of 13.1 feet



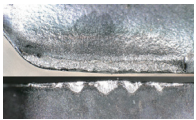
MV1020



Conventional A



Conventional B



Conventional C



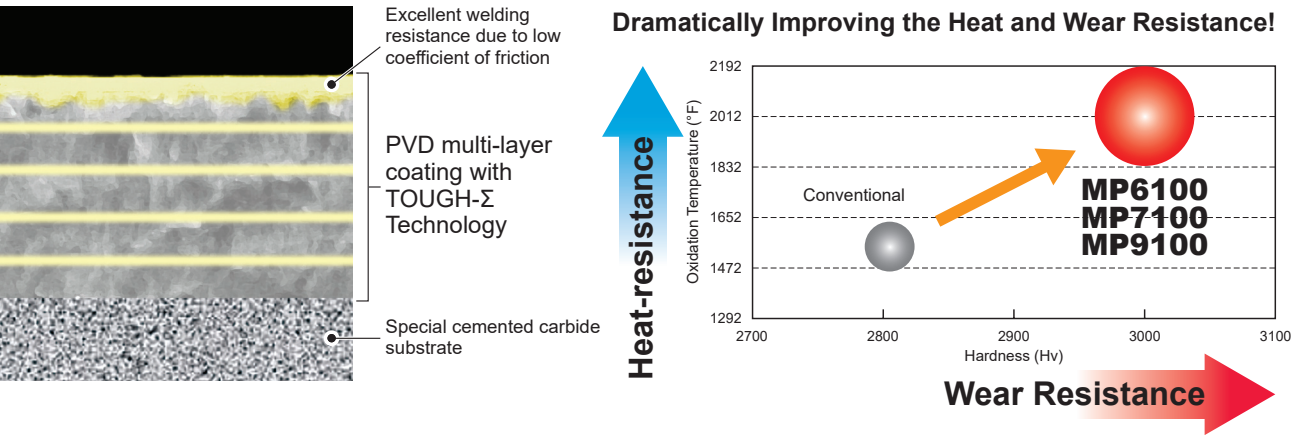
Conventional D

Insert Grades for a Wide Range of Materials

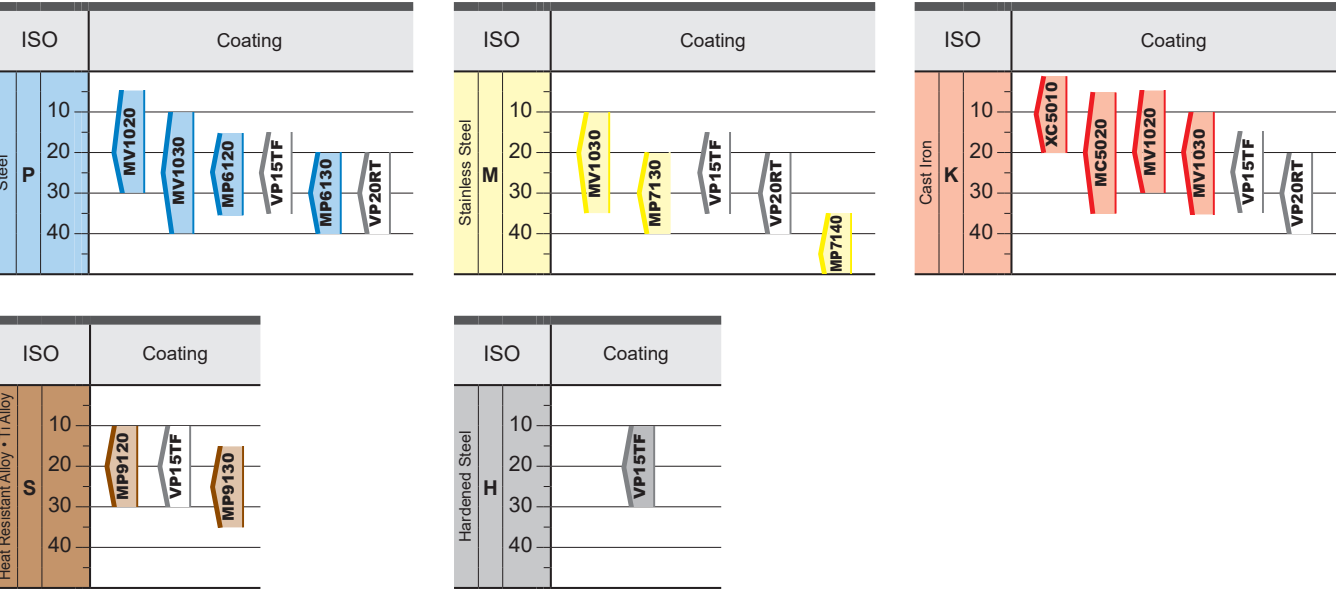
Accumulated Al-Ti-Cr-N Based PVD Coating

TOUGH-Σ Technology

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



Selection Standard



MC5020

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

Improved Wear Resistance

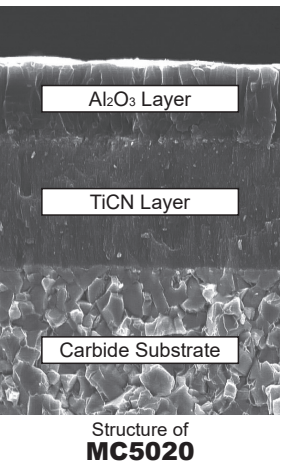
The micro-grain wear resistant Al₂O₃ and fibrous TiCN layers deliver excellent wear resistance when milling a wide range of cast irons.

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.

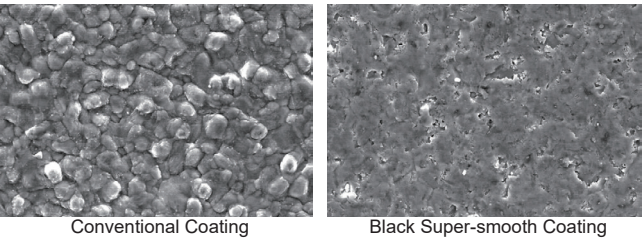
Reduced Abnormal Damage

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



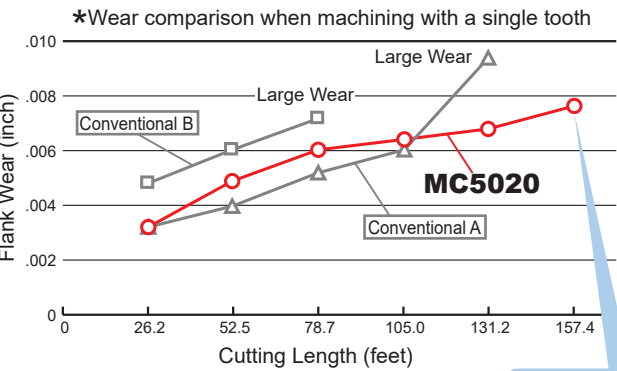
Black Super-smooth Coating

Comparison of Coating Surface



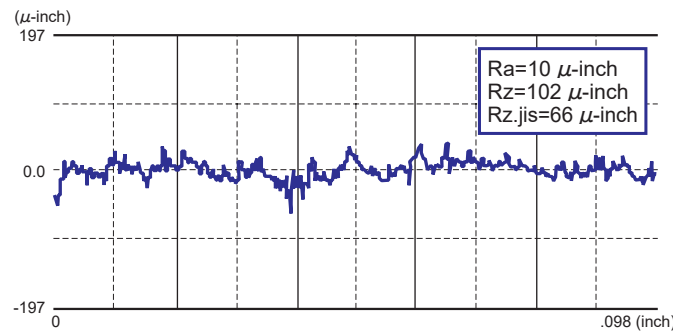
Cutting Performance

Wear Resistance

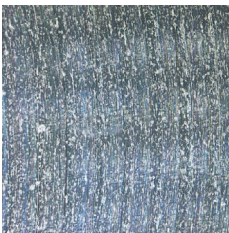


<Cutting Conditions>
Material : ASTM No45B
Tool : AHX640WR10010D
Insert : NNMU200608ZEN-MK (1 piece)
Cutting Speed : 985 SFM
Feed per Tooth : .012 IPT
Depth of Cut : ap=.197 inch
Cutting Mode : Dry Cutting
Single Insert

Surface Finish

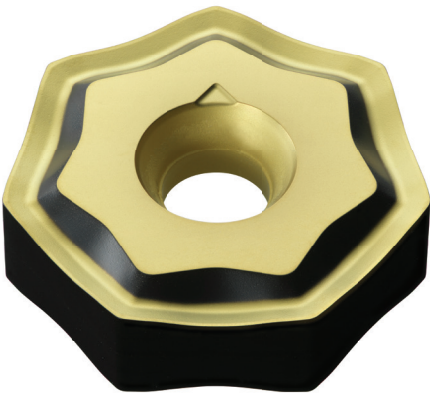


<Finish Condition>



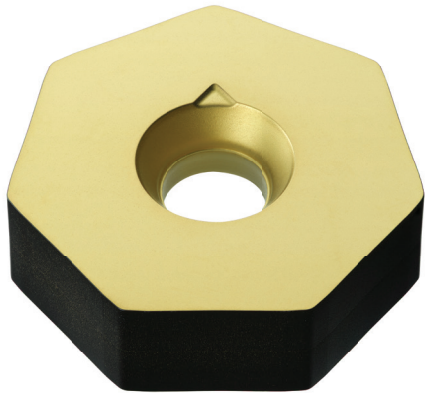
<Cutting Conditions>
Material : ASTM 100-70-03
Tool : AHX640WR10014D
Insert : NNMU200608ZEN-MK(13 pieces)
Wiper Insert : WNEU2006ZEN7C-WK(1 piece)
Cutting Speed : 1150 SFM
Feed per Tooth : .004 IPT
Depth of Cut : ap=.016 inch
ae=3.150 inch
Cutting Mode : Air Blow

Insert for XC5010



MK Chipbreaker General Cutting

When compared to flat top inserts, the cutting resistance is lower when using the MK chipbreaker. This reduces the load on the spindle thereby making it suitable for high-speed cutting.



FT Flat Top Cutting Edge Strength

The high cutting edge strength of the flat top type enables stable cutting over long periods and helps to prevent sudden edge chipping.

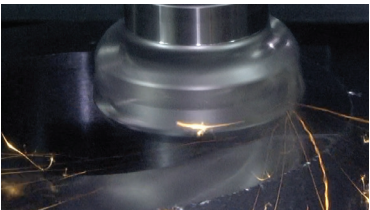
The height setting when using MK inserts is different than when using FT type inserts.

FCD600 Finish Surface Comparison

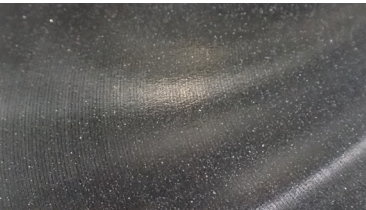
A high-quality machined surface is maintained even when high speed cutting conditions are used.



Cutting Speed : vc=820 SFM



Cutting Speed : vc=3280 SFM



Conventional, Coated Carbide Grade



XC5010 MK

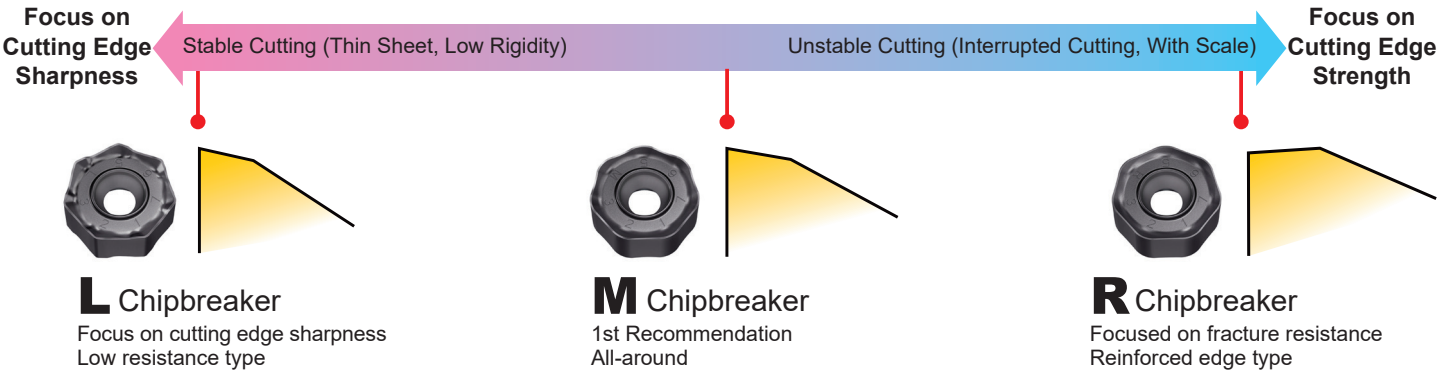
<Cutting Conditions>
Material : JIS FCD600
Tool : AHX640S DC=2.480 inch
Feed per Tooth : fz=.004 IPT
Depth of Cut : ap=.039 inch
ae=1.260 inch
Cutting Mode : Dry Cutting



YouTube

Chipbreaker System

Chipbreaker System for Varied Cutting Conditions



Material	Cutting Conditions		
	Stable Cutting	General Cutting	Unstable Cutting
P	AHX440S L With Wiper	AHX440S M (R.031") With Wiper AHX640S M MP	AHX440S M (R.126") Not with Wiper Shared with AHX475 R Not with Wiper Shared with AHX475
M	AHX440S L With Wiper	AHX440S M (R.031") With Wiper AHX640S MM	AHX440S M (R.126") Not with Wiper Shared with AHX475 R Not with Wiper Shared with AHX475
K	AHX440S L With Wiper	AHX440S M (R.031") With Wiper AHX640S MK	AHX440S M (R.126") Not with Wiper Shared with AHX475 R Not with Wiper Shared with AHX475 HK FT

Wiper Insert of AHX640S

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

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



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



FACE MILLING
<GENERAL CUTTING>

AHX440S

- PSteel
- MStainless Steel
- KCast Iron
- N
- S
- HHardened Steel



50°
KAPR



Fig. 1

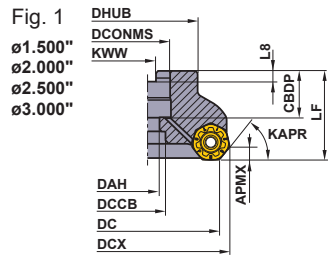
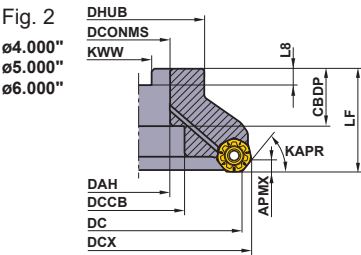


Fig. 2



Right hand tool holder only.

