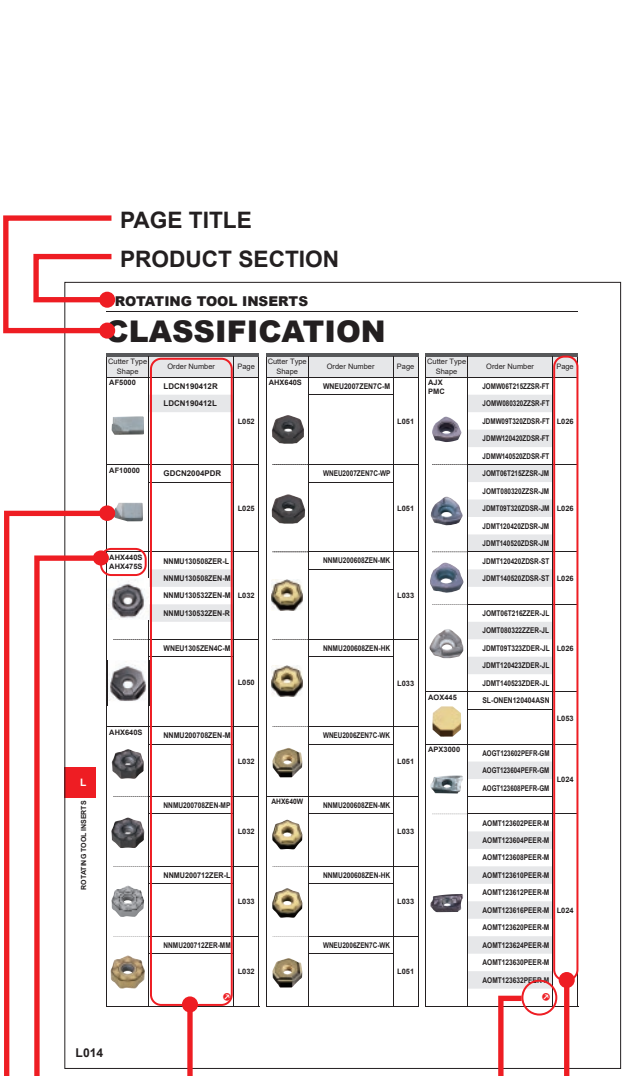
HOW TO READ THE STANDARD OF ROTATING TOOL INSERTS

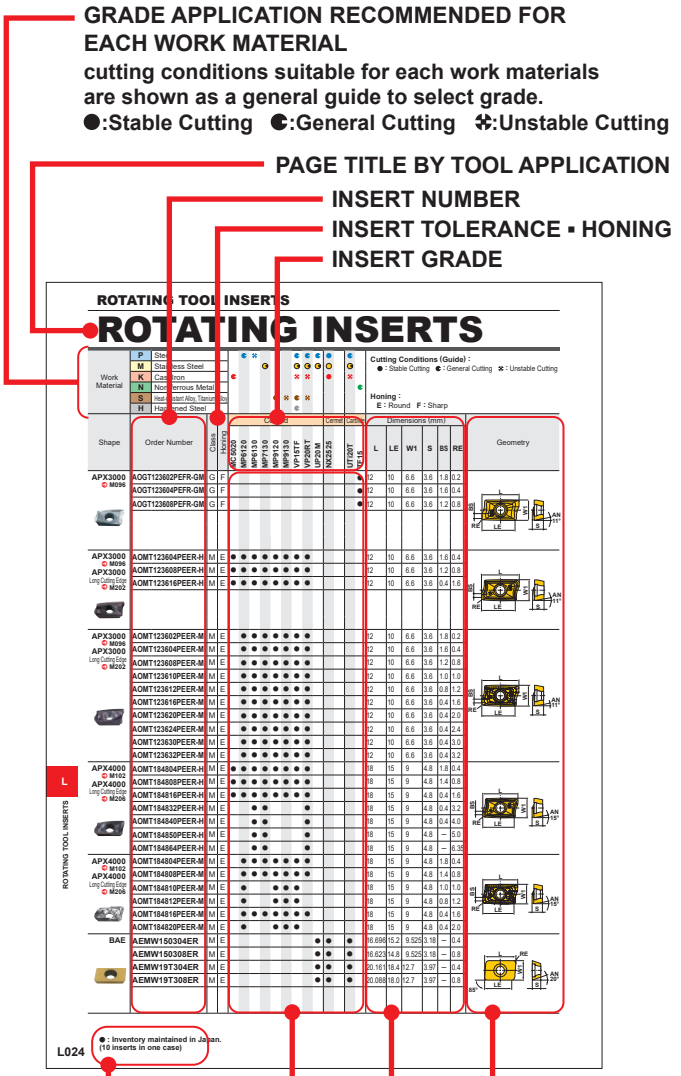
●How the section of rotating tool inserts is organised

①Organised according to cutter type.
②Cutters are arranged in alphabetical order.

●How the standards for rotating tool inserts are organised

①Classified into rotating tool inserts, wiper inserts and drilling inserts.
②Arranged in order of alphabet of order number.

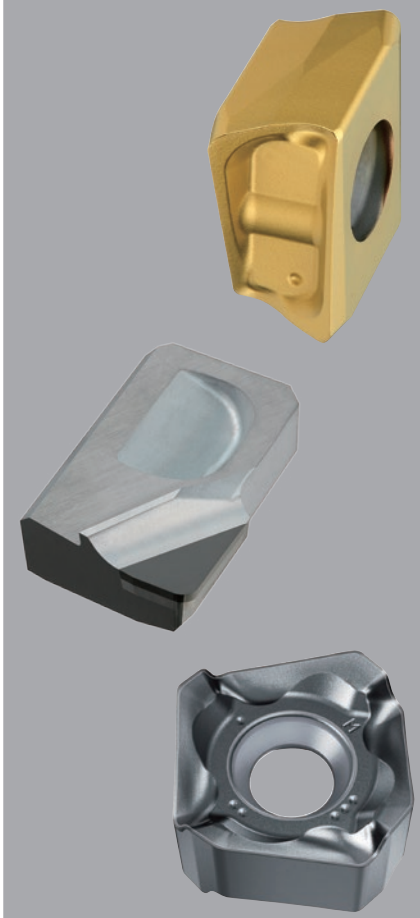




●To Order : Please specify
①insert number and grade.

MILLING TOOLS

INSERT STANDARDS
CBN & PCD INSERT STANDARDS
INSERT GRADES



IDENTIFICATION

Symbol	Insert Shape	
N	Heptagonal	
O	Octagonal	
S	Square	
T	Triangular	
C	Rhombic80°	
M	Rhombic86°	
A	Parallelogram85°	
R	Round	
X	Special Design	—
W	Wiper	—

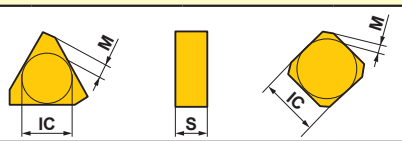
① Insert Shape

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

② Normal Clearance

①	②	③	④
S	E	E	R

③ Tolerance Class



Symbol	Tolerance of Nose Height **M** (mm)	Tolerance of Inscribed Circle **IC** (mm)	Tolerance of Thickness **S** (mm)
A	±0.005	±0.025	±0.025
C	±0.013	±0.025	±0.025
E	±0.025	±0.025	±0.025
G	±0.025	±0.025	±0.13
K*	±0.013	±0.05—±0.15	±0.025
M*	±0.08—±0.18	±0.05—±0.15	±0.13
N*	±0.08—±0.18	±0.05—±0.15	±0.025

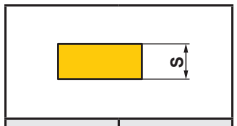
The surface of insert with ✱ mark is sintered.

④ Fixing and/or for Chip Breaker

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

Symbol R	Symbol C	Symbol S	Symbol T	Diameter of Inscribed Circle
	06	06	11	6.35
	08	07	13	7.94
	09	09	16	9.525
10				10.00
12				12.00
	12	12	22	12.70
	16	15	27	15.875
20				20.00

⑤ Insert Size



Symbol	Insert Thickness (mm)
03	3.18
T3	3.97
04	4.76

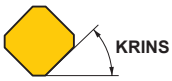
⑥ Insert Thickness

Symbol	Honing
F	Sharp
E	Round
T	Chamfer
S	Chamfer+Hone
Z	Chamfer (Strong Cutting Edge Type)

⑨ Cutting Edge Condition

⑤	⑥	⑦	⑧	⑨	⑩	⑪		⑫
12	03	A	F	E	R	1	-	JS

⑦ Wiper Insert Cutting Angle



Symbol	Wiper Insert Cutting Angle
A	45°
E	75°
P	90°
Z	Other Angle

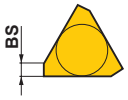
⑧ Clearance of Wiper Insert

Symbol	Clearance Angle
D	15°
E	20°
F	25°
G	30°

⑩ Hand Tool Holder

Symbol	Hand Tool Holder
L	Left Hand Tool Holder
N	For Both Right and Left Hand Tool Holder
R	Right Hand Tool Holder

⑪ Width of Wiper Insert



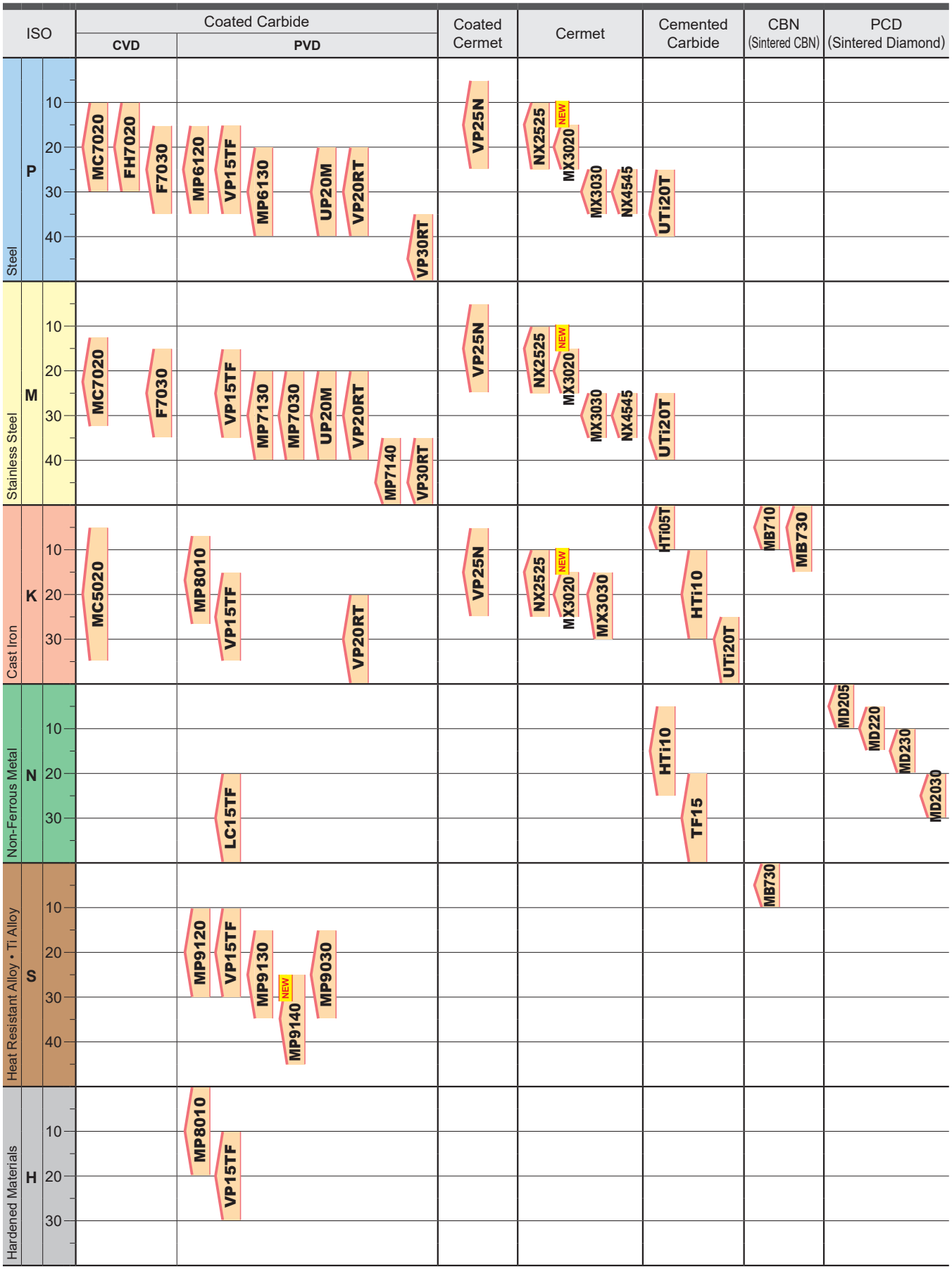
Symbol	Width of Wiper Insert
1	1.4 (1.94 only for TEKN)

⑫ Chip Breaker

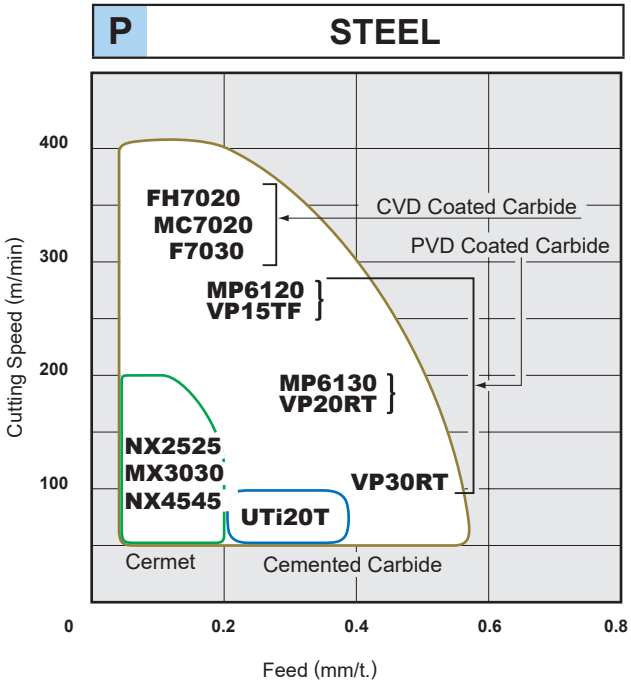
Symbol	Name
FT	FT Breaker
HS	HS Breaker
JH	JH Breaker
JM	JM Breaker
JP	JP Breaker
JS	JS Breaker
LS	LS Breaker
MM	MM Breaker
MS	MS Breaker

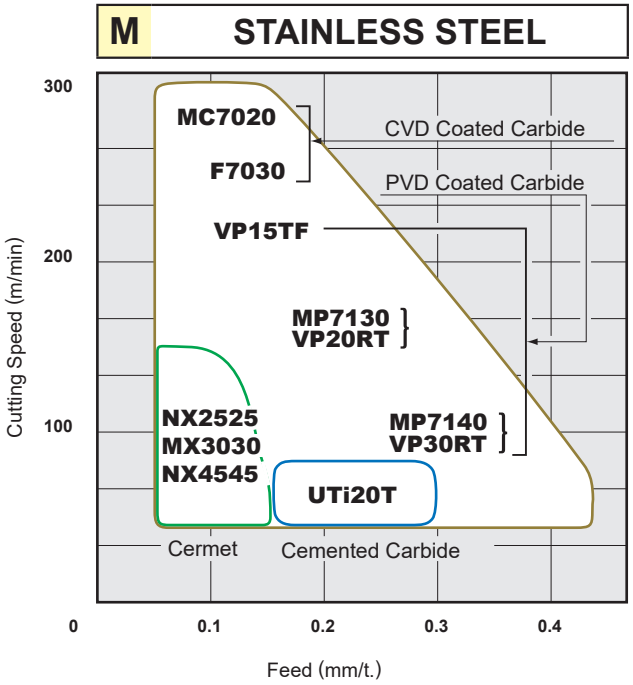
GRADES FOR MILLING

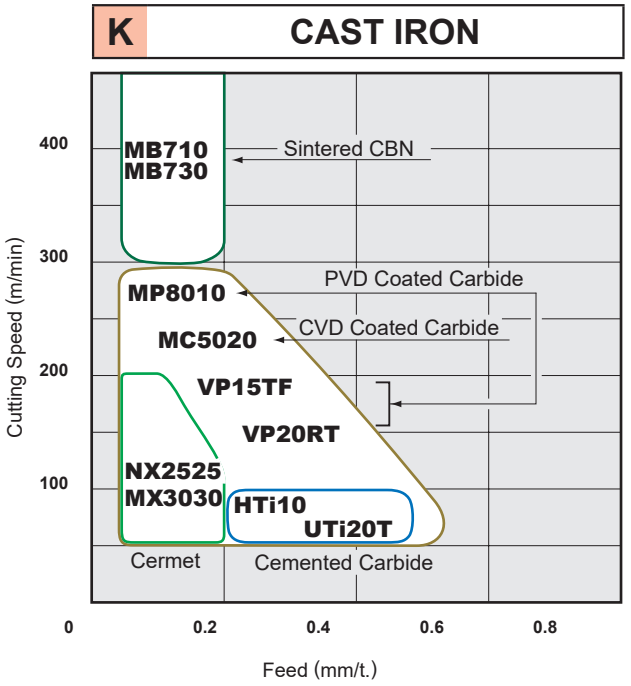
●INDEXABLE INSERT GRADES FOR MILLING

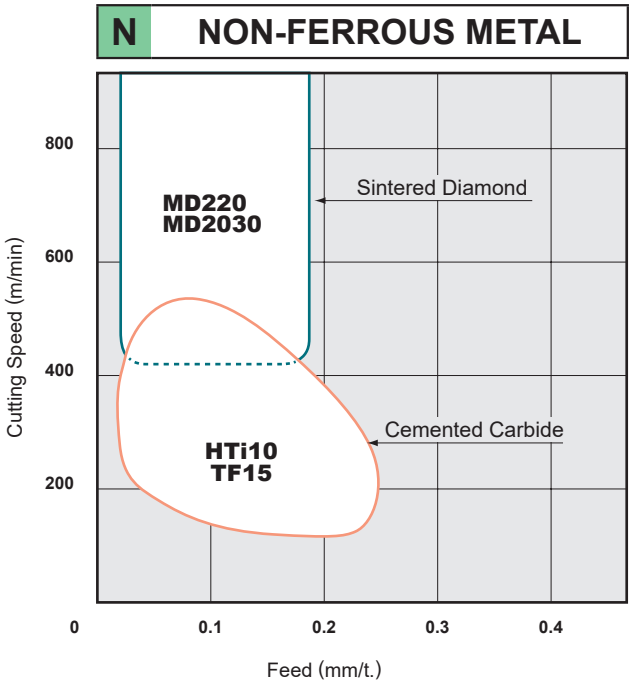


MILLING APPLICATION RANGE





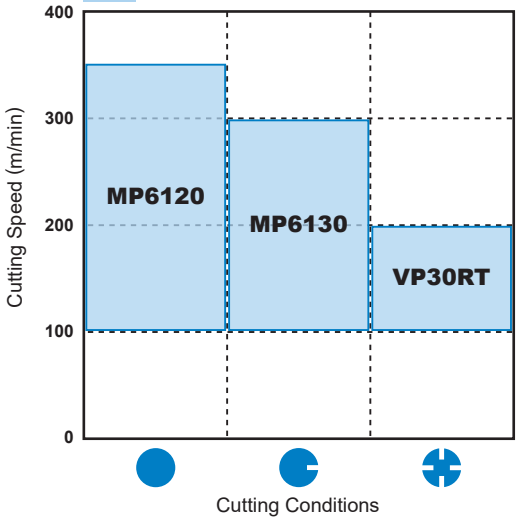




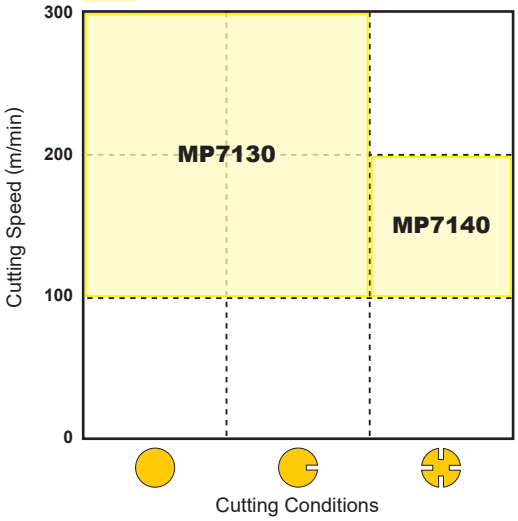
MILLING APPLICATION RANGE

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

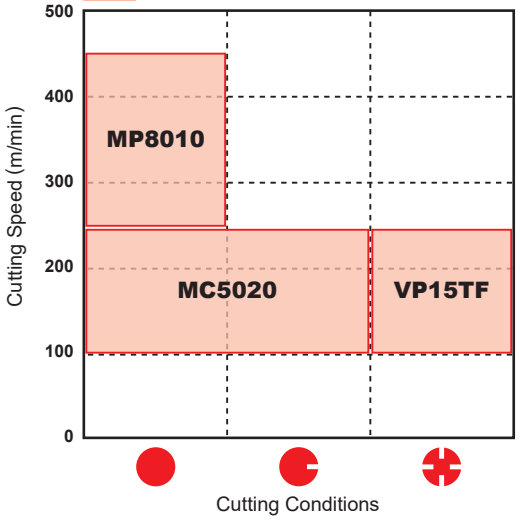
P STEEL (Medium to Rough Cutting)



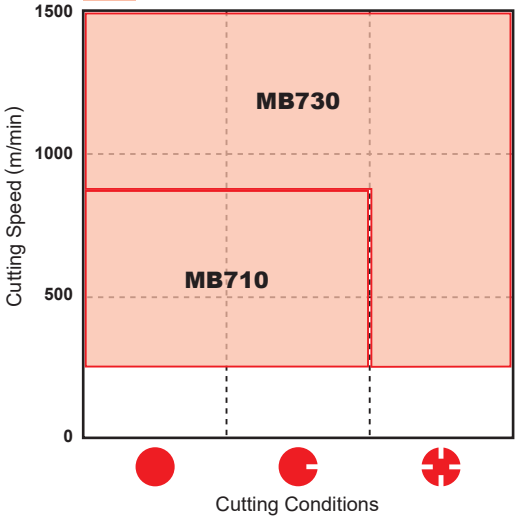
M STAINLESS STEEL



K CAST IRON



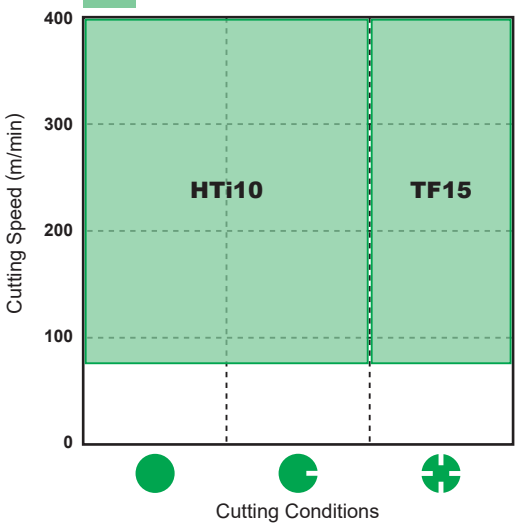
K CAST IRON (CBN)



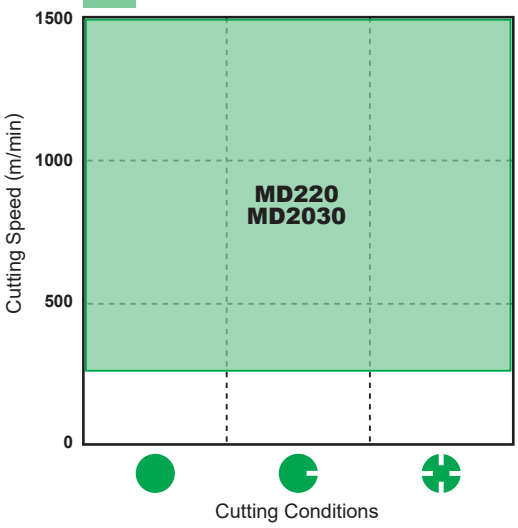
■CUTTING CONDITIONS

● Stable Cutting	Plane Cutting Constant Depth of Cut Pre-Machined Securely Clamped Component Cutting
◕ General Cutting	
✚ Unstable Cutting	Heavy Interrupted Cutting Irregular Depth of Cut Low Clamping Rigidity Cutting

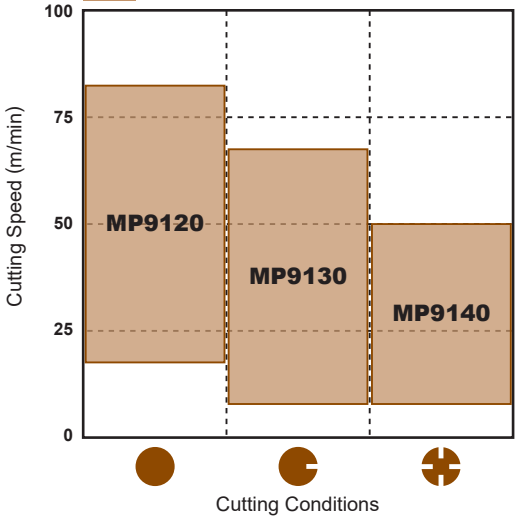
N NON-FERROUS METAL



N NON-FERROUS METAL (PCD)



S HEAT RESISTANT ALLOY, TITANIUM ALLOY



COATED CARBIDE (CVD&PVD)

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

<PVD>
- PVD coating prolongs tool life when compared to cemented carbide under the same cutting conditions.
- Coating of tools with sharp edges is possible without softening or changing the quality of the subsrate.

