

GUIDE TO MILLING TOOL INSERTS

●Organization for Milling insert Standards section

- ① Organized according to cutter type then, its' respective insert description number.
- ② Cutters are arranged in alphabetical order.

●Organization for Classification section

- ① Classified into milling inserts and wiper inserts.
- ② Inserts are arranged in alphabetical order.

ORGANIZED ACCORDING TO CUTTER TYPE IN ALPHABETICAL ORDER

INSERT DESCRIPTION NUMBER

INSERT TOLERANCE

INSERT GRADE

INSERT DIMENSIONS

INSERTS ARE ARRANGED IN ALPHABETICAL ORDER

CUTTER TYPE & PHOTO OF INSERT

MILLING TOOL INSERTS

MILLING INSERTS

Work Material: P Steel, M Stainless Steel, K Cast Iron, N Non-Ferrous Metal, S Heat-treatable Alloy, Titanium Alloy, Materials

Cutting Conditions: ● Stable Cutting, ● General Cutting, ● Unstable Cutting

Legend: ● Stable Cutting, ● General Cutting, ● Unstable Cutting

Table columns: Cutter Type, Insert Geometry, Order Number, (ISO) Number, Dimensions (inch), IC, S, BS, RE

MILLING TOOL INSERTS

CLASSIFICATION

Table columns: Order Number, (ISO) Number, Cutter Type, Page, Order Number, (ISO) Number, Cutter Type, Page

LEGEND FOR STOCK STATUS MARK
is shown on the left hand page of each double-page spread.

GRADE APPLICATION RECOMMENDED FOR EACH WORK MATERIAL
cutting conditions suitable for each work materials are shown as a general guide to select grade.

- Stable Cutting
- General Cutting
- Unstable Cutting

PAGE TITLE BY TOOL APPLICATION

PAGE TITLE

PRODUCT SECTION

PAGE REFERENCE
indicates the reference pages for detailed standards of specific inserts.

●To Order: Please specify insert number and grade.

MILLING TOOL INSERTS

- GRADE
- SINTERED CBN / PCD

IDENTIFICATION	J002
GRADES FOR MILLING.....	J004
MILLING APPLICATION RANGE.....	J005
COATED CARBIDE(CVD and PVD)	J008
CERMET	J010
CEMENTED CARBIDE.....	J011
CBN(SINTERED CBN)	J012
PCD(SINTERED DIAMOND).....	J013









STANDARD MILLING INSERTS








ROTATING INSERTS	J014
CBN AND PCD	J036

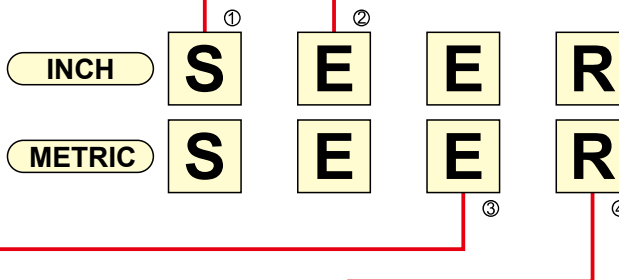
CLASSIFICATION.....	J038
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IDENTIFICATION

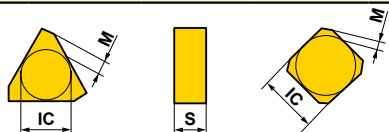
ISO CODES FOR MILLING

Symbol	Insert Shape	
S	Square	
T	Triangular	
C	Rhombic 80°	
N	Regular Heptagon	
O	Octagonal	
M	Rhombic 86°	
A	Parallelogram 85°	
R	Round	
X	Special Design	—
W	Wiper	—

Symbol	Relief Angle AN
C	7° 
D	15° 
E	20° 
F	25° 
G	30° 
N	0° 
P	11° 
O	Other
X	Other








③ Tolerance Class



Class	IC	M	S
C	.250	±.001	±.0005
	.375	±.001	±.001
E	.500	±.001	±.001
	.625	±.001	±.001
K	.250	±.002	±.0005
	.375	±.002	±.0005
	.500	±.003	±.0005
	.625	±.003	±.0005
N	.250	±.002	±.003
	.375	±.002	±.003
	.500	±.003	±.006
M	.250	±.002	±.003
	.375	±.002	±.003
	.500	±.003	±.005
	.625	±.004	±.006

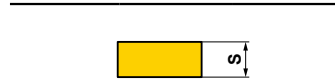
④ Chip Breaker With or Without Hole

Metric				
Symbol	Hole	Hole Configuration	Chip-breakers	Figure
W	With Hole	Cylindrical Hole	No	
T	With Hole	+ One Countersink (40°-60°)	Onesided	
B	With Hole	Cylindrical Hole + One Countersink (70°-90°)	No	
N	Without Hole	—	No	
R	Without Hole	—	Onesided	
X	—	—	—	Special Design

Note: Dimension symbols conforming to ISO13399. See pages PR3-PR6 for details.

Inch		Diameter of Inscribed Circle (inch)	Metric			
S	T		R	C	S	T
		.250		06	06	11
		.313		08	07	13
3	3	.375		09	09	16
		.394	10			
		.472	12			
4	4	.500		12	12	22
5		.625		16	15	27
		.787	20			

⑤ Insert Size

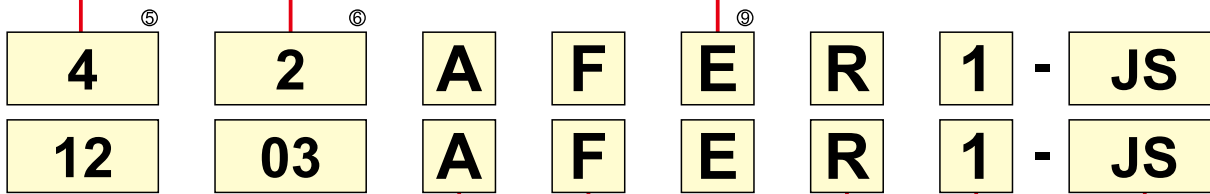


Inch	Thickness (inch)	Metric
2.5	.156	T3
2	.125	03
3	.187	04

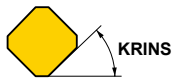
⑥ Insert Thickness

E	EDR Round
F	Sharp
T	Chamfer
S	EDR EDR Chamfer+Hone
X	Round (small)
Z	Chamfer

⑨ Cutting Edge Condition

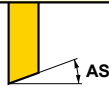


⑦ Cutting Edge Angle



A	45°
E	75°
P	90°

⑧ Wiper Edge Relief Angle



D	15°
E	20°
F	25°

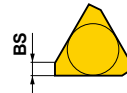
⑩ Cutting Direction

L	Left
N	Neutral
R	Right

⑫ Molded Chipbreaker for Milling



⑪ Width of Wiper Edge



1	.055
2	.094

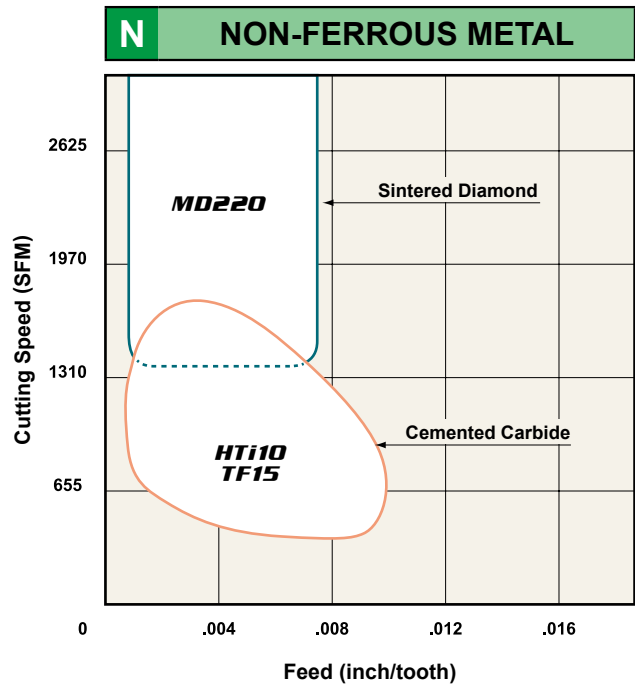
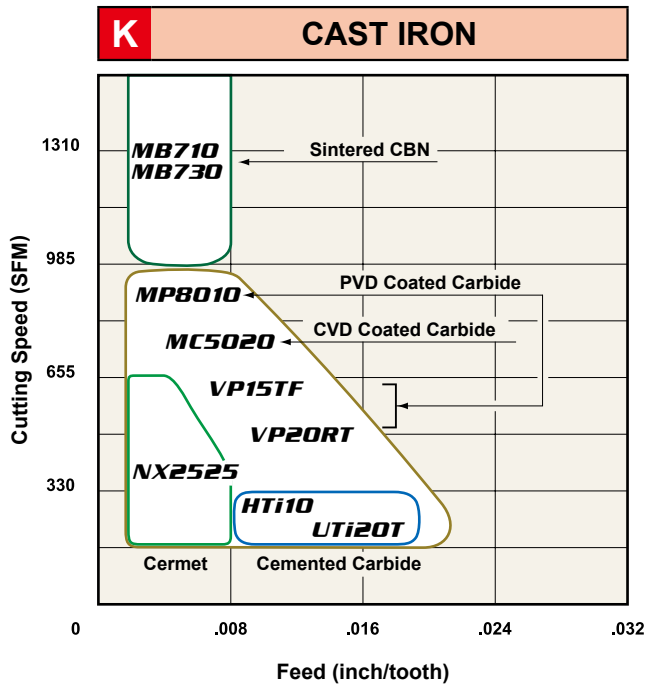
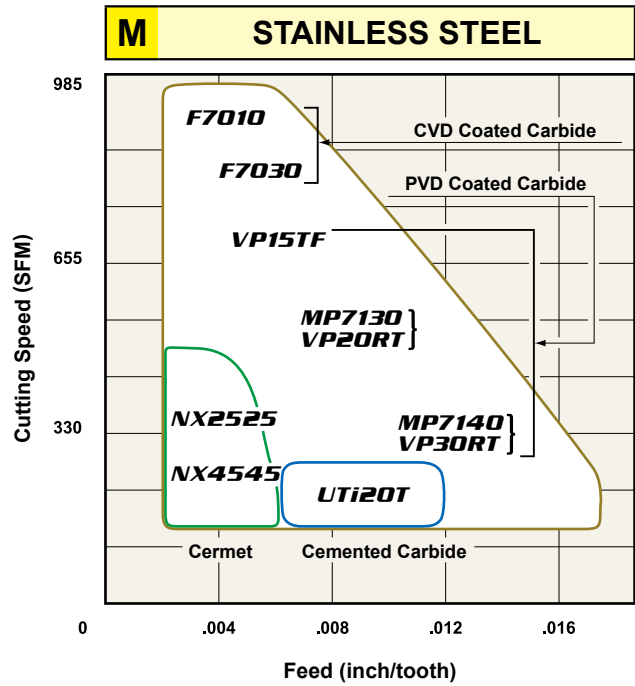
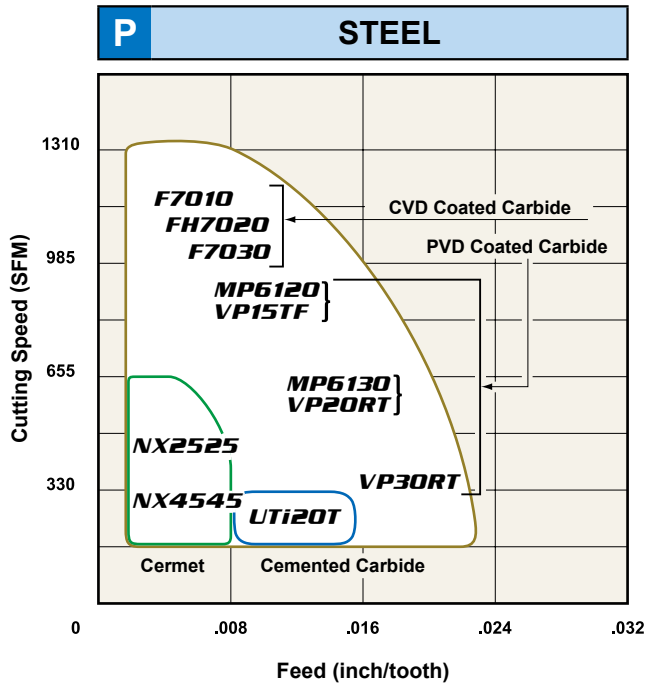
GRADES FOR MILLING