DC	Set Bolt	Geometry
φ1.500	HSCU25011H	① ②
φ2.000	HSCU37513H	
φ2.500	HSCU50014H	
φ3.000		
φ4.000	MBAU75016H	② With Coolant Through.
φ5.000		
φ6.000		

DCONMS=Inch size

DC	Order Number	Stock	*1 Coolant Thru	Number of Teeth	LF	DCX	DCONMS	Fig.	WT(lbs)	*2 APMX
1.500	AHX440SUR1503SA	●	Y	3	1.750	1.829	.500	1	.7	.118, .138
	AHX440SUR1504SA	●	Y	4	1.750	1.829	.500	1	.6	.118, .138
2.000	AHX440SUR0204AA	●	Y	4	1.750	2.329	.750	1	1.0	.118, .138
	AHX440SUR0205AA	●	Y	5	1.750	2.329	.750	1	1.0	.118, .138
	AHX440SUR0206AA	●	Y	6	1.750	2.329	.750	1	.9	.118, .138
2.500	AHX440SUR2505CA	●	Y	5	2.000	2.829	1.000	1	1.8	.118, .138
	AHX440SUR2506CA	●	Y	6	2.000	2.829	1.000	1	1.7	.118, .138
	AHX440SUR2508CA	●	Y	8	2.000	2.829	1.000	1	1.6	.118, .138
3.000	AHX440SUR0306CA	●	Y	6	2.000	3.329	1.000	1	2.3	.118, .138
	AHX440SUR0308CA	●	Y	8	2.000	3.329	1.000	1	2.2	.118, .138
	AHX440SUR0310CA	●	Y	10	2.000	3.328	1.000	1	2.1	.118, .138
4.000	AHX440SUR0407EA	●	Y	7	2.500	4.329	1.500	2	5.1	.118, .138
	AHX440SUR0410EA	●	Y	10	2.500	4.329	1.500	2	5.0	.118, .138
	AHX440SUR0412EA	●	Y	12	2.500	4.329	1.500	2	4.9	.118, .138
5.000	AHX440SUR0508EA	●	Y	8	2.500	5.329	1.500	2	8.1	.118, .138
	AHX440SUR0512EA	●	Y	12	2.500	5.329	1.500	2	7.9	.118, .138
	AHX440SUR0514EA	●	Y	14	2.500	5.329	1.500	2	7.8	.118, .138
6.000	AHX440SUR0610EA	●	Y	10	2.500	6.329	1.500	2	10.3	.118, .138
	AHX440SUR0614EA	●	Y	14	2.500	6.329	1.500	2	10.1	.118, .138
	AHX440SUR0616EA	●	Y	16	2.500	6.329	1.500	2	10.1	.118, .138

*1 Y=Yes

*2 For NNMU130508ZER-L, APMX max = .118, for NNMU130508ZEN-M, NNMU130532ZEN-M & NNMU130532ZEN-R, APMX max = .138

Note 1) The above "APMX" will vary depending on the chipbreaker insert.

Note 2) The cutter body includes a set bolt for an arbor.



Metric Standard

For inch arbors

Fig. 1

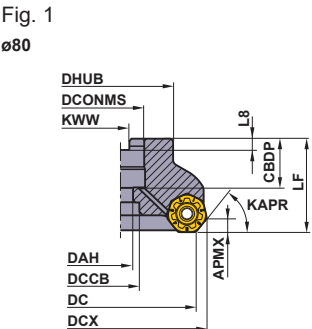
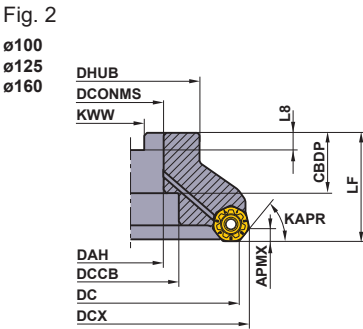


Fig. 2



Right hand tool holder only.

DCONMS=Inch size

DC	Order Number	Stock	*1 Coolant Thru	Number of Teeth	LF	DCX	DCONMS	Fig.	WT(kg)	*2 APMX
80	AHX440SR08006CA	★	Y	6	50	88.4	25.4 [1.0"]	1	1.1	3.0, 3.5
	AHX440SR08008CA	★	Y	8	50	88.4	25.4 [1.0"]	1	1.1	3.0, 3.5
	AHX440SR08010CA	★	Y	10	50	88.4	25.4 [1.0"]	1	1.1	3.0, 3.5
100	AHX440SR10007DA	★	Y	7	50	108.4	31.75 [1.25"]	2	1.6	3.0, 3.5
	AHX440SR10010DA	★	Y	10	50	108.4	31.75 [1.25"]	2	1.6	3.0, 3.5
	AHX440SR10012DA	★	Y	12	50	108.3	31.75 [1.25"]	2	1.6	3.0, 3.5
125	AHX440SR12508EA	★	Y	8	63	133.4	38.1 [1.50"]	2	3.0	3.0, 3.5
	AHX440SR12512EA	★	Y	12	63	133.4	38.1 [1.50"]	2	3.0	3.0, 3.5
	AHX440SR12514EA	★	Y	14	63	133.3	38.1 [1.50"]	2	2.9	3.0, 3.5
160	AHX440SR16010FA	★	Y	10	63	168.4	50.8 [2.0"]	2	4.8	3.0, 3.5
	AHX440SR16014FA	★	Y	14	63	168.4	50.8 [2.0"]	2	4.6	3.0, 3.5
	AHX440SR16016FA	★	Y	16	63	168.4	50.8 [2.0"]	2	4.7	3.0, 3.5

*1 Y=Yes

*2 For NNMU130508ZER-L, APMX max = 3.0, for NNMU130508ZEN-M, NNMU130532ZEN-M & NNMU130532ZEN-R, APMX max = 3.5

Note 1) Set bolt not included.

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

SPARE PARTS

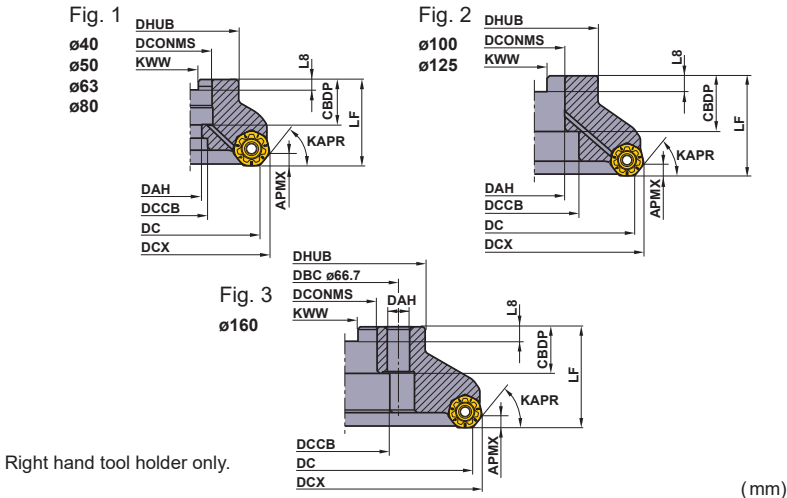
Tool Holder Type	*	
	Clamp Screw	Wrench (Insert)
AHX440S	TS35R	TKY15T

* Clamp Torque (lbf-in) : TS35R=31

General Purpose Multi-Corner Insert Type Face Milling Cutter



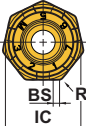
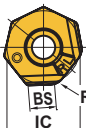
Metric Standard
For metric arbors



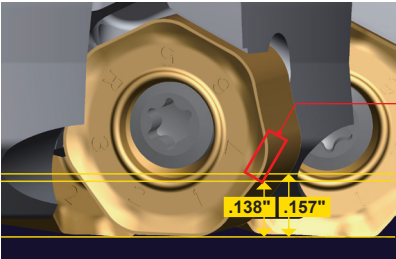
DCONMS=mm size						DCX		(mm)		
DC	Order Number	Stock	*1 Coolant Thru	Number of Teeth	LF	DCX	DCONMS	Fig.	WT(kg)	*2 APMX
40	AHX440S-040A03AR	★	Y	3	40	48.4	16	1	0.3	3.0, 3.5
	AHX440S-040A04AR	★	Y	4	40	48.4	16	1	0.2	3.0, 3.5
50	AHX440S-050A04AR	★	Y	4	40	58.4	22	1	0.4	3.0, 3.5
	AHX440S-050A05AR	★	Y	5	40	58.4	22	1	0.4	3.0, 3.5
	AHX440S-050A06AR	★	Y	6	40	58.4	22	1	0.4	3.0, 3.5
63	AHX440S-063A05AR	★	Y	5	40	71.4	22	1	0.6	3.0, 3.5
	AHX440S-063A06AR	★	Y	6	40	71.4	22	1	0.6	3.0, 3.5
	AHX440S-063A08AR	★	Y	8	40	71.4	22	1	0.5	3.0, 3.5
80	AHX440S-080A06AR	★	Y	6	50	88.4	27	1	1.1	3.0, 3.5
	AHX440S-080A08AR	★	Y	8	50	88.4	27	1	1.1	3.0, 3.5
	AHX440S-080A10AR	★	Y	10	50	88.4	27	1	1.1	3.0, 3.5
100	AHX440S-100B07AR	★	Y	7	50	108.4	32	2	1.6	3.0, 3.5
	AHX440S-100B10AR	★	Y	10	50	108.4	32	2	1.6	3.0, 3.5
	AHX440S-100B12AR	★	Y	12	50	108.3	32	2	1.6	3.0, 3.5
125	AHX440S-125B08AR	★	Y	8	63	133.4	40	2	3.0	3.0, 3.5
	AHX440S-125B12AR	★	Y	12	63	133.4	40	2	3.0	3.0, 3.5
	AHX440S-125B14AR	★	Y	14	63	133.3	40	2	2.9	3.0, 3.5
160	AHX440S-160C10NR	★	N	10	63	168.4	40	3	4.8	3.0, 3.5
	AHX440S-160C14NR	★	N	14	63	168.4	40	3	4.6	3.0, 3.5
	AHX440S-160C16NR	★	N	16	63	168.4	40	3	4.7	3.0, 3.5

*1 Y=Yes N=No
*2 For NNMU130508ZER-L, APMX max = 3.0, for NNMU130508ZEN-M, NNMU130532ZEN-M & NNMU130532ZEN-R, APMX max = 3.5
Note 1) Set bolt not included.
Note 2) The above "APMX" will vary depending on the chipbreaker insert.

INSERTS

Material		P	Steel	◆	◆		◆	◆		◆	◆	This is the selection guideline for AHX440S. Please note that the cutting conditions differ depending on multiple factors, for more details refer to the Recommended Cutting Conditions. Edge Preparation : E : Round							
		M	Cast Iron	◆					◆	◆									
		K	Hardened Steel	◆	◆	◆													
		H	Hardened Steel																
Application	Shape	Order Number	Class	Edge Preparation	Coated							Dimensions (inch)					Geometry		
					MV1020	MV1030	MC5020	MP6120	MP6130	MP7130	MP7140	VP15TF	IC	RE	BS	S		APMX	
Stable Cutting		NNMU130508ZER-L	M	E	●	●	●	●	●	●	●	★	.528	.031	.039	.200	.118		
General Cutting		NNMU130508ZEN-M	M	E	●	●	●	●	●	●	●	★	.528	.031	.039	.200	*.157		
Unstable Cutting		NNMU130532ZEN-M	M	E	●	●	●	●	●	●	●	★	.528	.126	—	.200	*.157		
		NNMU130532ZEN-R	M	E	●	●	●	●	●	●	●	★	.528	.126	—	.200	*.157		
Finish Cutting		WNEU1305ZEN4C-M	E	E			●	●				●	.528	.106	.157	.200	.020		
		Wiper																	

* When not using the Wiper, APMX = .138 inch



Next corner radius to be used

When the next corner is not to be used, the APMX is .157 inch. When the next corner is to be used later (clockwise insert indexing), the APMX is .138 inch. This is to ensure that the next cutting edge isn't already worn from use at .157 inch depth of cut.

Instructions for Use of Wiper Inserts

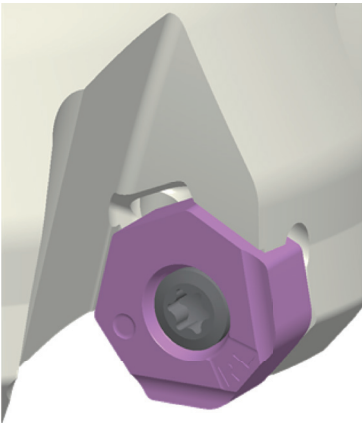


Fig.1



Fig.2

Note 1) These wiper inserts have 2 cutting edges for left-hand use and 2 corners for right-hand use. Position as shown in figure 1.
Note 2) A satisfactory finished 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

(inch)

	Material	Properties	Grade	vc (SFM)	fz (IPT)	ap	ae
P	Mild Steel	Hardness ≤180HB	MV1020	985 (655—1310)	.012 (.008—.016)	≤.118	≤.8DC
			MP6120,VP15TF	820 (655—985)	.012 (.008—.016)	≤.118	≤.8DC
			MV1030	805 (620—985)	.012 (.008—.016)	≤.118	≤.8DC
			MP6130	785 (620—950)	.012 (.008—.016)	≤.118	≤.8DC
	Carbon Steel,Alloy Steel	Hardness 180-280HB	MV1020	850 (560—1150)	.012 (.008—.016)	≤.118	≤.8DC
			MP6120,VP15TF	720 (560—885)	.012 (.008—.016)	≤.118	≤.8DC
			MV1030	690 (490—885)	.012 (.008—.016)	≤.118	≤.8DC
			MP6130	655 (490—820)	.012 (.008—.016)	≤.118	≤.8DC
	Carbon Steel,Alloy Steel	Hardness 280—350HB	MV1020	590 (330—820)	.012 (.008—.016)	≤.118	≤.8DC
			MP6120,VP15TF	460 (330—590)	.012 (.008—.016)	≤.118	≤.8DC
			MV1030	440 (295—590)	.012 (.008—.016)	≤.118	≤.8DC
			MP6130	395 (295—490)	.012 (.008—.016)	≤.118	≤.8DC
	Alloy Tool Steel	Hardness ≤350HB (annealing)	MP6120,VP15TF	460 (330—590)	.006 (.004—.008)	≤.039	≤.8DC
			MP6130	395 (295—490)	.006 (.004—.008)	≤.039	≤.8DC
	Pre-hardened Steel	Hardness 35—45HRC	MP6120	460 (330—590)	.006 (.004—.008)	≤.039	≤.8DC
			MP6130	395 (295—490)	.006 (.004—.008)	≤.039	≤.8DC
M	Austenitic Stainless Steel	Hardness ≤200HB	MP7130,VP15TF	655 (490—820)	.008 (.004—.012)	≤.118	≤.8DC
			MV1030	605 (395—820)	.008 (.004—.012)	≤.118	≤.8DC
			MP7140	590 (395—755)	.008 (.004—.012)	≤.118	≤.8DC
		Hardness > 200HB	MP7130,VP15TF	490 (330—655)	.008 (.004—.012)	≤.118	≤.8DC
			MV1030	460 (260—655)	.008 (.004—.012)	≤.118	≤.8DC
			MP7140	425 (260—590)	.008 (.004—.012)	≤.118	≤.8DC
	Ferritic and Martensitic Stainless Steel	Hardness ≤200HB	MP7130,VP15TF	655 (490—820)	.008 (.004—.012)	≤.118	≤.8DC
			MV1030	605 (395—820)	.008 (.004—.012)	≤.118	≤.8DC
			MP7140	590 (395—755)	.008 (.004—.012)	≤.118	≤.8DC
		Hardness > 200HB	MP7130,VP15TF	490 (330—655)	.008 (.004—.012)	≤.118	≤.8DC
			MV1030	460 (260—655)	.008 (.004—.012)	≤.118	≤.8DC
			MP7140	425 (260—590)	.008 (.004—.012)	≤.118	≤.8DC
	Two-Phase Stainless Steel	Hardness ≤280HB	MP7130,VP15TF	460 (330—590)	.006 (.002—.010)	≤.118	≤.8DC
			MP7140	395 (260—525)	.006 (.002—.010)	≤.118	≤.8DC
	Precipitation-Hardened Stainless Steel	Hardness < 450HB	MP7130,VP15TF	425 (330—525)	.006 (.002—.010)	≤.118	≤.8DC
			MP7140	360 (260—460)	.006 (.002—.010)	≤.118	≤.8DC
K	Gray Cast Iron	Tensile Strength ≤350MPa	MC5020	720 (490—985)	.012 (.008—.016)	≤.118	≤.8DC
			VP15TF	590 (425—755)	.012 (.008—.016)	≤.118	≤.8DC
	Ductile Cast Iron	Tensile Strength ≤450MPa	MV1020	785 (425—1150)	.008 (.004—.012)	≤.118	≤.8DC
			MC5020	720 (490—985)	.008 (.004—.012)	≤.118	≤.8DC
			MV1030	605 (395—820)	.008 (.004—.012)	≤.118	≤.8DC
			VP15TF	560 (395—720)	.008 (.004—.012)	≤.118	≤.8DC
	Ductile Cast Iron	Tensile Strength ≤800MPa	MV1020	720 (260—1150)	.008 (.004—.012)	≤.118	≤.8DC
			MC5020	560 (490—655)	.008 (.004—.012)	≤.118	≤.8DC
			MV1030	490 (330—655)	.008 (.004—.012)	≤.118	≤.8DC
			VP15TF	460 (330—590)	.008 (.004—.012)	≤.118	≤.8DC
H	Hardened Steel	Hardness 40—55HRC	VP15TF	260 (195—330)	.006 (.004—.008)	≤.039	≤.8DC