■SELECTION STANDARD

MILLING

Work Material		Recommended Grade	Recommended Cutting Speed (m/min)
P	Steel	F7030	200 (150 — 250)
		MC7020	200 (150 — 250)
		MP6120	150 (100 — 200)
		MP6130	150 (100 — 200)
		VP15TF	150 (100 — 200)
M	Stainless Steel	F7030	200 (150 — 250)
		MC7020	220 (170 — 270)
		MP7030	150 (100 — 200)
		MP7130	150 (100 — 200)
		MP7140	150 (100 — 200)
		VP15TF	150 (100 — 200)
K	Cast Iron	MC5020	180 (100 — 250)
		VP15TF	150 (100 — 200)
N	Aluminium Alloy	LC15TF	1000 (200 — 3000)
S	Heat Resistant Alloy Ti Alloy	MP9120	30 (20 — 40)
		VP15TF	30 (20 — 40)
		MP9030	40 (25 — 60)
		MP9130	25 (20 — 35)
		NEW MP9140	20 (15 — 30)
H	Hardened Materials	MP8010	80 (50 — 120)
		VP15TF	80 (50 — 120)

■GRADE CHARACTERISTICS

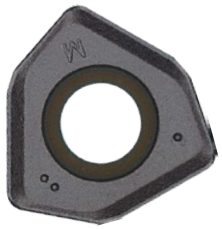
Grade	Substrate	Coating Layer	
	Hardness (HRA)	Composition	Thickness
MC5020	91.0	TiCN-Al_2O_3-Ti Compound	Thick
MC7020	88.8	TiCN-Al_2O_3 Compound	Thick
FH7020	88.8	TiCN-Al_2O_3-Ti Compound	Thick
F7030	88.8	TiCN-Al_2O_3-TiN	Thin
MP6120	91.5	(Al,Ti,Cr)N	Thin
MP6130	90.5	(Al,Ti,Cr)N	Thin
MP7030	90.5	(Al,Ti)N-Ti Compound	Thin
MP7130	90.5	(Al,Ti)N-Ti Compound	Thin
MP7140	88.8	(Al,Ti)N-Ti Compound	Thin

Grade	Substrate	Coating Layer	
	Hardness (HRA)	Composition	Thickness
MP8010	93.5	(Al,Ti,Si)N	Thin
MP9120	91.5	(Al,Ti,Cr)N	Thin
MP9030	90.5	(Al,Ti)N-Ti Compound	Thin
MP9130	90.5	(Al,Ti,Cr)N	Thin
NEW **MP9140**	89.0	Al-(Al,Ti)N	Thin
VP15TF	91.5	(Al,Ti)N	Thin
VP20RT	90.5	(Al,Ti)N	Thin
VP30RT	88.8	(Al,Ti)N	Thin
UP20M	90.5	Ti Compound	Thin

Note 1) Internal hardness represent typical values shown as hardness.

For machining of steels and stainless steels

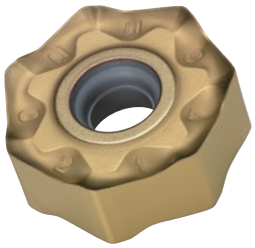
MC7020



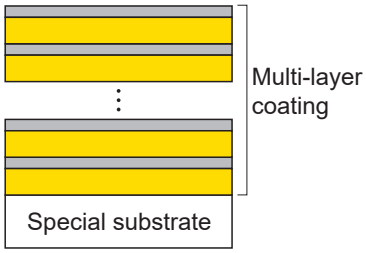
The micro-grain wear resistant Al_2O_3 and fibrous TiCN layers deliver excellent wear resistance in high speed cutting. Use of a specially developed cemented carbide that provides superior resistance to fracture and thermal cracking prevents the cutting edge from sudden fracturing.

For machining of stainless steel

MP7030



MP7030 has a multi-layer coating based on newly developed Ti-compound. It provides superior wear and fracture resistance in stainless steel machining. A special tough cemented carbide substrate gives excellent performance in machining of difficult-to-cut materials such as stainless steel.



Heat-resistant Alloy, Cutting For Titanium Alloy

MP9130

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

NEW

MP9140

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

CERMET

- NX2525 for high speed milling.
- NX4545, MX3030 for general milling.

■SELECTION STANDARD

MILLING

Work Material	Recommended Grade	Recommended Cutting Speed (m/min)	ISO	Application Range
P, M — Steel, Stainless Steel	NX2525	250 (150 — 350)	P, M	NX2525
	MX3030, NX4545	150 (120 — 180)		MX3030, NX4545
K — Cast Iron	NX2525	200 (150 — 300)	K	NX2525
	MX3030	150 (120 — 180)		MX3030

Note 1) In case of wet cutting, please use coated carbide VP15TF for steel cutting and coated carbide MC5020 for cast iron cutting.

■GRADE CHARACTERISTICS

Grade	Hardness (HRA)
NX2525	92.2
MX3030	90.0
NX4545	90.0

Note 1) Internal hardness represent typical values shown as hardness.

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 (m/min)	ISO	Application Range
P	Steel	**UTi20T**	120 (50 — 180)	P	UTi20T
M	Stainless Steel	**UTi20T**	120 (50 — 180)	M	UTi20T
K	Cast Iron	**HTi10**	100 (50 — 150)	K	HTi10
		UTi20T	120 (50 — 180)		UTi20T
N	Non-Ferrous Metal	**HTi10** **TF15**	400 (300 — 500)	N	HTi10 TF15

■MAIN COMPONENT AND APPLICATION

ISO	Main Component	Characteristics	Work Material
P M	WC-TiC-TaC-Co	Heat / 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)
P M	**UTi20T**	90.5
K N	**HTi05T**	92.5
K	**HTi10**	92.0
N	**TF15**	91.5

Note 1) Internal hardness represent typical values shown as hardness.

CBN (SINTERED CBN)

- MB710 and MB730 for cast iron cutting.
- BC5030 for high speed machining of cast irons available.
- Due to the combination of the BC5030 insert geometry and the AOX allows the use of up to 16 corners per insert, enabling cost effective high efficiency machining.

■SELECTION STANDARD / RECOMMENDED CUTTING CONDITIONS

FINISHING

Work Material		Structure	Cutting Speed (m/min) 250 500 750 1000 1250	Feed (mm/t.)	Depth of Cut (mm)	Coolant
Grey Cast Iron	JIS FC250	Ferritic + Pearilitic	MB710 / MB730	—0.3	—0.5	Dry
	JIS FC300	Pearilitic				

ROUGHING

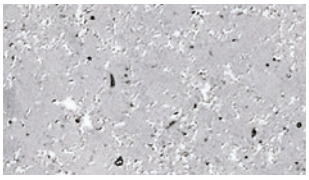
Work Material		Structure	Cutting Speed (m/min) 250 500 1000 1500 2000	Feed (mm/t.)	Depth of Cut (mm)	Coolant
Grey Cast Iron	JIS FC250	Pearilitic	BC5030	—0.15	—3.0	Dry

■FEATURES AND BASE

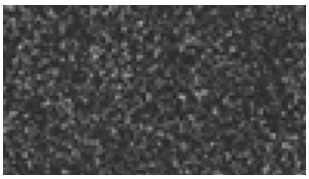
Grade	Application	Features	Main Component	Coating Layer
MB710	For General Cutting	General purpose grade with well balanced wear and fracture resistance.	CBN TiC Al_2O_3	—
MB730	For High Speed Cutting For interrupted Cutting	Has the largest CBN content and therefore displays good thermal conductivity. It is suitable for the high temperatures that are generated in high speed cutting.	CBN (High Content) Co Base Alloy	—
BC5030	For 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 coated grade for easy recognition of used corners.	CBN AlN	TiN

PCD (SINTERED DIAMOND)

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



Micro-Structure of **MD220**



Micro-Structure of **MD2030**

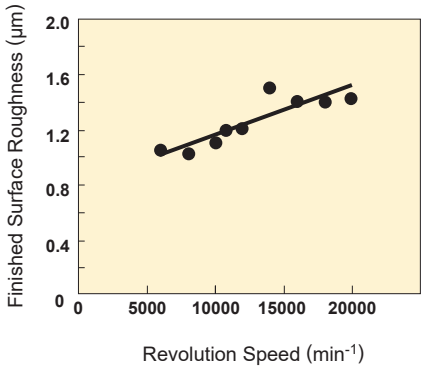
■GRADE FEATURES

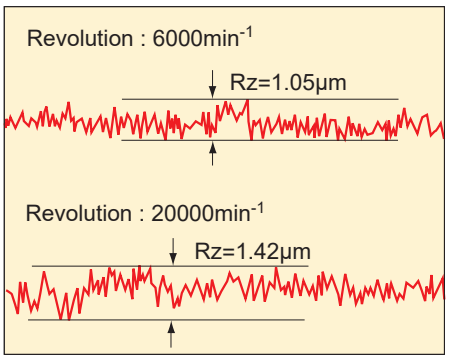
Grade	Features
MD220	Excellent in the balance between wear resistance and fracture resistance. For a wide range of tooling applications.
MD2030	Improved fracture resistance when used in unstable applications. The stability of the cutting edge can meet a wide variety of work material and cutting conditions.

■RECOMMENDED CUTTING CONDITIONS

Work Material	Cutting Speed (m/min)	Grade	Feed per Tooth (mm/t.)	Depth of Cut (mm)
Aluminium Alloy (Si ≤12%)	1000—6000	**MD220** **MD2030**	—0.3	—0.5
Aluminium Alloy (Si ≥13%)	200—800			

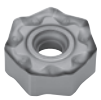
■CUTTING PERFORMANCE





<Cutting Conditions>
Workpiece : JIS A7075-T6
Insert : NP-GDCW1240PDFR2
Grade : MD220
Tool : V10000R0406D
Feed : 0.2mm/t.
Depth of Cut : 0.5mm
Width of Cut : 80mm
Dry Cutting

CLASSIFICATION

Cutter Type Shape	Order Number	Page
AF5000 	LDCN190412R	L052
	LDCN190412L	
AF10000 	GDCN2004PDR	L052
AHX440S AHX475S 	NNMU130508ZER-L	L032
	NNMU130508ZEN-M	
	NNMU130532ZEN-M	
	NNMU130532ZEN-R	
	WNEU1305ZEN4C-M	L050
AHX640S 	NNMU200708ZEN-M	L032
	NNMU200708ZEN-MP	L032
	NNMU200712ZER-L	L033
	NNMU200712ZER-MM	L032

Cutter Type Shape	Order Number	Page
AHX640S 	WNEU2007ZEN7C-M	L051
	WNEU2007ZEN7C-WP	L051
	NNMU200608ZEN-MK	L033
	NNMU200608ZEN-HK	L033
	WNEU2006ZEN7C-WK	L051
AHX640W 	NNMU200608ZEN-MK	L033
	NNMU200608ZEN-HK	L033
	WNEU2006ZEN7C-WK	L051

Cutter Type Shape	Order Number	Page
AJX PMC 	JOMW06T215ZZSR-FT	L026
	JOMW080320ZZSR-FT	
	JDMW09T320ZDSR-FT	
	JDMW120420ZDSR-FT	
	JDMW140520ZDSR-FT	
	JOMT06T215ZZSR-JM	L026
	JOMT080320ZZSR-JM	
	JDMT09T320ZDSR-JM	
	JDMT120420ZDSR-JM	
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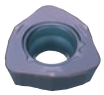	JDMT120420ZDSR-ST	L026
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	JOMT06T216ZZER-JL	L026
	JOMT080322ZZER-JL	
	JDMT09T323ZDER-JL	
	JDMT120423ZDER-JL	
	JDMT140523ZDER-JL	
AOX445 	SL-ONEN120404ASN	L053
APX3000 	AOGT123602PEFR-GM	L024
	AOGT123604PEFR-GM	
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	AOMT123602PEER-M	L024
	AOMT123604PEER-M	
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	AOMT123612PEER-M	
	AOMT123616PEER-M	
	AOMT123620PEER-M	
	AOMT123624PEER-M	
	AOMT123630PEER-M	
	AOMT123632PEER-M	

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APX3000 	AOMT123604PEER-H	L024
	AOMT123608PEER-H	
	AOMT123616PEER-H	
APX4000 	AOMT184804PEER-H	L024
	AOMT184808PEER-H	
	AOMT184816PEER-H	
	AOMT184832PEER-H	
	AOMT184840PEER-H	
	AOMT184850PEER-H	
	AOMT184864PEER-H	
	AOMT184804PEER-M	L024
	AOMT184808PEER-M	
	AOMT184810PEER-M	
	AOMT184812PEER-M	
	AOMT184816PEER-M	
	AOMT184820PEER-M	
AQX 	QOMT0830R-M2	L034
	QOMT1035R-M2	
	QOMT1342R-M2	
	QOMT1651R-M2	
	QOMT1856R-M2	
	QOMT2062R-M2	
	QOMT2576R-M2	
	QOGT0830R-G1	L034
	QOGT1035R-G1	
	QOGT1342R-G1	
	QOGT1651R-G1	
	QOGT1856R-G1	
	QOGT2062R-G1	
	QOGT2576R-G1	

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ARP 	RPHT1040M0E4-L	L034
	RPHT1040M0E4-M	
	RPHT1040M0E4-R	
	RPHT1248M0E4-L	
	RPHT1248M0E4-M	
	RPHT1248M0E4-R	
	RPMT1040M0E4-L	
	RPMT1040M0E4-M	
	RPMT1040M0E4-R	
	RPMT1248M0E4-L	
	RPMT1248M0E4-M	
	RPMT1248M0E4-R	
ARX 	RDMW0517M0E	L034
	RDMW0620M0E	
	RDMW0724M0E	
ASX400 ASX400 Side Cutter 	SOET12T308PEER-JL	L038
	SOMT12T308PEER-JM	L039
	SOMT12T308PEEL-JM	
	SOMT12T308PEER-JH	L038
	SOMT12T320PEER-FT	L039
	SOGT12T308PEFR-JP	L038
	WOEW12T308PEER8C	L051
	WOEW12T308PETR8C	

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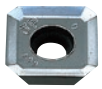
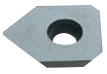
ASX445 	SEET13T3AGEN-JL	L037
	SEMT13T3AGSN-JM	L037
	SEMT13T3AGSN-JH	L037
	SEMT13T3AGSN-FT	L037
	SEGT13T3AGFN-JP	L037
	WEEW13T3AGER8C	L050
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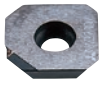	WEEW13T3AGFR3C	L055
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AXD4000 	XDGX175004PDFR-GL	L046
	XDGX175008PDFR-GL	
	XDGX175012PDFR-GL	
	XDGX175016PDFR-GL	
	XDGX175020PDFR-GL	
	XDGX175024PDFR-GL	
	XDGX175030PDFR-GL	
	XDGX175032PDFR-GL	
	XDGX175040PDFR-GL	
	XDGX175050PDFR-GL	
	XDGX175004PDER-GM	L046
	XDGX175008PDER-GM	
	XDGX175012PDER-GM	
	XDGX175016PDER-GM	
	XDGX175020PDER-GM	
	XDGX175024PDER-GM	
	XDGX175030PDER-GM	
	XDGX175032PDER-GM	
	XDGX175040PDER-GM	
	XDGX175050PDER-GM	
	XDGX175004PDFR-GM	L046
	XDGX175008PDFR-GM	
	XDGX175012PDFR-GM	
	XDGX175016PDFR-GM	
	XDGX175020PDFR-GM	
	XDGX175024PDFR-GM	
	XDGX175030PDFR-GM	
	XDGX175032PDFR-GM	
	XDGX175040PDFR-GM	
	XDGX175050PDFR-GM	

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AXD7000 	XDGX227008PDFR-GL	L047
	XDGX227016PDFR-GL	
	XDGX227020PDFR-GL	
	XDGX227030PDFR-GL	
	XDGX227032PDFR-GL	
	XDGX227040PDFR-GL	
	XDGX227050PDFR-GL	
	XDGX227008PDER-GLA	L047
	XDGX227016PDER-GLA	
	XDGX227020PDER-GLA	
	XDGX227024PDER-GLA	
	XDGX227030PDER-GLA	
	XDGX227032PDER-GLA	
	XDGX227040PDER-GLA	
	XDGX227050PDER-GLA	
BAE 	AEMW150304ER	L024
	AEMW150308ER	
	AEMW19T304ER	
	AEMW19T308ER	
BAP300 SRM2 	APMT1135PDER-H1	L025
	APMT1135PDER-H2	
	APMT1135PDER-H3	
	APMT1135PDER-H4	
	APMT1135PDER-H6	
	APMT1135PDER-M0	L025
	APMT1135PDER-M1	
	APMT1135PDER-M2	
	APGT1135PDFR-G2	L025

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BAP3500 	XPMT13T3PDER-M1	L049
	XPMT13T3PDER-M2	
	XPMT13T3PDER-M6	
	XPMT13T3PDER-M75	
	XPMT13T3PDER-M8	
	XPGT13T3PDFR-G1	L049
	XPGT13T3PDFR-G2	
	XPGT13T3PDFR-G6	
	XPGT13T3PDFR-G75	
	XPGT13T3PDFR-G8	
	XPGT13T3PDER-G1	L049
	XPGT13T3PDER-G2	
	XPGT13T3PDER-G6	
	XPGT13T3PDER-G75	
	XPGT13T3PDER-G8	
BAP400 SRM2 	APMT1604PDER-H1	L025
	APMT1604PDER-H2	
	APMT1604PDER-H4	
	APMT1604PDER-H6	
	APMT1604PDER-H8	
	APMT1604PDER-M2	L025
	APGT1604PDFR-G2	L025

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	SFAN1203ZFFL2	
	SFCN1203ZFFR2	
	SFCN1203ZFFL2	
	SFCN1203ZFFR2	L053
	WFC42ZFER2	L055
	NP-WFC42ZFER2	L055
BMR	HNMX1206EN06-R	L026
	HNMX1206ER12-R	L026
BN425 DN	SNC43B2G	L038
	SNC43B2S	
	SNK43B2G	
	SNK43B2S	
	SNKF43B2S	L038
	SNMF43B2G	

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BRP	RPMW08T2M0T	L035
	RPMW10T3M0E	
	RPMW10T3M0T	
	RPMW1204M0E	
	RPMW1204M0T	
	RPMW1606M0E	
	RPMW1606M0T	
	RPMT08T2M0E-JS	L035
	RPMT10T3M0E-JS	
	RPMT1204M0E-JS	
	RPMT1606M0E-JS	
BSP	SPMB1204APT	L040
BXD4000	XDGT1550PDER-G04	L045
	XDGT1550PDER-G08	
	XDGT1550PDER-G12	
	XDGT1550PDER-G16	
	XDGT1550PDER-G20	
	XDGT1550PDER-G30	
	XDGT1550PDER-G32	
	XDGT1550PDER-G40	
	XDGT1550PDER-G50	
	XDGT1550PDFR-G04	L045
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	XDGT1550PDFR-G12	
	XDGT1550PDFR-G16	
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	XDGT1550PDFR-G30	
	XDGT1550PDFR-G32	
	XDGT1550PDFR-G40	
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	XDGT1550PDFR-GL04	L045
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CBMP ECMP TAB	MPMT070308	L031
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	MPMT120408	
CESP CFSP CGSP	SPMW090304	L041
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	SPMW120304	
	SPMW120308	
DCCC	CCMX083508EN-A	L025
	CCMX09T308EN-A	
	CCMX09T308EN-B	L026
	ZCMX083508ER-A	L049
	ZCMX09T308ER-A	
	ZCMX09T308ER-B	L049
E404 FE404	SEA42C10GR	L035
	SEA42C10GL	

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FBP415 QBP415 	SPEN1203EEER1	L040
	SPEN1203EEEL1	
	SPNN1203EEER1	
	SPNN1203EEEL1	
	SPER1203EEER-JS	L040
	SPEN1203EETR1	L053
	WPC42EEER10C	L051
	WPC42EEEL10C	
FF3000 	SPCA53Z	L039
	SPCG53Z	L039
FMAX 	GOER1404PXFR2	L052
	GOER1408PXFR2	
	NEW GOER1408PXFR2-8	L052
	NEW GOER1401ZXFR2	L052
FMSD 	SDEN1203AEN	L035
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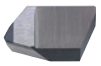
	SDKN1203AETN	
	SDKN1504AETN	

Cutter Type Shape	Order Number	Page
FP490 	SPEN424A	L039
FP590 	SPEN535A	L039
NF10000 	GDCN2004PDFR3	L052
NF10000 	NP-GDCN2004PDSR3	L053
NR10000 	GDCN2004ZDTR1	L052
MG200 	MGEEW1035PFTR	L031
MG300 	MGEEW1242PFTR	L031
MG400 	MGEEW1650PFTR	L031
MG245 	MGEEW1035AFTR	L031
MG345 	MGEEW1242AFTR	L031
MG445 	MGEEW1650AFTR	L031

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	SOMX063005-UM	L056
	SOMX073505-UM	
	SOMX084005-UM	
	SOMX094506-UM	
	SOMX115506-UM	
	SOMX136008-UM	
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	SOMX187008-UM	
	SOMX063005-US	L056
	SOMX073505-US	
	SOMX084005-US	
	SOMX094506-US	
	SOMX115506-US	
	SOMX136008-US	
	SOMX166508-US	
	SOMX187008-US	
	SOMX062905-UH	L057
	SOMX073405-UH	
	SOMX083905-UH	
	SOMX094406-UH	
	SOMX115406-UH	
	SOMX135908-UH	
	SOMX166408-UH	
	SOMX186908-UH	
	SOGX063005-UN	L057
	SOGX073505-UN	
	SOGX084005-UN	
	SOGX094506-UN	
	SOGX115506-UN	
	SOGX136008-UN	
	SOGX166508-UN	
	SOGX187008-UN	

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NSE300 SE300	TEEN1603PEFR1	L043
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	TEEN1603PETR1	
	TEEN1603PESR1	
	TECN1603PEFR1W	L044
	TECN1603PEER1W	
	TECN1603PETR1W	
	TEER1603PEER-JS	L044
	TECN1603PEFR1	L054
NSE400 SE400	TECN2204PEFR1	L044
	TECN2204PEER1	
	TECN2204PETR1	
	TEEN2204PEFR1	
	TEEN2204PEER1	
	TEEN2204PETR1	
	TEEN2204PESR1	
	TEKN2204PEER1	
	TEKN2204PESR1	
	TEKN2204PETR1	
	TEKN2204PETR	
	TEER2204PEER-JS	L044
	TECN2204PEFR1	L054

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OCTACUT	OEMX12T3ETR1	L033
	OEMX12T3ESR1	
	OEMX1705ESR1	
	OEMX1705ETR1	
	OEMX12T3ETR1	L053
	OEMX12T3EER1-JS	L033
	OEMX1705EER1-JS	
	OEMX1705ETR1-JS	
	REMX1705SN	L034
	REMX12T3EN-JS	L034
	REMX1705EN-JS	
PMF	TPEW1303ZPER2	L044
	TPEW1303ZPTR2	L054
PMR	CPMT1205ZPEN-M2	L026
	CPMT1205ZPEN-M3	
	CPMT1906ZPEN-M2	
	CPMT1906ZPEN-M3	
CFSP	SPMW090304	L041
	SPMW090308	

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S400	SPMN120304	L040
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S500	SPMN150408	L040
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	SPGN150404	
	SPGN150408	
SE415 QSE415	SEEN1203EFFR1	L036
	SEEN1203EFER1	
	SEEN1203EFTR1	
	SEEN1203EFSR1	
	SEKN1203EFSR1	L036
	SEKN1203EFTR1	
	SEKN1203EFTR	
	SEER1203EFER-JS	L036
	SECN1203EFFR1	L053
	WEC42EFER5C	L050
	WEC42EFTR5C	

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SE445 LSE445	SECN1203AFTN1	L035
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	SEEN1203AFEN1	
	SEEN1203AFTN1	
	SEEN1203AFSN1	
	SEKN1203AFSN1	
	SEKN1203AFTN1	
	SEKN1203AFTN	
	SEER1203AFEN-JS	L036
	SECN1203AFFR1	L053
	WEC42AFTR5C	L050
SE515	SECN1504EFTR1	L036
	SEEN1504EFER1	
	SEEN1504EFSR1	
	SEEN1504EFTR1	
	SEKN1504EFSR1	
	SEKN1504EFTR1	
	WEC53EFTR5C	L050
SE545	SEEN1504AFEN1	L036
	SEEN1504AFSN1	
	SEEN1504AFTN1	
	SEKN1504AFSN1	
	SEKN1504AFTN1	
	SEER1504AFEN-JS	L036

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SG20	RGEN2004M0EN	L035
	RGEN2004M0SN	
SPX	JPMX140412-JM	L027
	JPMX190412-JM	
	JPMX140412-WH	L027
	JPMX190412-WH	
	MPMX120412-JM	L032
	MPMX120412-WH	L032
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SRF	SRFT10	L041
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	SRM25C-M	
	SRM30C-M	
	SRM32C-M	
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	SRM25E-M	
	SRM30E-M	
	SRM32E-M	
	SRG16C	L042
	SRG20C	
	SRG25C	
	SRG30C	
	SRG32C	
	SRG16E	L042
	SRG20E	
	SRG25E	
	SRG30E	
	SRG32E	
SRM2ϕ40 ϕ50	SRG40C	L042
	SRG50C	
	SRG40E	L042
	SRG50E	
	APMT1135PDER-H2	L025
	APMT1604PDER-H2	
	APMT1135PDER-M2	L025
	APMT1604PDER-M2	

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	STAWN○○○○T STAWN○○○○TH	L062
SUF 	SUFT10R05 SUFT10R10 SUFT10R20 SUFT12R05 SUFT12R10 SUFT12R20 SUFT12R30 SUFT16R05 SUFT16R10 SUFT16R15 SUFT16R20 SUFT16R30 SUFT20R05 SUFT20R10 SUFT20R15 SUFT20R20 SUFT20R30 SUFT25R05 SUFT25R10 SUFT25R20 SUFT25R30 SUFT30R05 SUFT30R10 SUFT30R20 SUFT30R30 SUFT32R05 SUFT32R10 SUFT32R20	L043