INDEXABLE INSERT GRADES FOR MILLING

ISO	Coated Carbide		Cermet	Cemented Carbide	CBN (Sintered CBN)	PCD (Sintered Diamond)
	CVD	PVD				
P Steel	P01	F7010				
	P10	F7020	NX2525			
	P20	F7030	NX4545	LT120T		
	P30	MP6120 (NEW) VP15TF MP6130				
	P40	LP20M VP20RT	VP30RT			
M Stainless Steel	M01	F7010				
	M10	F7030	NX2525			
	M20	VP15TF	NX4545	LT120T		
	M30	MP7130 (NEW) MP7030 LP20M VP20RT				
	M40	MP7140 (NEW) VP30RT				
K Cast Iron	K01	MP8010		HT105T	MB710 MB730	
	K10	MC5020	NX2525	HT110		
	K20	VP15TF		LT120T	BC5030	
	K30	VP20RT				
N Non-Ferrous Metal	N01					MD205 MD220 MD230
	N10			HT110		
	N20	LC15TF		TF15		
	N30					
S Heat Resistant Alloy + Ti Alloy	S01				MB730	
	S10	MP9120 (NEW) VP15TF				
	S20	MP9130 MP9030				
	S30					
H Hardened Steel	H01	MP8010				
	H10	VP15TF				
	H20					
	H30					

MILLING TOOL INSERTS

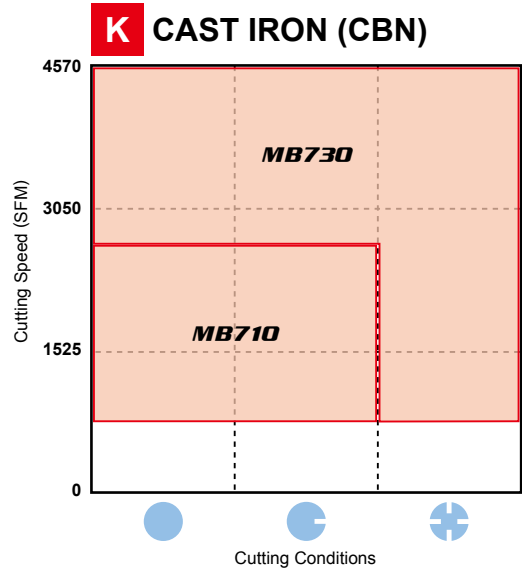
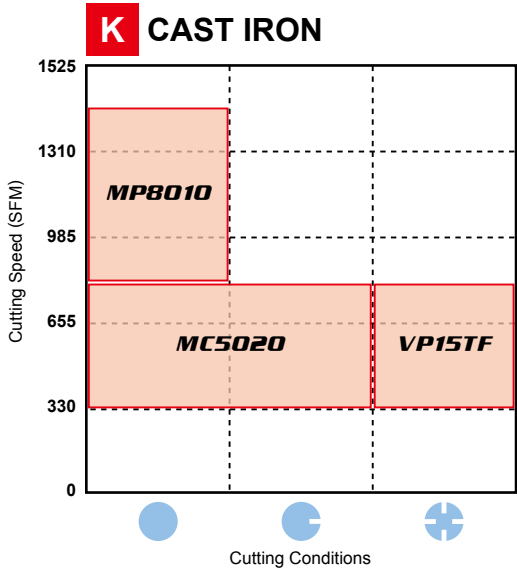
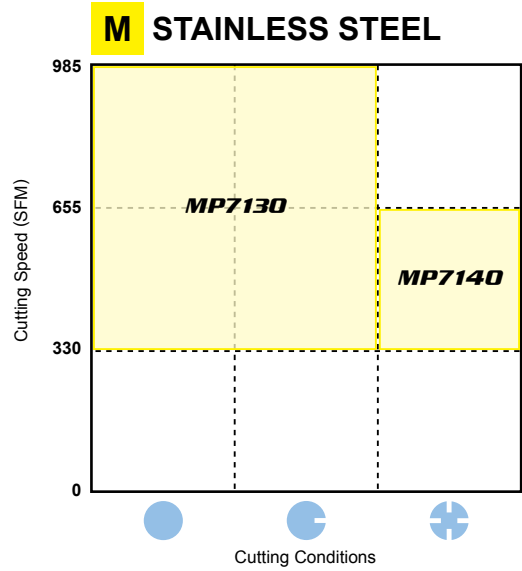
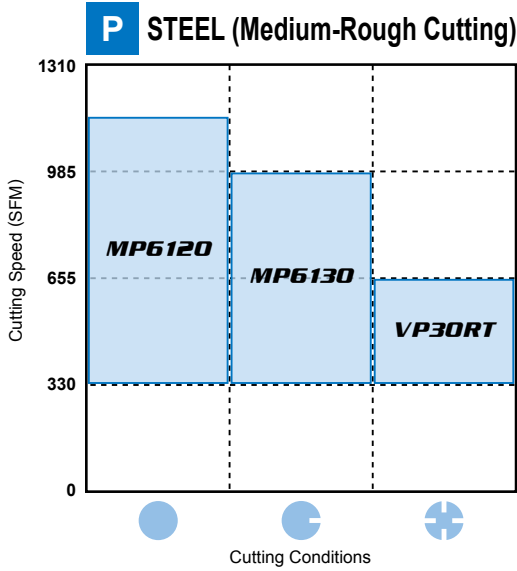
MILLING APPLICATION RANGE



MILLING TOOL INSERTS

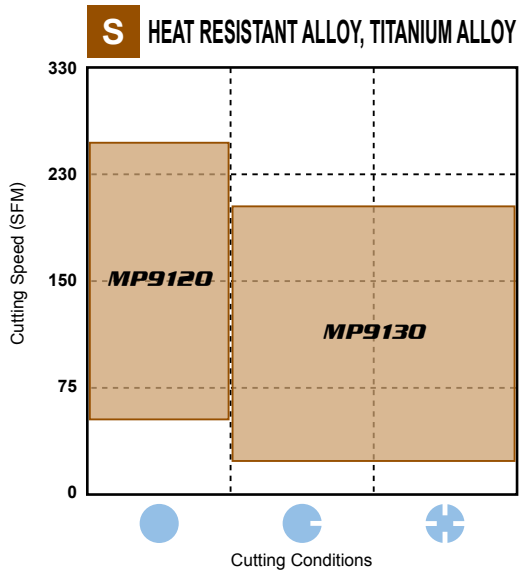
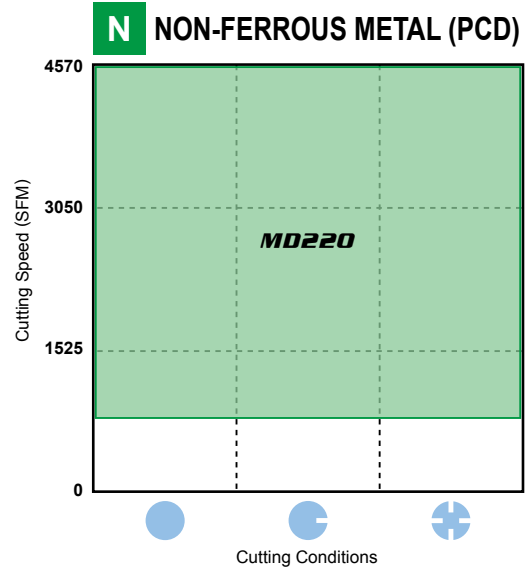
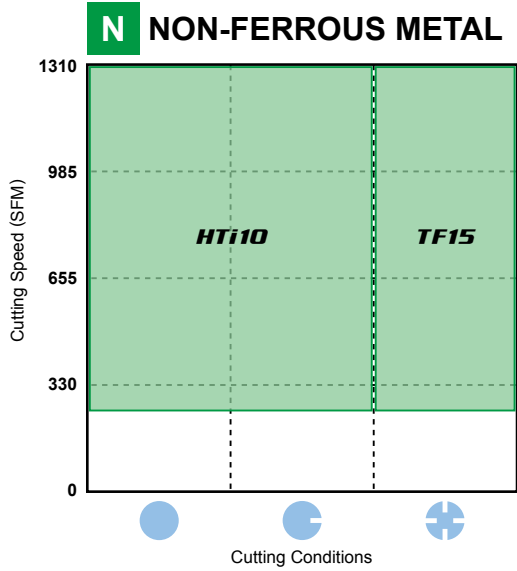
MILLING APPLICATION RANGE

● Recommendation of the insert grade based on cutting speed and conditions for each workpiece.



CUTTING CONDITIONS

- Stable Cutting**
 Continuous Cutting
 Constant Depth of Cut
 Pre-Machined
 Securely Clamped Component
- General Cutting**
- Unstable Cutting**
 Heavy Interrupted Cutting
 Irregular Depth of Cut
 Low Clamping Rigidity



COATED CARBIDE (CVD&PVD)

<CVD>

- Special tough fibrous structure improves wear and fracture resistance.
- It covers a wide application range and thus reduces the number of tools required.

<PVD>

- PVD coating prolongs tool life.
- Coating of tools with sharp edges is possible without softening or changing the quality of the substrate.

SELECTION STANDARD

● MILLING

Work Material	Recommended Grade	Recommended Cutting Speed (SFM)	ISO	Application Range
P Steel	F7030	655 (490 – 820)	P10	
	MP6120	575 (400 – 750)	P20	
	MP6130	575 (400 – 750)	P30	
	VP15TF	575 (400 – 750)	P40	
M Stainless Steel	F7030	655 (490 – 820)	M10	
	MP7030	490 (330 – 655)	M20	
	MP7130	490 (330 – 655)	M30	
	MP7140	490 (330 – 655)	M40	
	VP15TF	390 (330 – 655)	M40	
K Cast Iron	MC5020	590 (330 – 820)	K01	
	VP15TF	490 (330 – 655)	K10	
			K20	
			K30	
N Aluminum Alloy	LC15TF	3050 (600 – 9100)	N10	
			N20	
			N30	
S Heat Resistant Alloy Ti Alloy	MP9120	100 (65 – 130)	S01	
	VP15TF	100 (65 – 130)	S10	
	MP9130	131 (82 – 197)	S20	
	MP9030	131 (82 – 197)	S30	
H Hardened Materials	MP8010	240 (150 – 335)	H01	
			H10	
	VP15TF	240 (150 – 335)	H20	
			H30	

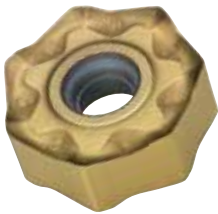
GRADE CHARACTERISTICS

Grade	Substrate		Coating Layer		Grade	Substrate		Coating Layer	
	Hardness (HRA)	T.R.S (GPa)*	Composition	Thickness		Hardness (HRA)	T.R.S (GPa)*	Composition	Thickness
MC5020	91.0	2.2	TiCN-Al ₂ O ₃ -Ti Compound	Thick	MP8010	93.5	2.3	(Al,Ti,Si)N	Thin
FH7020	88.8	2.8	TiCN-Al ₂ O ₃ -Ti Compound	Thick	NEW MP9120	91.5	2.5	(Al,Ti,Cr)N	Thin
F7030	88.8	2.8	TiCN-Al ₂ O ₃ -TiN	Thin	MP9030	90.5	2.5	(Al,Ti)N-Ti Compound	Thin
NEW MP6120	91.5	2.5	(Al,Ti,Cr)N	Thin	MP9130	90.5	2.7	(Al,Ti,Cr)N	Thin
NEW MP6130	90.5	2.5	(Al,Ti,Cr)N	Thin	VP15TF	91.5	2.5	(Al,Ti)N	Thin
MP7030	90.5	2.5	(Al,Ti)N-Ti Compound	Thin	VP20RT	90.5	2.5	(Al,Ti)N	Thin
NEW MP7130	90.5	2.5	(Al,Ti,Cr)N	Thin	VP30RT	88.8	2.8	(Al,Ti)N	Thin
NEW MP7140	88.8	2.8	(Al,Ti,Cr)N	Thin	UP20M	90.5	2.0	TiN	Thin

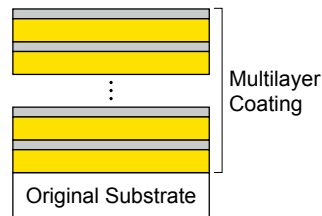
*1GPa=102kg/mm²

For Machining of Stainless Steel

MP7030



MP7030 is Multilayer coating based on newly developed Ti base compound for superior wear and fracture resistance during stainless steel machining. A special tough cemented carbide substrate gives excellent performance on difficult to cut materials such as stainless steel.



Heat-resistant Alloy, Cutting for Titanium Alloy

MP9130



An new and enhanced super fine cemented carbide substrate has increased toughness while maintaining hardness. The Al-Ti-Cr-N accumulated type coating ensures optimum heat and wear resistance. The combination of these properties gives excellent fracture resistance and a very low coefficient of friction for class leading welding resistance when machining titanium alloy.

CERMET

- NX2525 for high speed milling.
- NX4545 for general milling.

SELECTION STANDARD

MILLING

Work Material	Recommended Grade	Recommended Cutting Speed (SFM)	ISO	Application Range
Steel	NX2525	820 (490 – 1150)	P10 M10	NX2525
			P20 M20	
	NX4545	490 (390 – 590)	P30 M30	NX4545
Cast Iron	NX2525	655 (490 – 985)	K01	NX2525
			K10	
			K20	

(Note) In case of wet cutting, please use coated carbide F7030 for steel cutting and coated carbide MC5020 for cast iron cutting.

GRADE CHARACTERISTICS

Grade	Hardness (HRA)	T.R.S.(GPa)*	Thermal Conductivity (W/m·K)*	Thermal Expansion (x 10 ⁻⁶ /K)
NX2525	92.2	2.0	33	7.8
NX4545	90.0	2.2	33	7.8

*1GPa=102kg/mm², 1W/m · K=2.39×10⁻³cal/cm · sec · °C

CEMENTED CARBIDE

- Available grade series are UTi20T for steel and cast iron, and HTi10 for cast iron, non-ferrous metal and non-metal.

