BASSETT™

The Reliable Tool Expert

2018

Product Introduction

Professional and functional Lnserts

DALIAN TDC CARBIDE TOOLS CO.,LTD

Bassett

BRAND HISTORY

The Bassett Brand, which is an important product line within Greenfield Industries, has manufactured the highest quality carbide cutting tools for six decades. Greenfield Industries, which began as Cleveland Tools Inc. in 1876, has grown to become the world leader in precision tools over the century and a half since.

In 2009, TDC acquired Greenfield Industries and the Bassett brand. Currently, TDC provides quality products and services for world-wide customers based on their facilities located in Seneca, SC (US) and Dalian, China.

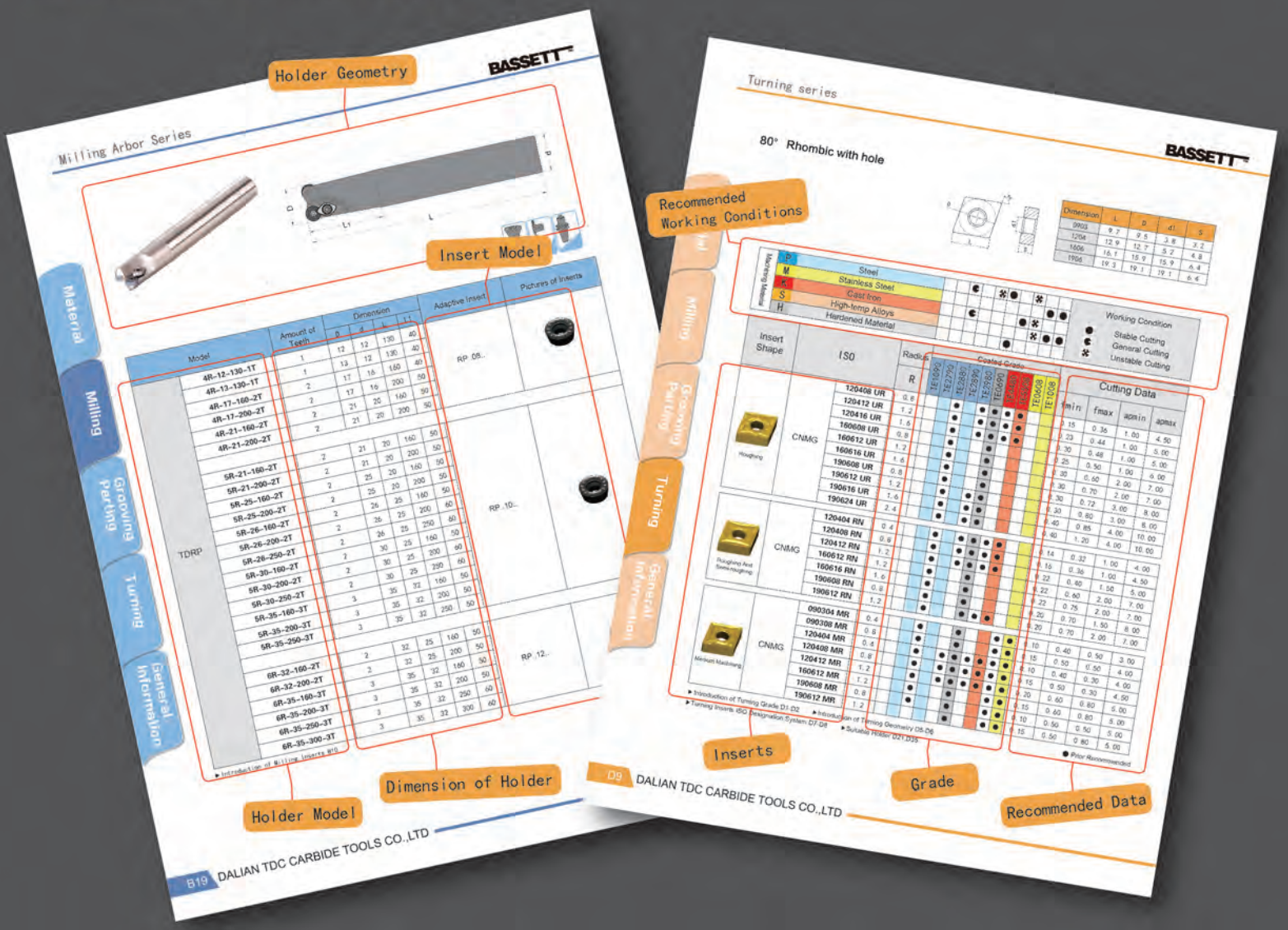
Recently TDC has also entered the indexable insert market and placed these inserts within the Bassett Line. Through this expansion, TDC is continuing its global adventure in Manufacturing, R&D, and Applications Development. Bassett Indexable Inserts are your most reliable choice.