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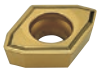
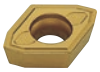
	GCMT040204-U2	L056
	GPMT060204-U1 GPMT070204-U1 GPMT090304-U1 GPMT11T308-U1 GPMT140408-U1	L056
	GPMT060204-U2 GPMT070204-U2 GPMT090304-U2 GPMT11T308-U2 GPMT140408-U2	L056
	GPMT060204-U3 GPMT070204-U3 GPMT090304-U3 GPMT11T308-U3 GPMT140408-U3	L056
TAW 	TAWNH○○○○T	L058
	TAWKH○○○○TG	L060
	TAWBH○○○○T	L059
	TAWC12T301-45GM	L061

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TSMP 	MPMW070308 MPMW090308 MPMW120408	L031
V10000 	NP-GDCW1240PDFR2	L053
VAS400 Side Cutter 	LNGU130804PNER-M LNGU130804PNEL-M LNGU130808PNER-M LNGU130808PNEL-M LNGU130812PNER-M LNGU130812PNEL-M LNGU130816PNER-M LNGU130816PNEL-M LNGU130820PNER-M LNGU130820PNEL-M LNGU130824PNER-M LNGU130824PNEL-M LNGU130830PNER-M LNGU130830PNEL-M LNGU130840PNER-M LNGU130840PNEL-M LNGU130850PNER-M LNGU130850PNEL-M	L028

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VAS400 Side Cutter	LNGU130804PNER-R	L028
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	LNGU130808PNER-R	
	LNGU130808PNEL-R	
	LNGU130812PNER-R	
	LNGU130812PNEL-R	
	LNGU130816PNER-R	
NEW	LNGU130816PNEL-R	
	LNGU130820PNER-R	
	LNGU130820PNEL-R	
	LNGU130824PNER-R	
	LNGU130824PNEL-R	
	LNGU130830PNER-R	
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	LNGU130840PNER-R	
	LNGU130840PNEL-R	
	LNGU130850PNER-R	
	LNGU130850PNEL-R	
VAS500 Side Cutter	LNGU171004PNER-R	L029
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	LNGU171008PNER-R	
	LNGU171008PNEL-R	
	LNGU171012PNER-R	
	LNGU171012PNEL-R	
	LNGU171016PNER-R	
	LNGU171016PNEL-R	
	LNGU171020PNER-R	
NEW	LNGU171020PNEL-R	
	LNGU171024PNER-R	
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	LNGU171030PNER-R	
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	LNGU171040PNER-R	
	LNGU171040PNEL-R	
	LNGU171050PNER-R	

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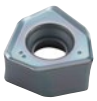
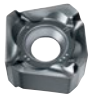
NEW	LNGU171060PNER-R	
	LNGU171060PNEL-R	
	LNGU171070PNER-R	
	LNGU171070PNEL-R	
VFX5	XNMU160708R-MS	L048
	XNMU160712R-MS	
	XNMU160716R-MS	
	XNMU160724R-MS	
	XNMU160732R-MS	
	XNMU160740R-MS	
	XNMU160708R-HS	L048
	XNMU160708R-LS	L048
VFX6	XNMU190912R-MS	L048
	XNMU190916R-MS	
	XNMU190924R-MS	
	XNMU190932R-MS	
	XNMU190940R-MS	
	XNMU190950R-MS	
	XNMU190912R-HS	L048
	XNMU190912R-LS	L048

Cutter Type Shape	Order Number	Page
VOX400 VOS400 Side Cutter	SONX1206PER	L039
	SONX1206PEL	
	WOEX1206PER5C	L051
		
VIPER	TPNX1605N	L045
		
VPX200	LOGU0904020PNER-L	L030
	LOGU0904040PNER-L	
	LOGU0904080PNER-L	
	LOGU0904100PNER-L	
NEW	LOGU0904120PNER-L	
	LOGU0904160PNER-L	
	LOGU0904020PNFR-L	
	LOGU0904040PNFR-L	
	LOGU0904080PNFR-L	
	LOGU0904100PNFR-L	
	LOGU0904120PNFR-L	
	LOGU0904160PNFR-L	
	LOGU0904020PNER-M	L030
	LOGU0904040PNER-M	
	LOGU0904080PNER-M	
	LOGU0904100PNER-M	
NEW	LOGU0904120PNER-M	
	LOGU0904160PNER-M	
	LOGU0904020PNFR-M	
	LOGU0904040PNFR-M	
	LOGU0904080PNFR-M	
	LOGU0904100PNFR-M	
	LOGU0904120PNFR-M	
	LOGU0904160PNFR-M	

Cutter Type Shape	Order Number	Page
VPX300 NEW 	LOGU1207020PNER-M	L030
	LOGU1207040PNER-M	
	LOGU1207080PNER-M	
	LOGU1207100PNER-M	
	LOGU1207120PNER-M	
	LOGU1207160PNER-M	
	LOGU1207200PNER-M	
	LOGU1207240PNER-M	
	LOGU1207300PNER-M	
	LOGU1207320PNER-M	
NEW 	LOGU1207020PNFR-M	L030
	LOGU1207040PNFR-M	
	LOGU1207080PNFR-M	
	LOGU1207100PNFR-M	
	LOGU1207120PNFR-M	
	LOGU1207160PNFR-M	
	LOGU1207200PNFR-M	
	LOGU1207240PNFR-M	
	LOGU1207300PNFR-M	
	LOGU1207320PNFR-M	
WJX NEW 	JOMU140715ZZER-M	L027
WSX445 	SNGU140812ANFR-L	L038
	SNGU140812ANER-L	
	SNGU140812ANER-M	
	SNMU140812ANER-M	
	SNMU140812ANER-R	
	SNMU140812ANER-H	
	NEW SNGU140812ANFL-L	
	NEW SNGU140812ANEL-L	
	SNGU140812ANEL-M	
	SNMU140812ANEL-M	
	SNMU140812ANEL-R	

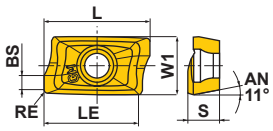
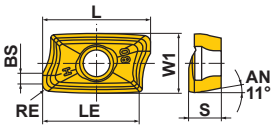
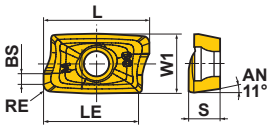
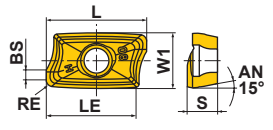
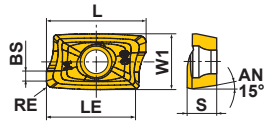
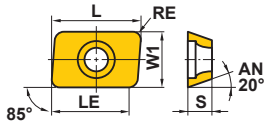
Cutter Type Shape	Order Number	Page
WSX445 	WNGU1406ANEN8C-M	L051
Corner Angle 0° 11° Positive 	TPEN1603PPR	L044
	TPEN2204PDR	
	TPKN1603PPR	
	TPKN2204PDR	
Corner Angle 15° 11° Positive 	SPKN1203EDR	L040
	SPKN1504EDR	
	SPEN1203EDR	
Corner Angle 45° 20° Positive 	SEKN1203AGTN	L037
Negative 	SNMN120408	L038
	SNMN120412	
11° Positive 	TPMN160304	L045
	TPMN160308	
	TPMN160312	
	TPMN220404	
	TPMN220408	
	TPMN220412	

ROTATING INSERTS

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◔ : General Cutting ✲ : Unstable Cutting

Honing :
E : Round **F :** Sharp

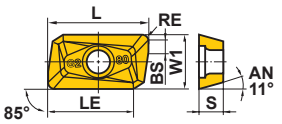
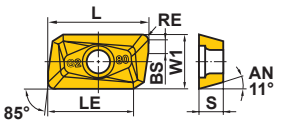
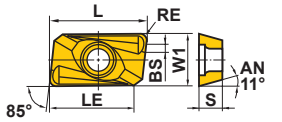
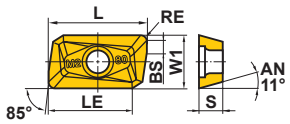
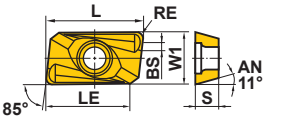
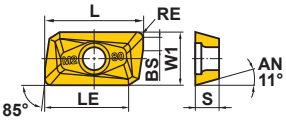
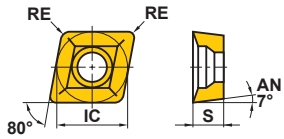
Shape	Order Number	Class	Honing	Coated								Cermet	Carbide		Dimensions (mm)						Geometry
				MC5020	MP6120	MP6130	MP7130	MP9120	MP9130	VP15TF	VP20RT	UP20M	NX2525	UTi20T	TF15	L	LE	W1	S	BS	RE	
APX3000 ➲ M096	AOGT123602PEFR-GM	G	F												●	12	10	6.6	3.6	1.8	0.2	
	AOGT123604PEFR-GM	G	F												●	12	10	6.6	3.6	1.6	0.4	
	AOGT123608PEFR-GM	G	F												●	12	10	6.6	3.6	1.2	0.8	
																						
APX3000 ➲ M096 **APX3000** Long Cutting Edge ➲ M202	AOMT123604PEER-H	M	E	●	●	●	●	●	●	●	●					12	10	6.6	3.6	1.6	0.4	
	AOMT123608PEER-H	M	E	●	●	●	●	●	●	●	●					12	10	6.6	3.6	1.2	0.8	
	AOMT123616PEER-H	M	E	●	●	●	●	●	●	●	●					12	10	6.6	3.6	0.4	1.6	
																						
APX3000 ➲ M096 **APX3000** Long Cutting Edge ➲ M202	AOMT123602PEER-M	M	E		●	●	●	●	●	●	●					12	10	6.6	3.6	1.8	0.2	
	AOMT123604PEER-M	M	E		●	●	●	●	●	●	●					12	10	6.6	3.6	1.6	0.4	
	AOMT123608PEER-M	M	E		●	●	●	●	●	●	●					12	10	6.6	3.6	1.2	0.8	
	AOMT123610PEER-M	M	E		●	●	●	●	●	●	●					12	10	6.6	3.6	1.0	1.0	
	AOMT123612PEER-M	M	E		●	●	●	●	●	●	●					12	10	6.6	3.6	0.8	1.2	
	AOMT123616PEER-M	M	E		●	●	●	●	●	●	●					12	10	6.6	3.6	0.4	1.6	
	AOMT123620PEER-M	M	E		●	●	●	●	●	●	●					12	10	6.6	3.6	0.4	2.0	
	AOMT123624PEER-M	M	E		●	●	●	●	●	●	●					12	10	6.6	3.6	0.4	2.4	
	AOMT123630PEER-M	M	E		●	●	●	●	●	●	●					12	10	6.6	3.6	0.4	3.0	
	AOMT123632PEER-M	M	E		●	●	●	●	●	●	●					12	10	6.6	3.6	0.4	3.2	
APX4000 ➲ M102 **APX4000** Long Cutting Edge ➲ M206	AOMT184804PEER-H	M	E	●	●	●	●	●	●	●	●					18	15	9	4.8	1.8	0.4	
	AOMT184808PEER-H	M	E	●	●	●	●	●	●	●	●					18	15	9	4.8	1.4	0.8	
	AOMT184816PEER-H	M	E	●	●	●	●	●	●	●	●					18	15	9	4.8	0.4	1.6	
	AOMT184832PEER-H	M	E			●	●				●					18	15	9	4.8	0.4	3.2	
	AOMT184840PEER-H	M	E			●	●				●					18	15	9	4.8	0.4	4.0	
	AOMT184850PEER-H	M	E			●	●				●					18	15	9	4.8	–	5.0	
	AOMT184864PEER-H	M	E			●	●				●					18	15	9	4.8	–	6.35	
APX4000 ➲ M102 **APX4000** Long Cutting Edge ➲ M206	AOMT184804PEER-M	M	E		●	●	●	●	●	●	●					18	15	9	4.8	1.8	0.4	
	AOMT184808PEER-M	M	E		●	●	●	●	●	●	●					18	15	9	4.8	1.4	0.8	
	AOMT184810PEER-M	M	E		●			●	●	●						18	15	9	4.8	1.0	1.0	
	AOMT184812PEER-M	M	E		●			●	●	●						18	15	9	4.8	0.8	1.2	
	AOMT184816PEER-M	M	E		●	●	●	●	●	●	●					18	15	9	4.8	0.4	1.6	
	AOMT184820PEER-M	M	E		●			●	●	●						18	15	9	4.8	0.4	2.0	
BAE	AEMW150304ER	M	E								●	●	●	●		16.696	15.2	9.525	3.18	–	0.4	
	AEMW150308ER	M	E								●	●	●	●		16.623	14.8	9.525	3.18	–	0.8	
	AEMW19T304ER	M	E								●	●	●	●		20.161	18.4	12.7	3.97	–	0.4	
	AEMW19T308ER	M	E								●	●	●	●		20.088	18.0	12.7	3.97	–	0.8	

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

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	
H	Hardened Steel	

Cutting Conditions (Guide) :
● : Stable Cutting ◕ : General Cutting ✠ : Unstable Cutting

Honing :
E : Round **F :** Sharp

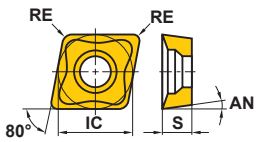
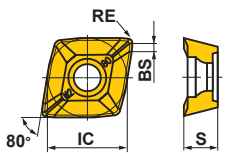
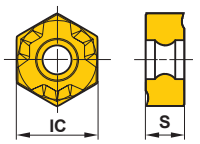
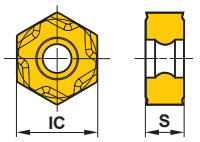
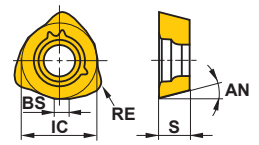
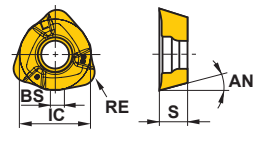
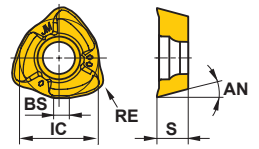
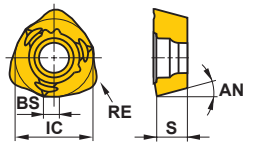
Shape	Order Number	Class	Honing	Coated			Cermet		Carbide		Dimensions (mm)							Geometry
				F7030	VP15TF	UP20M	NX2525	NX4545	UTi20T	HTi10	IC	L	LE	W1	S	BS	RE	
BAP300 ➲ M086	**APGT1135PDFR-G2**	G	F							●	—	11.3	9.7	6.35	3.5	1.2	0.8	
BAP400	**APGT1604PDFR-G2**	G	F							●	—	17.02	14	9.525	4.76	1.4	0.8	
BAP300 ➲ M086 ➲ M210 **SRM2** ➲ M236 **SRM2ϕ40 ϕ50** ➲ M244	**APMT1135PDER-H1**	M	E	●	●		●	●		●	—	11.25	9	6.35	3.5	1.5	0.4	
	APMT1135PDER-H2	M	E	●	●		●	●		●	—	11.25	9	6.35	3.5	1.2	0.8	
	APMT1135PDER-H3	M	E	●							—	11.26	9	6.35	3.5	0.8	1.2	
	APMT1135PDER-H4	M	E	●							—	11.24	9	6.35	3.5	0.4	1.6	
	APMT1135PDER-H6	M	E	●							—	11.10	9	6.35	3.5	0.4	2.4	
BAP300 ➲ M086 ➲ M210 **SRM2** ➲ M236 **SRM2ϕ40 ϕ50** ➲ M244	**APMT1135PDER-M0**	M	E	●							—	11.25	9	6.35	3.5	1.8	0.2	
	APMT1135PDER-M1	M	E	●							—	11.25	9	6.35	3.5	1.5	0.4	
	APMT1135PDER-M2	M	E	●	●			●			—	11.18	9	6.35	3.5	1.2	0.8	
BAP400 SRM2 ➲ M236 **SRM2ϕ40 ϕ50** ➲ M244	**APMT1604PDER-H1**	M	E	●							—	17.02	14	9.525	4.76	1.7	0.4	
	APMT1604PDER-H2	M	E	●	●		●	●		●	—	17.11	14	9.525	4.76	1.4	0.8	
	APMT1604PDER-H4	M	E	●							—	17.06	14	9.525	4.76	0.4	1.6	
	APMT1604PDER-H6	M	E	●							—	16.93	14	9.525	4.76	0.4	2.4	
	APMT1604PDER-H8	M	E	●							—	16.79	14	9.525	4.76	0.4	3.2	
BAP400 SRM2 ➲ M236 **SRM2ϕ40 ϕ50** ➲ M244	**APMT1604PDER-M2**	M	E	●	●			●			—	17.10	14	9.525	4.76	1.4	0.8	
DCCC ➲ M212	**CCMX083508EN-A**	M	E	●		●			●		7.94	—	—	—	3.5	—	0.8	
	CCMX09T308EN-A	M	E	●	●	●			●		9.525	—	—	—	3.97	—	0.8	

ROTATING INSERTS

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◔ : General Cutting
✠ : Unstable Cutting

Honing :
E : Round **S** : Chamfer + Hone

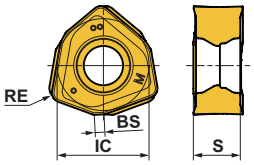
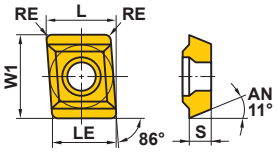
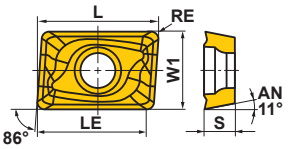
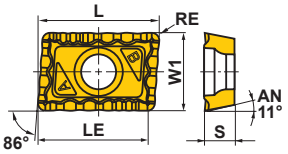
Shape	Order Number	Class	Honing	Coated											Carbide	Dimensions (mm)					Geometry
				F7030	FH7020	MP6120	MP6130	MP7130	MP7140	MP9120	MP9130	NEW MP9140	MC5015	VP15TF	VP30RT	UTi20T	IC	S	BS	RE	AN	
DCCC ➔ M212	CCMX09T308EN-B	M	E	●												●	9.525	3.97	–	0.8	7°	
PMR ➔ M258	CPMT1205ZPEN-M2	M	E											●			12.7	5.56	1.4	0.8	–	
	CPMT1205ZPEN-M3	M	E											●			12.7	5.56	1.4	1.2	–	
	CPMT1906ZPEN-M2	M	E											●			19.05	6.35	1.4	0.8	–	
	CPMT1906ZPEN-M3	M	E											●			19.05	6.35	1.4	1.2	–	
BMR ➔ M260	HNMX1206EN06-R	M	E										●				12.7	6	–	–	–	
BMR ➔ M260	HNMX1206ER12-R	M	E										●				12.7	6	–	–	–	
AJX ➔ M162 PMC ➔ M254	JOMW06T215ZZSR-FT	M	S		●	●	●	●	●	●	●			●	●		6.35	2.78	1.2	1.5	13°	
	JOMW080320ZZSR-FT	M	S		●	●	●	●	●	●	●			●	●		8	3.18	1.4	2	13°	
	JDMW09T320ZDSR-FT	M	S		●	●	●	●	●	●	●			●	●		9.525	3.97	1.8	2	15°	
	JDMW120420ZDSR-FT	M	S		●	●	●	●	●	●	●			●	●		12	4.76	2.5	2	15°	
	JDMW140520ZDSR-FT	M	S		●	●	●	●	●	●	●			●	●		14	5.56	2.8	2	15°	
AJX ➔ M162	JOMT06T216ZZER-JL	M	E					●	●	●	●	●					6.35	2.78	1.2	1.6	13°	
	JOMT080322ZZER-JL	M	E					●	●	●	●	●					8	3.18	1.4	2.2	13°	
	JDMT09T323ZDER-JL	M	E					●	●	●	●	●					9.525	3.97	1.8	2.3	15°	
	JDMT120423ZDER-JL	M	E					●	●	●	●	●					12	4.76	2.5	2.3	15°	
	JDMT140523ZDER-JL	M	E					●	●	●	●	●					14	5.56	2.8	2.3	15°	
AJX ➔ M162 PMC ➔ M254	JOMT06T215ZZSR-JM	M	S		●	●	●	●	●	●	●			●	●		6.35	2.78	1.2	1.5	13°	
	JOMT080320ZZSR-JM	M	S		●	●	●	●	●	●	●			●	●		8	3.18	1.4	2	13°	
	JDMT09T320ZDSR-JM	M	S		●	●	●	●	●	●	●			●	●		9.525	3.97	1.8	2	15°	
	JDMT120420ZDSR-JM	M	S		●	●	●	●	●	●	●			●	●		12	4.76	2.5	2	15°	
	JDMT140520ZDSR-JM	M	S		●	●	●	●	●	●	●			●	●		14	5.56	2.8	2	15°	
AJX ➔ M162 PMC ➔ M254	JDMT120420ZDSR-ST	M	S		●	●	●	●	●					●	●		12	4.76	2.5	2	15°	
	JDMT140520ZDSR-ST	M	S		●	●	●	●	●					●	●		14	5.56	2.8	2	15°	

● = NEW

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

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting
◐ : General Cutting
✠ : Unstable Cutting
Honing :
E : Round

Shape	Order Number	Class	Honing	Coated										Carbide	Dimensions (mm)							Geometry
				MC7020	MP6120	MP6130	MP7130	MP7140	MP9120	MP9130	VP15TF	VP20RT	VP30RT	UP20M	UTi20T	IC	L	LE	W1	S	BS	RE	
WJX ⊖ M172 NEW	**JOMU140715ZZER-M**	M	E	●	●	●	●	●	●	●	●		●			14	–	–	–	6.63	1.3	1.5	 Right hand insert shown.
CBJP TAB ⊖ M250	**JPMT060204-E**	M	E								●		●	●		–	7.0	6.0	7.94	2.38	–	0.4	
SPX ⊖ M215	**JPMX140412-JM**	M	E								●	●				–	15.04	12.9	12.7	4.79	–	1.2	
	JPMX190412-JM	M	E								●	●				–	19.81	17.6	12.7	4.83	–	1.2	
SPX ⊖ M215	**JPMX140412-WH**	M	E								●	●				–	15.04	12.9	12.7	4.76	–	1.2	
	JPMX190412-WH	M	E								●	●				–	19.81	17.6	12.7	4.76	–	1.2	

● = NEW

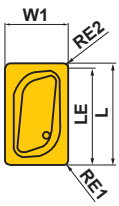
ROTATING INSERTS

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✱ : Unstable Cutting

Honing :
E : Round

Shape	Order Number	Hand	Class	Honing	Coated MP6120	Coated VP15TF	L	LE	S	S10	RE1	RE2	W1	Geometry
VAS400 Side Cutter ➲ **M090**	**LNGU130804PNER-M**	R	G	E		●	13.0	12.2	8.0	11.0	0.4	0.8	8.0	
	LNGU130804PNEL-M	L	G	E		●	13.0	12.2	8.0	11.0	0.4	0.8	8.0	
	LNGU130808PNER-M	R	G	E		●	13.0	12.2	8.0	11.0	0.8	0.8	8.0	
	LNGU130808PNEL-M	L	G	E		●	13.0	12.2	8.0	11.0	0.8	0.8	8.0	
	LNGU130812PNER-M	R	G	E		●	13.0	12.2	8.0	11.0	1.2	0.8	8.0	
	LNGU130812PNEL-M	L	G	E		●	13.0	12.2	8.0	11.0	1.2	0.8	8.0	
	LNGU130816PNER-M	R	G	E		●	13.0	12.2	8.0	11.0	1.6	0.8	8.0	
	LNGU130816PNEL-M	L	G	E		●	13.0	12.2	8.0	11.0	1.6	0.8	8.0	
	LNGU130820PNER-M	R	G	E		●	13.0	12.2	8.0	11.0	2.0	0.8	8.0	
	LNGU130820PNEL-M	L	G	E		●	13.0	12.2	8.0	11.0	2.0	0.8	8.0	
	LNGU130824PNER-M	R	G	E		●	13.0	12.2	8.0	11.0	2.4	0.8	8.0	
	LNGU130824PNEL-M	L	G	E		●	13.0	12.2	8.0	11.0	2.4	0.8	8.0	
	LNGU130830PNER-M	R	G	E		●	13.0	11.4	8.0	11.0	3.0	1.6	8.0	
	LNGU130830PNEL-M	L	G	E		●	13.0	11.4	8.0	11.0	3.0	1.6	8.0	
	LNGU130840PNER-M	R	G	E		●	13.0	11.4	8.0	11.0	4.0	1.6	8.0	
	LNGU130840PNEL-M	L	G	E		●	13.0	11.4	8.0	11.0	4.0	1.6	8.0	
	LNGU130850PNER-M	R	G	E		●	13.0	11.4	8.0	11.0	5.0	1.6	8.0	
	LNGU130850PNEL-M	L	G	E		●	13.0	11.4	8.0	11.0	5.0	1.6	8.0	
	NEW **LNGU130804PNER-R**	R	G	E	●	●	13.0	12.2	8.0	11.0	0.4	0.8	8.0	
	NEW **LNGU130804PNEL-R**	L	G	E	●	●	13.0	12.2	8.0	11.0	0.4	0.8	8.0	
	NEW **LNGU130808PNER-R**	R	G	E	●	●	13.0	12.2	8.0	11.0	0.8	0.8	8.0	
	NEW **LNGU130808PNEL-R**	L	G	E	●	●	13.0	12.2	8.0	11.0	0.8	0.8	8.0	
	NEW **LNGU130812PNER-R**	R	G	E	●	●	13.0	12.2	8.0	11.0	1.2	0.8	8.0	
	NEW **LNGU130812PNEL-R**	L	G	E	●	●	13.0	12.2	8.0	11.0	1.2	0.8	8.0	
	NEW **LNGU130816PNER-R**	R	G	E	●	●	13.0	12.2	8.0	11.0	1.6	0.8	8.0	
	NEW **LNGU130816PNEL-R**	L	G	E	●	●	13.0	12.2	8.0	11.0	1.6	0.8	8.0	
	NEW **LNGU130820PNER-R**	R	G	E	●	●	13.0	12.2	8.0	11.0	2.0	0.8	8.0	
	NEW **LNGU130820PNEL-R**	L	G	E	●	●	13.0	12.2	8.0	11.0	2.0	0.8	8.0	
	NEW **LNGU130824PNER-R**	R	G	E	●	●	13.0	12.2	8.0	11.0	2.4	0.8	8.0	
	NEW **LNGU130824PNEL-R**	L	G	E	●	●	13.0	12.2	8.0	11.0	2.4	0.8	8.0	
	NEW **LNGU130830PNER-R**	R	G	E	●	●	13.0	11.4	8.0	11.0	3.0	1.6	8.0	
	NEW **LNGU130830PNEL-R**	L	G	E	●	●	13.0	11.4	8.0	11.0	3.0	1.6	8.0	
	NEW **LNGU130840PNER-R**	R	G	E	●	●	13.0	11.4	8.0	11.0	4.0	1.6	8.0	
	NEW **LNGU130840PNEL-R**	L	G	E	●	●	13.0	11.4	8.0	11.0	4.0	1.6	8.0	
	NEW **LNGU130850PNER-R**	R	G	E	●	●	13.0	11.4	8.0	11.0	5.0	1.6	8.0	
	NEW **LNGU130850PNEL-R**	L	G	E	●	●	13.0	11.4	8.0	11.0	5.0	1.6	8.0	



Right hand insert shown.