SELECTION STANDARD

MILLING

Work Material	Recommended Grade	Recommended Cutting Speed (SFM)	ISO	Application Range	
P Steel	UTi20T	390 (165 – 590)	P10	UTi20T	
			P20		
			P30		
M Stainless Steel	UTi20T	390 (165 – 590)	M10	UTi20T	
			M20		
			M30		
K Cast Iron	HTi10	330 (165 – 490)	K10	HTi10	
	UTi20T	390 (165 – 590)	K20	UTi20T	
			K30		
N Non-Ferrous Metal	HTi10 TF15	1310 * (985 – 1640)	N01	HTi10	
			N10		
			N20		TF15
			N30		

*For High SFM, cutters need to be balanced. Keep the recommended cutting speed shown in each cutter type page.

MAIN COMPONENT AND APPLICATION

ISO	Main Component	Characteristics	Work Material
P M	WC-TiC-TaC-Co	High heat resistance and plastic deformation resistance.	Carbon steel, Alloy steel, Stainless steel, and Cast iron
K N	WC-Co	High rigidity and wear resistance.	Cast iron, Non-Ferrous metals, and Non-metal

GRADE CHARACTERISTICS

ISO	Grade	Hardness (HRA)	Thermal Conductivity (W/m·K)*	Thermal Expansion (x10 ⁻⁶ /K)	Young's Modulus (GPa)*	T.R.S (GPa)*
P M	UTi20T	90.5	38	5.5	520	2.0
K N	HTi05T	92.5	79	4.5	600	1.5
	HTi10	92.0	79	4.6	630	2.0
N	TF15	91.5	71	5.3	580	2.5

*1GPa = 102kg/mm², 1W/m·K=2.39 x 10⁻³cal/cm · sec · °C

CBN (SINTERED CBN)



- MB710 and MB730 for cast iron cutting.
- BC5030 for high-speed roughing of cast irons is now available.
- BC5030 roughing grade in combination with the AOX body allows use of up to 16 corners and enables cost-effective, high performance machining.

SELECTION STANDARD / RECOMMENDED CUTTING CONDITIONS

FINISHING

Work Material	Structure	Cutting Speed (SFM)					Feed (inch/rev)	Depth of Cut (inch)	Coolant
		820	1640	2460	3280	4100			
Gray Cast Iron	Ferritic + Pearlitic	MB710 MB730					-.012	-.020	Dry
	Pearlitic								

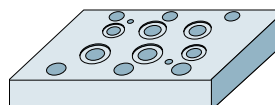
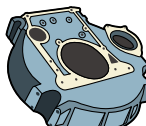
ROUGHING

Work Material	Structure	Cutting Speed (SFM)					Feed (inch/rev)	Depth of Cut (inch)	Coolant
		820	1640	3280	4920	6560			
Gray Cast Iron	Pearlitic	BC5030					-.006	-.118	Dry

FEATURES AND BASE

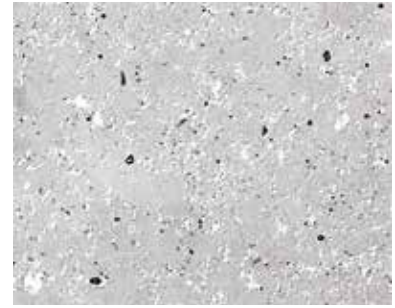
Grade	Application	Features	Main Component	Coating Layer
MB710	For General Cutting	General purpose grade with well balanced wear and fracture resistance.	CBN TiC Al ₂ O ₃	—
MB730	For High Speed Cutting For Interrupted Cutting	Has the largest CBN content and therefore displays good thermal conductivity. It is suitable for the high temperatures that are generated in high speed cutting.	CBN (High Content) Co Base Alloy	—
BC5030	High-speed machining at large depths of cut High-speed interrupted machining at large depths of cut	High CBN content and high thermal conductivity. The whole insert is composed of sintered CBN. This enables high speed, high efficiency machining at larger depths of cut. The coating is for recognition of spent corners.	CBN AlN	TiN Base

APPLICATION EXAMPLES

Tool		AOX445R10008D	Tool		NF1000R0408D (MB730)
Insert		SL-ONEN120404ASN (BC5030)	Workpiece		 AISI-35
Machine		Machining Center	Component		Hydraulic component
Workpiece		 AISI-35	Cutting Condition	Cutting Speed (SFM)	5480
Cutting Condition	Cutting Speed (SFM)	3940		Feed per Tooth (inch/tooth)	.0039
	Depth of Cut (inch)	.110		Table Feed (inch/min)	180
	Width of Cut (inch)	2.76		Depth of Cut (inch)	.0020
	Table Feed (inch/min)	120		Width of Cut (inch)	3.543
	Feed per Tooth (inch/tooth)	.004		Coolant	Dry (Wet cutting at previous process)
	Result	10 times longer tool life and 4 times higher efficiency than ceramics. Excellent machining with a surface finish of Ra < 64µm.	Axial Runout (inch)	≤0.005inch	
Result	Compared with competitor CBN grade cutting, the normal wear surface is excellent and extendable life finishing is maintained.				

PCD (SINTERED DIAMOND)

- Suitable for non-ferrous metals cutting such as aluminum alloy.
- Suitable for extremely high speed finishing.



Micro-Structure of MD220

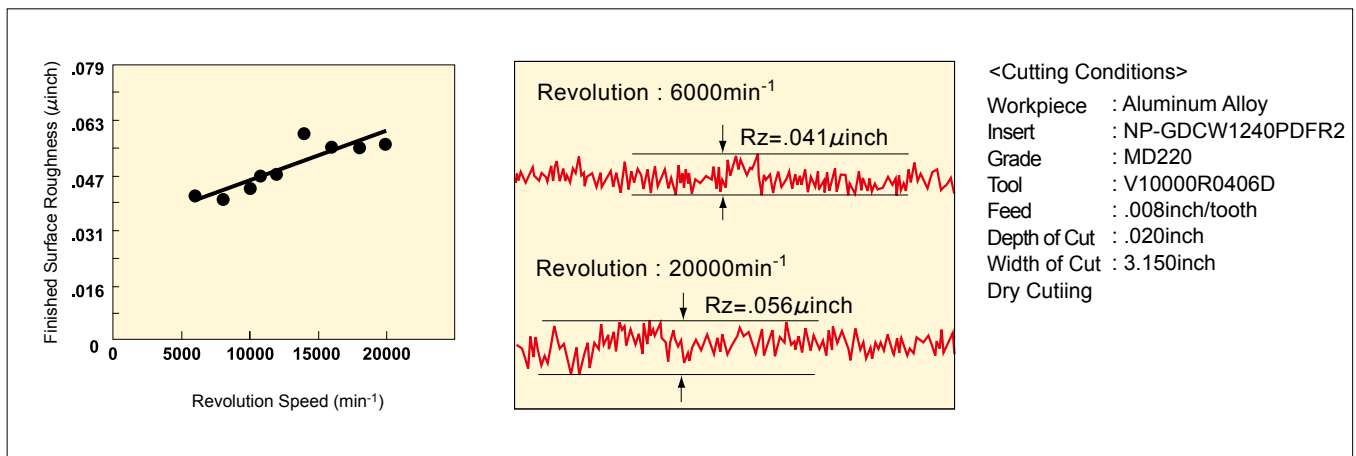
GRADE FEATURES

Grade	Features
MD220	Excellent balance between wear resistance and fracture resistance. A wide range of tooling application.

RECOMMENDED CUTTING CONDITION

Work Material	Cutting Speed (SFM)	Grade	Feed per Tooth (inch/tooth)	Depth of Cut (inch)
Aluminum Alloy (Si ≤ 12%)	3280—19700	MD220	—.012	—.002
Aluminum Alloy (Si ≥ 13%)	655—2630			

CUTTING PERFORMANCE



MILLING TOOL INSERTS

MILLING INSERTS

Work Material	P	Steel	Class	Honing	FH7020	MC5020	MP6120	MP6130	MP7130	MP7140	VP15TF	VP20RT	VP30RT	MP7030	Dimensions (inch)			
	M	Stainless Steel													IC	S	BS	RE
Cutter Type Insert Geometry	K	Cast Iron	Order Number	(ISO) Number	Coated									Dimensions (inch)				
	N	Non-Ferrous Metal			IC	S	BS	RE										
	S	Heat-resistant Alloy, Titanium Alloy			IC	S	BS	RE										
	H	Hardened Materials			IC	S	BS	RE										
AHX640S K024	NNMU200708ZEN-MP	NNMU200708ZEN-MP	M	E							●				.787	.315	.039	.031
AHX640S K024	NNMU200712ZER-MM	NNMU200712ZER-MM	M	E								●			.787	.315	.039	.047
AHX640S K024	WNEU2007ZEN7C-WP	WNEU2007ZEN7C-WP	E	E							●				.787	.272	.280	.031
AHX640S K024 AHX640W K029	NNMU200608ZEN-HK	NNMU200608ZEN-HK	M	E	●						● ●				.787	.258	.039	.031
AHX640S K024 AHX640W K029	NNMU200608ZEN-MK	NNMU200608ZEN-MK	M	E	●						● ●				.787	.258	.039	.031
AHX640S K024 AHX640W K029	WNEU2006ZEN7C-WK	WNEU2006ZEN7C-WK	E	E	●										.787	.258	.291	.031
AJX K108	JOMW06T215ZZSR-FT	JOMW06T215ZZSR-FT	M	S	●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	.250	.109	.047	.059
	JOMW080320ZZSR-FT	JOMW080320ZZSR-FT	M	S	●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	.315	.125	.055	.079
	JDMW09T320ZDSR-FT	JDMW09T320ZDSR-FT	M	S	●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	.375	.156	.071	.079
	JDMW120420ZDSR-FT	JDMW120420ZDSR-FT	M	S	●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	.472	.187	.098	.079
	JDMW140520ZDSR-FT	JDMW140520ZDSR-FT	M	S	●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	.551	.219	.110	.079

*JOMW... : 13°, JDMW... : 15°



● : Inventory maintained. ○ : Inventory maintained. (Available Winter 2015)
 ★ : Inventory maintained in Japan.
 <10 inserts in one case>

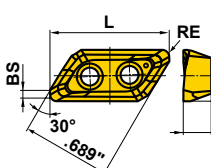
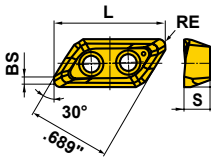
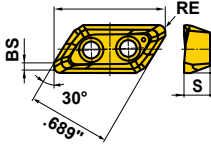
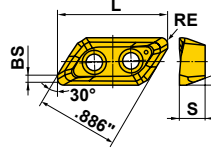
MILLING INSERTS

Work Material	P	Steel	Cutter Type	Order Number	(ISO) Number	Class	Honing	Coated										Cermet	Coated Cermet	Carbide	Dimensions (inch)			
	M	Stainless Steel						F7010	F7030	MC5020	MP6120	MP6130	MP7130	MP7140	MP9120	MP9130	VP15TF	VP30RT	NX2525	NX4545	VP25N	HT105T	HT110	L
	K	Cast Iron	ASX445	SEET13T3AGEN-JL	SEET13T3AGEN-JL	E	E	●	●	●	●	●	●	●	●	●	●	●	●	●	●	-	-	.059
	M	Stainless Steel	ASX445	SEET13T3AGEN-JL	SEET13T3AGEN-JL	E	E	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	-	-
	M	Stainless Steel	ASX445	SEMT13T3AGSN-JM	SEMT13T3AGSN-JM	M	S	●	●	●	●	●	●	●	●	●	●	●	●	●	●	-	-	.059
	K	Cast Iron	ASX445	SEMT13T3AGSN-JM	SEMT13T3AGSN-JM	M	S	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	-	-
	M	Stainless Steel	ASX445	SEMT13T3AGSN-JH	SEMT13T3AGSN-JH	M	S	●	●	●	●	●	●	●	●	●	●	●	●	●	●	-	-	.059
	K	Cast Iron	ASX445	SEMT13T3AGSN-JH	SEMT13T3AGSN-JH	M	S	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	-	-
	M	Stainless Steel	ASX445	SEMT13T3AGSN-FT	SEMT13T3AGSN-FT	M	S	●														-	-	.059
	K	Cast Iron	ASX445	SEMT13T3AGSN-FT	SEMT13T3AGSN-FT	M	S	●															-	-
	G	General Purpose	ASX445	SEGT13T3AGFN-JP	SEGT13T3AGFN-JP	G	F														●	-	-	-
	M	Stainless Steel	ASX445	SEGT13T3AGFN-JP	SEGT13T3AGFN-JP	G	F															●	-	-
	E	General Purpose	ASX445	WEEW13T3AGER8C	WEEW13T3AGER8C	E	E	●													●	.649	.654	.059
	T	Titanium Alloy	ASX445	WEEW13T3AGTR8C	WEEW13T3AGTR8C	E	T															●	.649	.654



● : Inventory maintained. ★ : Inventory maintained in Japan.
 □ : Non stock, produced to order only.
 <10 inserts in one case>