60 years

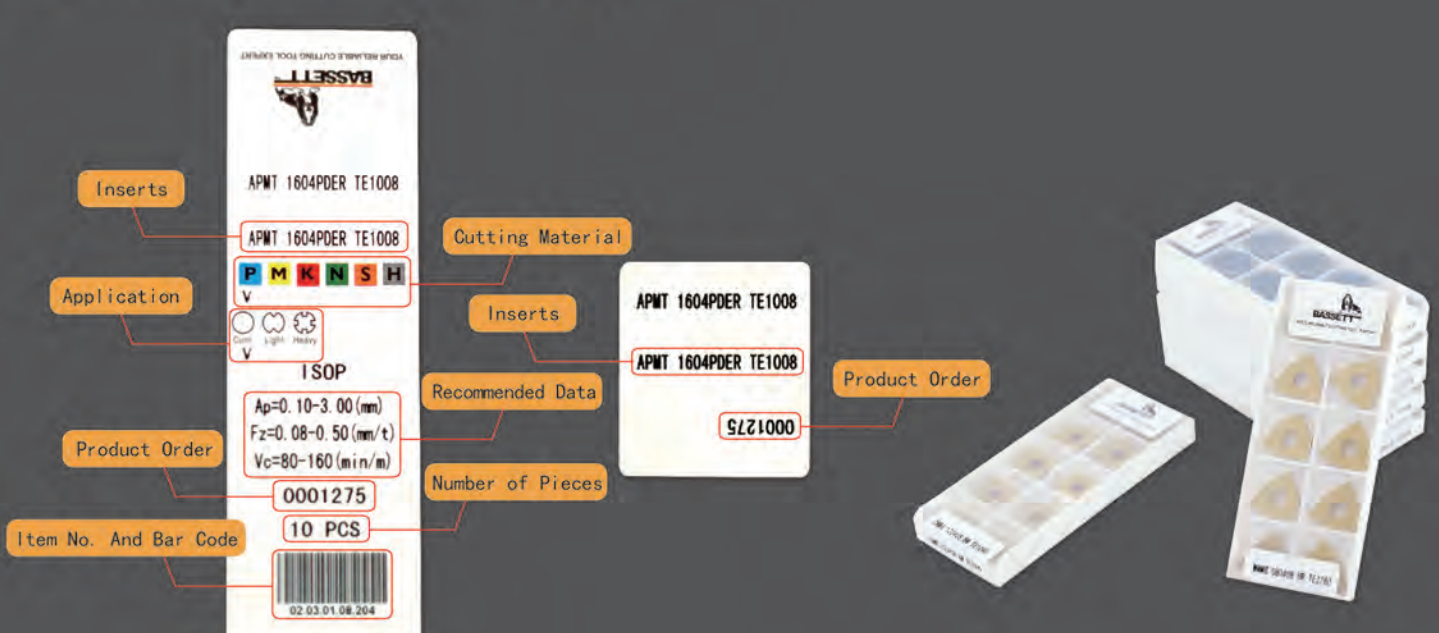
The Bassett Brand, which is an important product line within Greenfield Industries, has manufactured the highest quality carbide cutting tools for six decades.