● = NEW

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

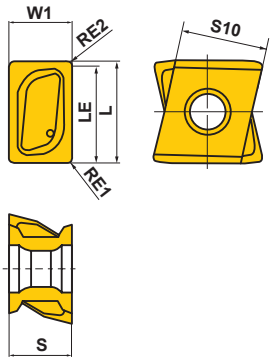
Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✱ : Unstable Cutting

Honing :
E : Round

Shape	Order Number	Hand	Class	Honing	Coated		Dimensions (mm)							Geometry
					MP6120	VP15TF	L	LE	S	S10	RE1	RE2	W1	
VAS500 Side Cutter ➲ **M092**	**LNGU171004PNER-R**	R	G	E	●	●	17.0	16.2	10.0	13.0	0.4	0.8	10.0	
	LNGU171004PNEL-R	L	G	E	●	●	17.0	16.2	10.0	13.0	0.4	0.8	10.0	
	LNGU171008PNER-R	R	G	E	●	●	17.0	16.2	10.0	13.0	0.8	0.8	10.0	
	LNGU171008PNEL-R	L	G	E	●	●	17.0	16.2	10.0	13.0	0.8	0.8	10.0	
	LNGU171012PNER-R	R	G	E	●	●	17.0	16.2	10.0	13.0	1.2	0.8	10.0	
	LNGU171012PNEL-R	L	G	E	●	●	17.0	16.2	10.0	13.0	1.2	0.8	10.0	
	LNGU171016PNER-R	R	G	E	●	●	17.0	16.2	10.0	13.0	1.6	0.8	10.0	
	LNGU171016PNEL-R	L	G	E	●	●	17.0	16.2	10.0	13.0	1.6	0.8	10.0	
	LNGU171020PNER-R	R	G	E	●	●	17.0	16.2	10.0	13.0	2.0	0.8	10.0	
	LNGU171020PNEL-R	L	G	E	●	●	17.0	16.2	10.0	13.0	2.0	0.8	10.0	
	LNGU171024PNER-R	R	G	E	●	●	17.0	16.2	10.0	13.0	2.4	0.8	10.0	
	LNGU171024PNEL-R	L	G	E	●	●	17.0	16.2	10.0	13.0	2.4	0.8	10.0	
	LNGU171030PNER-R	R	G	E	●	●	17.0	15.4	10.0	13.0	3.0	1.6	10.0	
	LNGU171030PNEL-R	L	G	E	●	●	17.0	15.4	10.0	13.0	3.0	1.6	10.0	
	LNGU171040PNER-R	R	G	E	●	●	17.0	15.4	10.0	13.0	4.0	1.6	10.0	
	LNGU171040PNEL-R	L	G	E	●	●	17.0	15.4	10.0	13.0	4.0	1.6	10.0	
	LNGU171050PNER-R	R	G	E	●	●	17.0	15.4	10.0	13.0	5.0	1.6	10.0	
	LNGU171050PNEL-R	L	G	E	●	●	17.0	15.4	10.0	13.0	5.0	1.6	10.0	
	LNGU171060PNER-R	R	G	E	●	●	17.0	15.4	10.0	13.0	6.0	1.6	10.0	
	LNGU171060PNEL-R	L	G	E	●	●	17.0	15.4	10.0	13.0	6.0	1.6	10.0	
	LNGU171070PNER-R	R	G	E	●	●	17.0	15.4	10.0	13.0	7.0	1.6	10.0	
	LNGU171070PNEL-R	L	G	E	●	●	17.0	15.4	10.0	13.0	7.0	1.6	10.0	

NEW



Right hand insert shown.

● = NEW

ROTATING INSERTS

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✱ : Unstable Cutting

Honing :
E : Round

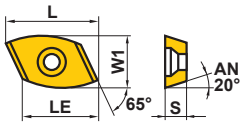
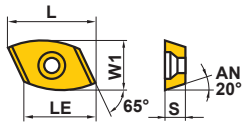
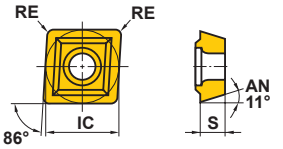
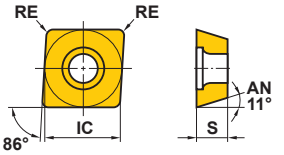
Shape	Order Number	Class	Honing	Coated							Carbide	Dimensions (mm)					Geometry
				MC5020	MP6120	MP6130	MP7130	MP9120	MP9130	VP15TF	TF15	L	RE	LE	S	BS	
VPX200 M110	LOGU0904020PNER-L	G	E	●	●	●	●	●	●	●		8.7	0.2	7.6	4.3	1.7	
	LOGU0904040PNER-L	G	E	●	●	●	●	●	●	●		8.7	0.4	7.6	4.3	1.5	
	LOGU0904080PNER-L	G	E	●	●	●	●	●	●	●		8.7	0.8	7.6	4.3	1.2	
	LOGU0904100PNER-L	G	E	●	●	●	●	●	●	●		8.7	1	7.6	4.3	1	
NEW	LOGU0904120PNER-L	G	E	●	●	●	●	●	●	●		8.7	1.2	7.6	4.3	0.8	
	LOGU0904160PNER-L	G	E	●	●	●	●	●	●	●		8.7	1.6	7.6	4.3	0.5	
	LOGU0904020PNFR-L	G	F								●	8.7	0.2	7.6	4.3	1.7	
	LOGU0904040PNFR-L	G	F								●	8.7	0.4	7.6	4.3	1.5	
	LOGU0904080PNFR-L	G	F								●	8.7	0.8	7.6	4.3	1.2	
	LOGU0904100PNFR-L	G	F								●	8.7	1	7.6	4.3	1	
	LOGU0904120PNFR-L	G	F								●	8.7	1.2	7.6	4.3	0.8	
	LOGU0904160PNFR-L	G	F								●	8.7	1.6	7.6	4.3	0.5	Right hand insert only.
VPX200 M110	LOGU0904020PNER-M	G	E	●	●	●	●	●	●	●		8.7	0.2	7.6	4.3	1.7	
	LOGU0904040PNER-M	G	E	●	●	●	●	●	●	●		8.7	0.4	7.6	4.3	1.6	
	LOGU0904080PNER-M	G	E	●	●	●	●	●	●	●		8.7	0.8	7.6	4.3	1.2	
	LOGU0904100PNER-M	G	E	●	●	●	●	●	●	●		8.7	1	7.6	4.3	1	
NEW	LOGU0904120PNER-M	G	E	●	●	●	●	●	●	●		8.7	1.2	7.6	4.3	0.9	
	LOGU0904160PNER-M	G	E	●	●	●	●	●	●	●		8.7	1.6	7.6	4.3	0.5	
	LOGU0904020PNFR-M	G	F								●	8.7	0.2	7.6	4.3	1.7	
	LOGU0904040PNFR-M	G	F								●	8.7	0.4	7.6	4.3	1.6	
	LOGU0904080PNFR-M	G	F								●	8.7	0.8	7.6	4.3	1.2	
	LOGU0904100PNFR-M	G	F								●	8.7	1	7.6	4.3	1	
	LOGU0904120PNFR-M	G	F								●	8.7	1.2	7.6	4.3	0.9	
	LOGU0904160PNFR-M	G	F								●	8.7	1.6	7.6	4.3	0.5	Right hand insert only.
VPX300 M122	LOGU1207020PNER-M	G	E	●	●	●	●	●	●	●		12.4	0.2	11.3	7.0	3.0	
	LOGU1207040PNER-M	G	E	●	●	●	●	●	●	●		12.4	0.4	11.3	7.0	2.8	
	LOGU1207080PNER-M	G	E	●	●	●	●	●	●	●		12.4	0.8	11.3	7.0	2.4	
	LOGU1207100PNER-M	G	E	●	●	●	●	●	●	●		12.4	1.0	11.3	7.0	2.3	
	LOGU1207120PNER-M	G	E	●	●	●	●	●	●	●		12.4	1.2	11.3	7.0	2.1	
	LOGU1207160PNER-M	G	E	●	●	●	●	●	●	●		12.4	1.6	11.3	7.0	1.7	
	LOGU1207200PNER-M	G	E	●	●	●	●	●	●	●		12.4	2.0	11.3	7.0	1.4	
	LOGU1207240PNER-M	G	E	●	●	●	●	●	●	●		12.4	2.4	11.3	7.0	1.0	
NEW	LOGU1207300PNER-M	G	E	●	●	●	●	●	●	●		12.4	3.0	11.3	7.0	0.5	
	LOGU1207320PNER-M	G	E	●	●	●	●	●	●	●		12.4	3.2	11.3	7.0	0.3	
	LOGU1207020PNFR-M	G	F								●	12.4	0.2	11.3	7.0	3.0	
	LOGU1207040PNFR-M	G	F								●	12.4	0.4	11.3	7.0	2.8	
	LOGU1207080PNFR-M	G	F								●	12.4	0.8	11.3	7.0	2.4	
	LOGU1207100PNFR-M	G	F								●	12.4	1.0	11.3	7.0	2.3	
	LOGU1207120PNFR-M	G	F								●	12.4	1.2	11.3	7.0	2.1	
	LOGU1207160PNFR-M	G	F								●	12.4	1.6	11.3	7.0	1.7	
	LOGU1207200PNFR-M	G	F								●	12.4	2.0	11.3	7.0	1.4	
	LOGU1207240PNFR-M	G	F								●	12.4	2.4	11.3	7.0	1.0	
	LOGU1207300PNFR-M	G	F								●	12.4	3.0	11.3	7.0	0.5	
	LOGU1207320PNFR-M	G	F								●	12.4	3.2	11.3	7.0	0.3	Right hand insert only.

● = NEW

Work Material																				
	P	Steel	◐	◐		●		◐												
	M	Stainless Steel	◔	◔		○		◔												
	K	Cast Iron	✲			●		✲	◐											
	N	Non-ferrous Metal							◑											
	S	Heat-resistant Alloy, Titanium Alloy	◐																	
	H	Hardened Steel	◔																	

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✲ : Unstable Cutting

Honing :
E : Round **T :** Chamfer

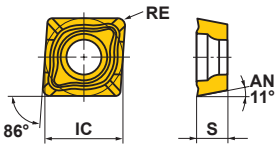
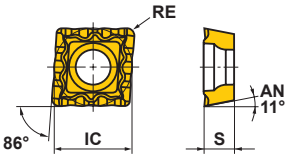
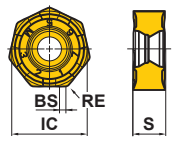
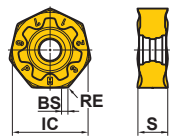
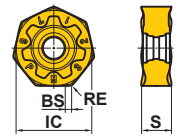
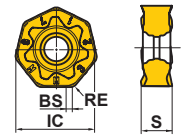
Shape	Order Number	Class	Honing	Coated		Cermet	Carbide		Dimensions (mm)						Geometry
				VP15TF	UP20M	NX2525	UTi20T	HTi10	L	LE	W1	IC	S	RE	
MG245 **MG345** **MG445**	**MGEEW1035AFTR**	E	T		●	●	●	●	14.3	9.3	9	—	3.5	—	
	MGEEW1242AFTR	E	T		●	●	●	●	17.0	11.2	10.5	—	4.2	—	
	MGEEW1650AFTR	E	T		●	●	●	●	21.8	14.9	13	—	5	—	
															This figure is for outer insert (E).
MG200 **MG300** **MG400**	**MGEEW1035PFTR**	E	T		●	●	●	●	14.3	9.3	9	—	3.5	—	
	MGEEW1242PFTR	E	T		●	●	●	●	17.0	11.2	10.5	—	4.2	—	
	MGEEW1650PFTR	E	T		●		●	●	21.8	14.9	13	—	5	—	
															
CBMP ➲ M250 **ECMP** **TAB**	**MPMT070308**	M	E		●		●		—	—	—	7.94	3.18	0.8	
	MPMT090308	M	E	●	●		●		—	—	—	9.525	3.18	0.8	
	MPMT120408	M	E		●		●		—	—	—	12.7	4.76	0.8	
															
TSMP ➲ M248	**MPMW070308**	M	E				●		—	—	—	7.94	3.18	0.8	
	MPMW090308	M	E				●		—	—	—	9.525	3.18	0.8	
	MPMW120408	M	E				●		—	—	—	12.7	4.76	0.8	
															

ROTATING INSERTS

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting
✲ : Unstable Cutting

Honing :
E : Round

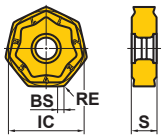
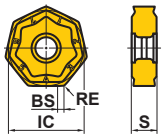
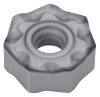
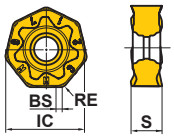
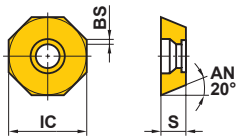
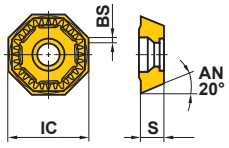
Shape	Order Number	Class	Honing	Coated								Dimensions (mm)				Geometry
				MP6120	MP6130	MP7130	MP7140	MC5020	VP15TF	VP20RT	MP7030	IC	S	BS	RE	
SPX M215	MPMX120412-JM	M	E						●	●		12.7	4.79	—	1.2	
SPX M215	MPMX120412-WH	M	E						●	●		12.7	4.76	—	1.2	
AHX440S M038	NNMU130508ZER-L	M	E	●	●	●	●	●	●			13.4	5.77	1	0.8	
	NNMU130508ZEN-M	M	E	●	●	●	●	●	●			13.4	5.57	1	0.8	
AHX475S M043	NNMU130532ZEN-M	M	E	●	●	●	●	●	●			13.4	5.57	—	3.2	
	NNMU130532ZEN-R	M	E	●	●	●	●	●	●			13.4	5.47	—	3.2	
AHX640S M046	NNMU200708ZEN-M	M	E	●	●							20	8	1	0.8	
AHX640S M046	NNMU200708ZEN-MP	M	E						●			20	8	1	0.8	
AHX640S M046	NNMU200712ZER-MM	M	E								●	20	8	1	1.2	

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

Work Material			F7030	MP9120	MP9130	MC5020	VP15TF	VP20RT	NX4545
	P	Steel	◐				◐	◐	◐
	M	Stainless Steel	◔				◔	◔	◔
	K	Cast Iron				◐	✲	✲	
	N	Non-ferrous Metal							
	S	Heat-resistant Alloy, Titanium Alloy		◐	✲		◐	✲	
	H	Hardened Steel					◔		

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting
✲ : Unstable Cutting

Honing :
E : Round **S :** Chamfer + Hone **T :** Chamfer

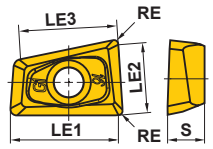
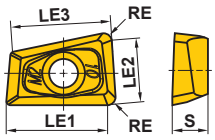
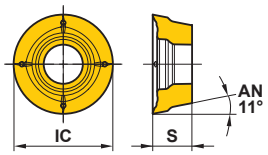
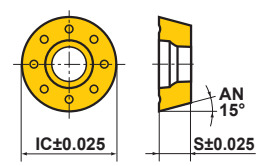
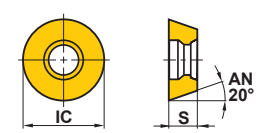
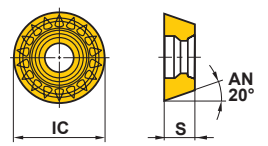
Shape	Order Number	Class	Honing	Coated						Cermet	Dimensions (mm)				Geometry
				F7030	MP9120	MP9130	MC5020	VP15TF	VP20RT	NX4545	IC	S	BS	RE	
AHX640S ➲ M046 **AHX640W** ➲ M054 	**NNMU200608ZEN-MK**	M	E				●	●	●		20	6.55	1	0.8	
AHX640S ➲ M046 **AHX640W** ➲ M054 	**NNMU200608ZEN-HK**	M	E				●	●	●		20	6.55	1	0.8	
AHX640S ➲ M046 	**NNMU200712ZER-L**	M	E		●	●					20	8	1	1.2	
OCTACUT ➲ M180 	**OEMX12T3ETR1**	M	T							●	12.7	3.97	1	–	
	OEMX12T3ESR1	M	S	●							12.7	3.97	1	–	
	OEMX1705ETR1	M	T					●		●	17	5	1.4	–	
	OEMX1705ESR1	M	S	●							17	5	1.4	–	
OCTACUT ➲ M180 	**OEMX12T3EER1-JS**	M	E	●							12.7	3.97	1	–	
	OEMX1705EER1-JS	M	E	●							17	5	1.4	–	
	OEMX1705ETR1-JS	M	T					●			17	5	1.4	–	

ROTATING INSERTS

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◕ : General Cutting
✱ : Unstable Cutting

Honing :
E : Round **F :** Sharp **S :** Chamfer + Hone

Shape	Order Number	Class	Honing	Coated										Carbide	Dimensions (mm)						Geometry
				F7030	MC7020	MP6120	MP6130	MP7130	MP7140	MP9120	MP9130	VP15TF	VP30RT	MP8010	HTi10	LE1	LE2	LE3	IC	S	RE	
AQX ⊜ M154	QOGT0830R-G1	G	E ✱1			●				●		●			●	7.7	4.9	7.3	—	3	0.4	
	QOGT1035R-G1	G	E ✱1			●				●		●			●	9.9	6.4	9.3	—	3.5	0.4	
	QOGT1342R-G1	G	E ✱1			●				●		●			●	12.4	8.1	11.6	—	4.2	0.4	
	QOGT1651R-G1	G	E ✱1			●				●		●			●	15.8	10.4	14.6	—	5.1	0.4	
	QOGT1856R-G1	G	E ✱1			●				●		●			●	17.3	11.4	16	—	5.6	0.4	
	QOGT2062R-G1	G	E ✱1			●				●		●			●	19.8	13.1	18.1	—	6.2	0.4	
	QOGT2576R-G1	G	E ✱1			●				●		●			●	25.2	16.6	23.1	—	7.6	0.4	
AQX ⊜ M154	QOMT0830R-M2	M	E			●	●	●	●	●		●	●			7.3	4.4	7.3	—	3	0.8	
	QOMT1035R-M2	M	E			●	●	●	●	●		●	●			9.5	5.9	9.3	—	3.5	0.8	
	QOMT1342R-M2	M	E			●	●	●	●	●		●	●			12	7.6	11.6	—	4.2	0.8	
	QOMT1651R-M2	M	E			●	●	●	●	●		●	●			15.4	9.9	14.6	—	5.1	0.8	
	QOMT1856R-M2	M	E			●	●	●	●	●		●	●			16.9	10.9	16	—	5.6	0.8	
	QOMT2062R-M2	M	E			●	●	●	●	●		●	●			19.4	12.6	18.1	—	6.2	0.8	
	QOMT2576R-M2	M	E			●	●	●	●	●		●	●			24.8	16.1	23.1	—	7.6	0.8	
ARP ⊜ M186	RPHT1040M0E4-L	H	E		●			●			●					—	—	—	10	3.97	—	
	RPHT1040M0E4-M	H	E		●			●			●					—	—	—	10	3.97	—	
	RPHT1040M0E4-R	H	E		●			●			●					—	—	—	10	3.97	—	
	RPHT1248M0E4-L	H	E		●			●			●					—	—	—	12	4.76	—	
	RPHT1248M0E4-M	H	E		●			●			●					—	—	—	12	4.76	—	
	RPHT1248M0E4-R	H	E		●			●			●					—	—	—	12	4.76	—	
	RPMT1040M0E4-L	M	E		●			●			●					—	—	—	10	3.97	—	
	RPMT1040M0E4-M	M	E		●			●			●					—	—	—	10	3.97	—	
	RPMT1040M0E4-R	M	E		●			●			●					—	—	—	10	3.97	—	
	RPMT1248M0E4-L	M	E		●			●			●					—	—	—	12	4.76	—	
	RPMT1248M0E4-M	M	E		●			●			●					—	—	—	12	4.76	—	
	RPMT1248M0E4-R	M	E		●			●			●					—	—	—	12	4.76	—	
ARX ⊜ M192	RDMW0517M0E	M	E									●	●			—	—	—	5	1.70	—	
	RDMW0620M0E	M	E									●	●			—	—	—	6	1.99	—	
	RDMW0724M0E	M	E									●	●			—	—	—	7	2.38	—	
OCTACUT ⊜ M180	REMX1705SN	M	S	●												—	—	—	17.25	5.2	—	
																						
OCTACUT ⊜ M180	REMX12T3EN-JS	M	E	●												—	—	—	12.95	4.17	—	
	REMX1705EN-JS	M	E	●												—	—	—	17.25	5.2	—	
																						

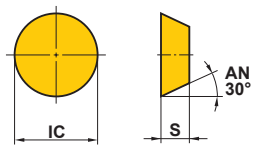
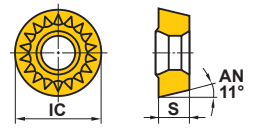
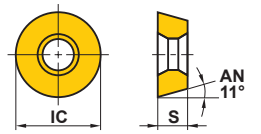
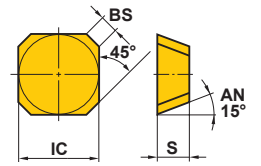
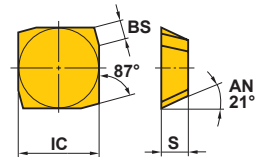
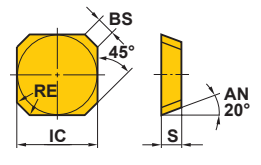
✱1 Grade HTi10 is "F".