MILLING TOOL INSERTS

Work Material	P	Steel	Cutter Type	Order Number	(ISO) Number	Class	Honing	Coated	Carbide	Dimensions (inch)			
	M	Stainless Steel								L	S	BS	RE
Work Material	K	Cast Iron	Insert Geometry	Order Number	(ISO) Number	Class	Honing	Coated	Carbide	L	S	BS	RE
	N	Non-Ferrous Metal											
	S	Heat-resistant Alloy, Titanium Alloy											
	H	Hardened Materials											
Cutting Conditions : ● : Stable Cutting ● : General Cutting ✖ : Unstable Cutting Honing : E : Round F : Sharp													
AXD4000 K064 													
XDGX175004PDFR-GL	XDGX175004PDFR-GL	G	F	★	●	.906	—	.067	.016				
XDGX175008PDFR-GL	XDGX175008PDFR-GL	G	F	★	●	.906	—	.051	.031				
XDGX175012PDFR-GL	XDGX175012PDFR-GL	G	F	★	●	.906	—	.035	.047				
XDGX175016PDFR-GL	XDGX175016PDFR-GL	G	F	★	●	.866	—	.055	.063				
XDGX175020PDFR-GL	XDGX175020PDFR-GL	G	F	★	●	.866	—	.039	.079				
XDGX175024PDFR-GL	XDGX175024PDFR-GL	G	F	★	●	.866	—	.024	.094				
XDGX175030PDFR-GL	XDGX175030PDFR-GL	G	F	★	●	.831	—	.031	.118				
XDGX175032PDFR-GL	XDGX175032PDFR-GL	G	F	★	●	.831	—	.024	.125				
XDGX175040PDFR-GL	XDGX175040PDFR-GL	G	F	★	●	.787	—	.031	.157				
XDGX175050PDFR-GL	XDGX175050PDFR-GL	G	F	★	●	.764	—	.016	.197				
AXD4000 K064 													
NEW XDGX175004PDER-GM	XDGX175004PDER-GM	G	E	●	●	.906	.197	.067	.016				
NEW XDGX175008PDER-GM	XDGX175008PDER-GM	G	E	●	●	.906	.197	.051	.031				
NEW XDGX175012PDER-GM	XDGX175012PDER-GM	G	E	●	●	.906	.197	.035	.047				
NEW XDGX175016PDER-GM	XDGX175016PDER-GM	G	E	●	●	.866	.197	.055	.063				
NEW XDGX175020PDER-GM	XDGX175020PDER-GM	G	E	●	●	.866	.197	.039	.079				
NEW XDGX175024PDER-GM	XDGX175024PDER-GM	G	E	●	●	.866	.197	.024	.094				
NEW XDGX175030PDER-GM	XDGX175030PDER-GM	G	E	●	●	.831	.197	.031	.118				
NEW XDGX175032PDER-GM	XDGX175032PDER-GM	G	E	●	●	.831	.197	.024	.125				
NEW XDGX175040PDER-GM	XDGX175040PDER-GM	G	E	●	●	.787	.197	.019	.157				
NEW XDGX175050PDER-GM	XDGX175050PDER-GM	G	E	●	●	.764	.197	.016	.197				
AXD4000 K064 													
NEW XDGX175004PDFR-GM	XDGX175004PDFR-GM	G	F	●	●	.906	.197	.067	.016				
NEW XDGX175008PDFR-GM	XDGX175008PDFR-GM	G	F	●	●	.906	.197	.051	.031				
NEW XDGX175012PDFR-GM	XDGX175012PDFR-GM	G	F	●	●	.906	.197	.035	.047				
NEW XDGX175016PDFR-GM	XDGX175016PDFR-GM	G	F	●	●	.866	.197	.055	.063				
NEW XDGX175020PDFR-GM	XDGX175020PDFR-GM	G	F	●	●	.866	.197	.039	.079				
NEW XDGX175024PDFR-GM	XDGX175024PDFR-GM	G	F	●	●	.866	.197	.024	.094				
NEW XDGX175030PDFR-GM	XDGX175030PDFR-GM	G	F	●	●	.831	.197	.031	.118				
NEW XDGX175032PDFR-GM	XDGX175032PDFR-GM	G	F	●	●	.831	.197	.024	.125				
NEW XDGX175040PDFR-GM	XDGX175040PDFR-GM	G	F	●	●	.787	.197	.019	.157				
NEW XDGX175050PDFR-GM	XDGX175050PDFR-GM	G	F	●	●	.764	.197	.016	.197				
AXD7000 K074 													
XDGX227008PDFR-GL	XDGX227008PDFR-GL	G	F	★	●	1.181	.276	.079	.031				
XDGX227016PDFR-GL	XDGX227016PDFR-GL	G	F	★	●	1.181	.276	.047	.063				
XDGX227020PDFR-GL	XDGX227020PDFR-GL	G	F	★	●	1.181	.276	.031	.079				
XDGX227024PDFR-GL	XDGX227024PDFR-GL	G	F	□	●	1.181	.276	.016	.094				
XDGX227030PDFR-GL	XDGX227030PDFR-GL	G	F	★	●	1.134	.276	.031	.118				
XDGX227032PDFR-GL	XDGX227032PDFR-GL	G	F	★	●	1.134	.276	.024	.125				
XDGX227040PDFR-GL	XDGX227040PDFR-GL	G	F	★	●	1.083	.276	.035	.157				
XDGX227050PDFR-GL	XDGX227050PDFR-GL	G	F	★	●	1.063	.276	.016	.197				



MILLING TOOL INSERTS

MILLING INSERTS

Work Material	P	Steel	Cutter Type	Insert Geometry	Order Number	(ISO) Number	Class	Honing	Coated Cermet Carbide					Dimensions (inch)											
	M	Stainless Steel							F7030	VP15TF	UP20M	NX2525	NX4545		UT120T	HT110	L	W1	S	BS	RE				
	K	Cast Iron																							
	N	Non-Ferrous Metal																							
	S	Heat-resistant Alloy, Titanium Alloy																							
	H	Hardened Materials																							
	BAE500	AEMW150304ER	AEMW150304ER	M	E					●	★	●			.625	.375	.125	—	.016						
		AEMW150308ER	AEMW150308ER	M	E					●	★	●			.625	.375	.125	—	.031						
		AEMW1503062ER	AEMW1503062ER	M	E							●			.625	.375	.125	—	.063						
		AEMW1503093ER	AEMW1503093ER	M	E							●			.625	.375	.125	—	.094						
		AEMW1503125ER	AEMW1503125ER	M	E							●			.625	.375	.125	—	.125						
		AEMW1503250ER	AEMW1503250ER	M	E							●			.625	.375	.125	—	.252						
	BAE600	AEMW19T304ER	AEMW19T304ER	M	E					●		●		.750	.500	.156	—	.016							
		AEMW19T308ER	AEMW19T308ER	M	E					●		●		.750	.500	.156	—	.031							
		AEMW19T3062ER	AEMW19T3062ER	M	E							●		.750	.500	.156	—	.063							
		AEMW19T3093ER	AEMW19T3093ER	M	E							●		.750	.500	.156	—	.094							
		AEMW19T3125ER	AEMW19T3125ER	M	E							●		.750	.500	.156	—	.125							
		AEMW19T3250ER	AEMW19T3250ER	M	E							●		.750	.500	.156	—	.252							
	BAP300	APGT1135PDR-G2	APGT1135PDR-G2	G	F							●		.433	.250	.138	.047	.031							
	BAP300	APMT1135PDR-H1	APMT1135PDR-H1	M	E	●			★					.433	.250	.138	.059	.016							
		APMT1135PDR-H2	APMT1135PDR-H2	M	E	●	●		●					.433	.250	.138	.047	.031							
		APMT1135PDR-H6	APMT1135PDR-H6	M	E	★								.433	.250	.138	.016	.094							
	BAP300	APMT1135PDR-M0	APMT1135PDR-M0	M	E	●								.433	.250	.138	.071	.008							
		APMT1135PDR-M1	APMT1135PDR-M1	M	E	●								.433	.250	.138	.059	.016							
		APMT1135PDR-M2	APMT1135PDR-M2	M	E	●	●		●					.433	.250	.138	.047	.031							
	BAP400	APGT1604PDR-G2	APGT1604PDR-G2	G	F							●		.650	.375	.187	.055	.031							
	BAP400	APMT1604PDR-H1	APMT1604PDR-H1	M	E	★								.650	.375	.187	.067	.016							
		APMT1604PDR-H2	APMT1604PDR-H2	M	E	●	●		●	●				.650	.375	.187	.055	.031							
		APMT1604PDR-H4	APMT1604PDR-H4	M	E	★								.650	.375	.187	.016	.063							
		APMT1604PDR-H6	APMT1604PDR-H6	M	E	★								.650	.375	.187	.016	.094							
		APMT1604PDR-H8	APMT1604PDR-H8	M	E	★								.650	.375	.187	.016	.125							

Cutting Conditions :
 ● : Stable Cutting
 ● : General Cutting
 ✦ : Unstable Cutting

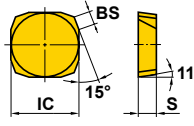
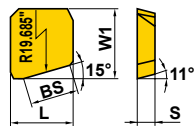
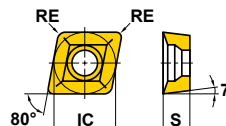
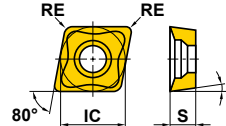
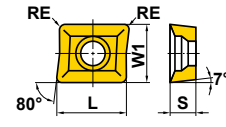
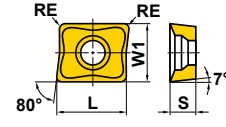
Honing :
 E : Round F : Sharp

MILLING TOOL INSERTS

Work Material	P	Steel			●	●	●	●	●					
	M	Stainless Steel			●	●	●	●	●					
Cutter Type	K	Cast Iron			●	●	●	●	●					
	N	Non-Ferrous Metal			●	●	●	●	●					
Insert Geometry	S	Heat-resistant Alloy, Titanium Alloy			●	●	●	●	●					
	H	Hardened Materials			●	●	●	●	●					
Order Number	(ISO) Number	Class	Honing	Coated		Cermets		Carbide		Dimensions (inch)				
				F7010	F7030	VP15TF	AP20M	NX2525	NX4545	HT110	W1	IC	S	BS
BAP400 	APMT1604PDER-M2	APMT1604PDER-M2	M	E	●	●	●			.375	—	.187	.055	.031
BAP3500 	XPGT13T3PDER-G1	XPGT13T3PDER-G1	G	E	●	●				.311	—	.156	.063	.016
	XPGT13T3PDER-G2	XPGT13T3PDER-G2	G	E	●	●				.311	—	.156	.047	.031
	XPGT13T3PDER-G6	XPGT13T3PDER-G6	G	E	●	●				.311	—	.156	.016	.094
	XPGT13T3PDER-G75	XPGT13T3PDER-G75	G	E	●	●				.311	—	.156	.016	.118
	XPGT13T3PDER-G8	XPGT13T3PDER-G8	G	E	●	●				.311	—	.156	.016	.125
BAP3500 	XPGT13T3PDFR-G1	XPGT13T3PDFR-G1	G	F				●		.311	—	.156	.063	.016
	XPGT13T3PDFR-G2	XPGT13T3PDFR-G2	G	F				●		.311	—	.156	.047	.031
	XPGT13T3PDFR-G6	XPGT13T3PDFR-G6	G	F				●		.311	—	.156	.016	.094
	XPGT13T3PDFR-G75	XPGT13T3PDFR-G75	G	F				●		.311	—	.156	.016	.118
	XPGT13T3PDFR-G8	XPGT13T3PDFR-G8	G	F				●		.311	—	.156	.016	.125
BAP3500 	XPMT13T3PDER-M1	XPMT13T3PDER-M1	M	E	●	●				.311	—	.156	.063	.016
	XPMT13T3PDER-M2	XPMT13T3PDER-M2	M	E	●	●				.311	—	.156	.047	.031
	XPMT13T3PDER-M6	XPMT13T3PDER-M6	M	E	●	●				.311	—	.156	.016	.094
	XPMT13T3PDER-M75	XPMT13T3PDER-M75	M	E	●	●				.311	—	.156	.016	.118
	XPMT13T3PDER-M8	XPMT13T3PDER-M8	M	E	●	●				.311	—	.156	.016	.125
BF407 <p>Right hand insert shown.</p>	SFAN42ZFFR2	SFAN1203ZFFR2	A	F				★	—	.500	.125	.094	—	
	SFAN42ZFFL2	SFAN1203ZFFL2	A	F				★	—	.500	.125	.094	—	
	SFCN42ZFFR2	SFCN1203ZFFR2	A	F				●	—	.500	.125	.094	—	
BOE K130 	OEMX12T3ETR1	OEMX12T3ETR1	M	T				●	—	.500	.156	.039	—	
	OEMX12T3ESR1	OEMX12T3ESR1	M	S	●				—	.500	.156	.039	—	
	OEMX1705ETR1	OEMX1705ETR1	M	T	●	●		●	—	.669	.197	.055	—	
	OEMX1705ESR1	OEMX1705ESR1	M	S	●				—	.669	.197	.055	—	
BOE K130 	OEMX12T3EER1-JS	OEMX12T3EER1-JS	M	E	★				—	.500	.156	.039	—	
	OEMX12T3ETR1-JS	OEMX12T3ETR1-JS	M	T				●	—	.500	.156	.039	—	
	OEMX1705EER1-JS	OEMX1705EER1-JS	M	E	★				—	.669	.197	.055	—	
	OEMX1705ETR1-JS	OEMX1705ETR1-JS	M	T		●	★	●	—	.669	.197	.055	—	