Catalogue

Reading Guide

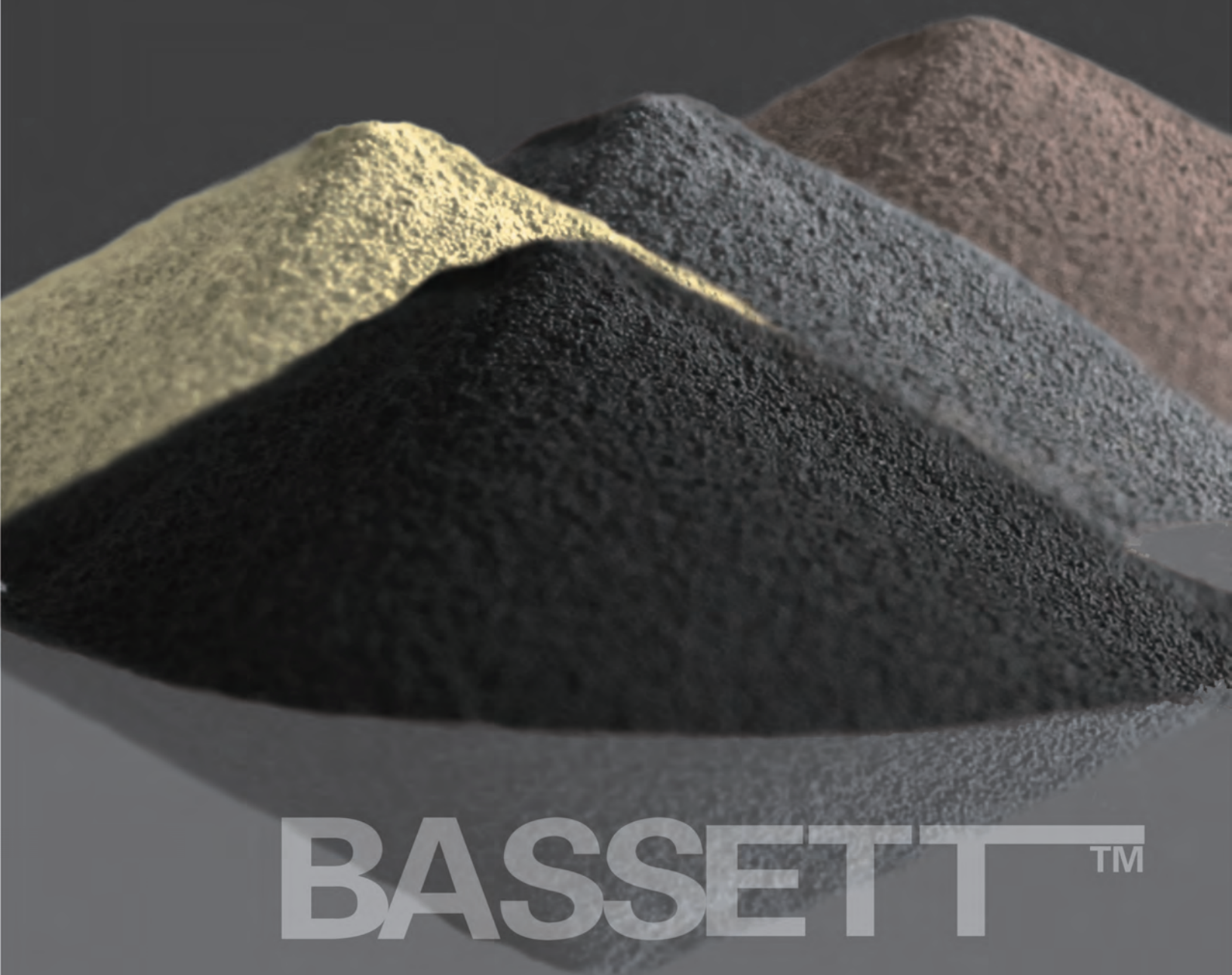


Product Packaging

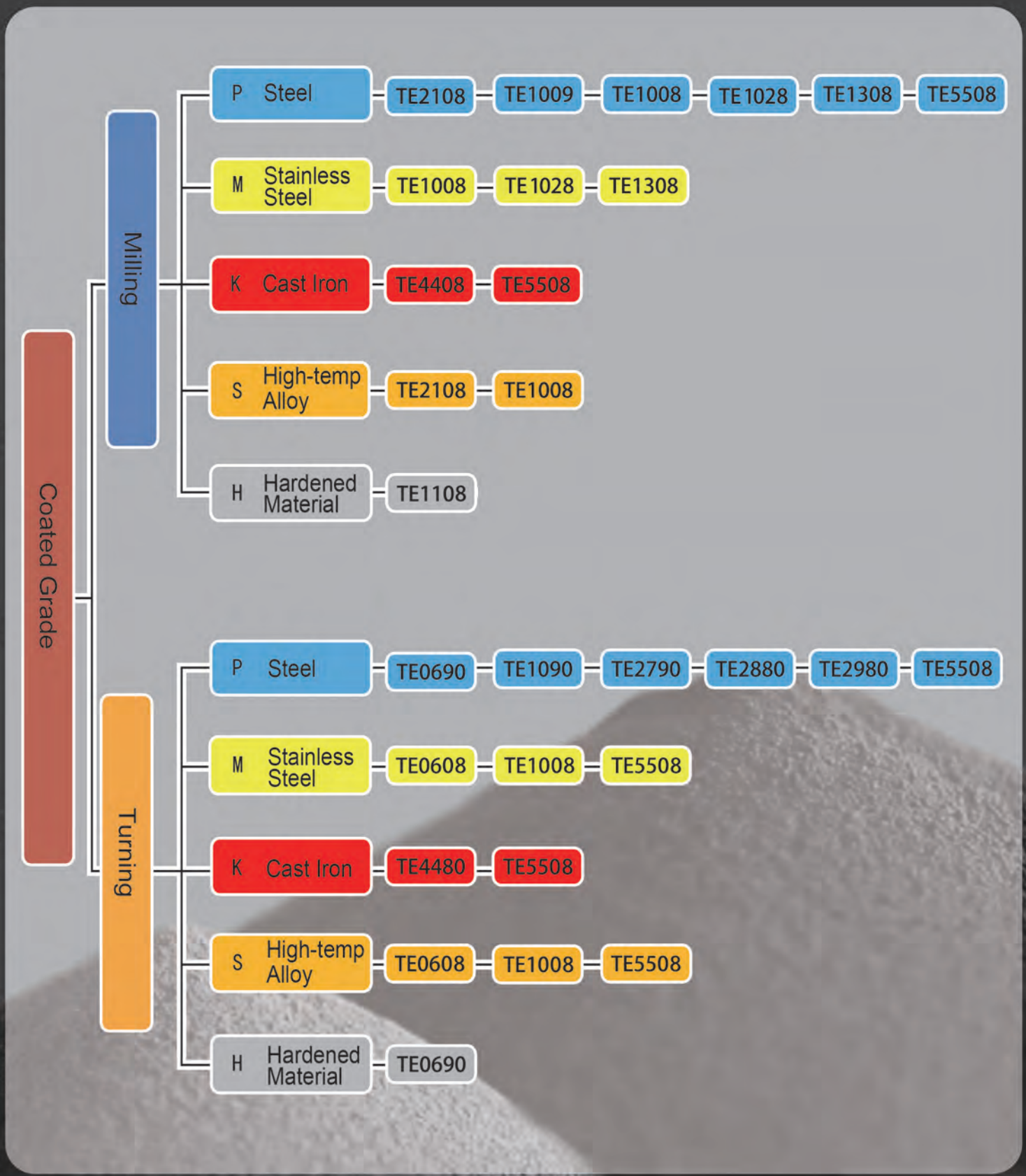


A

The Material



BASSETT™


Coated Grade
Milling
P Steel
TE2108
TE1009
TE1008
TE1028
TE1308
TE5508
M Stainless Steel
TE1008
TE1028
TE1308
K Cast Iron
TE4408
TE5508
S High-temp Alloy
TE2108
TE1008
H Hardened Material
TE1108
Turning
P Steel
TE0690
TE1090
TE2790
TE2880
TE2980
TE5508
M Stainless Steel
TE0608
TE1008
TE5508
K Cast Iron
TE4480
TE5508
S High-temp Alloy
TE0608
TE1008
TE5508
H Hardened Material
TE0690