Wet Cutting

(inch)

	Material	Properties	Grade	vc (SFM)	fz (IPT)	ap	ae
M	Austenitic Stainless Steel	Hardness ≤200HB	MP7130,VP15TF	410 (330—490)	.006 (.004—.008)	≤.118	≤.8DC
			MP7140	330 (260—460)	.006 (.004—.008)	≤.118	≤.8DC
		Hardness > 200HB	MP7130,VP15TF	330 (245—410)	.006 (.004—.008)	≤.118	≤.8DC
			MP7140	260 (180—345)	.006 (.004—.008)	≤.118	≤.8DC
	Ferritic and Martensitic Stainless Steel	Hardness ≤200HB	MP7130,VP15TF	410 (330—490)	.006 (.004—.008)	≤.118	≤.8DC
			MP7140	330 (260—460)	.006 (.004—.008)	≤.118	≤.8DC
		Hardness > 200HB	MP7130,VP15TF	330 (245—410)	.006 (.004—.008)	≤.118	≤.8DC
			MP7140	260 (180—345)	.006 (.004—.008)	≤.118	≤.8DC
	Two-Phase Stainless Steel	Hardness ≤280HB	MP7130,VP15TF	260 (195—330)	.004 (.002—.006)	≤.118	≤.8DC
			MP7140	195 (130—260)	.004 (.002—.006)	≤.118	≤.8DC
	Precipitation-Hardening Stainless Steel	Hardness < 450HB	MP7130,VP15TF	230 (165—295)	.004 (.002—.006)	≤.118	≤.8DC
			MP7140	165 (100—230)	.004 (.002—.006)	≤.118	≤.8DC

Cutting Conditions with Wiper Insert

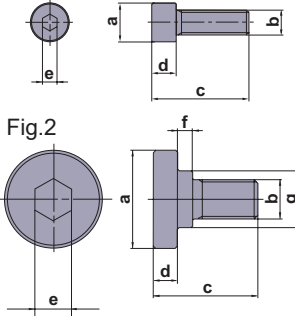
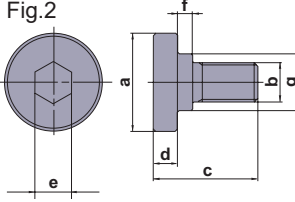
(inch)

	Material	Properties	Grade	vc (SFM)	fz (IPT)	ap
P	Mild Steel	≤180HB	MP6120,VP15TF	820 (655—985)	.012 (.008—.016)	≤.020
	Carbon Steel,Alloy Steel	180—280HB	MP6120,VP15TF	720 (560—885)	.012 (.008—.016)	≤.020
		280—350HB	MP6120,VP15TF	460 (330—590)	.012 (.008—.016)	≤.020
	Alloy Tool Steel	≤350HB (Annealing)	MP6120,VP15TF	460 (330—590)	.006 (.004—.008)	≤.020
	Pre-hardened Steel	35—45HRC	MP6120,VP15TF	460 (330—590)	.006 (.004—.008)	≤.020
M	Austenitic Stainless Steel	≤200HB	VP15TF	410 (330—490)	.006 (.004—.008)	≤.020
		> 200HB	VP15TF	330 (245—410)	.006 (.004—.008)	≤.020
	Ferritic and Martensitic Stainless Steel	≤200HB	VP15TF	410 (330—490)	.006 (.004—.008)	≤.020
		> 200HB	VP15TF	330 (245—410)	.006 (.004—.008)	≤.020
	Two-phase Stainless Steel	≤280HB	VP15TF	260 (195—330)	.004 (.002—.006)	≤.020
	Precipitation Hardening Stainless Steel	< 450HB	VP15TF	230 (165—295)	.004 (.002—.006)	≤.020
K	Gray Cast Iron	Tensile Strength ≤350MPa	MC5020	1050 (820—1310)	.012 (.008—.016)	≤.020
			VP15TF	720 (490—985)	.012 (.008—.016)	≤.020
	Ductile Cast Iron	Tensile Strength ≤450MPa	MC5020	820 (655—985)	.008 (.004—.012)	≤.020
			VP15TF	655 (490—820)	.008 (.004—.012)	≤.020
		Tensile Strength ≤800MPa	MC5020	720 (655—820)	.008 (.004—.012)	≤.020
			VP15TF	560 (490—655)	.008 (.004—.012)	≤.020
H	Hardened Steel	40—55HRC	VP15TF	260 (195—330)	.006 (.004—.008)	≤.020

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 when 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 dry cutting.)

Parts Sold Separately Set Bolt

(inch)

Tool Holder Type	Set Bolt		Fig.	a	b	c	d	e	f	g	Geometry
	With Coolant Thru	Without Coolant Thru									
	Order Number	Order Number									
AHX440S-040A	HSC08025H	HSC08040	1	.512	M8×1.25	1.299	.315	.197	—	—	Fig.1 
AHX440S-050A	HSC10030H	HSC10035	1	.630	M10×1.5	1.575	.394	.236	—	—	
AHX440S-063A	HSC10030H	HSC10035	1	.630	M10×1.5	1.575	.394	.236	—	—	Fig.2 
AHX440S-080A	HSC12035H	HSC12035 HSC12045	1	.709	M12×1.75	1.850 2.244	.472	.394	—	—	
AHX440S-100B	MBA16033H	—	2	1.575	M16×2	1.693	.394	.551	.236	.906	
AHX440S-125B	MBA20040H	—	2	1.969	M20×2.5	2.126	.551	.669	.236	1.063	
AHX440S-160C	MBA20040H	—	2	1.969	M20×2.5	2.126	.551	.669	.236	1.063	
AHX440SR080	HSC12035H	HSC12035 HSC12045	1	.709	M12×1.75	1.850 2.244	.472	.394	—	—	
AHX440SR100	MBA16033H	—	2	1.575	M16×2	1.693	.394	.551	.236	.906	
AHX440SR125	MBA20040H	—	2	1.969	M20×2.5	2.126	.551	.669	.236	1.063	
AHX440SR160	MBA24045H	—	2	2.559	M24×3	2.323	.551	.669	.394	1.457	

Note 1)Please purchase the appropriate set bolt after confirming the reference dimensions.
The items with an order number listed under the Set Bolt columns are also sold by MITSUBISHI MATERIALS.
Note 2) Internal coolant through is necessary with the set bolt.

FACE MILLING
<HIGH-FEED CUTTING FOR CAST IRON>
AHX475S

PSteel

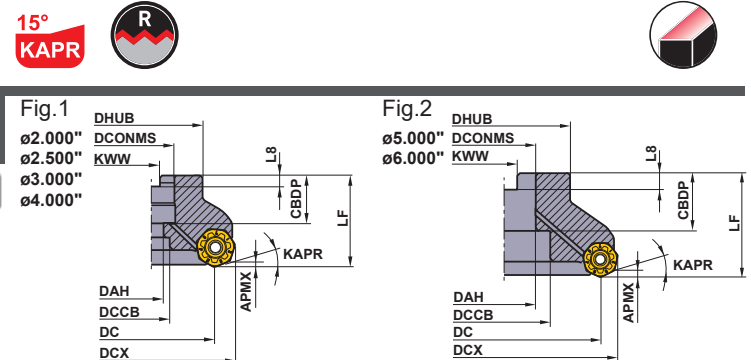
M

KCast Iron

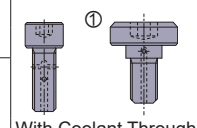
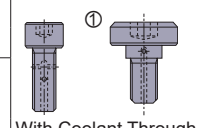
N

S

HHardened Steel



Right hand tool holder only.

DC	Set Bolt	Geometry	
ø2.000	HSCU37513H		②
ø2.500	HSCU50014H		
ø3.000			
ø4.000	MBAU75016H		②
ø5.000			
ø6.000			

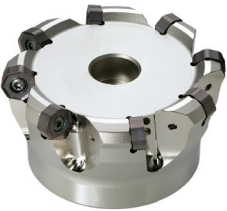
With Coolant Through.

DCONMS = Inch size

DC	Order Number	Stock	* Coolant Thru	Number of Teeth	LF	DCX	DCONMS	Fig.	WT(lbs)	APMX
2.000	AHX475SUR0204AA	●	Y	4	2.000	2.616	.750	1	1.5	.063
	AHX475SUR0205AA	●	Y	5	2.000	2.616	.750	1	1.4	.063
2.500	AHX475SUR2505CA	●	Y	5	2.000	3.116	1.000	1	2.2	.063
	AHX475SUR2506CA	●	Y	6	2.000	3.116	1.000	1	2.2	.063
3.000	AHX475SUR0306CA	●	Y	6	2.000	3.614	1.000	1	3.2	.063
	AHX475SUR0308CA	●	Y	8	2.000	3.614	1.000	1	3.1	.063
	AHX475SUR0306DA	●	Y	6	2.500	3.614	1.250	1	4.1	.063
	AHX475SUR0308DA	●	Y	8	2.500	3.614	1.250	1	4.0	.063
4.000	AHX475SUR0407EA	●	Y	7	2.500	4.616	1.500	1	7.0	.063
	AHX475SUR0409EA	●	Y	9	2.500	4.616	1.500	1	6.9	.063
5.000	AHX475SUR0508EA	●	Y	8	2.500	5.616	1.500	2	8.8	.063
	AHX475SUR0510EA	●	Y	10	2.500	5.616	1.500	2	8.8	.063
6.000	AHX475SUR0610FA	●	Y	10	2.500	6.616	2.000	2	12.4	.063
	AHX475SUR0612FA	●	Y	12	2.500	6.616	2.000	2	12.5	.063

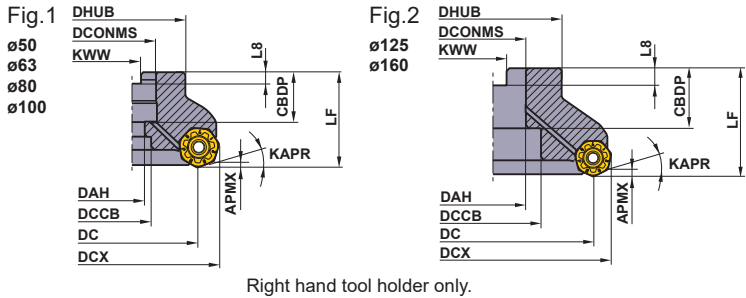
* Y=Yes
Note 1) The cutter body includes a set bolt for an arbor.

General Purpose Multi-Corner Insert Type Face Milling Cutter



Metric Standard

For inch arbors



DCONMS= Inch size (mm)

DC	Order Number	Stock	Coolant Thru [*]	Number of Teeth	LF	DCX	DCONMS	Fig.	WT(kg)	APMX
80	AHX475SR08006DA	★	Y	6	63	95.6	31.75 [1.25"]	1	2.0	1.6
	AHX475SR08008DA	★	Y	8	63	95.6	31.75 [1.25"]	1	2.0	1.6
100	AHX475SR10007DA	★	Y	7	63	115.6	31.75 [1.25"]	1	3.2	1.6
	AHX475SR10009DA	★	Y	9	63	115.6	31.75 [1.25"]	1	3.2	1.6
125	AHX475SR12508EA	★	Y	8	63	140.6	38.1 [1.50"]	2	4.0	1.6
	AHX475SR12510EA	★	Y	10	63	140.6	38.1 [1.50"]	2	4.0	1.6
160	AHX475SR16010FA	★	Y	10	63	175.6	50.8 [2.0"]	2	5.5	1.6
	AHX475SR16012FA	★	Y	12	63	175.6	50.8 [2.0"]	2	5.5	1.6

★ Y=Yes
Note 1) Set bolt not included.

Metric Standard

For metric arbors

DCONMS=mm size

(mm)

DC	Order Number	Stock	Coolant Thru*	Number of Teeth	LF	DCX	DCONMS	Fig.	WT(kg)	APMX
50	AHX475S-050A04AR	★	Y	4	50	65.7	22	1	0.6	1.6
	AHX475S-050A05AR	★	Y	5	50	65.7	22	1	0.6	1.6
63	AHX475S-063A05AR	★	Y	5	50	78.7	22	1	1.0	1.6
	AHX475S-063A06AR	★	Y	6	50	78.7	22	1	1.0	1.6
80	AHX475S-080A06AR	★	Y	6	50	95.6	27	1	1.6	1.6
	AHX475S-080A08AR	★	Y	8	50	95.6	27	1	1.6	1.6
100	AHX475S-100A07AR	★	Y	7	63	115.6	32	1	3.3	1.6
	AHX475S-100A09AR	★	Y	9	63	115.6	32	1	3.3	1.6
125	AHX475S-125B08AR	★	Y	8	63	140.6	40	2	4.0	1.6
	AHX475S-125B10AR	★	Y	10	63	140.6	40	2	4.0	1.6
160	AHX475S-160B10AR	★	Y	10	63	175.6	40	2	6.0	1.6
	AHX475S-160B12AR	★	Y	12	63	175.6	40	2	6.0	1.6

★ Y=Yes
Note 1) Set bolt not included.