MILLING TOOL INSERTS

MILLING INSERTS

Work Material	P	Steel	Class	Honing	F7030	MC5020	VP15TF	UP20M	HT105T	HT110	Cutting Conditions :					
	M	Stainless Steel									● : Stable Cutting ● : General Cutting ✱ : Unstable Cutting					
Cutter Type Insert Geometry	Order Number	(ISO) Number	Class	Honing	Coated		Carbide		Dimensions (inch)							
					L	W1	IC	S	BS	RE						
FBP415  Right hand insert shown.	SPNN42EEER1	SPNN1203EEER1	N	E	●			★	-	-	.500	.125	.055	-		
	SPNN42EEEL1	SPNN1203EEEL1	N	E				★	-	-	.500	.125	.055	-		
FBP415  Right hand insert shown.	WPC42EEER10C	WPC42EEER10C	C	E				●	.500	.597	-	.125	.394	-		
	WPC42EEEL10C	WPC42EEEL10C	C	E				★	.500	.597	-	.125	.394	-		
LER K098 	CCMX083508ENA	CCMX083508EN-A	M	E	★	●			-	-	.313	.138	-	.031		
	CCMX09T308ENA	CCMX09T308EN-A	M	E	●	●●			-	-	.375	.156	-	.031		
LER K098 	CCMX09T308ENB	CCMX09T308EN-B	M	E	★				-	-	.375	.156	-	.031		
LER K098 	ZCMX083508ERA	ZCMX083508ER-A	M	E	★				.409	.313	-	.137	-	.031		
	ZCMX09T308ERA	ZCMX09T308ER-A	M	E	●	●●			.472	.375	-	.156	-	.031		
LER K098 	ZCMX09T308ERB	ZCMX09T308ER-B	M	E	★	●			.472	.375	-	.156	-	.031		

MILLING TOOL INSERTS

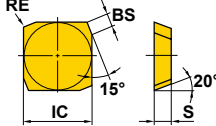
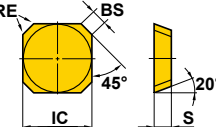
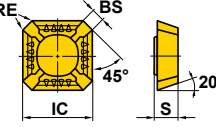
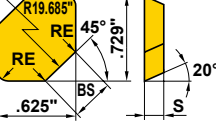
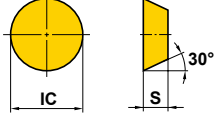
● : Inventory maintained. ★ : Inventory maintained in Japan.
 <10 inserts in one case>

MILLING INSERTS


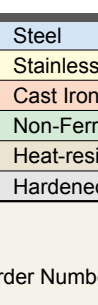

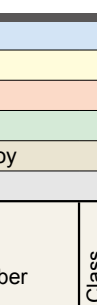
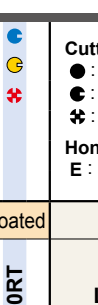
Work Material	P Steel		M Stainless Steel		K Cast Iron		N Non-Ferrous Metal		S Heat-resistant Alloy, Titanium Alloy		H Hardened Materials		Cutting Conditions :			
	●		●		●		●		●		●		● : Stable Cutting ● : General Cutting ✖ : Unstable Cutting Honing : E : Round F : Sharp S : Chamfer + Round T : Chamfer			
Cutter Type Insert Geometry	Order Number	(ISO) Number	Class	Honing	Coated		Cermet		Carbide		Dimensions (inch)					
					F7030	MC5020	VP15TF	UP20M	AP10H	NX2525	NX4545	UTi20T	HT110	IC	S	BS
NSE300 	TEEN32PEFR1	TEEN1603PEFR1	E	F						●	.375	.125	.055	.016		
	TEEN32PEER1	TEEN1603PEER1	E	E		●				●	.375	.125	.055	.016		
	TEEN32PETR1	TEEN1603PETR1	E	T			●	●	●	●	.375	.125	.055	.016		
	TEEN32PESR1	TEEN1603PESR1	E	S	●	★					.375	.125	.055	.016		
NSE300 	TEER32PEER-JS	TEER1603PEER-JS	E	E	●				★		.375	.125	.055	.016		
NSE400 SE400 	TECN43PEFR1	TECN2204PEFR1	C	F						●	.500	.187	.055	.039		
	TECN43PEER1	TECN2204PEER1	C	E						★	.500	.187	.055	.039		
	TECN43PETR1	TECN2204PETR1	C	T				★	★	★	.500	.187	.055	.039		
	TEEN43PEFR1	TEEN2204PEFR1	E	F						●	.500	.187	.055	.039		
	TEEN43PEER1	TEEN2204PEER1	E	E		●				●	.500	.187	.055	.039		
	TEEN43PETR1	TEEN2204PETR1	E	T			●	●	●	●	.500	.187	.055	.039		
	TEEN43PESR1	TEEN2204PESR1	E	S	●	★					.500	.187	.055	.039		
	TEKN43PEER1	TEKN2204PEER1	K	E						★	.500	.187	.076	—		
	TEKN43PESR1	TEKN2204PESR1	K	S	★						.500	.187	.076	—		
	TEKN43PETR1	TEKN2204PETR1	K	T			★	★	★		.500	.187	.076	—		
NSE400 SE400 	TEER43PEER-JS	TEER2204PEER-JS	E	E	★			□	★		.500	.187	.055	.039		
PMF K161 	TPEW1303ZPER2	TPEW1303ZPER2	E	E		●	●				.313	.125	.079	—		
PMR K160 	CPMT1205ZPEN-M2	CPMT1205ZPEN-M2	M	E		●					.500	.219	.055	.031		
	CPMT1205ZPEN-M3	CPMT1205ZPEN-M3	M	E		★					.500	.219	.055	.047		

● : Inventory maintained. ★ : Inventory maintained in Japan.
 □ : Non stock, produced to order only.
 <10 inserts in one case>

MILLING INSERTS

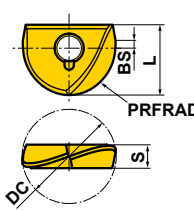
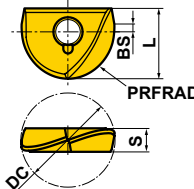
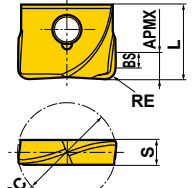
Work Material	P	Steel	Cutter Type	Order Number	(ISO) Number	Class	Honing	Coated						Cermet		Carbide		Cutting Conditions :							
	M	Stainless Steel						F7010	F7030	MC5020	VP15TF	UP20M	NX2525	NX4545	UTi20T	HTi05T	IC	S	BS	RE	●	●	✦		
Work Material	K	Cast Iron	Insert Geometry	Order Number	(ISO) Number	Class	Honing	Coated						Cermet		Carbide		Cutting Conditions :							
	N	Non-Ferrous Metal						F7010	F7030	MC5020	VP15TF	UP20M	NX2525	NX4545	UTi20T	HTi05T	IC	S	BS	RE	●	●	✦		
Work Material	S	Heat-resistant Alloy, Titanium Alloy	Insert Geometry	Order Number	(ISO) Number	Class	Honing	Coated						Cermet		Carbide		Cutting Conditions :							
	H	Hardened Materials						F7010	F7030	MC5020	VP15TF	UP20M	NX2525	NX4545	UTi20T	HTi05T	IC	S	BS	RE	●	●	✦		
SE515 	SEEN53EFER1	SEEN1504EFER1	E	E						★								.625	.187	.055	.039				
SE545 	SEEN53AFEN1	SEEN1504AFEN1	E	E						●								.625	.187	.055	.039				
	SEEN53AFTN1	SEEN1504AFTN1	E	T		●					●	●						.625	.187	.055	.039				
	SEEN53AFSN1	SEEN1504AFSN1	E	S		●	●											.625	.187	.055	.039				
	SEKN53AFSN1	SEKN1504AFSN1	K	S		★												.625	.187	.055	—				
	SEKN53AFTN1	SEKN1504AFTN1	K	T									★					.625	.187	.055	—				
SE545 	SEER53AFEN-JS	SEER1504AFEN-JS	E	E		★	★										.625	.187	.055	.039					
SE545 	WEC53AFER5C	WEC53AFER5C	C	E									●				—	.187	.197	.039					
	WEC53AFTR5C	WEC53AFTR5C	C	T						★								—	.187	.197	.039				
SG20 	RGEN2004EN	RGEN2004M0EN	E	E	★												.787	.187	—	—					
	RGEN2004SN	RGEN2004M0SN	E	S						★		★						.787	.187	—	—				

MILLING TOOL INSERTS

Work Material	P	Steel	Class	Honing	Coated	Dimensions (inch)					
	M	Stainless Steel				L	W1	IC	S	RE	
Cutter Type Insert Geometry	K	Cast Iron	Order Number	(ISO) Number	VP15TF	VP20RT	Cutting Conditions :				
	N	Non-Ferrous Metal					●	Stable Cutting	●	General Cutting	✦
SPX  K084	S	Heat-resistant Alloy, Titanium Alloy	M	E	●	●	Honing :				
	H	Hardened Materials					E	Round			
	JPMX140412-JM	JPMX140412-JM	M	E	●	●	.563	.500	—	.187	.047
	JPMX190412-JM	JPMX190412-JM	M	E	●	●	.750	.500	—	.187	.047
	JPMX140412-WH	JPMX140412-WH	M	E	●	●	.563	.500	—	.187	.047
	JPMX190412-WH	JPMX190412-WH	M	E	●	●	.750	.500	—	.187	.047
	MPMX120412-JM	MPMX120412-JM	M	E	●	●	—	—	.500	.187	.047
	MPMX120412-WH	MPMX120412-WH	M	E	●	●	—	—	.500	.187	.047
	SPMX120408-JM	SPMX120408-JM	M	E	●	●	—	—	.500	.187	.031
	SPMX120408-WH	SPMX120408-WH	M	E	●	●	—	—	.500	.187	.031

MILLING TOOL INSERTS

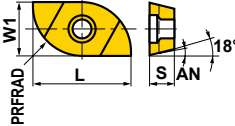
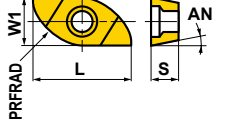
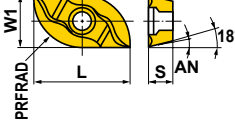
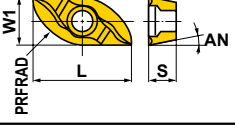
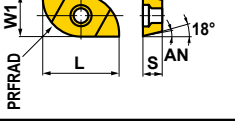
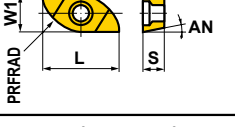
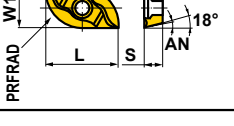
MILLING INSERTS