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Work Material			F7030	MC5020	VP15TF	UP20M	NX2525	NX4545	UTi20T	HTi10
	P	Steel	◐		◐	◐	●	◐	◐	
	M	Stainless Steel	◔		◔	◔	○	◔	◔	
	K	Cast Iron		◐	✲		●		✲	◐
	N	Non-ferrous Metal								◐
	S	Heat-resistant Alloy, Titanium Alloy			◐					
	H	Hardened Steel			◔					

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✲ : Unstable Cutting

Honing :
E : Round **F** : Sharp **S** : Chamfer + Hone **T** : Chamfer

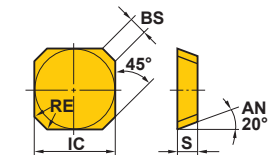
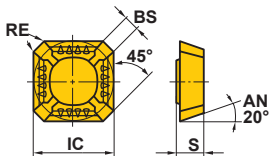
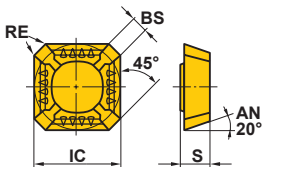
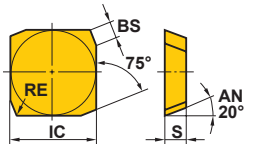
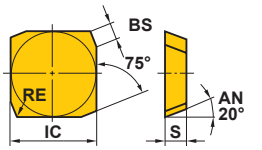
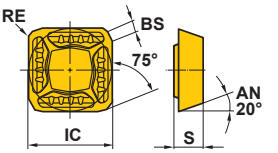
Shape	Order Number	Class	Honing	Coated				Cermet		Carbide		Dimensions (mm)				Geometry
				F7030	MC5020	VP15TF	UP20M	NX2525	NX4545	UTi20T	HTi10	IC	S	BS	RE	
SG20 ➲ M064	**RGEN2004M0EN**	E	E			●						20	4.76	–	–	
	RGEN2004M0SN	E	S	●			●			●	●	20	4.76	–	–	
BRP ➲ M196	**RPMT08T2M0E-JS**	M	E	●		●						8	2.78	–	–	
	RPMT10T3M0E-JS	M	E	●		●						10	3.97	–	–	
	RPMT1204M0E-JS	M	E	●		●				●		12	4.76	–	–	
	RPMT1606M0E-JS	M	E	●		●						16	6.35	–	–	
BRP ➲ M196	**RPMW08T2M0T**	M	T			●						8	2.78	–	–	
	RPMW10T3M0E	M	E	●					●			10	3.97	–	–	
	RPMW10T3M0T	M	T			●						10	3.97	–	–	
	RPMW1204M0E	M	E	●					●	●		12	4.76	–	–	
	RPMW1204M0T	M	T			●						12	4.76	–	–	
	RPMW1606M0E	M	E	●						●		16	6.35	–	–	
	RPMW1606M0T	M	T			●						16	6.35	–	–	
FMSD	**SDEN1203AEN**	E	T						▲			12.7	3.18	1.2	–	
	SDKN1203AEN	K	T	▲		●		▲		▲		12.7	3.18	1.2	–	
	SDKN1203AETN	K	T						▲			12.7	3.18	1.7	–	
	SDKN1504AETN	K	T						▲			15.875	4.76	1.7	–	
FE404 ➲ M266 **E404**	**SEA42C10GR**	A	F								▲	12.7	3.18	2.4	–	
	SEA42C10GL	A	F								▲	12.7	3.18	2.4	–	
SE445 **LSE445**	**SECN1203AFTN1**	C	T						●			12.7	3.18	1.4	1.0	
	SEEN1203AFFN1	E	F								●	12.7	3.18	1.4	1.0	
	SEEN1203AFEN1	E	E			●						12.7	3.18	1.4	1.0	
	SEEN1203AFTN1	E	T					●	●			12.7	3.18	1.4	1.0	
	SEEN1203AFSN1	E	S	●	●							12.7	3.18	1.4	1.0	
	SEKN1203AFSN1	K	S	●								12.7	3.18	1.4	–	
	SEKN1203AFTN1	K	T							●		12.7	3.18	1.4	–	
	SEKN1203AFTN	K	T						●			12.7	3.18	1.7	1.0	

ROTATING INSERTS

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✲ : Unstable Cutting

Honing :
E : Round **F** : Sharp **S** : Chamfer + Hone **T** : Chamfer

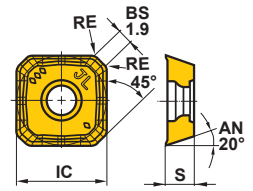
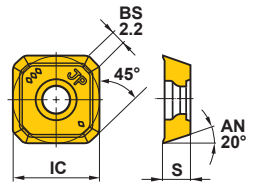
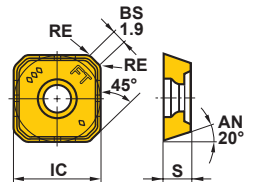
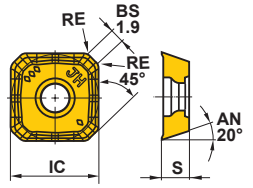
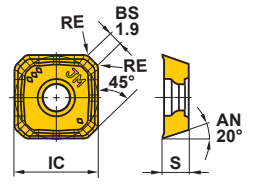
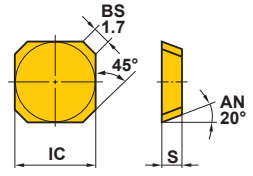
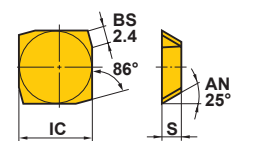
Shape	Order Number	Class	Honing	Coated F7030	Coated MC5020	Coated VP15TF	Cermet NX2525	Cermet NX4545	Carbide UTi20T	Carbide HTi10	Dimensions (mm) IC	S	BS	RE	Geometry
SE545	SEEN1504AFEN1	E	E			●					15.875	4.76	1.4	1.0	
	SEEN1504AFTN1	E	T				●	●			15.875	4.76	1.4	1.0	
	SEEN1504AFSN1	E	S	●	●						15.875	4.76	1.4	1.0	
	SEKN1504AFSN1	K	S	●							15.875	4.76	1.4	—	
	SEKN1504AFTN1	K	T						●		15.875	4.76	1.4	—	
SE445 LSE445	SEER1203AFEN-JS	E	E	●	●	●					12.7	3.18	1.4	1.0	
SE545	SEER1504AFEN-JS	E	E	●	●						15.875	4.76	1.4	1.0	
SE415 QSE415	SEEN1203EFFR1	E	F							●	12.7	3.18	1.4	1.0	
	SEEN1203EFER1	E	E			●					12.7	3.18	1.4	1.0	
	SEEN1203EFTR1	E	T				●	●			12.7	3.18	1.4	1.0	
	SEEN1203EFSR1	E	S	●	●						12.7	3.18	1.4	1.0	
	SEKN1203EFSR1	K	S	●							12.7	3.18	1.4	—	
	SEKN1203EFTR1	K	T						●		12.7	3.18	1.4	—	
	SEKN1203EFTR	K	T					●			12.7	3.18	1.8	1.0	Right hand insert shown.
SE515 ➲ M062	SECN1504EFTR1	C	T					●			15.875	4.76	1.4	1.0	
	SEEN1504EFER1	E	E			●					15.875	4.76	1.4	1.0	
	SEEN1504EFTR1	E	T					●			15.875	4.76	1.4	1.0	
	SEEN1504EFSR1	E	S	●							15.875	4.76	1.4	1.0	
	SEKN1504EFSR1	K	S	●							15.875	4.76	1.4	—	
	SEKN1504EFTR1	K	T						●		15.875	4.76	1.4	—	Right hand insert shown.
SE415 QSE415	SEER1203EFER-JS	E	E	●	●						12.7	3.18	1.4	1.0	

● : Inventory maintained in Japan. □ : Non stock, produced to order only. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	
H	Hardened Steel	

Cutting Conditions (Guide) :
● : Stable Cutting ◕ : General Cutting ✲ : Unstable Cutting

Honing :
E : Round **F** : Sharp
S : Chamfer + Hone **T** : Chamfer

Shape	Order Number	Class	Honing	Coated										Cermet	Carbide	Dimensions (mm)			Geometry
				F7030	MC5020	MP6120	MP6130	MP7130	MP7140	MP9120	MP9130	VP15TF	VP30RT	NX4545	HTi10	IC	S	RE	
ASX445 M030	SEET13T3AGEN-JL	E	E	●		●	●	●	●	●	●	●	●	●		13.4	3.97	1.5	
ASX445 M030	SEGT13T3AGFN-JP	G	F												●	13.4	3.97	—	
ASX445 M030	SEMT13T3AGSN-FT	M	S		●											13.4	3.97	1.5	
ASX445 M030	SEMT13T3AGSN-JH	M	S	●	●	●	●	●	●	●	●	●	●			13.4	3.97	1.5	
ASX445 M030	SEMT13T3AGSN-JM	M	S	●	●	●	●	●	●	●	●	●	●	●		13.4	3.97	1.5	
Corner Angle 45°	SEKN1203AGTN	K	T											▲		12.7	3.18	—	
BF407 QBF407	SFAN1203ZFFR2	A	F												●	12.7	3.175	—	
	SFAN1203ZFFL2	A	F												●	12.7	3.175	—	
	SFCN1203ZFFR2	C	F												●	12.7	3.175	—	
	SFCN1203ZFFL2	C	F												□	12.7	3.175	—	

ROTATING INSERTS

Work Material		
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	M	Stainless Steel
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	N	Non-ferrous Metal
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	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting
✱ : Unstable Cutting

Honing :
E : Round **F** : Sharp **T** : Chamfer

Shape	Order Number	Class	Honing	Coated										Cermet			Carbide			Dimensions (mm)			Geometry
				F7030	MC5020	MP6120	MP6130	MP7130	MP7140	MP9120	MP9130	VP15TF	VP20RT	VP30RT	MX3030	NX2525	NX4545	UTi20T	HTi10	TF15	S	BS	RE	
BN425 DN	SNC43B2G	C	F																●		4.8	2	—	
	SNC43B2S	C	T ✱1														●	●			4.8	2	—	
	SNK43B2G	K	F															●	●		4.8	2	—	
	SNK43B2S	K	T ✱1													●	●	●			4.8	2	—	
WSX445 M018	SNGU140812ANFR-L	G	F																	●	8.4	1.5	1.2	
	SNGU140812ANER-L	G	E		●	●	●	●	●	●	●	●	●		●						8.4	1.5	1.2	
	SNGU140812ANER-M	G	E		●	●	●	●	●	●	●	●	●		●						8.4	1.5	1.2	
	SNMU140812ANER-M	M	E		●	●	●	●	●	●	●	●	●		●						8.4	1.5	1.2	
	SNMU140812ANER-R	M	E		●	●	●					●	●								8.4	1.5	1.2	
	SNMU140812ANER-H	M	E		●	●	●					●	●								8.4	1.5	1.2	
	NEW SNGU140812ANFL-L	G	F																	●	8.4	1.5	1.2	
	NEW SNGU140812ANEL-L	G	E		●	●	●					●			●						8.4	1.5	1.2	
	SNGU140812ANEL-M	G	E		●	●	●					●			●						8.4	1.5	1.2	
	SNMU140812ANEL-M	M	E		●	●	●					●			●						8.4	1.5	1.2	
	SNMU140812ANEL-R	M	E		●	●	●					●									8.4	1.5	1.2	Right hand insert shown.
BN425 DN	SNKF43B2S	K	T														●				4.8	2	—	
	SNMF43B2G	M	E		●																4.8	2	—	
	SNMN120408	M	E		●																4.76	—	0.8	
	SNMN120412	M	E		●																4.76	—	1.2	
ASX400 M080	SOET12T308PEER-JL	E	E	●		●	●	●	●	●	●	●		●			●				3.97	1.4	0.8	
ASX400 M080	SOGT12T308PEFR-JP	G	F																●		3.97	1.4	0.8	
ASX400 M080	SOMT12T308PEER-JH	M	E	●	●	●	●	●	●	●	●	●		●							3.97	1.4	0.8	

✱1 Grade UTi20T is "E".

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(10 inserts in one case)

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
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	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting
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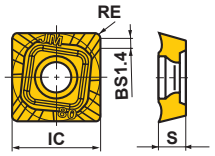
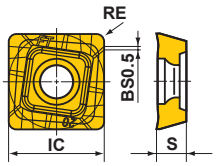
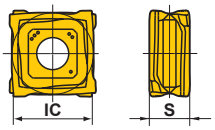
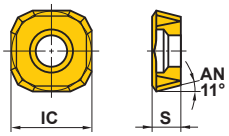
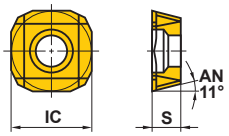
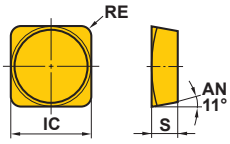
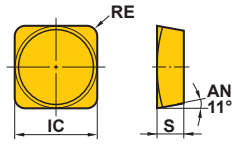
Honing :
E : Round **F :** Sharp

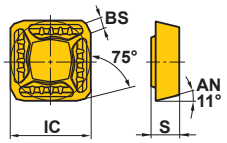
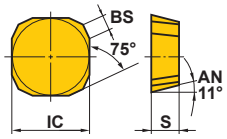
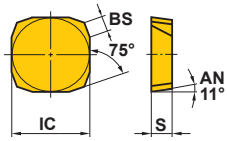
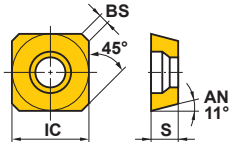
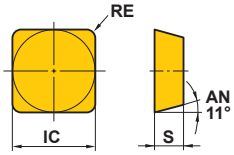
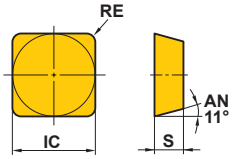
Shape	Order Number	Class	Honing	Coated										Cermet		Carbide		Dimensions (mm)			Geometry
				F7030	MC5020	MP6130	MP6130	MP7130	MP7140	MP9120	MP9130	VP15TF	VP30RT	NX2525	NX4545	HTi10	HTi05T	IC	S	RE	
ASX400 ➲ M080 **ASX400** Side Cutter ➲ M095 	**SOMT12T308PEER-JM**	M	E	●	●	●	●	●	●	●	●	●	●		●			12.7	3.97	0.8	 Right hand insert shown.
	SOMT12T308PEEL-JM	M	E									●						12.7	3.97	0.8	
ASX400 ➲ M080 	**SOMT12T320PEER-FT**	M	E		●	●				●	●	●						12.7	3.97	2.0	
VOX400 ➲ M076 **VOS400** Side Cutter ➲ M094 	**SONX1206PER**	N	E		●							●						12.7	6.3	—	 Right hand insert shown.
	SONX1206PEL	N	E									●						12.7	6.3	—	
FF3000 ➲ M074 	**SPCA53Z**	C	E											●				15.88	4.8	—	
FF3000 ➲ M074 	**SPCG53Z**	C	F											●			●	15.88	4.8	—	
FP490 ➲ M262 	**SPEN424A**	E	F													●	●	12.7	3.18	1.6	
FP590 ➲ M264 	**SPEN535A**	E	F														●	15.875	4.76	2.0	

ROTATING INSERTS

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✱ : Unstable Cutting

Honing :
E : Round **F** : Sharp **T** : Chamfer

Shape	Order Number	Class	Honing	Coated				Cermet		Carbide		Dimensions (mm)				Geometry
				F7030	MC5020	VP15TF	UP20M	NX2525	NX4545	UTi20T	HTi10	IC	S	BS	RE	
FBP415	**SPER1203EEER-JS**	E	E		●							12.7	3.18	1.4	—	
Corner Angle 15°	**SPEN1203EDR**	E	T	▲				▲	▲			12.7	3.18	1.4	—	
	SPKN1203EDR	K	T✱1	▲	●	●		▲		▲	▲	12.7	3.18	1.4	—	
	SPKN1504EDR	K	T✱1			●	▲	▲		▲	▲	15.875	4.76	1.4	—	
FBP415	**SPEN1203EEER1**	E	E		●						●	12.7	3.175	1.4	—	
	SPEN1203EEEL1	E	E		●						●	12.7	3.175	1.4	—	
	SPNN1203EEER1	N	E		●						●	12.7	3.18	1.3	—	
	SPNN1203EEEL1	N	E								●	12.7	3.18	1.3	—	
BSP	**SPMB1204APT**	M	T				●			●		12.7	4.76	1.4	—	
S400	**SPMN120304**	M	E✱1			●				●	●	12.7	3.18	—	0.4	
	SPMN120304T	M	T					●				12.7	3.18	—	0.4	
	SPMN120308	M	E	●		●	●			●	●	12.7	3.18	—	0.8	
	SPMN120312	M	E✱1	●		●				●	●	12.7	3.18	—	1.2	
	SPMN120408	M	E		●					●	●	12.7	4.76	—	0.8	
	SPMN120412	M	E		●					●		12.7	4.76	—	1.2	
	SPGN120304	G	E✱1					●		●	●	12.7	3.18	—	0.4	
	SPGN120308	G	E✱1				●	●		●	●	12.7	3.18	—	0.8	
	SPGN120312	G	F								●	12.7	3.18	—	1.2	
S500	**SPMN150408**	M	E							●		15.875	4.76	—	0.8	
	SPMN150412	M	E							●		15.875	4.76	—	1.2	
	SPGN150404	G	E							●		15.875	4.76	—	0.4	
	SPGN150408	G	F								●	15.875	4.76	—	0.8	

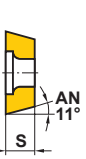
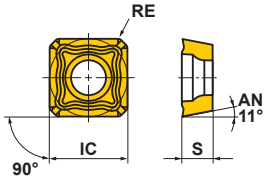
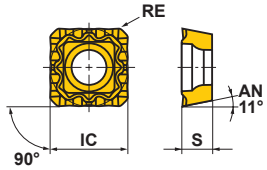
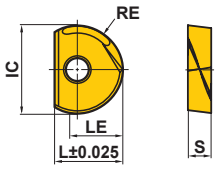
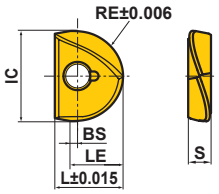
✱1 Grade HTi10 is "F".

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Work Material			Coated					Cermet		Carbide		Dimensions (mm)						Geometry
			EP6120	VP15TF	VP20RT	UP20M	MP8010	NX2525	NX4545	UTi20T	HTi10							
P	Steel		●	◕	◕	◕		●	◕	◕								
M	Stainless Steel			◔	◔	◔		○	◔	◔								
K	Cast Iron			✲	✲			●		✲	◕							
N	Non-ferrous Metal		◕								◕							
S	Heat-resistant Alloy, Titanium Alloy			◕	✲													
H	Hardened Steel		◔	◔			●											

Cutting Conditions (Guide) :
● : Stable Cutting ◕ : General Cutting ✲ : Unstable Cutting

Honing :
E : Round **F** : Sharp **T** : chamfer

Shape	Order Number	Class	Honing	EP6120	VP15TF	VP20RT	UP20M	MP8010	NX2525	NX4545	UTi20T	HTi10	L	LE	IC	S	BS	RE	Geometry
TBE1	**SPMT120408-A**	M	E				▲				▲		—	—	12.7	4.76	—	0.8	
CESP CFSP CGSP ➲ M246	**SPMW090304**	M	E ✶1		●		●		●	●	●	●	—	—	9.525	3.18	—	0.4	
	SPMW090308	M	E ✶1		●		●		●	●	●	●	—	—	9.525	3.18	—	0.8	
	SPMW120304	M	E ✶1		●		●		●	●	●	●	—	—	12.7	3.18	—	0.4	
	SPMW120308	M	E ✶1		●		●		●	●	●	●	—	—	12.7	3.18	—	0.8	
SPX ➲ M215	**SPMX120408-JM**	M	E		●	●							—	—	12.7	4.80	—	0.8	
SPX ➲ M215	**SPMX120408-WH**	M	E		●	●							—	—	12.7	4.76	—	0.8	
SRB ➲ M228	✶2 **SRBT10**	—	F		●								8.5	5	10	2.6	—	5	
	✶2 **SRBT12**	—	F		●								10	6	12	3	—	6	
	✶2 **SRBT16**	—	F		●								12	8	16	4	—	8	
	✶2 **SRBT20**	—	F		●								15	10	20	5	—	10	
	✶2 **SRBT25**	—	F		●								18.5	12.5	25	6	—	12.5	
	✶2 **SRBT30**	—	F		●								22.5	15	30	7	—	15	
	✶2 **SRBT32**	—	F		●								23.5	16	32	7	—	16	
SRF ➲ M228	✶2 **SRFT10**	—	F	●	●			●					8.5	5.5	10	2.6	0.5	5	
	✶2 **SRFT12**	—	F	●	●			●					10	6.5	12	3	0.5	6	
	✶2 **SRFT16**	—	F	●	●			●					12	9	16	4	1	8	
	✶2 **SRFT20**	—	F	●	●			●					15	11	20	5	1	10	
	✶2 **SRFT25**	—	F	●	●			●					18.5	13.5	25	6	1	12.5	
	✶2 **SRFT30**	—	F	●	●			●					22.5	16	30	7	1	15	
	✶2 **SRFT32**	—	F	●	●			●					23.5	17	32	7	1	16	

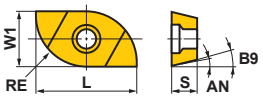
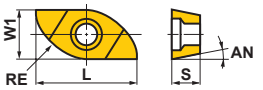
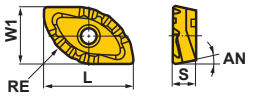
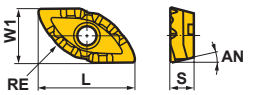
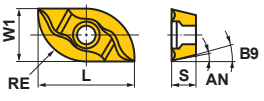
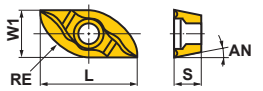
✶1 Grade NX2525 and NX4545 are "T".
✶2 2 inserts in one case.

ROTATING INSERTS

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✲ : Unstable Cutting

Honing :
E : Round

Shape	Order Number		Class	Honing	Coated MP6120	Coated MP9120	Coated VP15TF	Coated VP20RT	Coated VP30RT	Dimensions (mm) RE	L	W1	S	AN	B9	Geometry
SRM2 M236	SRG16C		G	E	●	●	●			8	16	8.2	3.5	11°	–	
	SRG20C		G	E	●	●	●			10	19	10.2	4.6	10°	18°	
	SRG25C		G	E	●	●	●			12.5	24	12.8	5.5	10°	18°	
	SRG30C		G	E	●	●	●			15	28	15.3	7	10°	18°	
	SRG32C		G	E	●	●	●			16	28	16.3	7	10°	18°	
SRM2 M236	SRG16E		G	E	●	●	●			8	13.5	6.7	3.5	11°	–	
	SRG20E		G	E	●	●	●			10	15.5	8.5	4.6	9°	–	
	SRG25E		G	E	●	●	●			12.5	20.5	10.2	5.5	9°	–	
	SRG30E		G	E	●	●	●			15	25.2	12.2	7	9°	–	
	SRG32E		G	E	●	●	●			16	26.1	13.1	7	9°	–	
SRM2ϕ40 ϕ50 M244	* SRG40C		G	E			●	●	●	20	36	20.5	8.0	11°	–	
	* SRG50C		G	E			●	●	●	25	40	26	8.5	11°	–	
SRM2ϕ40 ϕ50 M244	* SRG40E		G	E			●	●	●	20	32	16.6	8.0	11°	–	
	* SRG50E		G	E			●	●	●	25	35.8	20	8.5	11°	–	
SRM2 M236	SRM16C-M		M	E	●	●	●			8	16	8.2	3.5	11°	–	
	SRM20C-M		M	E	●	●	●			10	19	10.2	4.6	10°	18°	
	SRM25C-M		M	E	●	●	●			12.5	24	12.8	5.5	10°	18°	
	SRM30C-M		M	E	●	●	●			15	28	15.3	7	10°	18°	
	SRM32C-M		M	E	●	●	●			16	28	16.3	7	10°	18°	
SRM2 M236	SRM16E-M		M	E	●	●	●			8	13.5	6.7	3.5	11°	–	
	SRM20E-M		M	E	●	●	●			10	15.5	8.5	4.6	9°	–	
	SRM25E-M		M	E	●	●	●			12.5	20.5	10.2	5.5	9°	–	
	SRM30E-M		M	E	●	●	●			15	25.2	12.2	7	9°	–	
	SRM32E-M		M	E	●	●	●			16	26.1	13.1	7	9°	–	

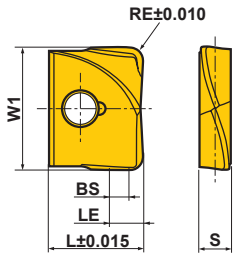
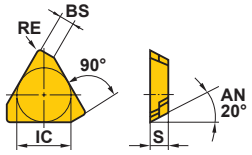
* 2 inserts in one case.

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

Work Material			F7030	MC5020	VP15TF	UP20M	MP8010	NX2525	NX4545	UTi20T	HTi10
	P	Steel	●		●	●		●	●	●	
	M	Stainless Steel	◔		◔	◔		○	◔	◔	
	K	Cast Iron		●	✲		●	●		✲	●
	N	Non-ferrous Metal									◔
	S	Heat-resistant Alloy, Titanium Alloy			◔						
	H	Hardened Steel			◔		○				

Cutting Conditions (Guide) :
● : Stable Cutting ◔ : General Cutting ✲ : Unstable Cutting

Honing :
E : Round **F** : Sharp **S** : Chamfer + Hone **T** : Chamfer

Shape	Order Number	Class	Honing	Coated					Cermet		Carbide		Dimensions (mm)							Geometry
				F7030	MC5020	VP15TF	UP20M	MP8010	NX2525	NX4545	UTi20T	HTi10	W1	LE	IC	L	S	BS	RE	
SUF ➲ M232	* SUFT10R05	—	F			●		●					10	1.5	—	8.5	2.6	1	0.5	
	* SUFT10R10	—	F			●		●					10	2	—	8.5	2.6	1	1	
	* SUFT10R20	—	F			●		●					10	3	—	8.5	2.6	1	2	
	* SUFT12R05	—	F			●		●					12	1.7	—	10	3	1.2	0.5	
	* SUFT12R10	—	F			●		●					12	2.2	—	10	3	1.2	1	
	* SUFT12R20	—	F			●		●					12	3.2	—	10	3	1.2	2	
	* SUFT12R30	—	F			●		●					12	4.2	—	10	3	1.2	3	
	* SUFT16R05	—	F			●		●					16	2.1	—	12	4	1.6	0.5	
	* SUFT16R10	—	F			●		●					16	2.6	—	12	4	1.6	1	
	* SUFT16R15	—	F			●		●					16	3.1	—	12	4	1.6	1.5	
	* SUFT16R20	—	F			●		●					16	3.6	—	12	4	1.6	2	
	* SUFT16R30	—	F			●		●					16	4.6	—	12	4	1.6	3	
	* SUFT20R05	—	F			●		●					20	2.5	—	15	5	2	0.5	
	* SUFT20R10	—	F			●		●					20	3	—	15	5	2	1	
	* SUFT20R15	—	F			●		●					20	3.5	—	15	5	2	1.5	
	* SUFT20R20	—	F			●		●					20	4	—	15	5	2	2	
	* SUFT20R30	—	F			●		●					20	5	—	15	5	2	3	
	* SUFT25R05	—	F			●		●					25	3	—	18.5	6	2.5	0.5	
	* SUFT25R10	—	F			●		●					25	3.5	—	18.5	6	2.5	1	
	* SUFT25R20	—	F			●		●					25	4.5	—	18.5	6	2.5	2	
	* SUFT25R30	—	F			●		●					25	5.5	—	18.5	6	2.5	3	
	* SUFT30R05	—	F			●		●					30	3.5	—	22.5	7	3	0.5	
	* SUFT30R10	—	F			●		●					30	4	—	22.5	7	3	1	
	* SUFT30R20	—	F			●		●					30	5	—	22.5	7	3	2	
	* SUFT30R30	—	F			●		●					30	6	—	22.5	7	3	3	
	* SUFT32R05	—	F			●		●					32	3.7	—	23.5	7	3.2	0.5	
	* SUFT32R10	—	F			●		●					32	4.2	—	23.5	7	3.2	1	
	* SUFT32R20	—	F			●		●					32	5.2	—	23.5	7	3.2	2	
NSE300 **SE300**	TEEN1603PEFR1	E	F									●	—	—	9.525	—	3.175	1.4	0.4	
	TEEN1603PEER1	E	E			●						●	—	—	9.525	—	3.175	1.4	0.4	
	TEEN1603PETR1	E	T				●		●	●	●		—	—	9.525	—	3.175	1.4	0.4	
	TEEN1603PESR1	E	S	●	●								—	—	9.525	—	3.175	1.4	0.4	

* 2 inserts in one case.