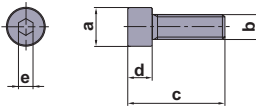
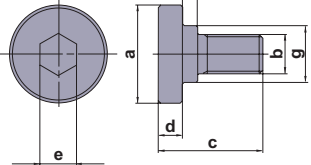
● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

SPARE PARTS

Tool Holder Type	★	
	Clamp Screw	Wrench (Insert)
AHX475S	TS35R	TKY15T

★ Clamp Torque (lbf-in) : TS35R=31

Parts Sold Separately Set Bolt

Tool Holder Type	Set Bolt		Fig.	Reference Dimensions							Geometry
	With Coolant Thru	Without Coolant Thru									
	Order Number	Order Number		a	b	c	d	e	f	g	
AHX475S-050A $\odot\odot\odot$ AR	HSC10030H	HSC10035	1	.630	M10×1.5	1.575	.394	.236	—	—	Fig.1 
AHX475S-063A $\odot\odot\odot$ AR	HSC10030H	HSC10035	1	.630	M10×1.5	1.575	.394	.236	—	—	
AHX475S-080A $\odot\odot\odot$ AR	HSC12035H	HSC12035 HSC12045	1	.709	M12×1.75	2.244	.472	.394	—	—	
AHX475S-100B $\odot\odot\odot$ AR	HSC16040H	—	1	.945	M16×2	2.205	.630	.551	—	—	Fig.2 
AHX475S-125B $\odot\odot\odot$ AR	MBA20040H	—	2	1.969	M20×2.5	2.126	.551	.669	.236	1.063	
AHX475S-160C $\odot\odot\odot$ AR	MBA20040H	—	2	1.969	M20×2.5	2.126	.551	.669	.236	1.063	
AHX475SR080 $\odot\odot\odot$ DA	HSC16040H	—	1	.945	M16×2	2.205	.630	.551	—	—	
AHX475SR100 $\odot\odot\odot$ DA	HSC16040H	—	1	.945	M16×2	2.205	.630	.551	—	—	
AHX475SR125 $\odot\odot\odot$ EA	MBA20040H	—	2	1.969	M20×2.5	2.126	.551	.669	.236	1.063	
AHX475SR160 $\odot\odot\odot$ FA	MBA24045H	—	2	2.559	M24×3	2.323	.551	.669	.394	1.457	

Note 1)Please purchase the appropriate set bolt after confirming the reference dimensions.
The items with an order number listed under the Set Bolt columns are also sold by MITSUBISHI MATERIALS.
Note 2) Internal coolant through is necessary with the set bolt.

INSERTS

Material		P	Steel	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
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RECOMMENDED CUTTING CONDITIONS

Dry Cutting

(inch)			
Material	Properties	Grade	vc (SFM)
P	Mild Steel	MV1020	720 (560—885)
		MP6120	490 (330—655)
		MV1030	460 (260—655)
		MP6130	425 (260—590)
	Carbon Steel, Alloy Steel	MV1020	655 (490—820)
		MP6120	425 (260—590)
		MV1030	395 (195—590)
		MP6130	360 (195—525)
	Carbon Steel, Alloy Steel	MV1020	490 (330—655)
		MP6120	330 (165—490)
		MV1030	295 (100—490)
		MP6130	260 (100—425)
	Alloy Tool Steel	MP6120	330 (165—490)
	Pre-hardened Steel	MP6130	260 (100—395)
		MP6120	330 (230—425)
K	Gray Cast Iron	MC5020	490 (330—655)
		VP15TF	395 (260—525)
	Ductile Cast Iron	MV1020	655 (490—820)
		MC5020	490 (330—655)
		MV1030	460 (260—655)
		VP15TF	395 (260—525)
	Ductile Cast Iron	MV1020	590 (425—755)
		MC5020	490 (330—655)
		MV1030	460 (260—655)
		VP15TF	395 (260—525)
H	Hardened Steel	VP15TF	230 (165—295)

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%.

Dry Cutting

(inch)									
Material	Properties	Grade	ap	Width of Cut ae					
				≤.5DC		.5DC—.8DC		.8DC—DC	
				Chip-breaker	fz (IPT)	Chip-breaker	fz (IPT)	Chip-breaker	fz (IPT)
P	Mild Steel	MV1020 MV1030 MP6120 MP6130	≤.063	R	.024	R	.031	M	.039
	Carbon Steel, Alloy Steel	MV1020 MV1030 MP6120 MP6130	≤.063	R	.024	R	.031	M	.039
	Carbon Steel, Alloy Steel	MV1020 MV1030 MP6120 MP6130	≤.063	R	.020	R	.024	R	.028
	Alloy Tool Steel	MP6120 MP6130	≤.063	R	.020	R	.024	R	.028
	Pre-hardened Steel	MP6120 MP6130	≤.063	R	.020	R	.024	R	.028
K	Gray Cast Iron	MC5020	≤.063	R	.024	R	.031	M	.039
		VP15TF	≤.063	M	.024	M	.031	M	.039
	Ductile Cast Iron	MV1020 MV1030 MC5020 VP15TF	≤.063	R	.024	R	.031	M	.039
	Ductile Cast Iron	MV1020 MV1030 MC5020 VP15TF	≤.063	R	.020	R	.024	R	.028
H	Hardened Steel	VP15TF	≤.063	R	.016	R	.020	R	.024

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%.

General Purpose Multi-Corner Insert Type Face Milling Cutter

FACE MILLING
<GENERAL CUTTING>

AHX640S

- PSteel
- MStainless Steel
- KCast Iron
- N
- SHeat Resistant Alloy
- HHardened Steel



Fig. 1
ø2.500"
ø3.000"

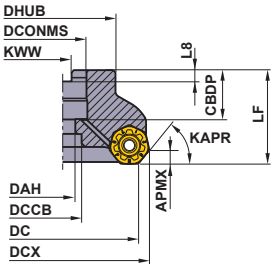
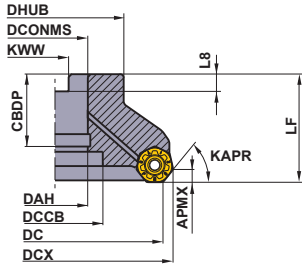
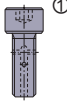
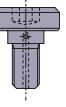


Fig. 2
ø4.000"
ø5.000"
ø6.000"



Right hand tool holder shown.

DC	Set Bolt	Geometry	
ø2.500	HSCU37513H		
ø3.000	HSCU62516H		
ø4.000	HSCU75016H		
ø5.000	MBAU75016H		
ø6.000	MBAU100016H		
ø8.000	—	—	With Coolant Through.

DCONMS=Inch size

(inch)

DC	Order Number	Stock	Coolant Thru	* Number of Teeth	Type	LF	DCX	DCONMS	Fig.	WT(lbs)	APMX
2.500	AHX640SUR2504AA	●	Y	4	R	2.000	2.994	.750	1	2.0	.236
	AHX640SUL2504AA	□	Y	4	L	2.000	2.994	.750	1	2.0	.236
	AHX640SUR2505AA	●	Y	5	R	2.000	2.994	.750	1	1.8	.236
	AHX640SUL2505AA	□	Y	5	L	2.000	2.994	.750	1	1.8	.236
3.000	AHX640SUR0304DA	●	Y	4	R	2.500	3.494	1.250	1	3.7	.236
	AHX640SUL0304DA	□	Y	4	L	2.500	3.494	1.250	1	3.7	.236
	AHX640SUR0306DA	●	Y	6	R	2.500	3.494	1.250	1	3.5	.236
	AHX640SUL0306DA	□	Y	6	L	2.500	3.494	1.250	1	3.5	.236
4.000	AHX640SUR0405EA	●	Y	5	R	2.500	4.494	1.500	2	6.4	.236
	AHX640SUL0405EA	□	Y	5	L	2.500	4.494	1.500	2	6.4	.236
	AHX640SUR0407EA	●	Y	7	R	2.500	4.494	1.500	2	6.4	.236
	AHX640SUL0407EA	□	Y	7	L	2.500	4.494	1.500	2	6.4	.236

* Y=Yes

Note 1) The cutter body includes a set bolt for an arbor.

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



Fig. 1
ø2.500"
ø3.000"

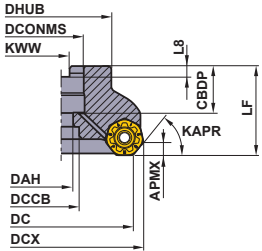


Fig. 2
ø4.000"
ø5.000"
ø6.000"

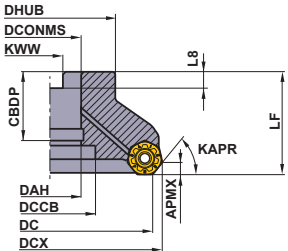
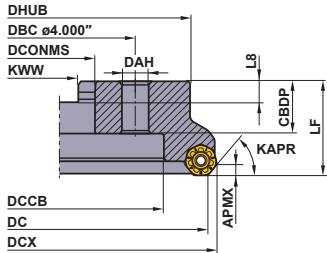
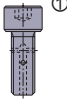
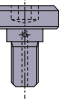


Fig. 3
ø8.000"



Right hand tool holder shown.

DC	Set Bolt	Geometry	
ø2.500	HSCU37513H		
ø3.000	HSCU62516H		
ø4.000	HSCU75016H		
ø5.000	MBAU75016H		
ø6.000	MBAU100016H		
ø8.000	—	—	With Coolant Through.

DCONMS=Inch size

(inch)

DC	Order Number	Stock	Coolant Thru	* Number of Teeth	Type	LF	DCX	DCONMS	Fig.	WT(lbs)	APMX
5.000	AHX640SUR0506EA	●	Y	6	R	2.500	5.494	1.500	2	8.2	.236
	AHX640SUL0506EA	□	Y	6	L	2.500	5.494	1.500	2	8.2	.236
	AHX640SUR0508EA	●	Y	8	R	2.500	5.494	1.500	2	7.9	.236
	AHX640SUL0508EA	□	Y	8	L	2.500	5.494	1.500	2	7.9	.236
6.000	AHX640SUR0607FA	●	Y	7	R	2.500	6.494	2.000	2	11.7	.236
	AHX640SUL0607FA	□	Y	7	L	2.500	6.494	2.000	2	11.7	.236
	AHX640SUR0610FA	●	Y	10	R	2.500	6.494	2.000	2	11.2	.236
	AHX640SUL0610FA	□	Y	10	L	2.500	6.494	2.000	2	11.2	.236
8.000	AHX640SUR0808MN	●	N	8	R	2.500	8.494	2.500	3	18.5	.236
	AHX640SUL0808MN	□	N	8	L	2.500	8.494	2.500	3	18.5	.236
	AHX640SUR0812MN	●	N	12	R	2.500	8.494	2.500	3	18.3	.236
	AHX640SUL0812MN	□	N	12	L	2.500	8.494	2.500	3	18.3	.236

* Y=Yes, N=No

Note 1) The cutter body includes a set bolt for an arbor.

SPARE PARTS

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

* Clamp Torque (lbf-in) : CS5015060T=44

● : USA Stock □ : Made to Order

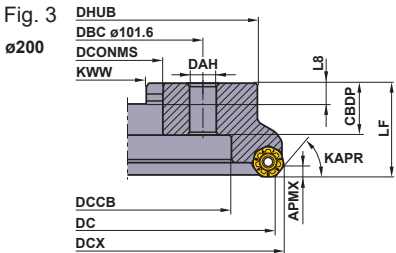
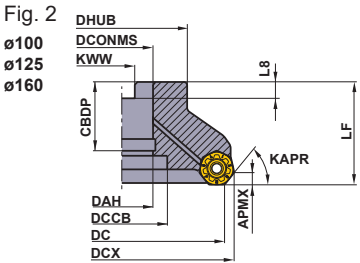
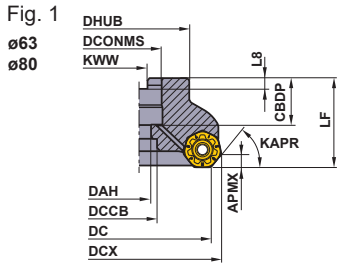
MOUNTING DIMENSION > pp.42-43

General Purpose Multi-Corner Insert Type Face Milling Cutter



Metric Standard

For inch arbors



Right hand tool holder only.

DC	Set Bolt	Geometry
ø63	HSC10030H	①
ø80	HSC12035H	
ø100	MBA16033H	②
ø125	MBA20040H	
ø160	MBA24045H	—
ø200	—	

With Coolant Through.

DCONMS=Inch size

DC	Order Number	Stock	Coolant Thru	* Number of Teeth	LF	DCX	DCONMS	Fig.	WT(kg)	APMX
80	AHX640SR08004CA	★	Y	4	50	92.55	25.4 [1.0"]	1	1.1	6
	AHX640SR08006CA	★	Y	6	50	92.55	25.4 [1.0"]	1	1.0	6
100	AHX640SR10005DA	★	Y	5	50	112.55	31.75 [1.25"]	2	1.7	6
	AHX640SR10007DA	★	Y	7	50	112.55	31.75 [1.25"]	2	1.5	6
125	AHX640SR12506EA	★	Y	6	63	137.55	38.1 [1.50"]	2	3.0	6
	AHX640SR12508EA	★	Y	8	63	137.55	38.1 [1.50"]	2	2.9	6
160	AHX640SR16007FA	★	Y	7	63	172.55	50.8 [2.0"]	2	4.9	6
	AHX640SR16010FA	★	Y	10	63	172.55	50.8 [2.0"]	2	4.7	6
200	AHX640SR20008KN	★	N	8	63	212.55	47.625 [1.875"]	3	8.2	6
	AHX640SR20012KN	★	N	12	63	212.55	47.625 [1.875"]	3	7.9	6

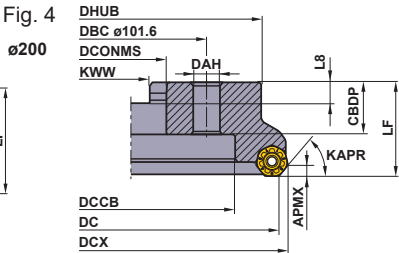
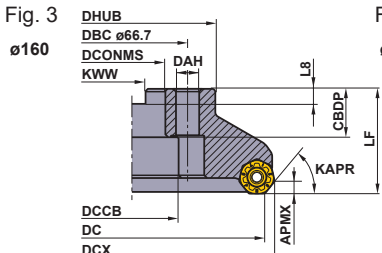
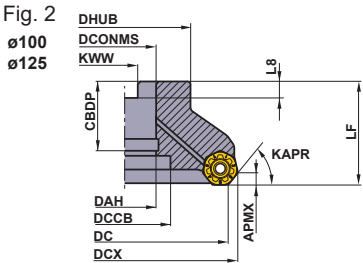
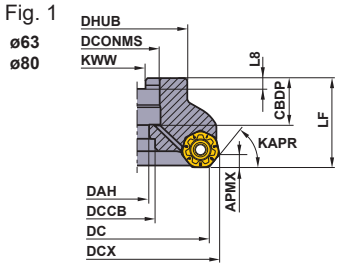
★ Y=Yes, N=No

Note 1) Set bolt not included.



Metric Standard

For metric arbors



Right hand tool holder only.

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

With Coolant Through.

DCONMS=mm size

DC	Order Number	Stock	Coolant Thru	* Number of Teeth	LF	DCX	DCONMS	Fig.	WT(kg)	APMX
63	AHX640S-063A04AR	★	Y	4	50	75.55	22	1	0.7	6
	AHX640S-063A05AR	★	Y	5	50	75.55	22	1	0.6	6
80	AHX640S-080A04AR	★	Y	4	50	92.55	27	1	1.1	6
	AHX640S-080A06AR	★	Y	6	50	92.55	27	1	1.0	6
100	AHX640S-100B05AR	★	Y	5	50	112.55	32	2	1.7	6
	AHX640S-100B07AR	★	Y	7	50	112.55	32	2	1.6	6
125	AHX640S-125B06AR	★	Y	6	63	137.55	40	2	3.1	6
	AHX640S-125B08AR	★	Y	8	63	137.55	40	2	3.0	6
160	AHX640S-160C07NR	★	N	7	63	172.55	40	3	5.4	6
	AHX640S-160C10NR	★	N	10	63	172.55	40	3	5.2	6
200	AHX640S-200C08NR	★	N	8	63	212.55	60	4	7.8	6
	AHX640S-200C12NR	★	N	12	63	212.55	60	4	7.5	6

★ Y=Yes, N=No

Note 1) Set bolt not included.