Work Material	P	Steel	Class	Honing	Coated	Dimensions (inch)								
	M	Stainless Steel				L	DC	S	BS	RE	PRFRAD	APMX		
Cutter Type Insert Geometry	K	Cast Iron	Order Number	(ISO) Number	EP6120	VP15TF	MP80T0	L	DC	S	BS	RE	PRFRAD	APMX
	N	Non-Ferrous Metal												
Order Number	S	Heat-resistant Alloy, Titanium Alloy	(ISO) Number	Class	Honing	Coated	L	DC	S	BS	RE	PRFRAD	APMX	
	H	Hardened Materials												
SRF  K136	SRFT0375	SRFT0375	-	F	●	●	.335	.375	.102	.020	-	.1875	-	
	SRFT0500	SRFT0500	-	F	●	●	.394	.500	.118	.020	-	.2500	-	
	SRFT0625	SRFT0625	-	F	●	●	.472	.622	.158	.039	-	.3125	-	
	SRFT0750	SRFT0750	-	F	●	●	.591	.750	.197	.039	-	.3750	-	
	SRFT1000	SRFT1000	-	F	●	●	.728	1.000	.236	.039	-	.5000	-	
	SRFT1250	SRFT1250	-	F	●	●	.925	1.250	.276	.039	-	.6250	-	
SRF (METRIC)  K138	SRFT10	SRFT10	-	F	★	★	.335	.394	.102	.020	-	.1969	-	
	SRFT12	SRFT12	-	F	★	★	.394	.472	.118	.020	-	.2362	-	
	SRFT16	SRFT16	-	F	★	★	.472	.630	.157	.039	-	.3150	-	
	SRFT20	SRFT20	-	F	★	★	.591	.787	.197	.039	-	.3937	-	
	SRFT25	SRFT25	-	F	★	★	.728	.984	.236	.039	-	.4921	-	
	SRFT32	SRFT32	-	F	★	★	.925	1.260	.276	.039	-	.6299	-	
SUF (METRIC)  K138	SUFT10R05	SUFT10R05	-	F	★	★	.335	.394	.102	.039	.0197	-	.0591	
	SUFT10R10	SUFT10R10	-	F	★	★	.335	.394	.102	.039	.0394	-	.0787	
	SUFT10R20	SUFT10R20	-	F	★	★	.335	.394	.102	.039	.0787	-	.1181	
	SUFT12R05	SUFT12R05	-	F	★	★	.394	.472	.118	.047	.0197	-	.0669	
	SUFT12R10	SUFT12R10	-	F	★	★	.394	.472	.118	.047	.0394	-	.0866	
	SUFT12R20	SUFT12R20	-	F	★	★	.394	.472	.118	.047	.0787	-	.1260	
	SUFT12R30	SUFT12R30	-	F	★	★	.394	.472	.118	.047	.1181	-	.1654	
	SUFT16R05	SUFT16R05	-	F	★	★	.472	.630	.157	.063	.0197	-	.0827	
	SUFT16R10	SUFT16R10	-	F	★	★	.472	.630	.157	.063	.0394	-	.1024	
	SUFT16R15	SUFT16R15	-	F	★	★	.472	.630	.157	.063	.0591	-	.1220	
	SUFT16R20	SUFT16R20	-	F	★	★	.472	.630	.157	.063	.0787	-	.1417	
	SUFT16R30	SUFT16R30	-	F	★	★	.472	.630	.157	.063	.1181	-	.1811	
	SUFT20R05	SUFT20R05	-	F	★	★	.591	.787	.197	.079	.0197	-	.0984	
	SUFT20R10	SUFT20R10	-	F	★	★	.591	.787	.197	.079	.0394	-	.1181	
	SUFT20R15	SUFT20R15	-	F	★	★	.591	.787	.197	.079	.0591	-	.1378	
	SUFT20R20	SUFT20R20	-	F	★	★	.591	.787	.197	.079	.0787	-	.1575	
	SUFT20R30	SUFT20R30	-	F	★	★	.591	.787	.197	.079	.1181	-	.1969	
	SUFT25R05	SUFT25R05	-	F	★	★	.728	.984	.236	.098	.0197	-	.1181	
	SUFT25R10	SUFT25R10	-	F	★	★	.728	.984	.236	.098	.0394	-	.1378	
	SUFT25R20	SUFT25R20	-	F	★	★	.728	.984	.236	.098	.0787	-	.1772	
	SUFT25R30	SUFT25R30	-	F	★	★	.728	.984	.236	.098	.1181	-	.2165	
	SUFT30R05	SUFT30R05	-	F	★	★	.886	1.181	.276	.118	.0197	-	.1378	
	SUFT30R10	SUFT30R10	-	F	★	★	.886	1.181	.276	.118	.0394	-	.1575	
	SUFT30R20	SUFT30R20	-	F	★	★	.886	1.181	.276	.118	.0787	-	.1969	
SUFT30R30	SUFT30R30	-	F	★	★	.886	1.181	.276	.118	.1181	-	.2362		
SUFT32R05	SUFT32R05	-	F	★	★	.925	1.26	.276	.126	.0197	-	.1457		
SUFT32R10	SUFT32R10	-	F	★	★	.925	1.26	.276	.126	.0394	-	.1772		
SUFT32R20	SUFT32R20	-	F	★	★	.925	1.26	.276	.126	.0787	-	.2047		

Cutting Conditions :
 ● : Stable Cutting
 ● : General Cutting
 ✖ : Unstable Cutting

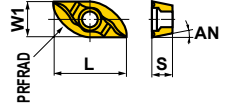
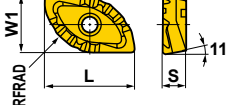
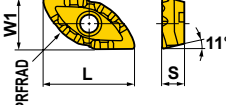
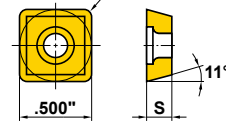
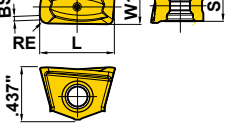
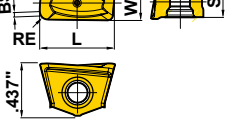
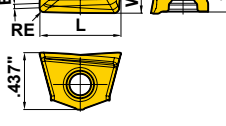
Honing :
 F : Sharp

MILLING TOOL INSERTS

Work Material	P	Steel	Coated	G	+	●	●	✦	Honing :	E : Round
	M	Stainless Steel								
Cutter Type Insert Geometry	Order Number	(ISO) Number	Class	Honing	VP15TF	L	W1	S	PRFRAD	AN
N	Non-Ferrous Metal	M	E	●	L	W1	S	PRFRAD	AN	
S	Heat-resistant Alloy, Titanium Alloy									M
H	Hardened Materials	M	E	●	L	W1	S	PRFRAD	AN	
SRM2 	SRM212C									SRM212C
	SRM216C	SRM216C	M	E	●	.945	.512	.216	.500	11°
	SRM220C	SRM220C	M	E	●	1.102	.638	.275	.625	11°
SRM2 	SRM212E	SRM212E	M	E	●	.610	.315	.169	.375	11°
	SRM216E	SRM216E	M	E	●	.807	.409	.216	.500	11°
	SRM220E	SRM220E	M	E	●	.964	.520	.275	.625	11°
SRM2 	SRM210C-M	SRM210C-M	M	E	●	.630	.323	.138	.313	11°
	SRM212C-M	SRM212C-M	M	E	●	.748	.385	.169	.375	11°
	SRM216C-M	SRM216C-M	M	E	●	.945	.512	.216	.500	11°
	SRM220C-M	SRM220C-M	M	E	●	1.102	.638	.275	.625	11°
SRM2 	SRM210E-M	SRM210E-M	M	E	●	.531	.258	.138	.313	11°
	SRM212E-M	SRM212E-M	M	E	●	.610	.315	.169	.375	11°
	SRM216E-M	SRM216E-M	M	E	●	.807	.409	.216	.500	11°
	SRM220E-M	SRM220E-M	M	E	●	.964	.520	.275	.625	11°
SRM2 (METRIC) 	SRG16C	SRG16C	G	E	★	.630	.323	.138	.315	11°
	SRG20C	SRG20C	G	E	★	.748	.402	.181	.394	10°
	SRG25C	SRG25C	G	E	★	.945	.504	.217	.492	10°
	SRG30C	SRG30C	G	E	★	1.102	.602	.276	.591	10°
	SRG32C	SRG32C	G	E	★	1.102	.642	.276	.630	10°
SRM2 (METRIC) 	SRG16E	SRG16E	G	E	★	.531	.264	.138	.315	11°
	SRG20E	SRG20E	G	E	★	.610	.335	.181	.394	9°
	SRG25E	SRG25E	G	E	★	.807	.402	.217	.492	9°
	SRG30E	SRG30E	G	E	★	.992	.480	.276	.591	9°
	SRG32E	SRG32E	G	E	★	1.028	.516	.276	.630	9°
SRM2 (METRIC) 	SRM16C-M	SRM16C-M	M	E	★	.630	.323	.138	.315	11°
	SRM20C-M	SRM20C-M	M	E	★	.748	.402	.181	.394	10°
	SRM25C-M	SRM25C-M	M	E	★	.945	.504	.217	.492	10°
	SRM30C-M	SRM30C-M	M	E	★	1.102	.602	.276	.591	10°
	SRM32C-M	SRM32C-M	M	E	★	1.102	.642	.276	.630	10°

MILLING TOOL INSERTS

MILLING INSERTS

Cutter Type Insert Geometry	Order Number	(ISO) Number	Class	Honing	Coated						Carbide		Dimensions (inch)							
					VP15TF	MP9030	MP9130	VP20RT	VP30RT	UP20M	UT120T	L	W1	S	BS	RE	PRFRAD	AN		
SRM2 (METRIC) ⓈK152 	SRM16E-M	SRM16E-M	M	E	★							.531	.264	.138	—	—	.315	11°		
	SRM20E-M	SRM20E-M	M	E	★							.610	.335	.181	—	—	.394	9°		
	SRM25E-M	SRM25E-M	M	E	★							.807	.402	.217	—	—	.492	9°		
	SRM30E-M	SRM30E-M	M	E	★							.992	.480	.276	—	—	.591	9°		
	SRM32E-M	SRM32E-M	M	E	★							1.028	.516	.276	—	—	.630	9°		
SRM2 40/50 (METRIC) ⓈK156 	SRG40C	SRG40C	G	E	★	★	★					1.417	.807	.315	—	—	.787	—		
	SRG50C	SRG50C	G	E	★	★	★					1.575	1.024	.335	—	—	.984	—		
SRM2 40/50 (METRIC) ⓈK156 	SRG40E	SRG40E	G	E	★	★	★					1.260	.654	.315	—	—	.787	—		
	SRG50E	SRG50E	G	E	★	★	★					1.409	.787	.335	—	—	.984	—		
TBE2 	SPMM432A	SPMT120408-A	M	E								—	—	.187	—	—	—	—		
VFX5 ⓈK090 	XNMU160708R-MS	XNMU160708R-MS	M	E	●							.630	.276	.256	.039	.031	—	—		
	XNMU160712R-MS	XNMU160712R-MS	M	E	●							.630	.276	.256	.039	.047	—	—		
	XNMU160716R-MS	XNMU160716R-MS	M	E	●							.630	.276	.256	.039	.063	—	—		
	XNMU160724R-MS	XNMU160724R-MS	M	E	●							.630	.276	.256	.039	.094	—	—		
	XNMU160732R-MS	XNMU160732R-MS	M	E	●							.681	.276	.256	—	.126	—	—		
	XNMU160740R-MS	XNMU160740R-MS	M	E	●							.744	.276	.256	—	.157	—	—		
VFX5 ⓈK090 	XNMU160708R-HS	XNMU160708R-HS	M	E	●							.630	.276	.256	.039	.031	—	—		
VFX5 ⓈK090 	XNMU160708R-LS	XNMU160708R-LS	M	E	●							.630	.276	.256	.039	.031	—	—		

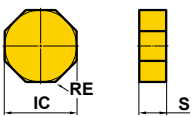
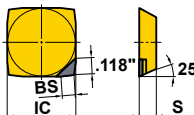
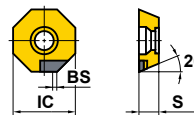
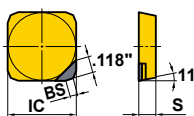
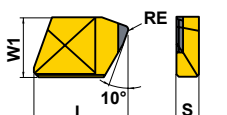
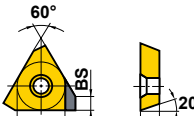
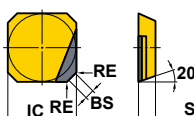
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 ● : Stable Cutting
 ● : General Cutting
 ✖ : Unstable Cutting

Honing :
 E : Round

MILLING TOOL INSERTS

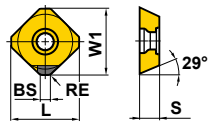
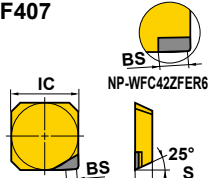
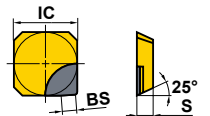
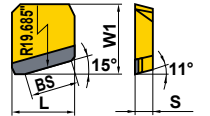
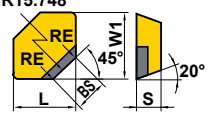


CBN AND PCD




















Cutter Type Insert Geometry	Order Number	(ISO) Number	Class	CBN	PCD	Dimensions (inch)					
				MB710 MB730 MB835 BC5030 MD220		L	W1	IC	S	BS	RE
AOX445 	SL-ONEN120404ASN	SL-ONEN120404ASN	E	★		—	—	.500	.187	—	.016
BF407 	SFCN42ZFFR2	SFCN1203ZFFR2	C		●	—	—	.500	.125	.094	—
BOE 	OEMX12T3ETR1	OEMX12T3ETR1	M	●●		—	—	.500	.156	.039	—
	OEMX12T3ETR5	OEMX12T3ETR5	M	●●		—	—	.500	.156	.197	—
FBP415 	SPEN42EETR1	SPEN1203EETR1	E	★		—	—	.500	.125	.055	—
NF10000 	NP-GDCN2004PDSR3	NP-GDCN2004PDSR3	C	★	★	.787	.500	—	.187	—	.031
PMF 	TPEW1303ZPTR2	TPEW1303ZPTR2	E	●		—	—	.313	.125	.079	—
SE445 	SECN42AFFR1	SECN1203AFFR1	C		●	—	—	.500	.125	.055	.039