ROTATING INSERTS

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◔ : General Cutting ✲ : Unstable Cutting

Honing :
E : Round **F :** Sharp **S :** Chamfer + Hone **T :** Chamfer

Shape	Order Number	Class	Honing	Coated					Cermet		Carbide		Dimensions (mm)				Geometry
				F7030	MC5020	VP15TF	UP20M	AP10H	NX2525	NX4545	UTi20T	HTi10	IC	S	BS	RE	
NSE300 SE300	TECN1603PEFR1W	C	F									●	9.525	3.175	1.4	0.4	Wall face finishing.
	TECN1603PEER1W	C	E									●	9.525	3.175	1.4	0.4	
	TECN1603PETR1W	C	T						●	●	●		9.525	3.175	1.4	0.4	
NSE300 NSE400	TEER1603PEER-JS	E	E	●							●		9.525	3.175	1.4	0.4	
	TEER2204PEER-JS	E	E	●							●		12.7	4.76	1.4	1.0	
NSE400 SE400	TECN2204PEFR1	C	F									●	12.7	4.76	1.4	1.0	
	TECN2204PEER1	C	E									●	12.7	4.76	1.4	1.0	
	TECN2204PETR1	C	T						●	●	●		12.7	4.76	1.4	1.0	
	TEEN2204PEFR1	E	F									●	12.7	4.76	1.4	1.0	
	TEEN2204PEER1	E	E			●						●	12.7	4.76	1.4	1.0	
	TEEN2204PETR1	E	T				●		●	●	●		12.7	4.76	1.4	1.0	
	TEEN2204PESR1	E	S	●	●								12.7	4.76	1.4	1.0	
	TEKN2204PEER1	K	E									●	12.7	4.76	1.94	—	
	TEKN2204PESR1	K	S	●									12.7	4.76	1.94	—	
	TEKN2204PETR1	K	T				●		●		●		12.7	4.76	1.94	—	
	TEKN2204PETR	K	T							●			12.7	4.76	1.94	—	Right hand insert shown.
	TPEN1603PPR	E	T	▲					▲				9.525	3.18	1.2	—	
	TPKN1603PPR	K	T *1	▲		●	▲		▲	▲	▲	▲	9.525	3.18	1.2	—	
	TPEN2204PDR	E	T *1	▲									12.7	4.76	1.4	—	
	TPKN2204PDR	K	T *1	▲		●	▲		▲	▲	▲	▲	12.7	4.76	1.4	—	
PMF → M256	TPEW1303ZPER2	E	E			●		●					7.94	3.18	2	—	

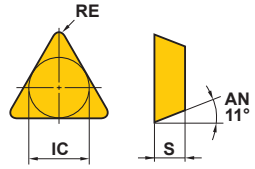
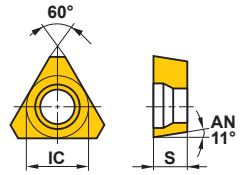
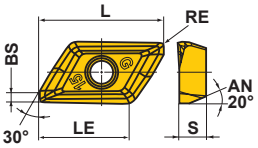
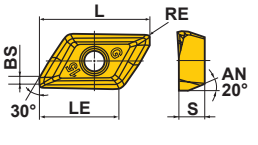
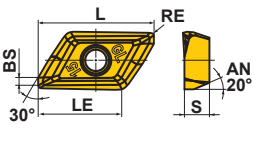
*1 Grade F7030 is "E".

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(10 inserts in one case)

Work Material																				
	P	Steel																		
	M	Stainless Steel																		
	K	Cast Iron																		
	N	Non-ferrous Metal																		
	S	Heat-resistant Alloy, Titanium Alloy																		
	H	Hardened Steel																		

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✲ : Unstable Cutting

Honing :
E : Round **F :** Sharp **T :** chamfer

Shape	Order Number	Class	Honing	Coated				Cermet	Carbide			Dimensions (mm)						Geometry
				F7030	VP15TF	LC15TF	UP20M	NX2525	UTi20T	HTi10	TF15	L	LE	IC	S	BS	RE	
11°Positive	TPMN160304	M	E*1	●	●		●	●	●	●		—	—	9.525	3.18	—	0.4	
	TPMN160308	M	E*2	●	●		●	●	●	●		—	—	9.525	3.18	—	0.8	
	TPMN160312	M	E*1				●			●		—	—	9.525	3.18	—	1.2	
	TPMN220404	M	E						●			—	—	12.7	4.76	—	0.4	
	TPMN220408	M	E*1	●	●		●		●	●		—	—	12.7	4.76	—	0.8	
	TPMN220412	M	E*1	●	●				●	●		—	—	12.7	4.76	—	1.2	
VIPER	TPNX1605N	N	E						●			—	—	9.525	5	—	—	
BXD4000 ➲ M150	XDGT1550PDER-G04	G	E		●							22	15.5	—	5	1.5	0.4	
	XDGT1550PDER-G08	G	E		●							22	15.5	—	5	1.1	0.8	
	XDGT1550PDER-G12	G	E		●							22	15.5	—	5	0.7	1.2	
	XDGT1550PDER-G16	G	E		●							22	15.6	—	5	0.5	1.6	
	XDGT1550PDER-G20	G	E		●							21.7	15.6	—	5	0.2	2.0	
	XDGT1550PDER-G30	G	E		●							20	14.8	—	5	0.6	3.0	
	XDGT1550PDER-G32	G	E		●							20	14.8	—	5	0.4	3.2	
	XDGT1550PDER-G40	G	E		●							19	14.4	—	5	0.5	4.0	
	XDGT1550PDER-G50	G	E		●							18	14	—	5	0.4	5.0	
BXD4000 ➲ M150	XDGT1550PDFR-G04	G	F			●					●	22	15.5	—	5	1.5	0.4	
	XDGT1550PDFR-G08	G	F			●					●	22	15.5	—	5	1.1	0.8	
	XDGT1550PDFR-G12	G	F			●					●	22	15.5	—	5	0.7	1.2	
	XDGT1550PDFR-G16	G	F			●					●	22	15.6	—	5	0.3	1.6	
	XDGT1550PDFR-G20	G	F			●					●	21.7	15.6	—	5	0.2	2.0	
	XDGT1550PDFR-G30	G	F			●					●	20	14.8	—	5	0.6	3.0	
	XDGT1550PDFR-G32	G	F			●					●	20	14.8	—	5	0.4	3.2	
	XDGT1550PDFR-G40	G	F			●					●	19	14.4	—	5	0.5	4.0	
	XDGT1550PDFR-G50	G	F			●					●	18	14	—	5	0.4	5.0	
BXD4000 ➲ M150	XDGT1550PDFR-GL04	G	F								●	22	15.5	—	5	1.5	0.4	
	XDGT1550PDFR-GL08	G	F								●	22	15.5	—	5	1.1	0.8	

*1 Grade HTi10 is "F".
*2 Grade HTi10 is "F", Grade NX2525 is "T".

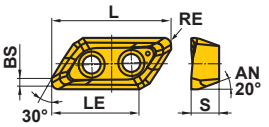
ROTATING INSERTS

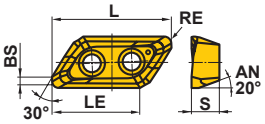
Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

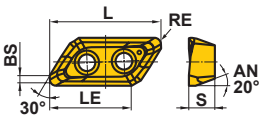
Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✣ : Unstable Cutting

Honing :
E : Round **F :** Sharp

Shape	Order Number	Class	Honing	Coated			Carbide	Dimensions (mm)					Geometry
				LC15TF	MP6120	MP9120	TF15	L	LE	S	BS	RE	
AXD4000 M134	XDGX175004PDFR-GL	G	F	●			●	23	16.9	5	1.7	0.4	
	XDGX175008PDFR-GL	G	F	●			●	23	17	5	1.3	0.8	
	XDGX175012PDFR-GL	G	F	●			●	23	17	5	0.9	1.2	
	XDGX175016PDFR-GL	G	F	●			●	22	16.4	5	1.4	1.6	
	XDGX175020PDFR-GL	G	F	●			●	22	16.4	5	1	2.0	
	XDGX175024PDFR-GL	G	F	●			●	22	16.4	5	0.6	2.4	
	XDGX175030PDFR-GL	G	F	●			●	21.1	16.1	5	0.8	3.0	
	XDGX175032PDFR-GL	G	F	●			●	21.1	16.1	5	0.6	3.2	
	XDGX175040PDFR-GL	G	F	●			●	20	15.6	5	0.8	4.0	
	XDGX175050PDFR-GL	G	F	●			●	19.4	15.3	5	0.4	5.0	
AXD4000 M134	XDGX175004PDER-GM	G	E		●	●		23	17	5	1.7	0.4	
	XDGX175008PDER-GM	G	E		●	●		23	17	5	1.2	0.8	
	XDGX175012PDER-GM	G	E		●	●		23	17	5	0.9	1.2	
	XDGX175016PDER-GM	G	E		●	●		22	15.9	5	1.4	1.6	
	XDGX175020PDER-GM	G	E		●	●		22	15.9	5	0.8	2.0	
	XDGX175024PDER-GM	G	E		●	●		22	15.9	5	0.4	2.4	
	XDGX175030PDER-GM	G	E		●	●		21.1	16	5	0.6	3.0	
	XDGX175032PDER-GM	G	E		●	●		21.1	16	5	0.4	3.2	
	XDGX175040PDER-GM	G	E		●	●		20	14.8	5	0.5	4.0	
	XDGX175050PDER-GM	G	E		●	●		19.4	15	5	0.4	5.0	
AXD4000 M134	XDGX175004PDFR-GM	G	F				●	23	17	5	1.7	0.4	
	XDGX175008PDFR-GM	G	F				●	23	17	5	1.2	0.8	
	XDGX175012PDFR-GM	G	F				●	23	17	5	0.9	1.2	
	XDGX175016PDFR-GM	G	F				●	22	15.9	5	1.4	1.6	
	XDGX175020PDFR-GM	G	F				●	22	15.9	5	0.8	2.0	
	XDGX175024PDFR-GM	G	F				●	22	15.9	5	0.4	2.4	
	XDGX175030PDFR-GM	G	F				●	21.1	16	5	0.6	3.0	
	XDGX175032PDFR-GM	G	F				●	21.1	16	5	0.4	3.2	
	XDGX175040PDFR-GM	G	F				●	20	14.8	5	0.5	4.0	
	XDGX175050PDFR-GM	G	F				●	19.4	15	5	0.4	5.0	





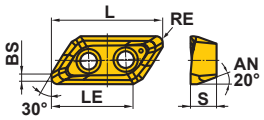
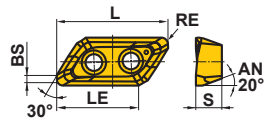


● : Inventory maintained in Japan.
(10 inserts in one case)

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✱ : Unstable Cutting

Honing :
E : Round **F** : Sharp

Shape	Order Number	Class	Honing	Coated			Carbide	Dimensions (mm)					Geometry
				LC15TF	MP6120	MP9120	TF15	L	LE	S	BS	RE	
AXD7000 ➲ M142	**XDGX227008PDFR-GL**	G	F	●			●	30	21.6	7	2	0.8	
	XDGX227016PDFR-GL	G	F	●			●	30	21.7	7	1.2	1.6	
	XDGX227020PDFR-GL	G	F	●			●	30	21.7	7	0.8	2.0	
	**XDGX227030PDFR-GL**	G	F	●			●	28.8	21.2	7	0.9	3.0	
	XDGX227032PDFR-GL	G	F	●			●	28.8	21.2	7	0.7	3.2	
	XDGX227040PDFR-GL	G	F	●			●	27.5	20.6	7	1	4.0	
	XDGX227050PDFR-GL	G	F	●			●	27	20.3	7	0.4	5.0	
AXD7000 ➲ M142	**XDGX227008PDER-GLA**	G	E		●	●		30	21.7	7	2	0.8	
	XDGX227016PDER-GLA	G	E		●	●		30	21.7	7	1.2	1.6	
	XDGX227020PDER-GLA	G	E		●	●		30	21.7	7	0.8	2.0	
	**XDGX227024PDER-GLA**	G	E		●	●		30	21.7	7	0.3	2.4	
	XDGX227030PDER-GLA	G	E		●	●		28.8	21.1	7	0.9	3.0	
	XDGX227032PDER-GLA	G	E		●	●		28.8	21.1	7	0.6	3.2	
	XDGX227040PDER-GLA	G	E		●	●		27.5	20.4	7	0.9	4.0	
	XDGX227050PDER-GLA	G	E		●	●		27	20.2	7	0.3	5.0	

ROTATING INSERTS

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✱ : Unstable Cutting

Honing :
E : Round

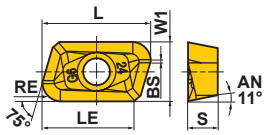
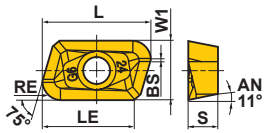
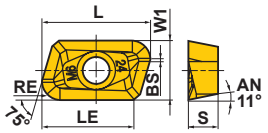
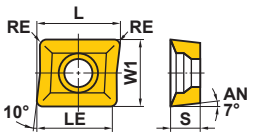
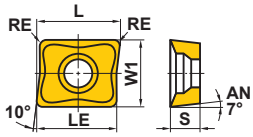
Shape	Order Number	Class	Honing	Coated MP9130	Dimensions (mm) L	LE	W1	INSL	S	BS	RE	Geometry
VFX5 M220	XNMU160708R-MS	M	E	●	16.0	13.4	7.0	11.1	6.5	1.0	0.8	
	XNMU160712R-MS	M	E	●	16.0	13.8	7.0	11.1	6.5	1.0	1.2	
	XNMU160716R-MS	M	E	●	16.0	13.8	7.0	11.1	6.5	1.0	1.6	
	XNMU160724R-MS	M	E	●	16.0	13.8	7.0	11.1	6.5	1.0	2.4	
	XNMU160732R-MS	M	E	●	17.3	14.4	7.0	11.1	6.5	—	3.2	
	XNMU160740R-MS	M	E	●	18.9	15.2	7.0	11.1	6.5	—	4.0	
VFX5 M220	XNMU160708R-HS	M	E	●	16.0	13.4	7.0	11.1	6.5	1.0	0.8	
VFX5 M220	XNMU160708R-LS	M	E	●	16.0	13.4	7.0	11.1	6.5	1.0	0.8	
VFX6 M224	XNMU190912R-MS	M	E	●	19.1	16.5	9.5	12.7	8.5	1.0	1.2	
	XNMU190916R-MS	M	E	●	19.1	16.5	9.5	12.7	8.5	1.0	1.6	
	XNMU190924R-MS	M	E	●	19.1	16.6	9.5	12.7	8.5	1.0	2.4	
	XNMU190932R-MS	M	E	●	20.2	17.1	9.5	12.7	8.5	—	3.2	
	XNMU190940R-MS	M	E	●	21.8	17.8	9.5	12.7	8.5	—	4.0	
	XNMU190950R-MS	M	E	●	21.8	17.8	9.5	12.7	8.5	—	5.0	
VFX6 M224	XNMU190912R-HS	M	E	●	19.1	16.5	9.5	12.7	8.5	1.0	1.2	
VFX6 M224	XNMU190912R-LS	M	E	●	19.1	16.5	9.5	12.7	8.5	1.0	1.2	

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

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✱ : Unstable Cutting

Honing :
E : Round **F :** Sharp

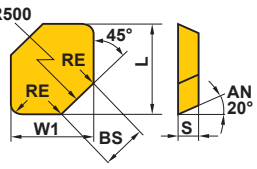
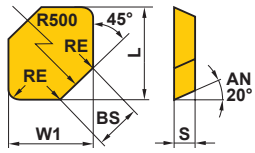
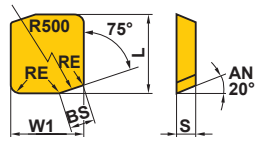
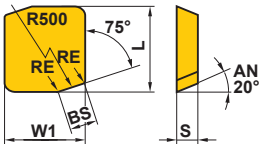
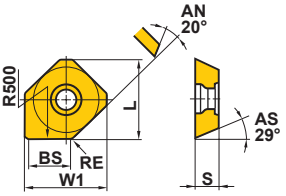
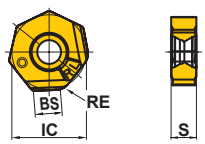
Shape	Order Number	Class	Honing	Coated F7030	Coated VP15TF	Coated UP20M	Carbide HTi10	Carbide UTi20T	L	LE	W1	S	BS	RE	Geometry
BAP3500	XPGT13T3PDER-G1	G	E		●				14.6	11.7	7.9	3.97	1.6	0.4	
	XPGT13T3PDER-G2	G	E		●				14.7	11.7	7.9	3.97	1.2	0.8	
	XPGT13T3PDER-G6	G	E		●				14.2	11.5	7.9	3.97	0.4	2.4	
	XPGT13T3PDER-G75	G	E		●				13.8	11.3	7.9	3.97	0.4	3.0	
	XPGT13T3PDER-G8	G	E		●				13.7	11.2	7.9	3.97	0.4	3.2	
BAP3500	XPGT13T3PDFR-G1	G	F				●		14.6	11.7	7.9	3.97	1.6	0.4	
	XPGT13T3PDFR-G2	G	F				●		14.7	11.7	7.9	3.97	1.2	0.8	
	XPGT13T3PDFR-G6	G	F				●		14.2	11.5	7.9	3.97	0.4	2.4	
	XPGT13T3PDFR-G75	G	F				●		13.8	11.3	7.9	3.97	0.4	3.0	
	XPGT13T3PDFR-G8	G	F				●		13.7	11.2	7.9	3.97	0.4	3.2	
BAP3500	XPMT13T3PDER-M1	M	E	●	●				14.6	11.7	7.9	3.97	1.6	0.4	
	XPMT13T3PDER-M2	M	E	●	●				14.7	11.8	7.9	3.97	1.2	0.8	
	XPMT13T3PDER-M6	M	E	●	●				14.2	11.6	7.9	3.97	0.4	2.4	
	XPMT13T3PDER-M75	M	E	●	●				13.8	11.4	7.9	3.97	0.4	3.0	
	XPMT13T3PDER-M8	M	E	●	●				13.7	11.3	7.9	3.97	0.4	3.2	
DCCC ➲ M212	ZCMX083508ER-A	M	E	●				●	11.0	8.5	7.94	3.5	—	0.8	
	ZCMX09T308ER-A	M	E	●	●	●		●	12.7	11.0	9.525	3.97	—	0.8	
DCCC ➲ M212	ZCMX09T308ER-B	M	E	●		●		●	12.7	11.0	9.525	3.97	—	0.8	
															

WIPER INSERTS

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✣ : Unstable Cutting

Honing :
E : Round **T :** Chamfer

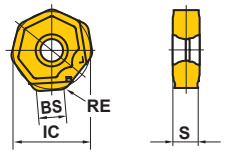
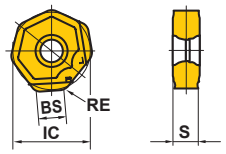
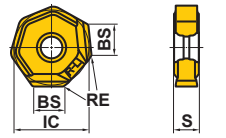
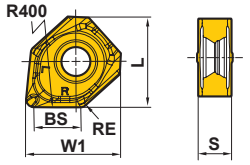
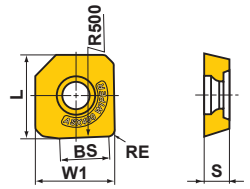
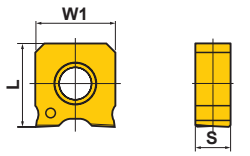
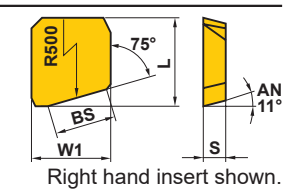
Shape	Order Number	Class	Honing	Coated			Cermet	Coated Cermet	Carbide	Dimensions (mm)						Dimensions (mm)
				MP6120	MC5020	VP15TF	NX2525	VP25N	HTi05T	L	W1	IC	S	BS	RE	
SE445 **LSE445**	**WEC42AFTR5C**	C	T				●			15.33	12.7	—	3.18	5	1.0	
SE545	**WEC53AFER5C**	C	E						●	18.505	15.875	—	4.76	5	1.0	
	WEC53AFTR5C	C	T				●			18.505	15.875	—	4.76	5	1.0	
SE415	**WEC42EFER5C**	C	E						●	13.728	12.7	—	3.18	5	1.0	
	WEC42EFTR5C	C	T				●			13.728	12.7	—	3.18	5	1.0	
SE515 M062	**WEC53EFTR5C**	C	T				●			16.903	15.875	—	4.76	5	1.0	
ASX445 M030	**WEEW13T3AGER8C**	E	E		●	●			●	16.6	16.48	—	3.97	7.5	1.5	
	WEEW13T3AGTR8C	E	T				●	●		16.6	16.48	—	3.97	7.5	1.5	
AHX440S M038	**WNEU1305ZEN4C-M**	E	E	●	●	●				—	—	13.4	5.1	4	2.7	

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

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✱ : Unstable Cutting

Honing :
E : Round **F :** Sharp **T :** Chamfer

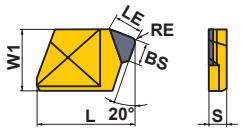
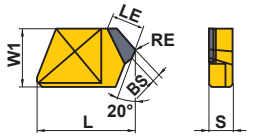
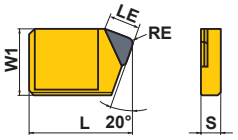
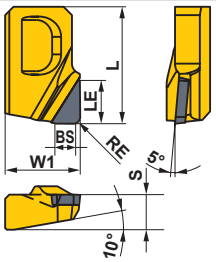
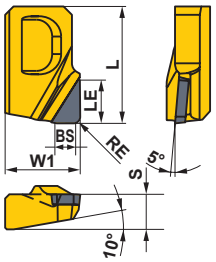
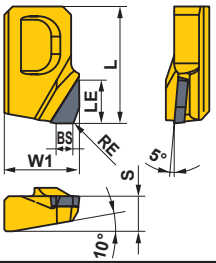
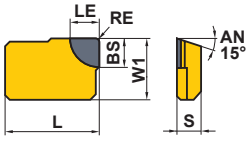
Shape	Order Number	Class	Honing	Coated			Cermet		Carbide	Dimensions (mm)						Geometry
				MC5020	MP6120	VP15TF	NX2525	NEW MX3020	HTi05T	L	W1	IC	S	BS	RE	
AHX640S ➲ M046	WNEU2007ZEN7C-M	E	E		●					—	—	20	6.9	7.2	0.8	
AHX640S ➲ M046	WNEU2007ZEN7C-WP	E	E			●				—	—	20	6.9	7.1	0.8	
AHX640S ➲ M046 AHX640W ➲ M054	WNEU2006ZEN7C-WK	E	E	●						—	—	20	6.55	7.4	0.8	
WSX445 ➲ M018	WNGU1406ANEN8C-M	G	E	●	●	●		●		16.87	16.87	—	6	8	1.0	
ASX400 ➲ M080	WOEW12T308PEER8C	E	E						●	13.2	12.5	—	3.97	8	0.8	
	WOEW12T308PETR8C	E	T				●			13.2	12.5	—	3.97	8	0.8	
VOX400 ➲ M076	WOEX1206PER5C	E	E			●				13.025	12.5	—	5.5	—	—	
FBP415 QBP415	WPC42EEER10C	C	E						●	15.163	12.7	—	3.175	10	—	 Right hand insert shown.
	WPC42EEEL10C	C	E						●	15.163	12.7	—	3.175	10	—	

● = NEW

CBN & PCD INSERTS

Work Material		
	K	Cast Iron
	N	Non-ferrous Metal

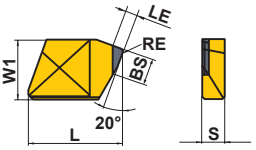
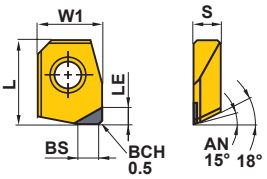
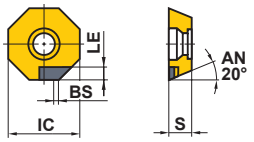
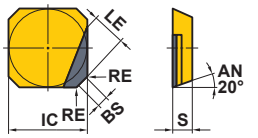
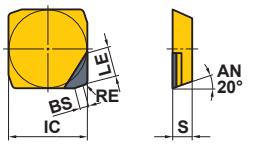
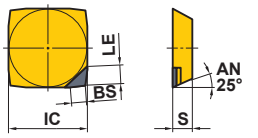
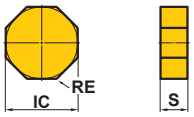
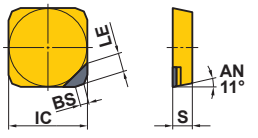
Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✱ : Unstable Cutting

Shape	Order Number	Class	CBN	PCD		Dimensions (mm)						Geometry
			MB730	MD220	MD2030	L	W1	S	BS	LE	RE	
NF10000 ➲ M072	**GDCN2004PDFR3**	C		●		20	12.7	4.76	3	5	1.2	
NR10000	**GDCN2004ZDTR1**	C		●		20	12.7	4.76	1.4	6.3	0.8	
AF10000	**GDCN2004PDR**	C		●		20	12.7	4.76	4.9	6.2	1.2	
FMAX ➲ M066	**GOER1404PXFR2**	E		●	●	14	9	4.2	2	5	0.4	
	GOER1408PXFR2	E		●	●	14	9	4.2	2	5	0.8	
FMAX ➲ M066 NEW	**GOER1408PXFR2-8**	E		●		14	9	4.2	2	8	0.8	
FMAX ➲ M066 NEW	**GOER1401ZXFR2**	E		●		14	9	4.2	2	5	0.1	
AF5000	**LDCN190412R**	C		●		19.05	12.7	4.76	4.3	6.2	1.2	
	LDCN190412R	C	●			19.05	12.7	4.76	4.3	6.0	1.2	
	LDCN190412L	C		●		19.05	12.7	4.76	4.3	6.2	1.2	