SPARE PARTS

Tool Holder Type	★	
		
AHX640S	Clamp Screw CS5015060T	Wrench (Insert) TKY20T

★ Clamp Torque (lbf-in) : CS5015060T=44

★ : Stocked in Japan

MOUNTING DIMENSION ➤ pp.44-45

General Purpose Multi-Corner Insert Type Face Milling Cutter

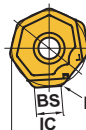
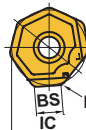
INSERTS

[illegible]

Note 1) The height of the cutter when setting MK or HK inserts is different from when setting MP, MM and FT inserts.

● : USA Stock
<10 inserts in one case>

Wiper Inserts

Material		P	Steel										This is the selection guideline for AHX640S. Please note that the cutting conditions differ depending on multiple factors, for more details refer to the Recommended Cutting Conditions.							
		M	Stainless Steel																	
		K	Cast Iron																	
		S	Heat Resistant and Titanium Alloys																	
		H	Hardened Steel																	
Edge Preparation : E : Round																				
Application	Shape	Order Number	Class	Edge Preparation	Coated								Dimensions (inch)					Geometry		
					XC5010	MC5020	MP6120	MP6130	MP7030	MP9120	MP9130	VP15TF	VP20RT	IC	RE	BS	S		APMX	
For Finish Cutting	 Wiper	WNEU2007ZEN7C-M	E	E			●								.787	.031	.283	.272	.020	 BS IC RE  S
For Finish Cutting	 Wiper	WNEU2007ZEN7C-WP	E	E								●		.787	.031	.280	.272	.020	 BS IC RE  S	
For Finish Cutting	 Wiper	WNEU2006ZEN7C-WK	E	E	●									.787	.031	.291	.258	.020	 BS IC RE  S	

Instructions for use of wiper inserts

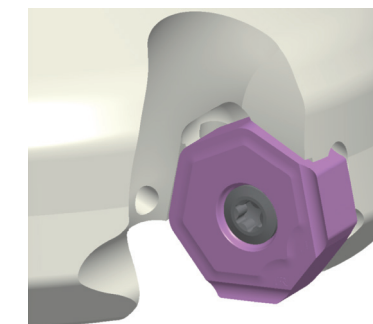


Fig.1

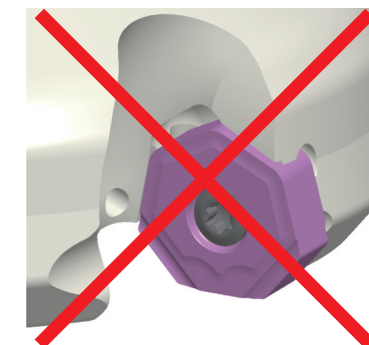


Fig.2

Note 1) These wiper inserts have 2 cutting edges for left-hand use and 2 corners for right-hand use. Position as shown in 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

(inch)

Material	Properties	Cutting Conditions	Grade	Chip-breaker	vc (SFM)	fz (IPT)	ap	ae
P	Mild Steel	Hardness ≤180HB	MV1020	M	985 (655—1310)	.012 (.008—.016)	≤.197	≤.8DC
			MV1030	M	805 (620—985)	.012 (.008—.016)	≤.197	≤.8DC
			MP6120	M	820 (655—985)	.012 (.008—.016)	≤.197	≤.8DC
			VP15TF	MP	820 (655—985)	.012 (.008—.016)	≤.197	≤.8DC
			MP6130	M	720 (560—885)	.016 (.012—.020)	≤.197	≤.8DC
	Carbon Steel, Alloy Steel	Hardness 180—280HB	MV1020	M	850 (560—1150)	.012 (.008—.016)	≤.197	≤.8DC
			MV1030	M	690 (490—885)	.012 (.008—.016)	≤.197	≤.8DC
			MP6120	M	720 (560—885)	.012 (.008—.016)	≤.197	≤.8DC
			VP15TF	MP	720 (560—885)	.012 (.008—.016)	≤.197	≤.8DC
			MP6130	M	620 (460—785)	.016 (.012—.020)	≤.197	≤.8DC
	Carbon Steel, Alloy Steel	Hardness 280—350HB	MV1020	M	590 (330—820)	.012 (.008—.016)	≤.197	≤.8DC
			MV1030	M	440 (295—590)	.012 (.008—.016)	≤.197	≤.8DC
			MP6120	M	460 (330—590)	.012 (.008—.016)	≤.197	≤.8DC
			VP15TF	MP	460 (330—590)	.012 (.008—.016)	≤.197	≤.8DC
			MP6130	M	360 (230—490)	.016 (.012—.020)	≤.197	≤.8DC
	Alloy Tool Steel	Hardness ≤350HB (annealing)	MP6120	M	460 (330—590)	.006 (.004—.008)	≤.118	≤.8DC
			VP15TF	MP	460 (330—590)	.006 (.004—.008)	≤.118	≤.8DC
			MP6130	M	360 (230—490)	.010 (.008—.012)	≤.118	≤.8DC
	Pre-hardened Steel	Hardness 35—45HRC	MP6120	M	460 (330—590)	.006 (.004—.008)	≤.118	≤.8DC
			VP15TF	MP	460 (330—590)	.006 (.004—.008)	≤.197	≤.8DC
			MP6130	M	360 (230—490)	.010 (.008—.012)	≤.118	≤.8DC
M	Austenitic Stainless Steel	Hardness ≤200HB	MV1030	L	605 (395—820)	.008 (.004—.012)	≤.197	≤.8DC
			MP7030	MM	655 (490—820)	.008 (.004—.012)	≤.197	≤.8DC
	Austenitic Stainless Steel	Hardness > 200HB	MV1030	L	460 (260—655)	.008 (.004—.012)	≤.197	≤.8DC
			MP7030	MM	490 (330—655)	.008 (.004—.012)	≤.197	≤.8DC
	Two-phase Stainless Steel	Hardness ≤280HB	MP7030	MM	460 (330—590)	.006 (.002—.010)	≤.197	≤.8DC
	Ferritic and Martensitic Stainless Steel	Hardness ≤200HB	MP7030	MM	655 (490—820)	.008 (.004—.012)	≤.197	≤.8DC
	Ferritic and Martensitic Stainless Steel	Hardness > 200HB	MP7030	MM	490 (330—655)	.008 (.004—.012)	≤.197	≤.8DC
	Precipitation-Hardening Stainless Steel	Hardness < 450HB	MP7030	MM	425 (330—525)	.006 (.002—.010)	≤.197	≤.8DC

(Note1) Wet cutting is recommended for good surface finishing of stainless steel. (Tool life is short compared to dry cutting.)

(Note2) Wet cutting with internal coolant through is recommended for titanium and heat resistant alloys.

(Note3) If the clamping rigidity of the workpiece material is low and the tool overhang is long, adjust the cutting speed and feed in the table above.

(inch)

Material	Properties	Cutting Conditions	Grade	Chip-breaker	vc (SFM)	fz (IPT)	ap	ae
K	Gray Cast Iron	Tensile Strength ≤350MPa	XC5010	MK, FT	2625 (1640—3280)	.004 (.004—.012)	≤.118	≤.8DC
			MC5020	MK, HK	720 (490—985)	.012 (.008—.016)	≤.197	≤.8DC
			VP15TF	MP	590 (425—755)	.012 (.008—.016)	≤.197	≤.8DC
			VP15TF,VP20RT	MK, HK	590 (425—755)	.012 (.008—.016)	≤.197	≤.8DC
	Ductile Cast Iron	Tensile Strength ≤450MPa	XC5010	MK, FT	2625 (1640—3280)	.004 (.004—.012)	≤.118	≤.8DC
			MV1020	MK, HK	785 (425—1150)	.008 (.004—.012)	≤.197	≤.8DC
			MC5020	MK, HK	655 (490—820)	.008 (.004—.012)	≤.197	≤.8DC
			MV1030	MK, HK	605 (395—820)	.008 (.004—.012)	≤.197	≤.8DC
			VP15TF	MP	560 (395—720)	.008 (.004—.012)	≤.197	≤.8DC
			VP15TF,VP20RT	MK, HK	560 (395—720)	.008 (.004—.012)	≤.197	≤.8DC
	Ductile Cast Iron	Tensile Strength ≤800MPa	XC5010	MK, FT	2625 (1640—3280)	.004 (.004—.012)	≤.118	≤.8DC
			MV1020	MK, HK	720 (260—1150)	.008 (.004—.012)	≤.197	≤.8DC
			MC5020	MK, HK	560 (490—655)	.008 (.004—.012)	≤.197	≤.8DC
			MV1030	MK, HK	490 (330—655)	.008 (.004—.012)	≤.197	≤.8DC
			VP15TF	MP	460 (330—590)	.008 (.004—.012)	≤.197	≤.8DC
			VP15TF,VP20RT	MK, HK	460 (330—590)	.008 (.004—.012)	≤.197	≤.8DC
H	Hardened Steel	40—55HRC	VP15TF	MP	260 (195—330)	.006 (.004—.008)	≤.118	≤.8DC

(Note1) Wet cutting is recommended for good surface finishing of stainless steel. (Tool life is short compared to dry cutting.)

(Note2) Wet cutting with internal coolant through is recommended for titanium and heat resistant alloys.

(Note3) If the clamping rigidity of the workpiece material is low and the tool overhang is long, adjust the cutting speed and feed in the table above.

FACE MILLING

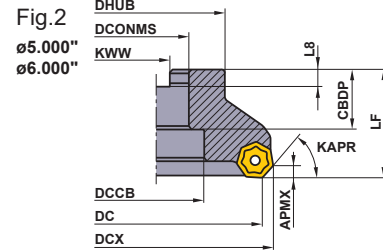
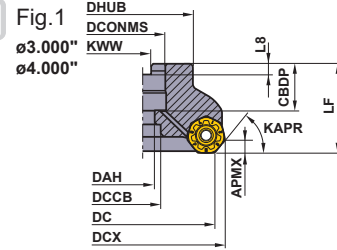
<HIGH-FEED CUTTING FOR CAST IRON>



AHX640W

P M K N S H

Cast Iron



Right hand tool holder shown.

RECOMMENDED CUTTING CONDITIONS

Wet Cutting

(inch)

	Material	Properties	Grade	Chip-breaker	vc (SFM)	fz (IPT)	ap	ae
M	Austenitic Stainless Steel	Hardness ≤200HB	MP7030	MM	410 (330—490)	.006 (.004—.008)	≤.197	≤.8DC
	Austenitic Stainless Steel	Hardness > 200HB	MP7030	MM	330 (245—410)	.006 (.004—.008)	≤.197	≤.8DC
	Two-phase Stainless Steel	Hardness ≤280HB	MP7030	MM	260 (195—330)	.004 (.002—.006)	≤.197	≤.8DC
	Ferritic and Martensitic Stainless Steel	Hardness ≤200HB	MP7030	MM	410 (330—490)	.006 (.004—.008)	≤.197	≤.8DC
	Ferritic and Martensitic Stainless Steel	Hardness > 200HB	MP7030	MM	330 (245—410)	.006 (.004—.008)	≤.197	≤.8DC
	Precipitation Hardening Stainless Steel	Hardness < 450HB	MP7030	MM	230 (165—295)	.004 (.002—.006)	≤.197	≤.8DC
S	Titanium Alloy	—	MP7030	MM	130 (65—165)	.006 (.004—.008)	≤.118	≤.6DC
		—	MP9120	L	195 (165—230)	.004 (.002—.006)	≤.118	≤.6DC
		—	MP9130	L	130 (65—165)	.006 (.004—.008)	≤.118	≤.6DC
	Heat Resistant Alloy	—	MP7030	MM	130 (65—165)	.006 (.004—.008)	≤.118	≤.6DC
		—	MP9120	L	195 (165—230)	.004 (.002—.006)	≤.118	≤.6DC
		—	MP9130	L	130 (65—165)	.006 (.004—.008)	≤.118	≤.6DC

Note1) Recommended wet cutting for good surface finishing of stainless steel. (Tool life is short compared to dry cutting.)
Note2) We recommend wet cutting with internal coolant through for titanium alloy and heat resistant alloy.
Note3) When clamp rigidity is low and tool overhang is long, we recommend reducing the cutting speed and the feed rate by 30%.

Cutting Conditions with Wiper Insert

(inch)

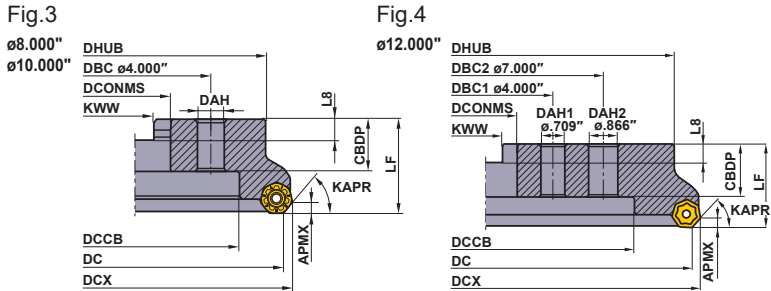
	Material	Properties	Main Insert	Breaker	Wiper Insert	Chip-breaker	vc (SFM)	fz (IPT)	ap	ae
P	Mild Steel	Hardness ≤180HB	VP15TF	MP	VP15TF	WP	820 (655—985)	.012 (.008—.016)	≤.0197	≤.8DC
			MP6120	M	MP6120	M	820 (655—985)	.012 (.008—.016)	≤.0197	≤.8DC
	Carbon Steel,Alloy Steel	Hardness 180—280HB	VP15TF	MP	VP15TF	WP	720 (560—885)	.012 (.008—.016)	≤.0197	≤.8DC
			MP6120	M	MP6120	M	720 (560—885)	.012 (.008—.016)	≤.0197	≤.8DC
	Carbon Steel,Alloy Steel	Hardness 280—350HB	VP15TF	MP	VP15TF	WP	460 (330—590)	.012 (.008—.016)	≤.0197	≤.8DC
			MP6120	M	MP6120	M	460 (330—590)	.012 (.008—.016)	≤.0197	≤.8DC
K	Gray Cast Iron	Tensile Strength ≤350MPa	MC5020	MK,HK	MC5020	WK	1050 (820—1310)	.012 (.008—.016)	≤.0197	≤.8DC
			VP15TF	MP	VP15TF	WP	720 (490—985)	.012 (.008—.016)	≤.0197	≤.8DC
	Ductile Cast Iron	Tensile Strength ≤450MPa	MC5020	MK,HK	MC5020	WK	820 (655—985)	.008 (.004—.012)	≤.0197	≤.8DC
			VP15TF	MP	VP15TF	WP	655 (490—820)	.008 (.004—.012)	≤.0197	≤.8DC
	Ductile Cast Iron	Tensile Strength ≤800MPa	MC5020	MK,HK	MC5020	WK	720 (655—820)	.008 (.004—.012)	≤.0197	≤.8DC
			VP15TF	MP	VP15TF	WP	560 (490—655)	.008 (.004—.012)	≤.0197	≤.8DC
S	Heat Resistant Alloys	—	VP15TF	MP	VP15TF	WP	130 (65—165)	.006 (.004—.008)	≤.0197	≤.8DC
H	Hardened Steel	40—55HRC	VP15TF	MP	VP15TF	WP	260 (195—330)	.006 (.004—.008)	≤.0197	≤.8DC

Note 1) When clamp rigidity is low and tool overhang is long, we recommend reducing the cutting speed and the feed rate by 30%.
Note 2) Please use WP geometry insert in combination with MP geometry inserts, and use WK geometry insert in combination with MK or HK geometry inserts

● : USA Stock □ : Made to Order

MOUNTING DIMENSION > p.46

General Purpose Multi-Corner Insert Type Face Milling Cutter



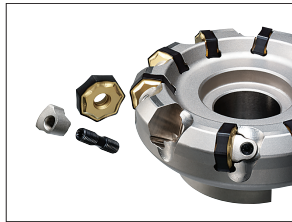
Right hand tool holder shown.