MILLING TOOL INSERTS









CBN AND PCD WITH WIPER

Cutter Type Insert Geometry	Order Number	(ISO) Number	Class	CBN	PCD	Dimensions (inch)					
				MB710	MD220	L	W1	IC	S	BS	RE
ASX445  K019	NP-WEEW13T3AGFR3C	NP-WEEW13T3AGFR3C	E	●	.649	.651	—	.156	.118	.059	
	NP-WEEW13T3AGTR3C	NP-WEEW13T3AGTR3C	E	●	.649	.651	—	.156	.118	.059	
BF407  NP-WFC42ZFER6	NP-WFC42ZFER2	NP-WFC42ZFER2	C	●	—	—	.500	.125	.094	—	
	NP-WFC42ZFER6	NP-WFC42ZFER6	C	●	—	—	.500	.125	.236	—	
BF407 	WFC42ZFER2	WFC42ZFER2	C	★	—	—	.500	.125	.094	—	
FBP415 	WPC42EETR10C	WPC42EETR10C	C	●	.500	.597	—	.125	.394	—	
SE445  R15.748	WEC42AFFR5C	WEC42AFFR5C	C	●	.500	.604	—	.125	.197	.039	
	WEC42AFTR5C	WEC42AFTR5C	C	●	.500	.604	—	.125	.197	.039	

CLASSIFICATION





Order Number	(ISO) Number	Cutter Type	Page	Order Number	(ISO) Number	Cutter Type	Page
AEMW150304ER	AEMW150304ER	BAE500	J020	APMT1135PDER-M0	APMT1135PDER-M0	BAP300	J020
AEMW150308ER	AEMW150308ER			APMT1135PDER-M1	APMT1135PDER-M1		
AEMW1503062ER	AEMW1503062ER			APMT1135PDER-M2	APMT1135PDER-M2		
AEMW1503093ER	AEMW1503093ER						
AEMW1503125ER	AEMW1503125ER						
AEMW1503250ER	AEMW1503250ER						
AEMW19T304ER	AEMW19T304ER		BAE600	J020	APGT1604PDFR-G2	APGT1604PDFR-G2	BAP400
AEMW19T308ER	AEMW19T308ER						
AEMW19T3062ER	AEMW19T3062ER						
AEMW19T3093ER	AEMW19T3093ER						
AEMW19T3125ER	AEMW19T3125ER						
AEMW19T3250ER	AEMW19T3250ER						
AOGT123602PEFR-GM	AOGT123602PEFR-GM		APX3000	J015	APMT1604PDER-H1	APMT1604PDER-H1	
AOGT123604PEFR-GM	AOGT123604PEFR-GM	ⓈK044	APMT1604PDER-H2		APMT1604PDER-H2		
AOGT123608PEFR-GM	AOGT123608PEFR-GM						
AOMT123604PEER-H	AOMT123604PEER-H		J015	CCMX083508ENA	CCMX083508EN-A	LER	J024
AOMT123608PEER-H	AOMT123608PEER-H				CCMX09T308ENA	CCMX09T308EN-A	
AOMT123616PEER-H	AOMT123616PEER-H						
AOMT123602PEER-M	AOMT123602PEER-M		J015	CCMX09T308ENB	CCMX09T308EN-B		J024
AOMT123604PEER-M	AOMT123604PEER-M						
AOMT123608PEER-M	AOMT123608PEER-M						
AOMT123610PEER-M	AOMT123610PEER-M						
AOMT123612PEER-M	AOMT123612PEER-M						
AOMT123616PEER-M	AOMT123616PEER-M						
AOMT123620PEER-M	AOMT123620PEER-M						
AOMT123624PEER-M	AOMT123624PEER-M						
AOMT123630PEER-M	AOMT123630PEER-M						
AOMT123632PEER-M	AOMT123632PEER-M						
AOMT184804PEER-H	AOMT184804PEER-H	APX4000	J016	JOMW06T215ZZSR-FT	JOMW06T215ZZSR-FT	AJX	J014
AOMT184808PEER-H	AOMT184808PEER-H	ⓈK052		JOMW080320ZZSR-FT	JOMW080320ZZSR-FT		
AOMT184816PEER-H	AOMT184816PEER-H			JDMW09T320ZDSR-FT	JDMW09T320ZDSR-FT		
AOMT184832PEER-H	AOMT184832PEER-H			JDMW120420ZDSR-FT	JDMW120420ZDSR-FT		
AOMT184840PEER-H	AOMT184840PEER-H			JDMW140520ZDSR-FT	JDMW140520ZDSR-FT		
AOMT184850PEER-H	AOMT184850PEER-H			NEW JDMT09T323ZDER-JL	JDMT09T323ZDER-JL		
AOMT184850PEER-H	AOMT184850PEER-H			NEW JDMT120423ZDER-JL	JDMT120423ZDER-JL		
AOMT184864PEER-H	AOMT184864PEER-H			NEW JDMT140523ZDER-JL	JDMT140523ZDER-JL		
AOMT184804PEER-M	AOMT184804PEER-M			J016	JOMT06T215ZZSR-JM	JOMT06T215ZZSR-JM	
AOMT184808PEER-M	AOMT184808PEER-M						
AOMT184810PEER-M	AOMT184810PEER-M						
AOMT184812PEER-M	AOMT184812PEER-M						
AOMT184816PEER-M	AOMT184816PEER-M						
AOMT184820PEER-M	AOMT184820PEER-M						
APGT1135PDFR-G2	APGT1135PDFR-G2	BAP300	J020	JDMT120420ZDSR-ST	JDMT120420ZDSR-ST		
				JDMT140520ZDSR-ST	JDMT140520ZDSR-ST		
APMT1135PDER-H1	APMT1135PDER-H1		J020	JPMT060204-E	JPMT060204-E		
APMT1135PDER-H2	APMT1135PDER-H2						
APMT1135PDER-H6	APMT1135PDER-H6						

Order Number	(ISO) Number	Cutter Type	Page
JPMX140412-JM JPMX190412-JM	JPMX140412-JM JPMX 190412-JM	SPX ↻K084 	J029
JPMX140412-WH JPMX190412-WH	JPMX140412-WH JPMX 190412-WH		J029
MBD0500021 MBD 0500041 MBD0625021 MBD 0625041 MBD0750021 MBD 0750041 MBD1000021 MBD 1000041 MBD1000081	MBD0500021 MBD0500041 MBD0625021 MBD0625041 MBD0750021 MBD0750041 MBD1000021 MBD1000041 MBD1000081	MBD ↻K147 	J025
MBF0500021 MBF 0500041 MBF 0625021 MBF 0625041 MBF 0750021 MBF 0750041 MBF 1000021 MBF 1000041 MBF 1000081	MBF0500021 MBF0500041 MBF0625021 MBF0625041 MBF0750021 MBF0750041 MBF1000021 MBF1000041 MBF1000081	MBF ↻K147 	J025
MBN0312001 MBN 0375001 MBN0500001 MBN 0625001 MBN0750001 MBN1000001 MBN1250001 MBN M200001 MBN M300001	MBN0312001 MBN0375001 MBN0500001 MBN0625001 MBN0750001 MBN1000001 MBN1250001 MBNM200001 MBNM300001	MBN ↻K146 	J025
MPMM322 MPMM432	MPMT090308 MPMT120408	ECMP ↻K134 	J023
MPMX120412-JM	MPMX120412-JM	SPX ↻K084 	J029
MPMX120412-WH	MPMX120412-WH		J029

Order Number	(ISO) Number	Cutter Type	Page
NNMU200608ZEN-HK NNMI 200608ZEN-MK	NNMU200608ZEN-HK NNMU200608ZEN-MK	AHX640S ↻K024 AHX640W ↻K029 	J014
NNMU200708ZEN-MP	NNMU200708ZEN-MP	AHX640S ↻K024 	J014
NNMU200712ZER-MM	NNMU200712ZER-MM		J014
NP-GDCN2004PDSR3	NP-GDCN2004PDSR3	NF10000 	J036
NP-WEEW13T3AGFR3C NP-WEEW 13T3AGTR3C	NP-WEEW13T3AGFR3C NP-WEEW13T3AGTR3C	ASX445 ↻K016 	J037
NP-WFC42ZFER2 NP-WFC42ZFER6	NP-WFC42ZFER2 NP-WFC 42ZFER6	BF407 	J037
OEMX12T3ETR1 OEMX 12T3ESR1 OEMX1705ETR1 OEMX 1705ESR1 OEMX12T3EER1-JS OEMX 12T3ETR1-JS OEMX1705EER1-JS OEMX 1705ETR1-JS OEMX12T3ETR1 OEMX 12T3ETR5	OEMX12T3ETR1 OEMX12T3ESR1 OEMX1705ETR1 OEMX1705ESR1 OEMX12T3EER1-JS OEMX12T3ETR1-JS OEMX1705EER1-JS OEMX1705ETR1-JS OEMX12T3ETR1 OEMX12T3ETR5	BOE ↻K130 	J021 J021 J036
QOGT0830R-G1 QOGT 0934R-G1 QOGT1443R-G1 QOGT 1651R-G1 QOGT1959R-G1 QOMT0830R-M2 QOMT0934R-M2 QOMT1443R-M2 QOMT1651R-M2 QOMT1959R-M2	QOGT0830R-G1 QOGT0934R-G1 QOGT1443R-G1 QOGT1651R-G1 QOGT1959R-G1 QOMT0830R-M2 QOMT0934R-M2 QOMT1443R-M2 QOMT1651R-M2 QOMT1959R-M2	AQX ↻K100 	J016 J016

MILLING TOOL INSERTS

CLASSIFICATION

Order Number	(ISO) Number	Cutter Type	Page	Order Number	(ISO) Number	Cutter Type	Page		
QOGT0830R-G1	QOGT0830R-G1	AQX(METRIC)  ↻K101	J016	SEEN42EFFR1	SEEN1203EFFR1	SE415 	J027		
QOGT1035R-G1	QOGT1035R-G1			SEEN42EFER1	SEEN1203EFER1				
QOGT1342R-G1	QOGT1342R-G1			SEEN42EFTR1	SEEN1203EFTR1				
QOGT1651R-G1	QOGT1651R-G1				J016	SEEN42EFSR1	SEEN1203EFSR1		J027
QOGT1856R-G1	QOGT1856R-G1					SEKN42EFSR1	SEKN1203EFSR1		
QOGT2062R-G1	QOGT2062R-G1					SEKN42EFTR1	SEKN1203EFTR1		
QOGT2576R-G1	QOGT2576R-G1					SEKN42EFTR	SEKN1203EFTR		
QOMT0830R-M2	QOMT0830R-M2		J016	SEER42EFER-JS	SEER1203EFER-JS		J027		
QOMT1035R-M2	QOMT1035R-M2								
QOMT1342R-M2	QOMT1342R-M2								
QOMT1651R-M2	QOMT1651R-M2								
QOMT1856R-M2	QOMT1856R-M2								
QOMT2062R-M2	QOMT2062R-M2								
QOMT2576R-M2	QOMT2576R-M2								
RDMW0517M0E	RDMW0517M0E	ARX(METRIC)  ↻K122	J017	SECN42AFTN1	SECN1203AFTN1	SE445 	J027		
RDMW0620M0E	RDMW0620M0E			SEEN42AFFN1	SEEN1203AFFN1				
RDMW0724M0E	RDMW0724M0E			SEEN42AFEN1	SEEN1203AFEN1				
		SEEN42AFTN1	SEEN1203AFTN1						
		SEEN42AFSN1	SEEN1203AFSN1						
		SEEN42AFXN1	SEEN1203AFXN1						
		SEKN42AFSN1	SEKN1203AFSN1						
		SEKN42AFTN1	SEKN1203AFTN1						
		SEKN42AFTN	SEKN1203AFTN						
		SEER42AFEN-JS	SEER1203AFEN-JS						
		SEER42AFXN-JS	SEER1203AFXN-JS						
							J027		
				SECN42AFFR1	SECN1203AFFR1	SE445 	J036		
				SEEN53EFER1	SEEN1504EFER1	SE515 	J028		
				SEEN53AFEN1	SEEN1504AFEN1	SE545 	J028		
				SEEN53AFTN1	SEEN1504AFTN1				
				SEEN53AFSN1	SEEN1504AFSN1				
				SEKN53AFSN1	SEKN1504AFSN1				
				SEKN53AFTN1	SEKN1504AFTN1				
				SEER53AFEN-JS	SEER1504AFEN-JS		J028		
				SEET13T3AGEN-JL	SEET13T3AGEN-JL	ASX445 ↻K016 	J018		
				SEMT13T3AGSN-JM	SEMT13T3AGSN-JM		J018		





















MILLING TOOL INSERTS

Order Number	(ISO) Number	Cutter Type	Page	Order Number	(ISO) Number	Cutter Type	Page
SEMT13T3AGSN-JH	SEMT13T3AGSN-JH	ASX445 K016	J018	SOMT12T308PEER-JM	SOMT12T308PEER-JM	ASX400 K038	J017
				SOMT12T308PEEL-JM	SOMT12T308PEEL-JM		
SEMT13T3AGSN-FT	SEMT13T3AGSN-FT		J018	SOMT12T308PEER-JH	SOMT12T308PEER-JH		J017
							
SEGT13T3AGFN-JP	SEGT13T3AGFN-JP		J018	SOMT12T320PEER-FT	SOMT12T320PEER-FT		J017
							
SEER43AFEN-JS	SEER1204AFEN-JS	Corner Angle 45° 20° Positive	J034	SOGT12T308PEFR-JP	SOGT12T308PEFR-JP		J017
							
SEKN42AGTN	SEKN1203AGTN	Corner Angle 45° 20° Positive	J034	SONX1206PER	SONX1206PER	VOX400 K033	J033
							