Milling Grade Comparison

Milling grades												
ISO class	Bassett	Taegu Tec	Sandvik	Walter	Seco	Kennametal	Mitsubbishi	Sumitomo	Tungaloy	Kyocera	Korloy	Iscar
P			GC1010 GC1030	WHH15 WXM15	MH1000 F15M MP1500 F30M	KC510M KC522M KC635M	MP8010 VP15TF					IC903 IC900
		TT2510 TT7080 TT7030	GC4220 GC4230	WKP25 WAM10 WAM20	MP1500 MP2500 T250M T25M			ACP100	T3130 AH330		PC210F	
	TE1008 TE1009 TE1028	TT9080 TT9030	GC1030 GC4240	WAM30	F25M F30M MP3000	KC522M KC635M	VP15TF VP20RT UP20M	ACP200	AH725 AH730 GH330 AH120	PR830 PR1225 PR1230 PR9925	PC3500 PC5300	IC808 IC908
	TE1308 TE5508	TT8080 TT8020 TT7800	GC4240 GC1040	WKP35 WXP45 WSP45	F40M T350M	KC725M KC735M KC935M KCPM20	V030RT FH7020 F7030	ACP300 ACZ350	AH140 T3130 AH130 AH3035 AH9030	RP1525	PC5400 PC3545	IC830 IC330 IC928
M	TE1008 TE1028	TT9080 TT9030	GC1030 GC2030 S30T GC1025	WAM30 WXM35	MS2050 MP2500 F25M F30M	KC635M	VP15TF VP20RT UP20M	ACP100 ACP200 ACP300	T3130 AH725 AH120 AH4035	PR830 PR1210 PR1025 PR1225 PR905	PC5300 PC9530	IC808 IC908
	TE5508	TT8080 TT8020	GC2040 S40T	WXM35 WSM35 WSP45	F40M MS2500 MM4500	KC725M	F7030 MP7030 VP30RT MP9130	ACM100 ACM200 ACM300	AH130 AH140 SH730 AH3035	PR1225 PR905	PC5300 PC5400	IC830 IC330 IC928
S	TE1008 TE1028	TT9080 TT9030	GC1030 GC2030 S30T GC1025	WAM30 WXM35	MS2050 MP2500 F25M F30M	KC635M	VP15TF VP20RT UP20M	ACP100 ACP200 ACP300	T3130 AH725 AH120 AH4035	PR830 PR1210 PR1025 PR1225 PR905	PC5300 PC9530	IC808 IC908
	TE5508	TT8080 TT8020	GC2040 S40T	WXM35 WSM35 WSP45	F40M MS2500 MM4500	KC725M	F7030 MP7030 VP30RT MP9130	ACM100 ACM200 ACM300	AH130 AH140 SH730 AH3035	PR1225 PR905	PC5300 PC5400	IC830 IC330 IC928
K		TT7515	GC3220 GC3330 GC4220	WAK15	MK1500 MP1500	KC915M KCK15	MC5020	ACK100			PC8110	IC5100
	TE4408	TT6080	GC1020 GC4230 GC3040 GC4240	WKP25S WKP35S WKK25S WKK25	MK2050	KCK15 KC520M	MP8010 VP15TF VP20RT F5010	ACK200 ACK300 ACZ310	T1115 AH110 AH120	PR905 PR1210 PR1510	PC6510 PC5300 PC5400	IC810 IC910
H	TE1108	TT2510 TT9080	GC1010 GC1030	WHH15	MH1000 F15M MP1500 F30M MP3000	KC510M KC522M KC635M	MP8010 VP15TF MP9130				PC210F	IC903 IC900