DCONMS=Inch size (inch)

DC	Order Number	Stock	Coolant Thru	* Number of Teeth	Type	LF	DCX	DCONMS	Fig.	WT(lbs)	APMX
8.000	AHX640WR0820M	●	N	20	R	2.500	8.494	2.500	3	19.6	.236
	AHX640WL0820M	□	N	20	L	2.500	8.494	2.500	3	19.6	.236
	AHX640WR0828M	●	N	28	R	2.500	8.494	2.500	3	19.6	.236
	AHX640WL0828M	□	N	28	L	2.500	8.494	2.500	3	19.6	.236
10.000	AHX640WR1024M	●	N	24	R	2.500	10.494	2.500	3	32.0	.236
	AHX640WL1024M	□	N	24	L	2.500	10.494	2.500	3	32.0	.236
	AHX640WR1036M	●	N	36	R	2.500	10.494	2.500	3	32.0	.236
	AHX640WL1036M	□	N	36	L	2.500	10.494	2.500	3	32.0	.236
12.000	AHX640WR1228M	●	N	28	R	2.500	12.494	2.500	4	49.2	.236
	AHX640WL1228M	□	N	28	L	2.500	12.494	2.500	4	49.2	.236
	AHX640WR1242M	●	N	42	R	2.500	12.494	2.500	4	49.2	.236
	AHX640WL1242M	□	N	42	L	2.500	12.494	2.500	4	49.2	.236

* N=No
Note 1) Set bolt not included.

SPARE PARTS



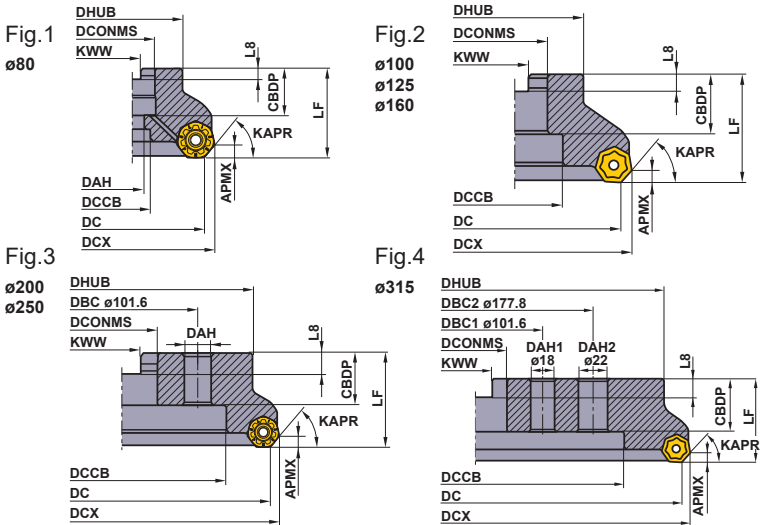
Tool Holder Type			
	Wedge	Clamp Screw	Wrench
AHX640W	CWAHX640WN	LS0622T	TKY15T

* Clamp Torque (lbf-in) : LS0622T=53



Metric Standard

For inch arbors



Right hand tool holder shown. (mm)

DCONMS=Inch size

DC	Order Number	Stock	Coolant Thru	* Number of Teeth	Type	LF	DCX	DCONMS	Fig.	WT(kg)	APMX
80	AHX640WR08008C	★	N	8	R	50	92.6	25.4 [1.0"]	1	1.5	6
	AHX640WL08008C	★	N	8	L	50	92.6	25.4 [1.0"]	1	1.5	6
	AHX640WR08010C	★	N	10	R	50	92.6	25.4 [1.0"]	1	1.5	6
	AHX640WL08010C	★	N	10	L	50	92.6	25.4 [1.0"]	1	1.5	6
100	AHX640WR10010D	★	N	10	R	50	112.6	31.75 [1.25"]	2	2.1	6
	AHX640WL10010D	★	N	10	L	50	112.6	31.75 [1.25"]	2	2.1	6
	AHX640WR10014D	★	N	14	R	50	112.6	31.75 [1.25"]	2	2.1	6
	AHX640WL10014D	★	N	14	L	50	112.6	31.75 [1.25"]	2	2.1	6
125	AHX640WR12512E	★	N	12	R	63	137.6	38.1 [1.50"]	2	3.5	6
	AHX640WL12512E	★	N	12	L	63	137.6	38.1 [1.50"]	2	3.5	6
	AHX640WR12518E	★	N	18	R	63	137.6	38.1 [1.50"]	2	3.5	6
	AHX640WL12518E	★	N	18	L	63	137.6	38.1 [1.50"]	2	3.5	6
160	AHX640WR16016F	★	N	16	R	63	172.6	50.8 [2.0"]	2	5.6	6
	AHX640WL16016F	★	N	16	L	63	172.6	50.8 [2.0"]	2	5.6	6
	AHX640WR16022F	★	N	22	R	63	172.6	50.8 [2.0"]	2	5.6	6
	AHX640WL16022F	★	N	22	L	63	172.6	50.8 [2.0"]	2	5.6	6
200	AHX640WR20020K	★	N	20	R	63	212.6	47.625 [1.875"]	3	9.0	6
	AHX640WL20020K	★	N	20	L	63	212.6	47.625 [1.875"]	3	9.0	6
	AHX640WR20028K	★	N	28	R	63	212.6	47.625 [1.875"]	3	9.0	6
	AHX640WL20028K	★	N	28	L	63	212.6	47.625 [1.875"]	3	9.0	6
250	AHX640WR25024K	★	N	24	R	63	262.6	47.625 [1.875"]	3	14.4	6
	AHX640WL25024K	★	N	24	L	63	262.6	47.625 [1.875"]	3	14.4	6
	AHX640WR25036K	★	N	36	R	63	262.6	47.625 [1.875"]	3	14.4	6
	AHX640WL25036K	★	N	36	L	63	262.6	47.625 [1.875"]	3	14.4	6
315	AHX640WR31528P	★	N	28	R	63	327.6	47.625 [1.875"]	4	23.8	6
	AHX640WL31528P	★	N	28	L	63	327.6	47.625 [1.875"]	4	23.8	6
	AHX640WR31544P	★	N	44	R	63	327.6	47.625 [1.875"]	4	23.8	6
	AHX640WL31544P	★	N	44	L	63	327.6	47.625 [1.875"]	4	23.8	6

* N=No
Note 1) Set bolt not included.

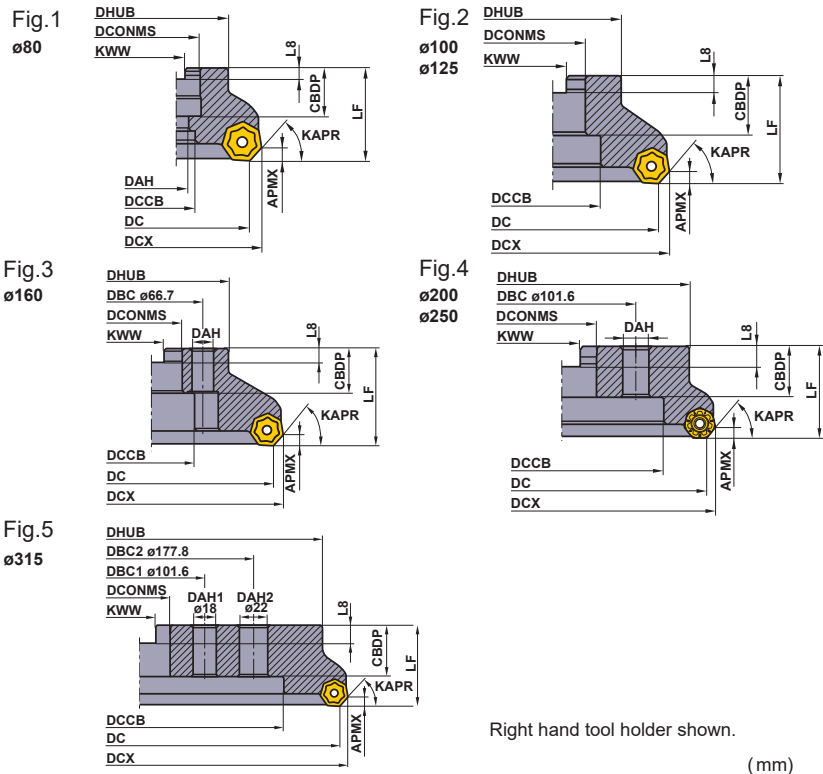
● : USA Stock ★ : Stocked in Japan □ : Made to Order

MOUNTING DIMENSION > pp.46-48

General Purpose Multi-Corner Insert Type Face Milling Cutter



Metric Standard
For metric arbors



DCONMS=mm size

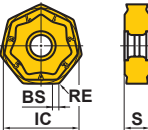
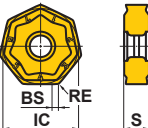
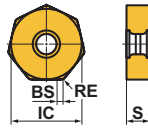
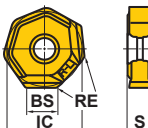
DCX

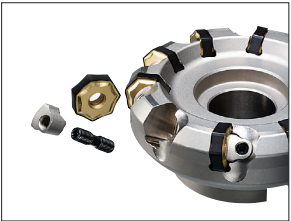
(mm)

DC	Order Number	Stock	Coolant Thru*	Number of Teeth	Type	LF	DCX	DCONMS	Fig.	WT(kg)	APMX
80	AHX640W-080A08R	★	N	8	R	50	92.6	27	1	1.5	6
	AHX640W-080A08L	★	N	8	L	50	92.6	27	1	1.5	6
	AHX640W-080A10R	★	N	10	R	50	92.6	27	1	1.5	6
	AHX640W-080A10L	★	N	10	L	50	92.6	27	1	1.5	6
100	AHX640W-100B10R	★	N	10	R	50	112.6	32	2	2.1	6
	AHX640W-100B10L	★	N	10	L	50	112.6	32	2	2.1	6
	AHX640W-100B14R	★	N	14	R	50	112.6	32	2	2.1	6
	AHX640W-100B14L	★	N	14	L	50	112.6	32	2	2.1	6
125	AHX640W-125B12R	★	N	12	R	63	137.6	40	2	3.1	6
	AHX640W-125B12L	★	N	12	L	63	137.6	40	2	3.1	6
	AHX640W-125B18R	★	N	18	R	63	137.6	40	2	3.1	6
	AHX640W-125B18L	★	N	18	L	63	137.6	40	2	3.1	6
160	AHX640W-160C16R	★	N	16	R	63	172.6	40	3	5.6	6
	AHX640W-160C16L	★	N	16	L	63	172.6	40	3	5.6	6
	AHX640W-160C22R	★	N	22	R	63	172.6	40	3	5.6	6
	AHX640W-160C22L	★	N	22	L	63	172.6	40	3	5.6	6
200	AHX640W-200C20R	★	N	20	R	63	212.6	60	4	8.0	6
	AHX640W-200C20L	★	N	20	L	63	212.6	60	4	8.0	6
	AHX640W-200C28R	★	N	28	R	63	212.6	60	4	8.0	6
	AHX640W-200C28L	★	N	28	L	63	212.6	60	4	8.0	6
250	AHX640W-250C24R	★	N	24	R	63	262.6	60	4	12.6	6
	AHX640W-250C24L	★	N	24	L	63	262.6	60	4	12.6	6
	AHX640W-250C36R	★	N	36	R	63	262.6	60	4	12.6	6
	AHX640W-250C36L	★	N	36	L	63	262.6	60	4	12.6	6
315	AHX640W-315C28R	★	N	28	R	80	327.6	60	5	31.5	6
	AHX640W-315C28L	★	N	28	L	80	327.6	60	5	31.5	6
	AHX640W-315C44R	★	N	44	R	80	327.6	60	5	31.5	6
	AHX640W-315C44L	★	N	44	L	80	327.6	60	5	31.5	6

★ N=No
Note 1) Set bolt not included.
● : USA Stock ★ : Stocked in Japan <10 inserts in one case>

INSERTS

Material		K	Cast Iron		◆◆◆◆◆◆						This is the selection guideline for AHX640W. Please note that the cutting conditions differ depending on multiple factors, for more details refer to the Recommended Cutting Conditions. Edge Preparation : E : Round						
Application	Shape	Order Number	Class	Edge Preparation	Coated						Dimensions(inch)					Geometry	
					XC5010	MC5020	MV1020	MV1030	VP15TF	VP20RT	IC	RE	BS	S	APMX		
General Cutting		NNMU200608ZEN-MK	M	E	●	●	●	●	●	●	.787	.031	.039	.240	.236		
Unstable Cutting		NNMU200608ZEN-HK	M	E		●	●	●	●	●	.787	.031	.039	.240	.236		
		NNMQ200708ZEN-FT	M	E	●							.787	.031	.039	.258	.236	
Finish Cutting	 Wiper	WNEU2006ZEN7C-WK	E	E		●					.787	.031	.291	.258	.020		



SPARE PARTS

Tool Holder Type			
	Wedge	Clamp Screw	Wrench
AHX640W	CWAHX640WN	LS0622T	TKY15T

* Clamp Torque (lbf-in) : LS0622T=53

Recommended Cutting Conditions

Dry·Wet Cutting

(inch)

Material	Properties	Cutting Conditions	Grade	Chip-breaker	Cutting Speed vc (SFM)	Feed per Tooth fz (IPT)	ap	ae
K	Gray Cast Iron	●	XC5010	MK, FT	2625 (1640—3280)	.004 (.004—.012)	≤.118	≤.8DC
		●	MC5020	MK, HK	720 (490—985)	.012 (.008—.016)	≤.197	≤.8DC
		●✖	VP15TF,VP20RT	MK, HK	590 (425—755)	.012 (.008—.016)	≤.197	≤.8DC
	Ductile Cast Iron	●	XC5010	MK, FT	2625 (1640—3280)	.004 (.004—.012)	≤.118	≤.8DC
		●	MC5020	MK, HK	655 (490—820)	.008 (.004—.012)	≤.197	≤.8DC
		●	MV1020	MK, HK	785 (425—1150)	.008 (.004—.012)	≤.197	≤.8DC
		●	MV1030	MK, HK	605 (395—820)	.008 (.004—.012)	≤.197	≤.8DC
		●✖	VP15TF,VP20RT	MK, HK	560 (395—720)	.008 (.004—.012)	≤.197	≤.8DC
	Ductile Cast Iron	●	XC5010	MK, FT	2625 (1640—3280)	.004 (.004—.012)	≤.118	≤.8DC
		●	MC5020	MK, HK	560 (490—655)	.008 (.004—.012)	≤.197	≤.8DC
		●	MV1020	MK, HK	720 (260—1150)	.008 (.004—.012)	≤.197	≤.8DC
		●	MV1030	MK, HK	490 (330—655)	.008 (.004—.012)	≤.197	≤.8DC
		●✖	VP15TF,VP20RT	MK, HK	460 (330—590)	.008 (.004—.012)	≤.197	≤.8DC

(Note 1) With reference to the above examples, adjust the cutting conditions according to the machining setup.
(Note 2) Tool life when wet cutting is short compared to dry cutting.
(Note 3) MV1020 and MV1030 are not recommended for wet cutting.