SFAN42ZFFR2	SFAN1203ZFFR2	BF407	J021	SPEN42EEER1	SPEN1203EEER1	FBP415	J023
SFAN42ZFFL2	SFAN1203ZFFL2			SPEN42EEEL1	SPEN1203EEEL1		J024
SFCN42ZFFR2	SFCN1203ZFFR2			SPNN42EEER1	SPNN1203EEER1		
			J036	SPNN42EEEL1	SPNN1203EEEL1		
SFCN42ZFFR2	SFCN1203ZFFR2			SPER42EEER-JS	SPER1203EEER-JS	FBP415	J023
							
SL-ONEN120404ASN	SL-ONEN120404ASN	AOX445 K032	J036	SPEN42EETR1	SPEN1203EETR1		J036
							
SNMN432	SNMN120408	Negative	J034	SPKN42EDR	SPKN1203EDR	Corner Angle 15° 11° Positive	J034
SNMN433	SNMN120412			SPKN53EDR	SPKN1504EDR		
NEW SNMU140812ANER-M	SNMU140812ANER-M	WSX445 K008	J033	SPMB1204APT	SPMB1204APT	BSP	J022
NEW SNMU140812ANER-R	SNMU140812ANER-R						
NEW SNMU140812ANER-H	SNMU140812ANER-H						
NEW SNGU140812ANER-L	SNGU140812ANER-L		J033				
NEW SNGU140812ANER-M	SNGU140812ANER-M						
NEW SNGU140812ANFR-L	SNGU140812ANFR-L		J033				
NEW WNGU1406ANEN8C-M	WNGU1406ANEN8C-M						
							
SOET12T308PEER-JL	SOET12T308PEER-JL	ASX400 K038	J017	SPMN421	SPMN120304	11° Positive	J035
				SPMN421T	SPMN120304T		
				SPMN422	SPMN120308		
				SPMN423	SPMN120312		
				SPMN432	SPMN120408		
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				SPMN532	SPMN150408		







MILLING TOOL INSERTS



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SPMW322	SPMW090308			SRM212C-M	SRM212C-M		
SPMW421	SPMW120304			SRM216C-M	SRM216C-M		
SPMW422	SPMW120308			SRM220C-M	SRM220C-M		
SPMX120408-JM	SPMX120408-JM	SPX ⊕K084 	J029	SRM210E-M	SRM210E-M		J031
				SRM212E-M	SRM212E-M		
				SRM216E-M	SRM216E-M		
				SRM220E-M	SRM220E-M		
SPMX120408-WH	SPMX120408-WH		J029	SRM16C-M	SRM16C-M	SRM2(METRIC) ⊕K152 	J031
				SRM20C-M	SRM20C-M		
				SRM25C-M	SRM25C-M		
				SRM30C-M	SRM30C-M		
SRFT0375	SRFT0375	SRF ⊕K136 	J030	SRM32C-M	SRM32C-M		J032
SRFT0500	SRFT0500			SRM16E-M	SRM16E-M		
SRFT0625	SRFT0625			SRM20E-M	SRM20E-M		
SRFT0750	SRFT0750			SRM25E-M	SRM25E-M		
SRFT1000	SRFT1000			SRM30E-M	SRM30E-M		
SRFT1250	SRFT1250			SRM32E-M	SRM32E-M		
SRFT10	SRFT10	SRF(METRIC) ⊕K138 	J030	SUFT10R05	SUFT10R05	SUFT(METRIC) ⊕K138 	J030
SRFT12	SRFT12			SUFT10R10	SUFT10R10		
SRFT16	SRFT16			SUFT10R20	SUFT10R20		
SRFT20	SRFT20			SUFT12R05	SUFT12R05		
SRFT25	SRFT25			SUFT12R10	SUFT12R10		
SRFT30	SRFT30			SUFT12R20	SUFT12R20		
SRFT32	SRFT32			SUFT12R30	SUFT12R30		
SRG40C	SRG40C	SRM2 40/50 ⊕K156 	J032	SUFT16R05	SUFT16R05		J030
SRG50C	SRG50C			SUFT16R10	SUFT16R10		
SRG40E	SRG40E		J032	SUFT16R15	SUFT16R15		
SRG50E	SRG50E			SUFT16R20	SUFT16R20		
SRG16C	SRG16C	SRM2(METRIC) ⊕K152 	J031	SUFT16R30	SUFT16R30		
SRG20C	SRG20C			SUFT20R05	SUFT20R05		
SRG25C	SRG25C			SUFT20R10	SUFT20R10		
SRG30C	SRG30C			SUFT20R15	SUFT20R15		
SRG32C	SRG32C		J031	SUFT20R20	SUFT20R20		
SRG16E	SRG16E			SUFT20R30	SUFT20R30		
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SRG25E	SRG25E			SUFT25R10	SUFT25R10		
SRG30E	SRG30E			SUFT25R20	SUFT25R20		
SRG32E	SRG32E			SUFT25R30	SUFT25R30		
SRM212C	SRM212C	SRM2 ⊕K150 	J031	SUFT25R30	SUFT25R30		
SRM216C	SRM216C			SUFT30R05	SUFT30R05		
SRM220C	SRM220C			SUFT30R10	SUFT30R10		
SRM212E	SRM212E		J031	SUFT30R20	SUFT30R20		
SRM216E	SRM216E			SUFT30R30	SUFT30R30		
SRM220E	SRM220E			SUFT32R05	SUFT32R05		
				SUFT32R10	SUFT32R10		
				SUFT32R20	SUFT32R20		

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TECN32PEER1W	TECN1603PEER1W			WEC42EFTR5C	WEC42EFTR5C				
TECN32PETR1W	TECN1603PETR1W								
TEEN32PEFR1	TEEN1603PEFR1	NSE300 	J026	WEC42AFTR5C	WEC42AFTR5C	SE445 	J027		
TEEN32PEER1	TEEN1603PEER1								
TEEN32PETR1	TEEN1603PETR1								
TEEN32PESR1	TEEN1603PESR1								
TEER32PEER-JS	TEER1603PEER-JS		J026	WEC42AFFR5C	WEC42AFFR5C		J037		
				WEC42AFTR5C	WEC42AFTR5C				
TECN43PEFR1	TECN2204PEFR1	NSE400 SE400 	J026	WEC53AFER5C	WEC53AFER5C	SE545 	J028		
TECN43PEER1	TECN2204PEER1			WEC53AFTR5C	WEC53AFTR5C				
TECN43PETR1	TECN2204PETR1								
TEEN43PEFR1	TEEN2204PEFR1					WEEW13T3AGER8C	WEEW13T3AGER8C	ASX445 K016 	J018
TEEN43PEER1	TEEN2204PEER1					WEEW13T3AGTR8C	WEEW13T3AGTR8C		
TEEN43PETR1	TEEN2204PETR1								
TEEN43PESR1	TEEN2204PESR1								
TEKN43PEER1	TEKN2204PEER1					WFC42ZFER2	WFC42ZFER2	BF407 	J037
TEKN43PESR1	TEKN2204PESR1								
TEKN43PETR1	TEKN2204PETR1								
TEKN43PETR	TEKN2204PETR								
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TPEW1303ZPTR2	TPEW1303ZPTR2	PMF K161 	J036	WOEW12T308PEER8C	WOEW12T308PEER8C	ASX400 K038 	J017		
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TPKN32PPR	TPKN1603PPR	Corner Angle 0° 11° Positive 	J034	WOEX1206PER5C	WOEX1206PER5C	VOX400 K033 	J033		
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XDGT1550PDER-G08	XDGT1550PDER-G08			XDGX227016PDFR-GL	XDGX227016PDFR-GL			
XDGT1550PDER-G12	XDGT1550PDER-G12			XDGX227020PDFR-GL	XDGX227020PDFR-GL			
XDGT1550PDER-G16	XDGT1550PDER-G16			XDGX227024PDFR-GL	XDGX227024PDFR-GL			
XDGT1550PDER-G20	XDGT1550PDER-G20			XDGX227030PDFR-GL	XDGX227030PDFR-GL			
XDGT1550PDER-G30	XDGT1550PDER-G30			XDGX227032PDFR-GL	XDGX227032PDFR-GL			
XDGT1550PDER-G32	XDGT1550PDER-G32			XDGX227040PDFR-GL	XDGX227040PDFR-GL			
XDGT1550PDER-G40	XDGT1550PDER-G40			XDGX227050PDFR-GL	XDGX227050PDFR-GL			
XDGT1550PDER-G50	XDGT1550PDER-G50							
XDGT1550PDFR-G04	XDGT1550PDFR-G04				J023			XNMMU160708R-MS
XDGT1550PDFR-G08	XDGT1550PDFR-G08	XNMMU160712R-MS	XNMMU160712R-MS					
XDGT1550PDFR-G12	XDGT1550PDFR-G12	XNMMU160716R-MS	XNMMU160716R-MS					
XDGT1550PDFR-G16	XDGT1550PDFR-G16	XNMMU160724R-MS	XNMMU160724R-MS					
XDGT1550PDFR-G20	XDGT1550PDFR-G20	XNMMU160732R-MS	XNMMU160732R-MS					
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XDGT1550PDFR-G32	XDGT1550PDFR-G32	XNMMU160740R-MS	XNMMU160740R-MS					
XDGT1550PDFR-G40	XDGT1550PDFR-G40	XNMMU160708R-HS	XNMMU160708R-HS					
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XDGT1550PDFR-GL04	XDGT1550PDFR-GL04		J023			XNMMU160708R-LS	XNMMU160708R-LS	
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XDGX175012PDFR-GL	XDGX175012PDFR-GL			XNMMU190924R-MS	XNMMU190924R-MS			
XDGX175016PDFR-GL	XDGX175016PDFR-GL			XNMMU190932R-MS	XNMMU190932R-MS			
XDGX175020PDFR-GL	XDGX175020PDFR-GL			XNMMU190940R-MS	XNMMU190940R-MS			
XDGX175024PDFR-GL	XDGX175024PDFR-GL			XNMMU190950R-MS	XNMMU190950R-MS			
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XDGX175032PDFR-GL	XDGX175032PDFR-GL							
XDGX175040PDFR-GL	XDGX175040PDFR-GL							
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NEW XDGX175008PDER-GM	XDGX175008PDER-GM							
NEW XDGX175012PDER-GM	XDGX175012PDER-GM							
NEW XDGX175016PDER-GM	XDGX175016PDER-GM							
NEW XDGX175020PDER-GM	XDGX175020PDER-GM							
NEW XDGX175024PDER-GM	XDGX175024PDER-GM							
NEW XDGX175030PDER-GM	XDGX175030PDER-GM							
NEW XDGX175032PDER-GM	XDGX175032PDER-GM							
NEW XDGX175040PDER-GM	XDGX175040PDER-GM							
NEW XDGX175050PDER-GM	XDGX175050PDER-GM							
NEW XDGX175004PDFR-GM	XDGX175004PDFR-GM		J019	XPGT13T3PDER-G1	XPGT13T3PDER-G1	BAP3500 	J021	
NEW XDGX175008PDFR-GM	XDGX175008PDFR-GM			XPGT13T3PDER-G2	XPGT13T3PDER-G2			
NEW XDGX175012PDFR-GM	XDGX175012PDFR-GM			XPGT13T3PDER-G6	XPGT13T3PDER-G6			
NEW XDGX175016PDFR-GM	XDGX175016PDFR-GM			XPGT13T3PDER-G75	XPGT13T3PDER-G75			
NEW XDGX175020PDFR-GM	XDGX175020PDFR-GM			XPGT13T3PDER-G8	XPGT13T3PDER-G8			
NEW XDGX175024PDFR-GM	XDGX175024PDFR-GM			XPGT13T3PDFR-G1	XPGT13T3PDFR-G1			
NEW XDGX175030PDFR-GM	XDGX175030PDFR-GM			XPGT13T3PDFR-G2	XPGT13T3PDFR-G2			
NEW XDGX175032PDFR-GM	XDGX175032PDFR-GM			XPGT13T3PDFR-G6	XPGT13T3PDFR-G6			
NEW XDGX175040PDFR-GM	XDGX175040PDFR-GM			XPGT13T3PDFR-G75	XPGT13T3PDFR-G75			
NEW XDGX175050PDFR-GM	XDGX175050PDFR-GM			XPGT13T3PDFR-G8	XPGT13T3PDFR-G8			
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NEW XDGX175008PDFR-GM	XDGX175008PDFR-GM			XPMT13T3PDER-M2	XPMT13T3PDER-M2			
NEW XDGX175012PDFR-GM	XDGX175012PDFR-GM			XPMT13T3PDER-M6	XPMT13T3PDER-M6			
NEW XDGX175016PDFR-GM	XDGX175016PDFR-GM			XPMT13T3PDER-M75	XPMT13T3PDER-M75			
NEW XDGX175020PDFR-GM	XDGX175020PDFR-GM			XPMT13T3PDER-M8	XPMT13T3PDER-M8			
NEW XDGX175024PDFR-GM	XDGX175024PDFR-GM							
NEW XDGX175030PDFR-GM	XDGX175030PDFR-GM							
NEW XDGX175032PDFR-GM	XDGX175032PDFR-GM							
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