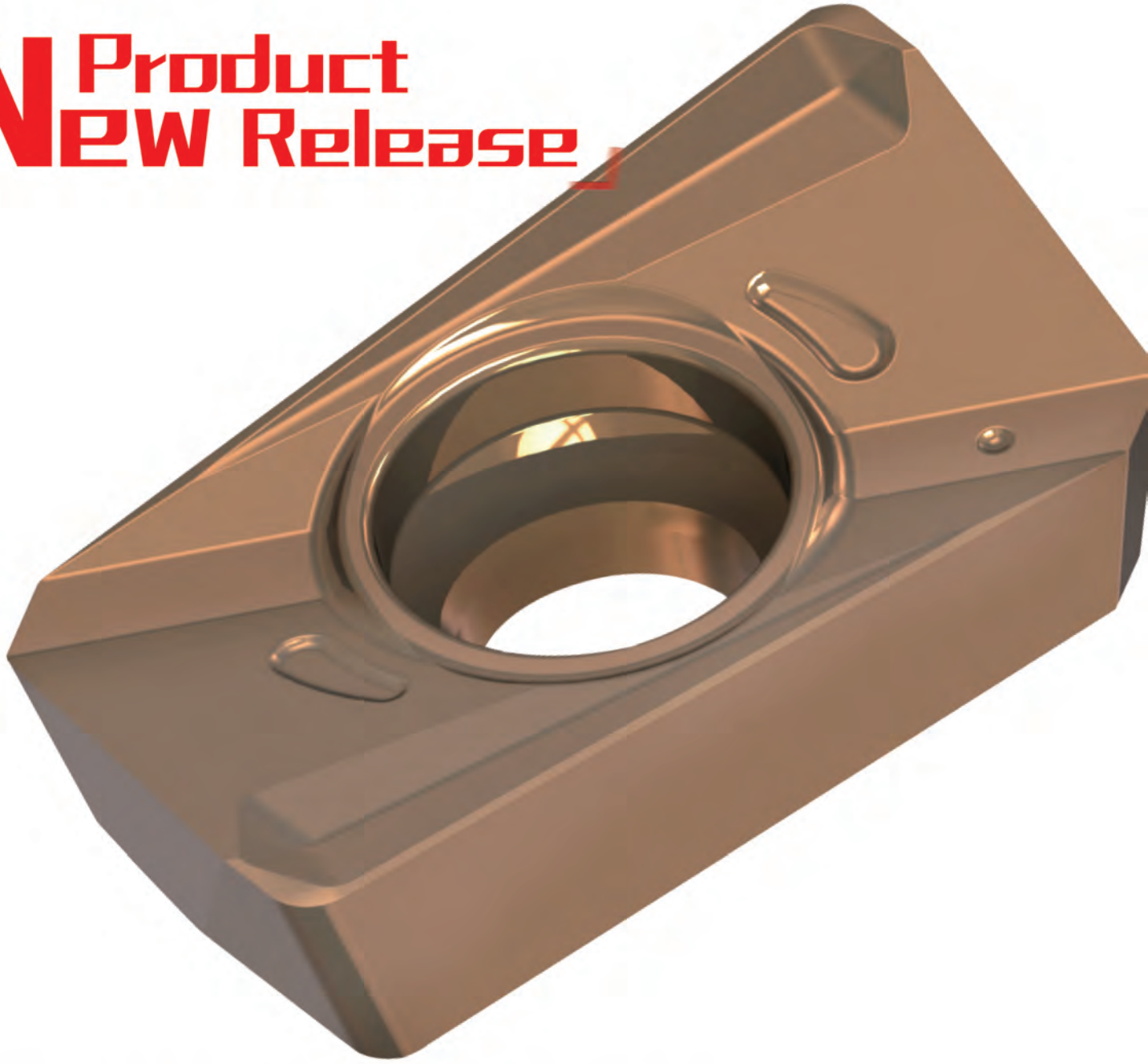
Turning Grade Comparison

Turning grades Table

ISO class	Bassett	Taegu	Sandvik	Walter	Seco	Kennamet	Mitsubbi	Sumitomo	Tungaloy	Kyocera	Korloy	Iscar
P		TT8105	GC4305 GC4205	WPP05	TP0501 TP0500	KCP05	UE6105 UE6005	AC810P AC500G	T9105 T9005	CA5505		
	TE2790	TT8115	GC4315 GC4215	WPP10S WPP10	TP1501 TP1500 TP1000	KCP10 KCP10B KC9110	MC6015 UE6110 UE6010	AC1000 AC700G	T9115 T9015	CA515 CA5515	NC3010 NC3015	IC8150 IC9150
	TE2880 TE2890	TT8125 TT5100	GC4325 GC4225	WPP20S WMP20S	TP2501 TP2500 TP2000	KCP25 KCP25B KC9125	MC6025 UE6020	AC820P AC2000 ACZ310	T9125 T9025	CA525 CA5525	NC3220 NC3120 NC3020	IC8250 IC9250
	TE2980	TT8135 TT7100	GC4235 GC4035 GC2135	WPP30S WPP30	TP3500 TP3000 TP40	KCP30 KCP40 KC9040	UE6135 UH6400	AC830P AC3000	T9135 T9035	CA5535 CR9025	NC3030 NC500H	IC8350 IC9350
M	TE0608	TT9125	GC2015	WSM10 WAM10	TM2000 CP600 TP200	KCM15	MC7015 US7020 VP05RT	AC610M EH10Z	T6120	CA6515	PC8110 NC9020	IC6015 IC807
	TE1008	TT9225	GC2025	WMP20S WSM20	CP500	KCM25	MC7025 US735	AC630M AC304	T6130 AH630 T6020	CA6525	NC9025	IC6025 IC9300
	TE5508	TT9235 TT8020	GC2135 GC2035 GC30	WSM30 WAM30	TM4000 CP600 TP400	KCM35	UH6400 MP7035	AC6040M AC3000	AH645 T6030	PR630	NC5330 PC9030 PC5400	IC3028
K		TT7005	GC3205 GC3005	WKK10S WAK10	TK1001 TK1000	KCK05 KC9315	MC5005 UC5105	AC405K AC410K AC300G	T5105 T5010	CA4505 CA4010	NC6205 NC6105	IC5010 IC4028