● = NEW

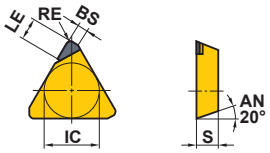
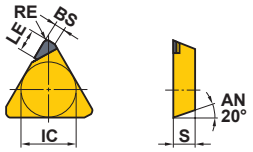
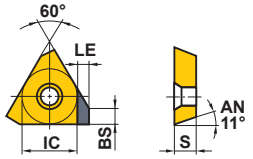
● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(1 inserts in one case)

Work Material															
	K	Cast Iron	◐	◐	◐	◐	**Cutting Conditions (Guide) :** ● : Stable Cutting ◐ : General Cutting ✤ : Unstable Cutting								
	N	Non-ferrous Metal													

Shape	Order Number	Class	CBN			PCD	Dimensions (mm)							Geometry
			MB710	MB730	BC5030	MD220	L	W1	IC	LE	S	BS	RE	
NF10000 ➲ M072	**NP-GDCN2004PDSR3**	C		●			20	12.7	—	2.5	4.76	3	0.8	
V10000 ➲ M070	**NP-GDCW1240PDFR2**	C				●	12	9.5	—	2	4	2	—	
OCTACUT ➲ M180	**OEMX12T3ETR1**	M		●			—	—	12.7	2.5	3.97	1	—	
SE445 **LSE445**	**SECN1203AFFR1**	C				▲	—	—	12.7	5	3.18	1.4	1.0	
SE415	**SECN1203EFFR1**	C				●	—	—	12.7	5	3.18	1.4	1.0	
BF407	**SFCN1203ZFFR2**	C				▲	—	—	12.7	3	3.175	2.4	—	
AOX445 ➲ M060	**SL-ONEN120404ASN**	E			●		—	—	12.7	—	4.76	—	0.4	
FBP415	**SPEN1203EETR1**	E	●				—	—	12.7	3	3.175	1.4	—	

CBN & PCD INSERTS

Work Material					
	K	Cast Iron	● ●	●	**Cutting Conditions (Guide) :** ● : Stable Cutting ● : General Cutting ✱ : Unstable Cutting
	N	Non-ferrous Metal			

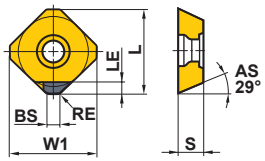
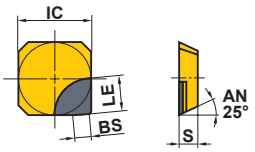
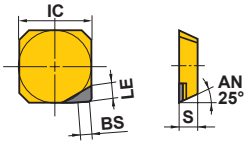
Shape	Order Number	Class	CBN		PCD	Dimensions (mm)					Geometry
			MB710	BC5030	MD220	IC	LE	S	BS	RE	
SE300 NSE300 	**TECN1603PEFR1**	C			●	9.525	5	3.175	1.4	0.4	
SE400 NSE400 	**TECN2204PEFR1**	C			▲	12.7	5	4.76	1.4	1.0	
PMF ➲ M256 	**TPEW1303ZPTR2**	E	●			7.94	1.5	3.18	2	–	

● : Inventory maintained in Japan. ▲ : Inventory maintained in Japan. To be replaced by new products.
(1 inserts in one case)

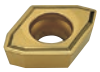
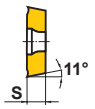
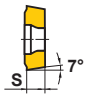
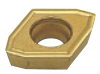
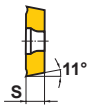
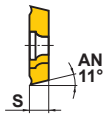
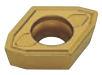
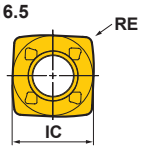
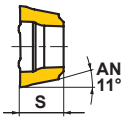
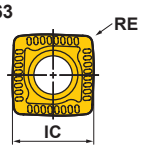
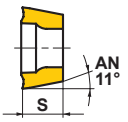
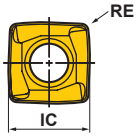
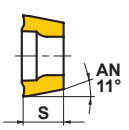
CBN & PCD INSERTS WITH WIPER

Work Material		
K	Cast Iron	◐
N	Non-ferrous Metal	◐

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✱ : Unstable Cutting

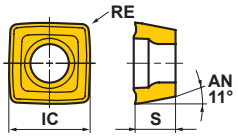
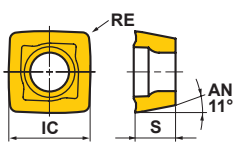
Shape	Order Number	Class	CBN	PCD	Dimensions (mm)							Geometry
			MB710	MD220	L	W1	LE	IC	S	BS	RE	
ASX445 ➲ M030	**WEEW13T3AGFR3C**	E		●	16.6	16.48	1.8	—	3.97	3.0	1.5	
	**WEEW13T3AGTR3C**	E	●		16.6	16.48	1.8	—	3.97	3.0	1.5	
BF407	**WFC42ZFER2**	C		▲	—	—	6.2	12.4	3.175	2.4	—	
												
BF407	**NP-WFC42ZFER2**	C		▲	—	—	3.0	12.4	3.175	2.4	—	
												

DRILLING INSERTS

Shape	Order Number	Class	Coated							Dimensions (mm)				Geometry
			VP15TF	UP20M	GP20M	UE6020	US735	MC1020	MC5020	IC	L	S	RE	
TAF ➲ P241	**GCMT040204-U1**	M		●						—	5.0	2.38	0.4	**U1** Breaker
	GPMT060204-U1	M		●		●				5.56	—	2.38	0.4	GCMT  
 GCMT	**GPMT070204-U1**	M		●		●				6.35	—	2.38	0.4	
	GPMT090304-U1	M		●		●				7.94	—	3.18	0.4	
	GPMT11T308-U1	M		●		●				9.525	—	3.97	0.8	
 GPMT	**GPMT140408-U1**	M		●		●				12.7	—	4.76	0.8	GPMT  
TAF ➲ P241	**GCMT040204-U2**	M	●		●					—	5.0	2.38	0.4	**U2** Breaker
	GPMT060204-U2	M	●	●		●	●			5.56	—	2.38	0.4	GCMT  
 GCMT	**GPMT070204-U2**	M	●	●		●	●			6.35	—	2.38	0.4	
	GPMT090304-U2	M	●	●		●	●			7.94	—	3.18	0.4	
	GPMT11T308-U2	M	●	●		●	●			9.525	—	3.97	0.8	
 GPMT	**GPMT140408-U2**	M	●	●		●	●			12.7	—	4.76	0.8	GPMT  
TAF ➲ P241	**GPMT060204-U3**	M		●		●	●			5.56	—	2.38	0.4	**U3** Breaker
	GPMT070204-U3	M		●		●	●			6.35	—	2.38	0.4	GPMT  
	GPMT090304-U3	M		●		●	●			7.94	—	3.18	0.4	
	**GPMT11T308-U3**	M		●		●	●			9.525	—	3.97	0.8	
	GPMT140408-U3	M		●		●	●			12.7	—	4.76	0.8	
MVX ➲ P230	NEW **SOMX052704-UM**	M	●					●	●	5	—	2.7	0.4	ø14—ø16.5  
	SOMX063005-UM	M	●					●	●	6	—	3	0.5	
	**SOMX073505-UM**	M	●					●	●	7	—	3.5	0.5	
	SOMX084005-UM	M	●					●	●	8.3	—	4	0.5	
	SOMX094506-UM	M	●					●	●	9.7	—	4.5	0.6	
	**SOMX115506-UM**	M	●					●	●	11.6	—	5.5	0.6	ø17—ø63  
	SOMX136008-UM	M	●					●	●	13.8	—	6	0.8	
	SOMX166508-UM	M	●					●	●	16.5	—	6.5	0.8	
	SOMX187008-UM	M	●					●	●	18.2	—	7	0.8	
MVX ➲ P230	**SOMX063005-US**	M	●							6	—	3	0.5	 
	SOMX073505-US	M	●							7	—	3.5	0.5	
	SOMX084005-US	M	●							8.3	—	4	0.5	
	SOMX094506-US	M	●							9.7	—	4.5	0.6	
	**SOMX115506-US**	M	●							11.6	—	5.5	0.6	
	SOMX136008-US	M	●							13.8	—	6	0.8	
	SOMX166508-US	M	●							16.5	—	6.5	0.8	
	SOMX187008-US	M	●							18.2	—	7	0.8	

● = NEW

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

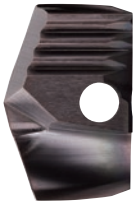
Shape	Order Number	Class	Coated							Dimensions (mm)				Geometry
			DP8020	TF15						IC	L	S	RE	
MVX ➲ **P230** 	**SOMX062905-UH**	M	●							6	–	2.9	0.5	
	SOMX073405-UH	M	●							7	–	3.4	0.5	
	SOMX083905-UH	M	●							8.3	–	3.9	0.5	
	SOMX094406-UH	M	●							9.7	–	4.4	0.6	
	SOMX115406-UH	M	●							11.6	–	5.4	0.6	
	SOMX135908-UH	M	●							13.8	–	5.9	0.8	
	SOMX166408-UH	M	●							16.5	–	6.4	0.8	
	SOMX186908-UH	M	●							18.2	–	6.9	0.8	
MVX ➲ **P230** 	**SOGX063005-UN**	G		●						6	–	3	0.5	
	SOGX073505-UN	G		●						7	–	3.5	0.5	
	SOGX084005-UN	G		●						8.3	–	4	0.5	
	SOGX094506-UN	G		●						9.7	–	4.5	0.6	
	SOGX115506-UN	G		●						11.6	–	5.5	0.6	
	SOGX136008-UN	G		●						13.8	–	6	0.8	
	SOGX166508-UN	G		●						16.5	–	6.5	0.8	
	SOGX187008-UN	G		●						18.2	–	7	0.8	

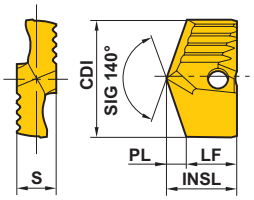
DRILLING INSERTS

Applicable Drill Shape Geometry

TAW H Type

P219





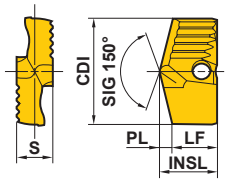
Order Number	Coated VP15TF	Coated VP10H	Dimensions (mm) CDI	INSL	LF	PL	S	Applicable Holder
TAWNH1850T	●	□	18.5	12.7	9.3	3.4	7.0	
TAWNH1860T	●	□	18.6	12.7	9.3	3.4	7.0	
TAWNH1870T	●	□	18.7	12.7	9.3	3.4	7.0	TAWSN 1900S25
TAWNH1880T	●	□	18.8	12.7	9.3	3.4	7.0	
TAWNH1890T	●	□	18.9	12.7	9.3	3.4	7.0	TAWMN 1900S25
TAWNH1900T	●	□	19.0	12.7	9.2	3.5	7.0	
TAWNH1910T	●	□	19.1	12.7	9.2	3.5	7.0	TAWLN 1900S25
TAWNH1920T	●	□	19.2	12.7	9.2	3.5	7.0	
TAWNH1930T	●	□	19.3	12.7	9.2	3.5	7.0	
TAWNH1940T	●	□	19.4	12.7	9.2	3.5	7.0	
TAWNH1950T	●	□	19.5	12.6	9.1	3.5	7.0	
TAWNH1960T	●	□	19.6	12.7	9.1	3.6	7.0	
TAWNH1970T	●	□	19.7	12.7	9.1	3.6	7.0	TAWSN 2000S25
TAWNH1980T	●	□	19.8	12.7	9.1	3.6	7.0	
TAWNH1990T	●	□	19.9	12.7	9.1	3.6	7.0	TAWMN 2000S25
TAWNH2000T	●	□	20.0	12.6	9.0	3.6	7.0	
TAWNH2010T	□	□	20.1	12.7	9.0	3.7	7.0	TAWLN 2000S25
TAWNH2020T	□	□	20.2	12.7	9.0	3.7	7.0	
TAWNH2030T	□	□	20.3	12.7	9.0	3.7	7.0	
TAWNH2040T	□	□	20.4	12.7	9.0	3.7	7.0	
TAWNH2050T	●	□	20.5	12.6	8.9	3.7	7.0	
TAWNH2060T	□	□	20.6	12.6	8.9	3.7	7.0	
TAWNH2070T	□	□	20.7	12.7	8.9	3.8	7.0	TAWSN 2100S25
TAWNH2080T	□	□	20.8	12.7	8.9	3.8	7.0	
TAWNH2090T	□	□	20.9	12.7	8.9	3.8	7.0	TAWMN 2100S25
TAWNH2100T	●	□	21.0	12.6	8.8	3.8	7.0	
TAWNH2110T	□	□	21.1	12.6	8.8	3.8	7.0	TAWLN 2100S25
TAWNH2120T	□	□	21.2	12.7	8.8	3.9	7.0	
TAWNH2130T	□	□	21.3	12.7	8.8	3.9	7.0	
TAWNH2140T	□	□	21.4	12.7	8.8	3.9	7.0	
TAWNH2150T	●	□	21.5	14.5	10.6	3.9	8.0	
TAWNH2160T	□	□	21.6	14.5	10.6	3.9	8.0	
TAWNH2170T	□	□	21.7	14.5	10.6	3.9	8.0	TAWSN 2200S25
TAWNH2180T	□	□	21.8	14.6	10.6	4.0	8.0	
TAWNH2190T	□	□	21.9	14.6	10.6	4.0	8.0	TAWMN 2200S25
TAWNH2200T	●	□	22.0	14.5	10.5	4.0	8.0	
TAWNH2210T	□	□	22.1	14.5	10.5	4.0	8.0	TAWLN 2200S25
TAWNH2220T	□	□	22.2	14.5	10.5	4.0	8.0	
TAWNH2230T	□	□	22.3	14.6	10.5	4.1	8.0	
TAWNH2240T	□	□	22.4	14.6	10.5	4.1	8.0	
TAWNH2250T	●	□	22.5	14.5	10.4	4.1	8.0	TAWSN 2300S25
TAWNH2260T	□	□	22.6	14.5	10.4	4.1	8.0	
TAWNH2270T	□	□	22.7	14.5	10.4	4.1	8.0	TAWMN 2300S25
TAWNH2280T	□	□	22.8	14.5	10.4	4.1	8.0	
TAWNH2290T	□	□	22.9	14.6	10.4	4.2	8.0	TAWLN 2300S25

Order Number	Coated VP15TF	Coated VP10H	Dimensions (mm) CDI	INSL	LF	PL	S	Applicable Holder
TAWNH2300T	●	□	23.0	14.5	10.3	4.2	8.0	TAWSN 2300S25
TAWNH2310T	□	□	23.1	14.5	10.3	4.2	8.0	
TAWNH2320T	□	□	23.2	14.5	10.3	4.2	8.0	TAWMN 2300S25
TAWNH2330T	□	□	23.3	14.5	10.3	4.2	8.0	
TAWNH2340T	□	□	23.4	14.6	10.3	4.3	8.0	TAWLN 2300S25
TAWNH2350T	●	□	23.5	14.5	10.2	4.3	8.0	
TAWNH2360T	□	□	23.6	14.5	10.2	4.3	8.0	
TAWNH2370T	□	□	23.7	14.5	10.2	4.3	8.0	TAWSN 2400S32
TAWNH2380T	□	□	23.8	14.5	10.2	4.3	8.0	
TAWNH2390T	□	□	23.9	14.5	10.2	4.3	8.0	TAWMN 2400S32
TAWNH2400T	●	□	24.0	14.5	10.1	4.4	8.0	
TAWNH2410T	□	□	24.1	14.5	10.1	4.4	8.0	TAWLN 2400S32
TAWNH2420T	□	□	24.2	14.5	10.1	4.4	8.0	
TAWNH2430T	□	□	24.3	14.5	10.1	4.4	8.0	
TAWNH2440T	□	□	24.4	14.5	10.1	4.4	8.0	
TAWNH2450T	●	□	24.5	16.2	11.7	4.5	9.0	
TAWNH2460T	□	□	24.6	16.2	11.7	4.5	9.0	
TAWNH2470T	□	□	24.7	16.2	11.7	4.5	9.0	TAWSN 2500S32
TAWNH2480T	□	□	24.8	16.2	11.7	4.5	9.0	
TAWNH2490T	□	□	24.9	16.2	11.7	4.5	9.0	TAWMN 2500S32
TAWNH2500T	●	□	25.0	16.1	11.6	4.5	9.0	
TAWNH2510T	□	□	25.1	16.2	11.6	4.6	9.0	TAWLN 2500S32
TAWNH2520T	□	□	25.2	16.2	11.6	4.6	9.0	
TAWNH2530T	□	□	25.3	16.2	11.6	4.6	9.0	
TAWNH2540T	□	□	25.4	16.2	11.6	4.6	9.0	
TAWNH2550T	●	□	25.5	16.1	11.5	4.6	9.0	
TAWNH2560T	□	□	25.6	16.2	11.5	4.7	9.0	
TAWNH2570T	□	□	25.7	16.2	11.5	4.7	9.0	TAWSN 2600S32
TAWNH2580T	□	□	25.8	16.2	11.5	4.7	9.0	
TAWNH2590T	□	□	25.9	16.2	11.5	4.7	9.0	TAWMN 2600S32
TAWNH2600T	●	□	26.0	16.1	11.4	4.7	9.0	
TAWNH2610T	□	□	26.1	16.1	11.4	4.7	9.0	TAWLN 2600S32
TAWNH2620T	□	□	26.2	16.2	11.4	4.8	9.0	
TAWNH2630T	□	□	26.3	16.2	11.4	4.8	9.0	
TAWNH2640T	□	□	26.4	16.2	11.4	4.8	9.0	
TAWNH2650T	●	□	26.5	16.1	11.3	4.8	9.0	
TAWNH2660T	□	□	26.6	16.1	11.3	4.8	9.0	
TAWNH2670T	□	□	26.7	16.2	11.3	4.9	9.0	TAWSN 2700S32
TAWNH2680T	□	□	26.8	16.2	11.3	4.9	9.0	
TAWNH2690T	□	□	26.9	16.2	11.3	4.9	9.0	TAWMN 2700S32
TAWNH2700T	●	□	27.0	16.1	11.2	4.9	9.0	
TAWNH2710T	□	□	27.1	16.1	11.2	4.9	9.0	TAWLN 2700S32
TAWNH2720T	□	□	27.2	16.1	11.2	4.9	9.0	
TAWNH2730T	□	□	27.3	16.2	11.2	5.0	9.0	
TAWNH2740T	□	□	27.4	16.2	11.2	5.0	9.0	

● : Inventory maintained in Japan. □ : Non stock, produced to order only.
(1 insert in one case)

Order Number	Coated		Dimensions (mm)					Applicable Holder
	VP15TF	VP10H	CDI	INSL	LF	PL	S	
TAWNH2750T	●	□	27.5	17.3	12.3	5.0	10.0	
TAWNH2760T	□	□	27.6	17.3	12.3	5.0	10.0	
TAWNH2770T	□	□	27.7	17.3	12.3	5.0	10.0	TAWSN
TAWNH2780T	□	□	27.8	17.4	12.3	5.1	10.0	2800S32
TAWNH2790T	□	□	27.9	17.4	12.3	5.1	10.0	TAWMN
TAWNH2800T	●	□	28.0	17.3	12.2	5.1	10.0	2800S32
TAWNH2810T	□	□	28.1	17.3	12.2	5.1	10.0	TAWLN
TAWNH2820T	□	□	28.2	17.3	12.2	5.1	10.0	2800S32
TAWNH2830T	□	□	28.3	17.4	12.2	5.2	10.0	
TAWNH2840T	□	□	28.4	17.4	12.2	5.2	10.0	
TAWNH2850T	●	□	28.5	17.3	12.1	5.2	10.0	
TAWNH2860T	□	□	28.6	17.3	12.1	5.2	10.0	
TAWNH2870T	□	□	28.7	17.3	12.1	5.2	10.0	TAWSN
TAWNH2880T	□	□	28.8	17.3	12.1	5.2	10.0	2900S32
TAWNH2890T	□	□	28.9	17.4	12.1	5.3	10.0	TAWMN
TAWNH2900T	●	□	29.0	17.3	12.0	5.3	10.0	2900S32
TAWNH2910T	□	□	29.1	17.3	12.0	5.3	10.0	TAWLN
TAWNH2920T	□	□	29.2	17.3	12.0	5.3	10.0	2900S32
TAWNH2930T	□	□	29.3	17.3	12.0	5.3	10.0	
TAWNH2940T	□	□	29.4	17.4	12.0	5.4	10.0	

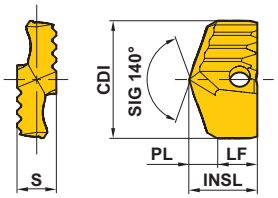
Order Number	Coated		Dimensions (mm)					Applicable Holder
	VP15TF	VP10H	CDI	INSL	LF	PL	S	
TAWNH2950T	●	□	29.5	17.3	11.9	5.4	10.0	
TAWNH2960T	□	□	29.6	17.3	11.9	5.4	10.0	
TAWNH2970T	□	□	29.7	17.3	11.9	5.4	10.0	TAWSN
TAWNH2980T	□	□	29.8	17.3	11.9	5.4	10.0	3000S32
TAWNH2990T	□	□	29.9	17.3	11.9	5.4	10.0	TAWMN
TAWNH3000T	●	□	30.0	17.3	11.8	5.5	10.0	3000S32
TAWNH3010T	□	□	30.1	17.3	11.8	5.5	10.0	TAWLN
TAWNH3020T	□	□	30.2	17.3	11.8	5.5	10.0	3000S32
TAWNH3030T	□	□	30.3	17.3	11.8	5.5	10.0	
TAWNH3040T	□	□	30.4	17.3	11.8	5.5	10.0	

Applicable Drill Shape Geometry	Order Number	Coated		Dimensions (mm)				
		VP15TF		CDI	INSL	LF	PL	S
TAW H Type P229  	**TAWBH2450T**	●		24.5	15.0	11.7	3.3	9.0
	TAWBH2460T	□		24.6	15.0	11.7	3.3	9.0
	TAWBH2470T	●		24.7	15.0	11.7	3.3	9.0
	TAWBH2650T	□		26.5	14.9	11.3	3.6	9.0
	TAWBH2670T	●		26.7	14.9	11.3	3.6	9.0

DRILLING INSERTS

Applicable Drill Shape Geometry

TAW H Type
(Cast Iron)
P219



Order Number	Coated DP5010	Dimensions (mm) CDI	INSL	LF	PL	S	Applicable Holder
TAWKH1850TG	●	18.5	12.7	8.6	4.1	7.0	
TAWKH1860TG	●	18.6	12.7	8.6	4.1	7.0	
TAWKH1870TG	●	18.7	12.7	8.6	4.1	7.0	TAWSN 1900S25
TAWKH1880TG	●	18.8	12.7	8.6	4.1	7.0	
TAWKH1890TG	●	18.9	12.7	8.6	4.1	7.0	TAWMN 1900S25
TAWKH1900TG	●	19.0	12.6	8.5	4.1	7.0	
TAWKH1910TG	●	19.1	12.7	8.5	4.2	7.0	TAWLN 1900S25
TAWKH1920TG	●	19.2	12.7	8.5	4.2	7.0	
TAWKH1930TG	●	19.3	12.7	8.5	4.2	7.0	
TAWKH1940TG	●	19.4	12.7	8.5	4.2	7.0	
TAWKH1950TG	●	19.5	12.6	8.4	4.2	7.0	
TAWKH1960TG	●	19.6	12.7	8.4	4.3	7.0	
TAWKH1970TG	●	19.7	12.7	8.4	4.3	7.0	TAWSN 2000S25
TAWKH1980TG	●	19.8	12.7	8.4	4.3	7.0	
TAWKH1990TG	●	19.9	12.7	8.4	4.3	7.0	TAWMN 2000S25
TAWKH2000TG	●	20.0	12.6	8.3	4.3	7.0	
TAWKH2010TG	□	20.1	12.6	8.3	4.3	7.0	TAWLN 2000S25
TAWKH2020TG	□	20.2	12.7	8.3	4.4	7.0	
TAWKH2030TG	□	20.3	12.7	8.3	4.4	7.0	
TAWKH2040TG	□	20.4	12.7	8.3	4.4	7.0	
TAWKH2050TG	●	20.5	12.6	8.2	4.4	7.0	
TAWKH2060TG	□	20.6	12.6	8.2	4.4	7.0	
TAWKH2070TG	□	20.7	12.7	8.2	4.5	7.0	TAWSN 2100S25
TAWKH2080TG	□	20.8	12.7	8.2	4.5	7.0	
TAWKH2090TG	□	20.9	12.7	8.2	4.5	7.0	TAWMN 2100S25
TAWKH2100TG	●	21.0	12.6	8.1	4.5	7.0	
TAWKH2110TG	□	21.1	12.6	8.1	4.5	7.0	TAWLN 2100S25
TAWKH2120TG	□	21.2	12.6	8.1	4.5	7.0	
TAWKH2130TG	□	21.3	12.7	8.1	4.6	7.0	
TAWKH2140TG	□	21.4	12.7	8.1	4.6	7.0	
TAWKH2150TG	●	21.5	14.5	9.8	4.7	8.0	
TAWKH2160TG	□	21.6	14.5	9.8	4.7	8.0	
TAWKH2170TG	□	21.7	14.5	9.8	4.7	8.0	TAWSN 2200S25
TAWKH2180TG	□	21.8	14.6	9.8	4.8	8.0	
TAWKH2190TG	□	21.9	14.6	9.8	4.8	8.0	TAWMN 2200S25
TAWKH2200TG	●	22.0	14.5	9.7	4.8	8.0	
TAWKH2210TG	□	22.1	14.5	9.7	4.8	8.0	TAWLN 2200S25
TAWKH2220TG	□	22.2	14.5	9.7	4.8	8.0	
TAWKH2230TG	□	22.3	14.5	9.7	4.8	8.0	
TAWKH2240TG	□	22.4	14.6	9.7	4.9	8.0	
TAWKH2250TG	●	22.5	14.5	9.6	4.9	8.0	TAWSN 2300S25
TAWKH2260TG	□	22.6	14.5	9.6	4.9	8.0	
TAWKH2270TG	□	22.7	14.5	9.6	4.9	8.0	TAWMN 2300S25
TAWKH2280TG	□	22.8	14.5	9.6	4.9	8.0	
TAWKH2290TG	□	22.9	14.6	9.6	5.0	8.0	TAWLN 2300S25