Finishing (Use of Wiper Inserts)

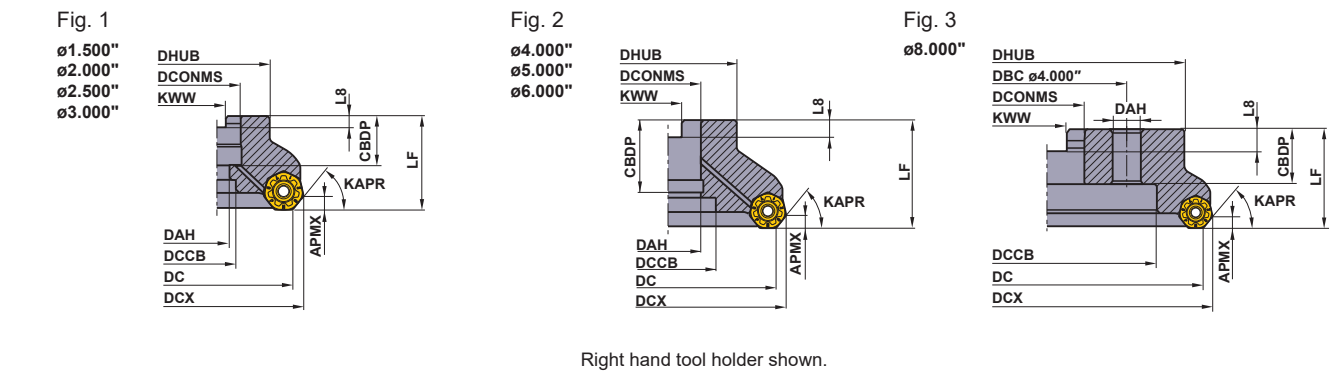
(inch)

Material	Properties	Cutting Conditions	Grade	Chip-breaker	vc (SFM)	fz (IPT)	ap
K	Gray Cast Iron	●	MC5020	MK, HK	1050 (820—1310)	.008 (.004—.012)	<.020
		●	MC5020	MK, HK	885 (655—1150)	.008 (.004—.012)	.020—.118
	Ductile Cast Iron	●	MC5020	MK, HK	885 (655—1150)	.008 (.004—.012)	<.020
		●	MC5020	MK, HK	720 (655—820)	.008 (.004—.012)	.020—.118

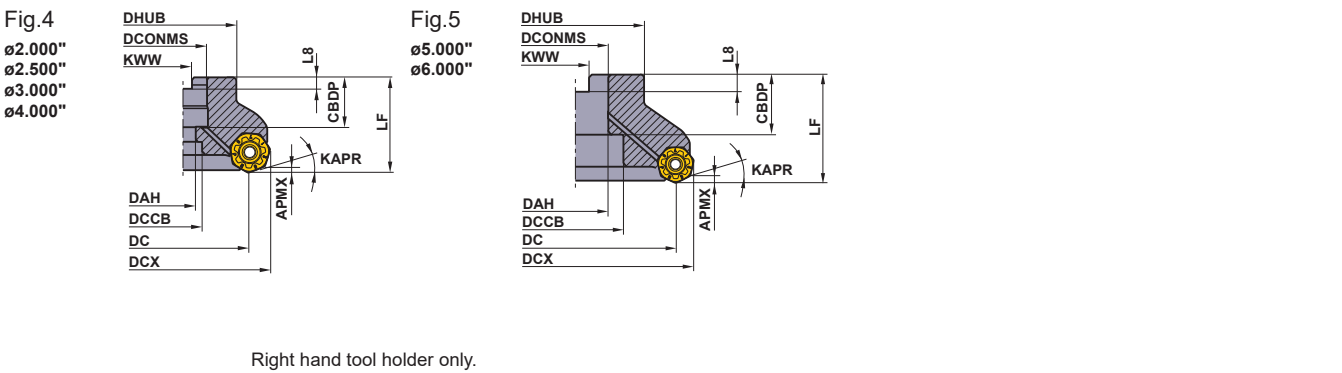
(Note 3) Please use 2-3 pieces of wiper inserts where the feed rate exceeds 6mm/rev.

Memo

AHX440S, AHX475S, AHX640S Mounting Dimension

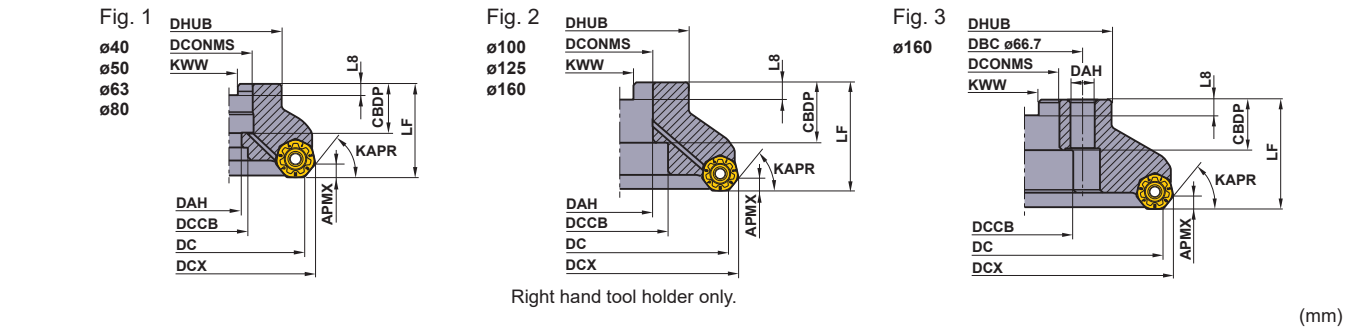


(inch)									
DCONMS	DC	Order Number	CBDP	DAH	DCCB	DHUB	KWW	L8	Fig.
.500	1.500	AHX440SUR1503SA	.630	.276	.433	1.44	.250	.156	1
.500	1.500	AHX440SUR1504SA	.630	.276	.433	1.44	.250	.156	1
.750	2.000	AHX440SUR0204AA	.748	.413	.630	1.75	.313	.187	1
.750	2.000	AHX440SUR0205AA	.748	.413	.630	1.75	.313	.187	1
.750	2.000	AHX440SUR0206AA	.748	.413	.630	1.75	.313	.187	1
.750	2.000	AHX475SUR0204AA	.748	.413	.630	1.88	.313	.187	4
.750	2.000	AHX475SUR0205AA	.748	.413	.630	1.88	.313	.187	4
.750	2.500	AHX640SUL2504AA	.748	.413	.630	1.75	.313	.187	1
.750	2.500	AHX640SUL2505AA	.748	.413	.630	1.75	.313	.187	1
.750	2.500	AHX640SUR2504AA	.748	.413	.630	1.75	.313	.187	1
.750	2.500	AHX640SUR2505AA	.748	.413	.630	1.75	.313	.187	1
1.000	2.500	AHX440SUR2505CA	.945	.539	.787	2.19	.375	.219	1
1.000	2.500	AHX440SUR2506CA	.945	.539	.787	2.19	.375	.219	1
1.000	2.500	AHX440SUR2508CA	.945	.539	.787	2.19	.375	.219	1
1.000	2.500	AHX475SUR2505CA	.945	.539	.787	2.38	.375	.219	4
1.000	2.500	AHX475SUR2506CA	.945	.539	.787	2.38	.375	.219	4
1.000	3.000	AHX440SUR0306CA	.945	.539	.787	2.19	.375	.219	1
1.000	3.000	AHX440SUR0308CA	.945	.539	.787	2.19	.375	.219	1
1.000	3.000	AHX440SUR0310CA	.945	.539	.787	2.19	.375	.219	1
1.000	3.000	AHX475SUR0306CA	.945	.539	.787	2.75	.375	.219	4
1.000	3.000	AHX475SUR0308CA	.945	.539	.787	2.75	.375	.219	4
1.250	3.000	AHX475SUR0306DA	1.260	.669	1.024	2.88	.500	.281	4
1.250	3.000	AHX475SUR0308DA	1.260	.669	1.024	2.88	.500	.281	4
1.250	3.000	AHX640SUL0304DA	1.260	.669	1.024	2.88	.500	.281	1
1.250	3.000	AHX640SUL0306DA	1.260	.669	1.024	2.88	.500	.281	1
1.250	3.000	AHX640SUR0304DA	1.260	.669	1.024	2.88	.500	.281	1
1.250	3.000	AHX640SUR0306DA	1.260	.669	1.024	2.88	.500	.281	1
1.500	4.000	AHX440SUR0407EA	1.417	—	1.500	3.50	.625	.375	2
1.500	4.000	AHX440SUR0410EA	1.417	—	1.500	3.50	.625	.375	2

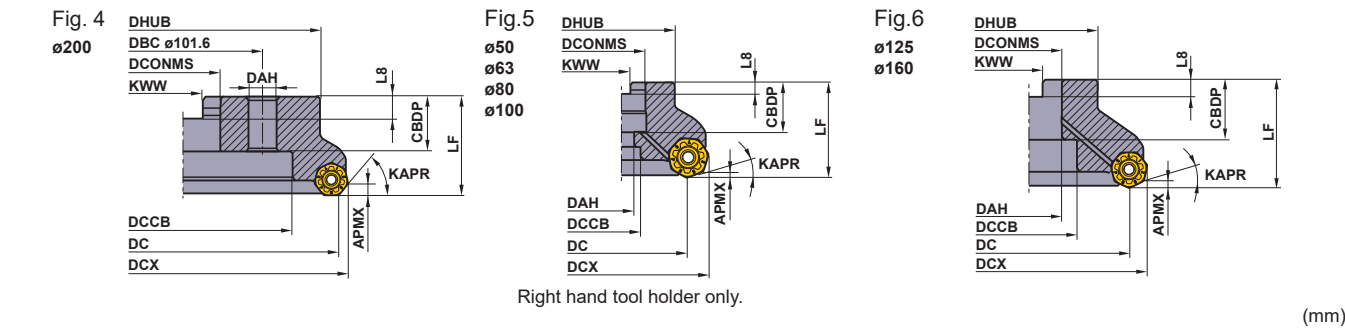


(inch)									
DCONMS	DC	Order Number	CBDP	DAH	DCCB	DHUB	KWW	L8	Fig.
1.500	4.000	AHX440SUR0412EA	1.417	—	1.500	3.50	.625	.375	2
1.500	4.000	AHX475SUR0407EA	1.181	.787	1.181	3.75	.625	.375	4
1.500	4.000	AHX475SUR0409EA	1.181	.787	1.181	3.75	.625	.375	4
1.500	4.000	AHX640SUL0405EA	1.181	—	.787	3.81	.625	.375	2
1.500	4.000	AHX640SUL0407EA	1.181	—	.787	3.81	.625	.375	2
1.500	4.000	AHX640SUR0405EA	1.181	—	.787	3.81	.625	.375	2
1.500	4.000	AHX640SUR0407EA	1.181	—	.787	3.81	.625	.375	2
1.500	5.000	AHX440SUR0508EA	1.417	—	1.500	3.81	.625	.375	2
1.500	5.000	AHX440SUR0512EA	1.417	—	1.500	3.81	.625	.375	2
1.500	5.000	AHX440SUR0514EA	1.417	—	1.500	3.81	.625	.375	2
1.500	5.000	AHX475SUR0508EA	1.417	—	1.500	3.81	.625	.375	5
1.500	5.000	AHX475SUR0510EA	1.417	—	1.500	3.81	.625	.375	5
1.500	5.000	AHX640SUL0506EA	1.575	—	2.205	3.81	.625	.375	2
1.500	5.000	AHX640SUL0508EA	1.575	—	2.205	3.81	.625	.375	2
1.500	5.000	AHX640SUR0506EA	1.575	—	2.205	3.81	.625	.375	2
1.500	5.000	AHX640SUR0508EA	1.575	—	2.205	3.81	.625	.375	2
1.500	6.000	AHX440SUR0610EA	1.417	—	1.500	3.81	.625	.375	2
1.500	6.000	AHX440SUR0614EA	1.417	—	1.500	3.81	.625	.375	2
1.500	6.000	AHX440SUR0616EA	1.417	—	1.500	3.81	.625	.375	2
2.000	6.000	AHX475SUR0610FA	1.417	—	3.228	4.88	.750	.437	5
2.000	6.000	AHX475SUR0612FA	1.417	—	3.228	4.88	.750	.437	5
2.000	6.000	AHX640SUL0607FA	1.693	—	3.228	4.88	.750	.437	2
2.000	6.000	AHX640SUL0610FA	1.693	—	3.228	4.88	.750	.437	2
2.000	6.000	AHX640SUR0607FA	1.693	—	3.228	4.88	.750	.437	2
2.000	6.000	AHX640SUR0610FA	1.693	—	3.228	4.88	.750	.437	2
2.500	8.000	AHX640SUL0808MN	1.378	—	5.512	6.89	1.000	.560	3
2.500	8.000	AHX640SUL0812MN	1.378	—	5.512	6.89	1.000	.560	3
2.500	8.000	AHX640SUR0808MN	1.378	—	5.512	6.89	1.000	.560	3
2.500	8.000	AHX640SUR0812MN	1.378	—	5.512	6.89	1.000	.560	3

AHX440S, AHX475S, AHX640S Mounting Dimension

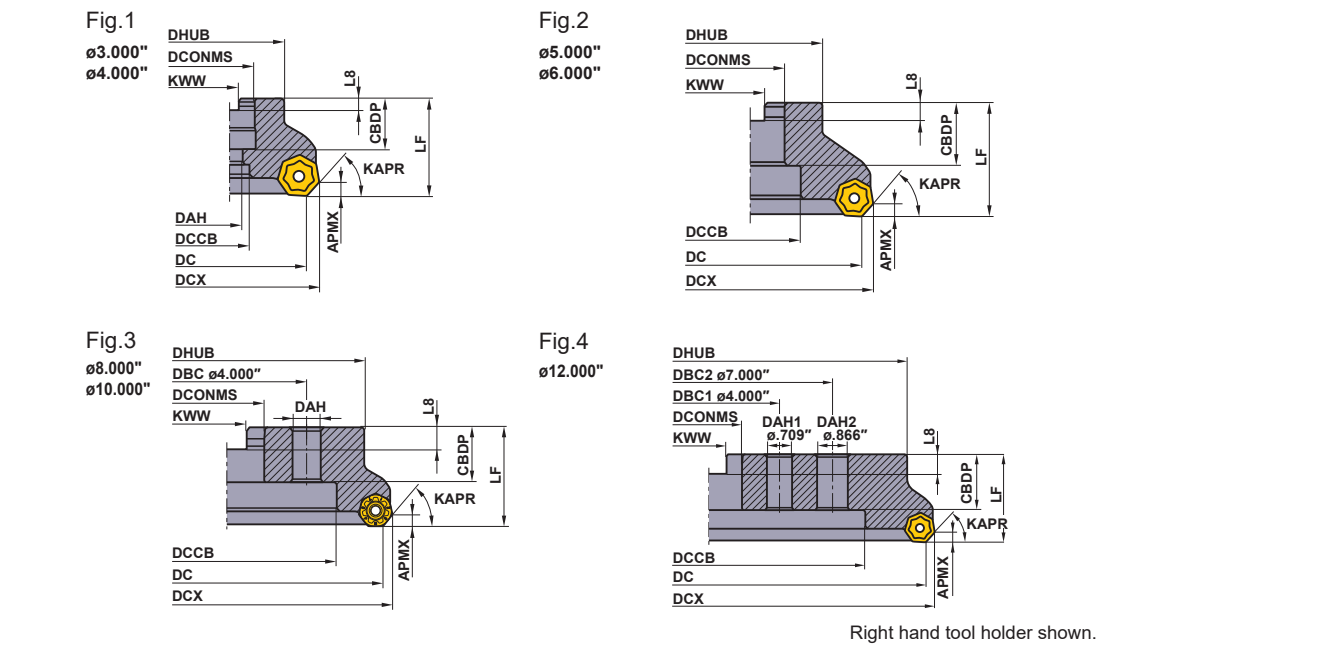


DCONMS	DC	Order Number	CBDP	DAH	DCCB	DHUB	KWW	L8	Fig.
16	40	AHX440S-040A03AR	18	9	14	37	8.4	5.6	1
16	40	AHX440S-040A04AR	18	9	14	37	8.4	5.6	1
22	50	AHX440S-050A04AR	20	11	17	47	10.4	6.3	1
22	50	AHX440S-050A05AR	20	11	17	47	10.4	6.3	1
22	50	AHX440S-050A06AR	20	11	17	47	10.4	6.3	1
22	50	AHX475S-050A04AR	20	11	17	47	10.4	6.3	5
22	50	AHX475S-050A05AR	20	11	17	47	10.4	6.3	5
22	63	AHX440S-063A05AR	20	11	17	50	10.4	6.3	1
22	63	AHX440S-063A06AR	20	11	17	50	10.4	6.3	1
22	63	AHX440S-063A08AR	20	11	17	50	10.4	6.3	1
22	63	AHX475S-063A05AR	20	11	17	60	10.4	6.3	5
22	63	AHX475S-063A06AR	20	11	17	60	10.4	6.3	5
22	63	AHX640S-063A04AR	20	11	17	50	10.4	6.3	1
22	63	AHX640S-063A05AR	20	11	17	50	10.4	6.3	1
25.4	80	AHX440SR08006CA	26	13	20	56	9.5	6	1
25.4	80	AHX440SR08008CA	26	13	20	56	9.5	6	1
25.4	80	AHX440SR08010CA	26	13	20	56	9.5	6	1
25.4	80	AHX640SR08004CA	26	13	20	56	9.5	6	1
25.4	80	AHX640SR08006CA	26	13	20	56	9.5	6	1
27	80	AHX440S-080A06AR	23	13	20	56	12.4	7	1
27	80	AHX440S-080A08AR	23	13	20	56	12.4	7	1
27	80	AHX440S-080A10AR	23	13	20	56	12.4	7	1
27	80	AHX475S-080A06AR	23	13	20	76	12.4	7	5
27	80	AHX475S-080A08AR	23	13	20	76	12.4	7	5
27	80	AHX640S-080A04AR	23	13	20	56	12.4	7	1
27	80	AHX640S-080A06AR	23	13	20	56	12.4	7	1
31.75	80	AHX475SR08006DA	32	17	26	76	12.7	8	5
31.75	80	AHX475SR08008DA	32	17	26	76	12.7	8	5
31.75	100	AHX440SR10007DA	37	—	45	70	12.7	8	2
31.75	100	AHX440SR10010DA	37	—	45	70	12.7	8	2
31.75	100	AHX440SR10012DA	37	—	45	70	12.7	8	2
31.75	100	AHX475SR10007DA	32	17	26	96	12.7	8	5
31.75	100	AHX475SR10009DA	32	17	26	96	12.7	8	5
31.75	100	AHX640SR10005DA	35	—	45	70	12.7	8	2
31.75	100	AHX640SR10007DA	35	—	45	70	12.7	8	2
32	100	AHX440S-100B07AR	32	—	45	78	14.4	8	2
32	100	AHX440S-100B10AR	32	—	45	78	14.4	8	2
32	100	AHX440S-100B12AR	32	—	45	78	14.4	8	2



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

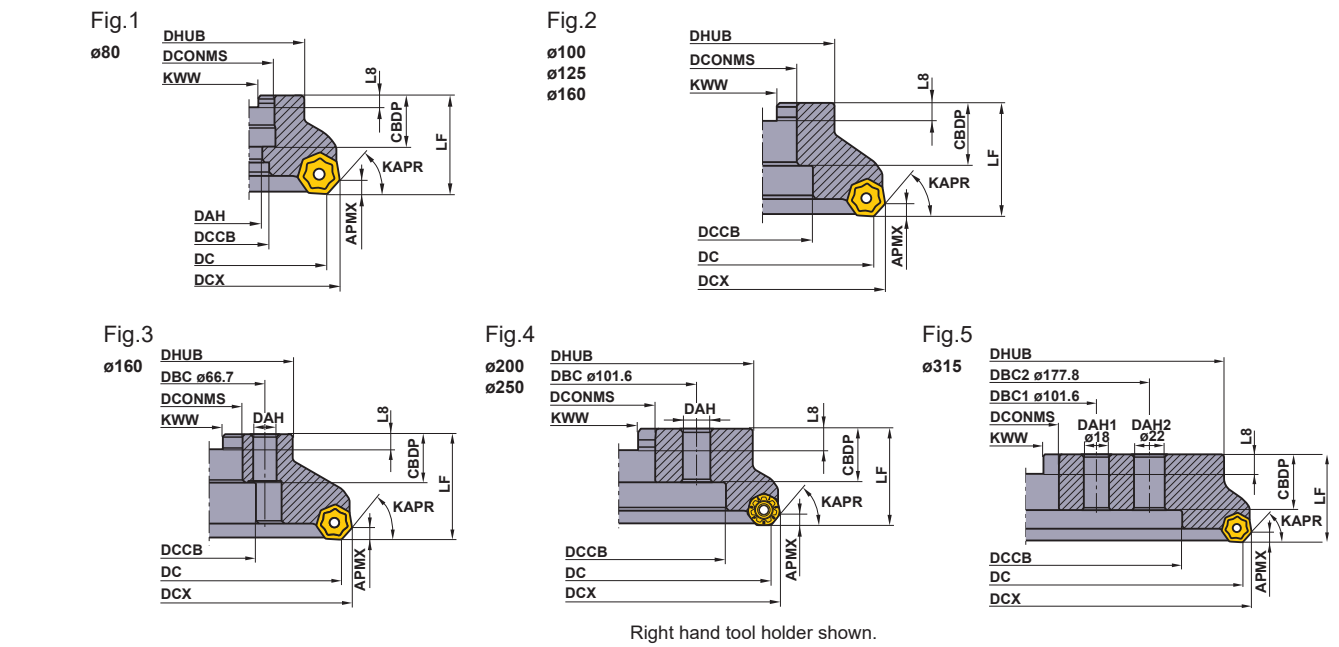
AHX640W Mounting Dimension



(inch)

DCONMS	DC	Order Number	CBDP	DAH	DCCB	DHUB	KWW	L8	Fig.
1.250	3.000	AHX640WL0308D	1.260	.669	1.024	2.87	.500	.281	1
1.250	3.000	AHX640WL0310D	1.260	.669	1.024	2.87	.500	.281	1
1.250	3.000	AHX640WR0308D	1.260	.669	1.024	2.87	.500	.281	1
1.250	3.000	AHX640WR0310D	1.260	.669	1.024	2.87	.500	.281	1
1.500	4.000	AHX640WL0410E	1.181	.787	1.181	3.80	.625	.375	1
1.500	4.000	AHX640WL0414E	1.181	.787	1.181	3.80	.625	.375	1
1.500	4.000	AHX640WR0410E	1.181	.787	1.181	3.80	.625	.375	1
1.500	4.000	AHX640WR0414E	1.181	.787	1.181	3.80	.625	.375	1
1.500	5.000	AHX640WL0512E	1.378	—	2.362	3.80	.625	.375	2
1.500	5.000	AHX640WL0518E	1.378	—	2.362	3.80	.625	.375	2
1.500	5.000	AHX640WR0512E	1.378	—	2.362	3.80	.625	.375	2
1.500	5.000	AHX640WR0518E	1.378	—	2.362	3.80	.625	.375	2
2.000	6.000	AHX640WL0614F	1.496	—	3.150	4.72	.750	.437	2
2.000	6.000	AHX640WL0620F	1.496	—	3.150	4.72	.750	.437	2
2.000	6.000	AHX640WR0614F	1.496	—	3.150	4.72	.750	.437	2
2.000	6.000	AHX640WR0620F	1.496	—	3.150	4.72	.750	.437	2
2.500	8.000	AHX640WL0820M	1.378	—	5.512	6.89	1.000	.560	3
2.500	8.000	AHX640WL0828M	1.378	—	5.512	6.89	1.000	.560	3
2.500	8.000	AHX640WR0820M	1.378	—	5.512	6.89	1.000	.560	3
2.500	8.000	AHX640WR0828M	1.378	—	5.512	6.89	1.000	.560	3
2.500	10.000	AHX640WL1024M	1.378	—	7.087	8.66	1.000	.560	3
2.500	10.000	AHX640WL1036M	1.378	—	7.087	8.66	1.000	.560	3
2.500	10.000	AHX640WR1024M	1.378	—	7.087	8.66	1.000	.560	3
2.500	10.000	AHX640WR1036M	1.378	—	7.087	8.66	1.000	.560	3
2.500	12.000	AHX640WL1228M	1.575	—	9.646	11.22	1.000	.560	4
2.500	12.000	AHX640WL1242M	1.575	—	9.646	11.22	1.000	.560	4
2.500	12.000	AHX640WR1228M	1.575	—	9.646	11.22	1.000	.560	4
2.500	12.000	AHX640WR1242M	1.575	—	9.646	11.22	1.000	.560	4

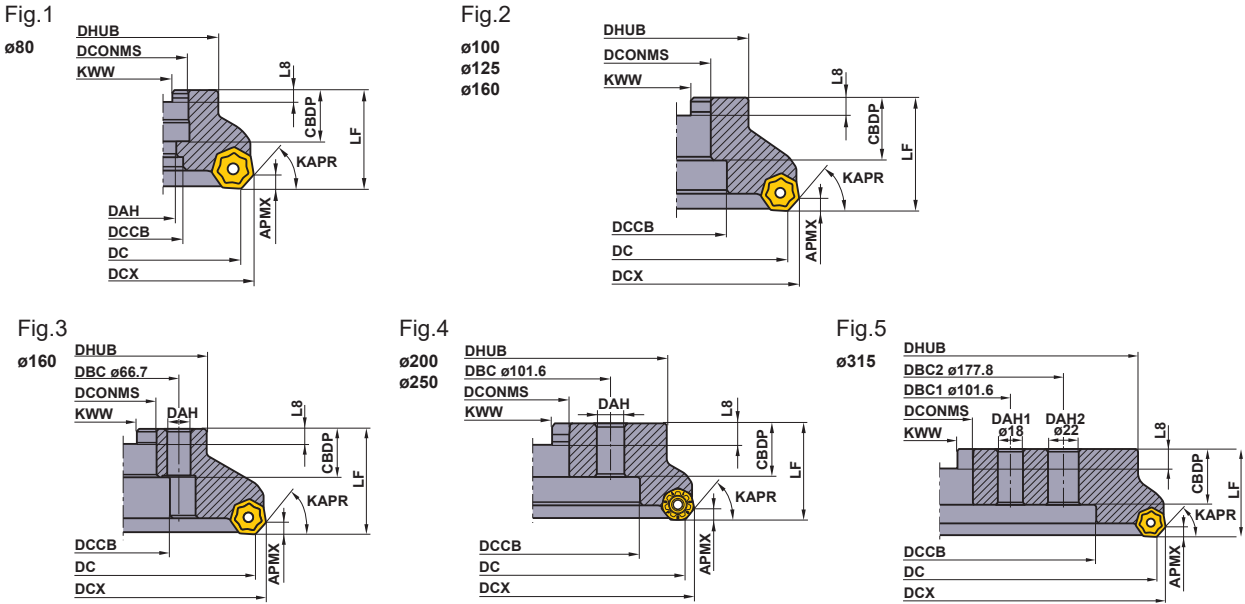
AHX640W Mounting Dimension



(mm)

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

AHX640W Mounting Dimension



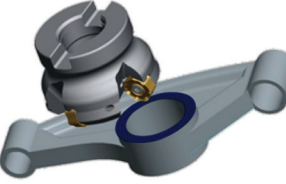
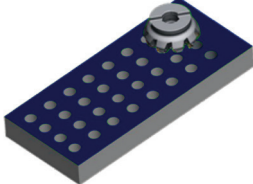
Right hand tool holder shown.

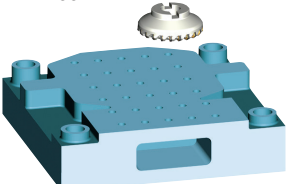
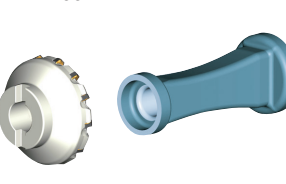
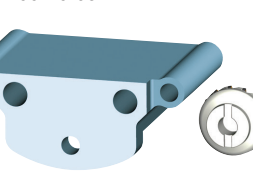
(mm)

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

Memo

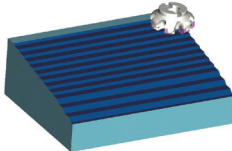
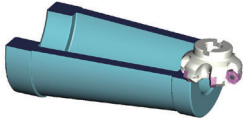
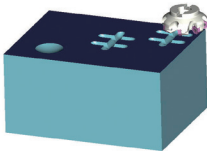
Application Example

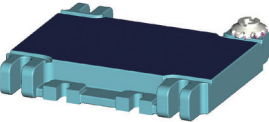
Component		Parts for Turbo	Automobile Parts	Steel Plate for Pressure Containers
Workpiece	AISI 309		ASTM 80-55-06	W-nr 1.0425
				
	Tool		AHX440S-063A08AR	AHX440S-050A04AR
	Cutting Speed (SFM)		325	460
	Feed per Tooth (IPT)		.012	.006
Cutting Conditions	Depth of Cut ap (inch)		.118	.031
	Depth of Cut ae (inch)		1.969	1.378
	Cutting Mode		Dry Cutting	Wet Cutting
Results		AHX440S achieved 1.4 times the tool life of conventional.	AHX440S achieved 1.4 times the tool life of conventional. 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 whether burrs were generated around holes.

Component		Press Mold Base	Housing Case	Automotive Suspension Part
Workpiece	ASTM No35B		ASTM No35B	ASTM 100-70-03
				
	Tool		AHX640WR16016F	AHX640WR12512E
	Cutting Speed (SFM)		785	490
	Table Feed (IPM)		121	19.7
Cutting Conditions	Feed per Tooth (IPT)		.016	.004
	Depth of Cut ap (inch)		.118-.157	.118
	Depth of Cut ae (inch)		6	1.57
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 iron, 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.

Application Example

Component		Machine Parts		Machine Parts		Mold	
Workpiece		AISI 1045		AISI 4140		AISI L6 (HRC43)	
							
Tool		Conventional	AHX640SR10007DA	Conventional	AHX640SR10007DA	Conventional	AHX640SR10007DA
Cutting Conditions	Cutting Speed (SFM)	655	820	245	330	310	310
	Feed per Tooth (IPT)	.007	.009	.002	.007	.008	.010
	Depth of Cut ap (inch)	.197	.197	.039	.079	.118	.118
	Depth of Cut ae (inch)	2.953	2.953	2.756	2.756	2.362	2.362
Cutting Mode		Air Blow	Air Blow	Air Blow	Air Blow	Air Blow	Air Blow
Results		With older products, raising the cutting speed to 820 SFM 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	ASTM No45B		
	Tool		Conventional
	Cutting Speed (SFM)		230
	Feed per Tooth (IPT)		.059
	Depth of Cut ap (inch)		.039
Cutting Conditions	Depth of Cut ae (inch)		3.937
	Cutting Mode		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.



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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.

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