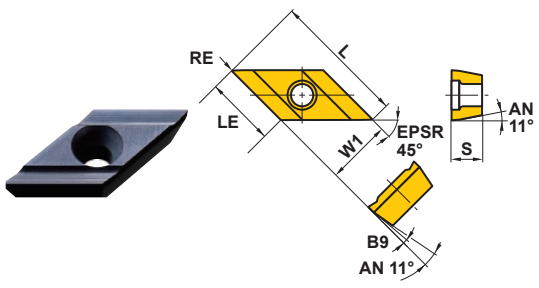
Order Number	Coated DP5010	Dimensions (mm) CDI	INSL	LF	PL	S	Applicable Holder
TAWKH2300TG	●	23.0	14.5	9.5	5.0	8.0	TAWSN 2300S25
TAWKH2310TG	□	23.1	14.5	9.5	5.0	8.0	
TAWKH2320TG	□	23.2	14.5	9.5	5.0	8.0	TAWMN 2300S25
TAWKH2330TG	□	23.3	14.5	9.5	5.0	8.0	
TAWKH2340TG	□	23.4	14.5	9.5	5.0	8.0	TAWLN 2300S25
TAWKH2350TG	●	23.5	14.5	9.4	5.1	8.0	
TAWKH2360TG	□	23.6	14.5	9.4	5.1	8.0	
TAWKH2370TG	□	23.7	14.5	9.4	5.1	8.0	TAWSN 2400S32
TAWKH2380TG	□	23.8	14.5	9.4	5.1	8.0	
TAWKH2390TG	□	23.9	14.5	9.4	5.1	8.0	TAWMN 2400S32
TAWKH2400TG	●	24.0	14.5	9.3	5.2	8.0	
TAWKH2410TG	□	24.1	14.5	9.3	5.2	8.0	TAWLN 2400S32
TAWKH2420TG	□	24.2	14.5	9.3	5.2	8.0	
TAWKH2430TG	□	24.3	14.5	9.3	5.2	8.0	
TAWKH2440TG	□	24.4	14.5	9.3	5.2	8.0	
TAWKH2450TG	●	24.5	16.0	10.7	5.3	9.0	
TAWKH2460TG	□	24.6	16.1	10.7	5.4	9.0	
TAWKH2470TG	□	24.7	16.1	10.7	5.4	9.0	TAWSN 2500S32
TAWKH2480TG	□	24.8	16.1	10.7	5.4	9.0	
TAWKH2490TG	□	24.9	16.1	10.7	5.4	9.0	TAWMN 2500S32
TAWKH2500TG	●	25.0	16.1	10.7	5.4	9.0	
TAWKH2510TG	□	25.1	16.2	10.7	5.5	9.0	TAWLN 2500S32
TAWKH2520TG	□	25.2	16.2	10.7	5.5	9.0	
TAWKH2530TG	□	25.3	16.2	10.7	5.5	9.0	
TAWKH2540TG	□	25.4	16.2	10.7	5.5	9.0	
TAWKH2550TG	●	25.5	16.1	10.6	5.5	9.0	
TAWKH2560TG	□	25.6	16.1	10.6	5.5	9.0	
TAWKH2570TG	□	25.7	16.2	10.6	5.6	9.0	TAWSN 2600S32
TAWKH2580TG	□	25.8	16.2	10.6	5.6	9.0	
TAWKH2590TG	□	25.9	16.2	10.6	5.6	9.0	TAWMN 2600S32
TAWKH2600TG	●	26.0	16.1	10.5	5.6	9.0	
TAWKH2610TG	□	26.1	16.1	10.5	5.6	9.0	TAWLN 2600S32
TAWKH2620TG	□	26.2	16.2	10.5	5.7	9.0	
TAWKH2630TG	□	26.3	16.2	10.5	5.7	9.0	
TAWKH2640TG	□	26.4	16.2	10.5	5.7	9.0	
TAWKH2650TG	●	26.5	16.1	10.4	5.7	9.0	
TAWKH2660TG	□	26.6	16.1	10.4	5.7	9.0	
TAWKH2670TG	□	26.7	16.1	10.4	5.7	9.0	TAWSN 2700S32
TAWKH2680TG	□	26.8	16.2	10.4	5.8	9.0	
TAWKH2690TG	□	26.9	16.2	10.4	5.8	9.0	TAWMN 2700S32
TAWKH2700TG	●	27.0	16.1	10.3	5.8	9.0	
TAWKH2710TG	□	27.1	16.1	10.3	5.8	9.0	TAWLN 2700S32
TAWKH2720TG	□	27.2	16.1	10.3	5.8	9.0	
TAWKH2730TG	□	27.3	16.2	10.3	5.9	9.0	
TAWKH2740TG	□	27.4	16.2	10.3	5.9	9.0	

● : Inventory maintained in Japan. □ : Non stock, produced to order only.
(1 insert in one case)

Order Number	Coated	Dimensions (mm)					Applicable Holder
	DP5010	CDI	INSL	LF	PL	S	
TAWKH2750TG	●	27.5	17.2	11.2	6.0	10.0	
TAWKH2760TG	□	27.6	17.2	11.2	6.0	10.0	
TAWKH2770TG	□	27.7	17.2	11.2	6.0	10.0	TAWSN 2800S32
TAWKH2780TG	□	27.8	17.3	11.2	6.1	10.0	
TAWKH2790TG	□	27.9	17.3	11.2	6.1	10.0	TAWMN 2800S32
TAWKH2800TG	●	28.0	17.3	11.2	6.1	10.0	
TAWKH2810TG	□	28.1	17.3	11.2	6.1	10.0	TAWLN 2800S32
TAWKH2820TG	□	28.2	17.3	11.2	6.1	10.0	
TAWKH2830TG	□	28.3	17.3	11.2	6.1	10.0	
TAWKH2840TG	□	28.4	17.4	11.2	6.2	10.0	
TAWKH2850TG	●	28.5	17.3	11.1	6.2	10.0	
TAWKH2860TG	□	28.6	17.3	11.1	6.2	10.0	
TAWKH2870TG	□	28.7	17.3	11.1	6.2	10.0	TAWSN 2900S32
TAWKH2880TG	□	28.8	17.3	11.1	6.2	10.0	
TAWKH2890TG	□	28.9	17.4	11.1	6.3	10.0	TAWMN 2900S32
TAWKH2900TG	●	29.0	17.3	11.0	6.3	10.0	
TAWKH2910TG	□	29.1	17.3	11.0	6.3	10.0	TAWLN 2900S32
TAWKH2920TG	□	29.2	17.3	11.0	6.3	10.0	
TAWKH2930TG	□	29.3	17.3	11.0	6.3	10.0	
TAWKH2940TG	□	29.4	17.3	11.0	6.3	10.0	

Order Number	Coated	Dimensions (mm)					Applicable Holder
	DP5010	CDI	INSL	LF	PL	S	
TAWKH2950TG	●	29.5	17.3	10.9	6.4	10.0	
TAWKH2960TG	□	29.6	17.3	10.9	6.4	10.0	
TAWKH2970TG	□	29.7	17.3	10.9	6.4	10.0	TAWSN 3000S32
TAWKH2980TG	□	29.8	17.3	10.9	6.4	10.0	
TAWKH2990TG	□	29.9	17.3	10.9	6.4	10.0	TAWMN 3000S32
TAWKH3000TG	●	30.0	17.3	10.8	6.5	10.0	
TAWKH3010TG	□	30.1	17.3	10.8	6.5	10.0	TAWLN 3000S32
TAWKH3020TG	□	30.2	17.3	10.8	6.5	10.0	
TAWKH3030TG	□	30.3	17.3	10.8	6.5	10.0	
TAWKH3040TG	□	30.4	17.3	10.8	6.5	10.0	

Insert for TAW Drill Chamfering Module

Shape Geometry	Order Number	Coated		Dimensions (mm)					
		VP15TF		L	LE	WI	S	RE	B9
	**TAWC12T301-45GM**	●		17.4	9.05	8.5	3.97	0.1	5°

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

DRILLING INSERTS

Applicable Drill Shape Geometry

STAW

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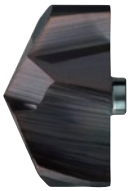

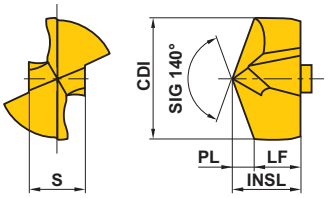

Order Number	Coated		Dimensions (mm)					Applicable Holder
	VP15TF	VP10H	CDI	INSL	LF	PL	S	
STAWN1000TH	●	□	10.0	5.6	3.8	1.8	4.6	STAWSS1000S16 STAWSN1000S16 STAWMN1000S16 STAWLN1000S16
STAWN1010TH	●	□	10.1	5.6	3.8	1.8	4.6	
STAWN1020TH	●	□	10.2	5.7	3.8	1.9	4.6	
STAWN1030TH	●	□	10.3	5.7	3.8	1.9	4.6	
STAWN1040TH	●	□	10.4	5.7	3.8	1.9	4.6	
STAWN1050TH	●	□	10.5	5.9	4.0	1.9	4.8	STAWSS1050S16 STAWSN1050S16 STAWMN1050S16 STAWLN1050S16
STAWN1060TH	●	□	10.6	5.9	4.0	1.9	4.8	
STAWN1070TH	●	□	10.7	5.9	4.0	1.9	4.8	
STAWN1080TH	●	□	10.8	6.0	4.0	2.0	4.8	
STAWN1090TH	●	□	10.9	6.0	4.0	2.0	4.8	
STAWN1100TH	●	□	11.0	6.2	4.2	2.0	5.1	STAWSS1100S16 STAWSN1100S16 STAWMN1100S16 STAWLN1100S16
STAWN1110TH	●	□	11.1	6.2	4.2	2.0	5.1	
STAWN1120TH	●	□	11.2	6.2	4.2	2.0	5.1	
STAWN1130TH	●	□	11.3	6.3	4.2	2.1	5.1	
STAWN1140TH	●	□	11.4	6.3	4.2	2.1	5.1	
STAWN1150TH	●	□	11.5	6.5	4.4	2.1	5.3	STAWSS1150S16 STAWSN1150S16 STAWMN1150S16 STAWLN1150S16
STAWN1160TH	●	□	11.6	6.5	4.4	2.1	5.3	
STAWN1170TH	●	□	11.7	6.5	4.4	2.1	5.3	
STAWN1180TH	●	□	11.8	6.5	4.4	2.1	5.3	
STAWN1190TH	●	□	11.9	6.6	4.4	2.2	5.3	
STAWN1200TH	●	□	12.0	6.8	4.6	2.2	5.5	STAWSS1200S16 STAWSN1200S16 STAWMN1200S16 STAWLN1200S16
STAWN1210TH	●	□	12.1	6.8	4.6	2.2	5.5	
STAWN1220TH	●	□	12.2	6.8	4.6	2.2	5.5	
STAWN1230TH	●	□	12.3	6.8	4.6	2.2	5.5	
STAWN1240TH	●	□	12.4	6.9	4.6	2.3	5.5	
STAWN1250TH	●	□	12.5	7.1	4.8	2.3	5.8	STAWSS1250S16 STAWSN1250S16 STAWMN1250S16 STAWLN1250S16
STAWN1260TH	●	□	12.6	7.1	4.8	2.3	5.8	
STAWN1270TH	●	□	12.7	7.1	4.8	2.3	5.8	
STAWN1280TH	●	□	12.8	7.1	4.8	2.3	5.8	
STAWN1290TH	●	□	12.9	7.1	4.8	2.3	5.8	
STAWN1300TH	●	□	13.0	7.3	4.9	2.4	6.0	STAWSS1300S16 STAWSN1300S16 STAWMN1300S16 STAWLN1300S16
STAWN1310TH	●	□	13.1	7.3	4.9	2.4	6.0	
STAWN1320TH	●	□	13.2	7.3	4.9	2.4	6.0	
STAWN1330TH	●	□	13.3	7.3	4.9	2.4	6.0	
STAWN1340TH	●	□	13.4	7.3	4.9	2.4	6.0	
STAWN1350TH	●	□	13.5	7.6	5.1	2.5	6.2	STAWSS1350S16 STAWSN1350S16 STAWMN1350S16 STAWLN1350S16
STAWN1360TH	●	□	13.6	7.6	5.1	2.5	6.2	
STAWN1370TH	●	□	13.7	7.6	5.1	2.5	6.2	
STAWN1380TH	●	□	13.8	7.6	5.1	2.5	6.2	
STAWN1390TH	●	□	13.9	7.6	5.1	2.5	6.2	
STAWN1400TH	●		14.0	7.8	5.3	2.5	6.4	STAWSS1400S16 STAWSN1400S16 STAWMN1400S16 STAWLN1400S16
STAWN1410TH	●		14.1	7.9	5.3	2.6	6.4	
STAWN1420TH	●		14.2	7.9	5.3	2.6	6.4	
STAWN1430TH	●		14.3	7.9	5.3	2.6	6.4	
STAWN1440TH	●		14.4	7.9	5.3	2.6	6.4	

● : Inventory maintained in Japan. □ : Non stock, produced to order only.
(1 insert in one case)

Order Number	Coated		Dimensions (mm)					Applicable Holder
	VP15TF	VP10H	CDI	INSL	LF	PL	S	
STAWN1450TH	●		14.5	8.1	5.5	2.6	6.7	STAWSS1450S16 STAWSN1450S16 STAWMN1450S16 STAWLN1450S16
STAWN1460TH	●		14.6	8.2	5.5	2.7	6.7	
STAWN1470TH	●		14.7	8.2	5.5	2.7	6.7	
STAWN1480TH	●		14.8	8.2	5.5	2.7	6.7	
STAWN1490TH	●		14.9	8.2	5.5	2.7	6.7	
STAWN1500TH	●		15.0	8.4	5.7	2.7	6.9	STAWSS1500S20 STAWSN1500S20 STAWMN1500S20 STAWLN1500S20
STAWN1510TH	●		15.1	8.4	5.7	2.7	6.9	
STAWN1520TH	●		15.2	8.5	5.7	2.8	6.9	
STAWN1530TH	●		15.3	8.5	5.7	2.8	6.9	
STAWN1540TH	●		15.4	8.5	5.7	2.8	6.9	
STAWN1550T	●		15.5	8.7	5.9	2.8	7.1	STAWSS1600S20 STAWSN1600S20 STAWMN1600S20 STAWLN1600S20
STAWN1560T	●		15.6	8.7	5.9	2.8	7.1	
STAWN1570T	●		15.7	8.8	5.9	2.9	7.1	
STAWN1580T	●		15.8	8.8	5.9	2.9	7.1	
STAWN1590T	●		15.9	8.8	5.9	2.9	7.1	
STAWN1600T	●		16.0	8.8	5.9	2.9	7.1	
STAWN1610T	●		16.1	8.8	5.9	2.9	7.1	
STAWN1620T	●		16.2	8.8	5.9	2.9	7.1	
STAWN1630T	●		16.3	8.9	5.9	3.0	7.1	
STAWN1640T	●		16.4	8.9	5.9	3.0	7.1	
STAWN1650T	●		16.5	9.3	6.3	3.0	7.6	STAWSS1700S20 STAWSN1700S20 STAWMN1700S20 STAWLN1700S20
STAWN1660T	●		16.6	9.3	6.3	3.0	7.6	
STAWN1670T	●		16.7	9.3	6.3	3.0	7.6	
STAWN1680T	●		16.8	9.4	6.3	3.1	7.6	
STAWN1690T	●		16.9	9.4	6.3	3.1	7.6	
STAWN1700T	●		17.0	9.4	6.3	3.1	7.6	
STAWN1710T	●		17.1	9.4	6.3	3.1	7.6	
STAWN1720T	●		17.2	9.4	6.3	3.1	7.6	
STAWN1730T	●		17.3	9.4	6.3	3.1	7.6	
STAWN1740T	●		17.4	9.5	6.3	3.2	7.6	
STAWN1750T	●		17.5	9.9	6.7	3.2	8.1	STAWSS1800S20 STAWSN1800S20 STAWMN1800S20 STAWLN1800S20
STAWN1760T	●		17.6	9.9	6.7	3.2	8.1	
STAWN1770T	●		17.7	9.9	6.7	3.2	8.1	
STAWN1780T	●		17.8	9.9	6.7	3.2	8.1	
STAWN1790T	●		17.9	10.0	6.7	3.3	8.1	
STAWN1800T	●		18.0	10.0	6.7	3.3	8.1	
STAWN1810T	●		18.1	10.0	6.7	3.3	8.1	
STAWN1820T	●		18.2	10.0	6.7	3.3	8.1	
STAWN1830T	●		18.3	10.0	6.7	3.3	8.1	
STAWN1840T	●		18.4	10.0	6.7	3.3	8.1	

DRILLING INSERTS

Applicable Drill Shape Geometry

STAW

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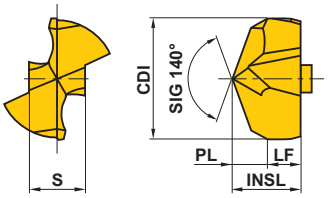

Order Number	Coated		Dimensions (mm)					Applicable Holder
	DP5010		CDI	INSL	LF	PL	S	
STAWK1000TG	●		10.0	5.6	3.3	2.3	4.6	STAWSS1000S16 STAWSN1000S16 STAWMN1000S16 STAWLN1000S16
STAWK1010TG	●		10.1	5.6	3.3	2.3	4.6	
STAWK1020TG	●		10.2	5.6	3.3	2.3	4.6	
STAWK1030TG	●		10.3	5.7	3.3	2.4	4.6	
STAWK1040TG	●		10.4	5.7	3.3	2.4	4.6	
STAWK1050TG	●		10.5	5.9	3.5	2.4	4.8	STAWSS1050S16 STAWSN1050S16 STAWMN1050S16 STAWLN1050S16
STAWK1060TG	●		10.6	5.9	3.5	2.4	4.8	
STAWK1070TG	●		10.7	5.9	3.5	2.4	4.8	
STAWK1080TG	●		10.8	5.9	3.5	2.4	4.8	
STAWK1090TG	●		10.9	6.0	3.5	2.5	4.8	
STAWK1100TG	●		11.0	6.2	3.7	2.5	5.1	STAWSS1100S16 STAWSN1100S16 STAWMN1100S16 STAWLN1100S16
STAWK1110TG	●		11.1	6.2	3.7	2.5	5.1	
STAWK1120TG	●		11.2	6.2	3.7	2.5	5.1	
STAWK1130TG	●		11.3	6.2	3.7	2.5	5.1	
STAWK1140TG	●		11.4	6.3	3.7	2.6	5.1	
STAWK1150TG	●		11.5	6.5	3.9	2.6	5.3	STAWSS1150S16 STAWSN1150S16 STAWMN1150S16 STAWLN1150S16
STAWK1160TG	●		11.6	6.5	3.9	2.6	5.3	
STAWK1170TG	●		11.7	6.5	3.9	2.6	5.3	
STAWK1180TG	●		11.8	6.5	3.9	2.6	5.3	
STAWK1190TG	●		11.9	6.5	3.9	2.6	5.3	
STAWK1200TG	●		12.0	6.8	4.1	2.7	5.5	STAWSS1200S16 STAWSN1200S16 STAWMN1200S16 STAWLN1200S16
STAWK1210TG	●		12.1	6.8	4.1	2.7	5.5	
STAWK1220TG	●		12.2	6.8	4.1	2.7	5.5	
STAWK1230TG	●		12.3	6.8	4.1	2.7	5.5	
STAWK1240TG	●		12.4	6.8	4.1	2.7	5.5	
STAWK1250TG	●		12.5	7.0	4.2	2.8	5.8	STAWSS1250S16 STAWSN1250S16 STAWMN1250S16 STAWLN1250S16
STAWK1260TG	●		12.6	7.0	4.2	2.8	5.8	
STAWK1270TG	●		12.7	7.0	4.2	2.8	5.8	
STAWK1280TG	●		12.8	7.0	4.2	2.8	5.8	
STAWK1290TG	●		12.9	7.0	4.2	2.8	5.8	
STAWK1300TG	●		13.0	7.2	4.4	2.8	6.0	STAWSS1300S16 STAWSN1300S16 STAWMN1300S16 STAWLN1300S16
STAWK1310TG	●		13.1	7.3	4.4	2.9	6.0	
STAWK1320TG	●		13.2	7.3	4.4	2.9	6.0	
STAWK1330TG	●		13.3	7.3	4.4	2.9	6.0	
STAWK1340TG	●		13.4	7.3	4.4	2.9	6.0	
STAWK1350TG	●		13.5	7.5	4.6	2.9	6.2	STAWSS1350S16 STAWSN1350S16 STAWMN1350S16 STAWLN1350S16
STAWK1360TG	●		13.6	7.6	4.6	3.0	6.2	
STAWK1370TG	●		13.7	7.6	4.6	3.0	6.2	
STAWK1380TG	●		13.8	7.6	4.6	3.0	6.2	
STAWK1390TG	●		13.9	7.6	4.6	3.0	6.2	

● : Inventory maintained in Japan.
(1 insert in one case)

Order Number	Coated		Dimensions (mm)					Applicable Holder
	DP5010		CDI	INSL	LF	PL	S	
STAWK1400TG	●		14.0	7.8	4.8	3.0	6.4	STAWSS1400S16 STAWSN1400S16 STAWMN1400S16 STAWLN1400S16
STAWK1410TG	●		14.1	7.8	4.8	3.0	6.4	
STAWK1420TG	●		14.2	7.9	4.8	3.1	6.4	
STAWK1430TG	●		14.3	7.9	4.8	3.1	6.4	
STAWK1440TG	●		14.4	7.9	4.8	3.1	6.4	
STAWK1450TG	●		14.5	8.1	5.0	3.1	6.7	STAWSS1450S16 STAWSN1450S16 STAWMN1450S16 STAWLN1450S16
STAWK1460TG	●		14.6	8.1	5.0	3.1	6.7	
STAWK1470TG	●		14.7	8.2	5.0	3.2	6.7	
STAWK1480TG	●		14.8	8.2	5.0	3.2	6.7	
STAWK1490TG	●		14.9	8.2	5.0	3.2	6.7	
STAWK1500TG	●		15.0	8.4	5.2	3.2	6.9	STAWSS1500S20 STAWSN1500S20 STAWMN1500S20 STAWLN1500S20
STAWK1510TG	●		15.1	8.4	5.2	3.2	6.9	
STAWK1520TG	●		15.2	8.4	5.2	3.2	6.9	
STAWK1530TG	●		15.3	8.5	5.2	3.3	6.9	
STAWK1540TG	●		15.4	8.5	5.2	3.3	6.9	
STAWK1550TG	●		15.5	8.7	5.3	3.4	7.1	STAWSS1600S20 STAWSN1600S20 STAWMN1600S20 STAWLN1600S20
STAWK1560TG	●		15.6	8.7	5.3	3.4	7.1	
STAWK1570TG	●		15.7	8.7	5.3	3.4	7.1	
STAWK1580TG	●		15.8	8.8	5.3	3.5	7.1	
STAWK1590TG	●		15.9	8.8	5.3	3.5	7.1	
STAWK1600TG	●		16.0	8.8	5.3	3.5	7.1	
STAWK1610TG	●		16.1	8.8	5.3	3.5	7.1	
STAWK1620TG	●		16.2	8.8	5.3	3.5	7.1	
STAWK1630TG	●		16.3	8.8	5.3	3.5	7.1	
STAWK1640TG	●		16.4	8.9	5.3	3.6	7.1	
STAWK1650TG	●		16.5	9.3	5.7	3.6	7.6	STAWSS1700S20 STAWSN1700S20 STAWMN1700S20 STAWLN1700S20
STAWK1660TG	●		16.6	9.3	5.7	3.6	7.6	
STAWK1670TG	●		16.7	9.3	5.7	3.6	7.6	
STAWK1680TG	●		16.8	9.3	5.7	3.6	7.6	
STAWK1690TG	●		16.9	9.4	5.7	3.7	7.6	
STAWK1700TG	●		17.0	9.4	5.7	3.7	7.6	
STAWK1710TG	●		17.1	9.4	5.7	3.7	7.6	
STAWK1720TG	●		17.2	9.4	5.7	3.7	7.6	
STAWK1730TG	●		17.3	9.4	5.7	3.7	7.6	
STAWK1740TG	●		17.4	9.4	5.7	3.7	7.6	
STAWK1750TG	●		17.5	9.8	6.0	3.8	8.1	STAWSS1800S20 STAWSN1800S20 STAWMN1800S20 STAWLN1800S20
STAWK1760TG	●		17.6	9.8	6.0	3.8	8.1	
STAWK1770TG	●		17.7	9.8	6.0	3.8	8.1	
STAWK1780TG	●		17.8	9.8	6.0	3.8	8.1	
STAWK1790TG	●		17.9	9.8	6.0	3.8	8.1	
STAWK1800TG	●		18.0	9.9	6.0	3.9	8.1	
STAWK1810TG	●		18.1	9.9	6.0	3.9	8.1	
STAWK1820TG	●		18.2	9.9	6.0	3.9	8.1	
STAWK1830TG	●		18.3	9.9	6.0	3.9	8.1	
STAWK1840TG	●		18.4	9.9	6.0	3.9	8.1	