	TE4480	TT7015 TT7310	GC3210 GC3015	WKK20S WAK20	TK2001 TK2000	KCK15 KCK15B KC9325	MC5015 UC5115	AC415K AC500G	T5115 T5020	CA4515 CA4115 CA4120	NC6210 NC6110	IC5005
			GC3215	WAK30		KCK20		AC420K	T5125		NC315K	
S	TE0608	TT5080	GCS05F GC1105 GC1115	WSM10 WAM10	TH1000 TH1500 TS2000 TS2500 CP200	KCU10 KC5510 KC5010	MP9005 MP9015 VP05RT VP10RT	AC510U EH510Z EH10Z	AH110	PR1005 PR930	PC8110	IC807 IC907
	TE1008	TT9080	GC15 GC1125 GC1025 GC1515 GC1525	WSM21 WSM20 WSM30	CP500	KCU25 KC5525 KC5025	VP15TF VP20RT	AC520U EH20Z	AH120	PR1025 PR1125 PR1225 PR1425	PC5300 PC9530 PC5400	IC808 IC908
H	TE0608	TT5008	GCS05F GC1105 GC1115	WSM10 WAM10	TH1000 TH1500 TS2000 TS2500 CP200	KCU10 KC5510 KC5010	MP9005 MP9015 VP05RT VP10RT	AC510U EH510Z EH10Z	AH110	PR1005 PR930	PC8110	IC807 IC907
	TE1008	TT9080	GC15 GC1125 GC1025 GC1515 GC1525	WSM21 WSM20 WSM30	CP500	KCU25 KC5525 KC5025	VP15TF VP20RT	AC520U EH20Z	AH120	PR1025 PR1125 PR1225 PR1425	PC5300 PC9530 PC5400	IC808 IC908

B Milling

New Product Release



4.0 Innovation for Making Steel and Stainless Steel Industry Begins

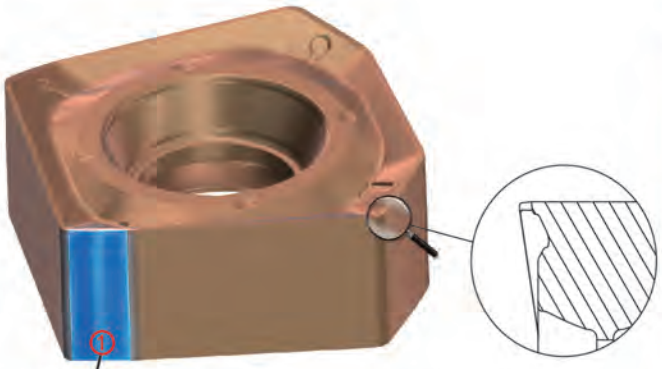
Inserts	Chip Breaker	Cutting Edge	Feature
 General Machining	PDER		General application,for steel,stainless steel and die steel general machining.
 Roughing	H H		Chamfered ,strong resistance to vibration, for steel,stainless steel and die steel roughing.
 Medium Cutting -finishing	M M		Sharp edge, little cutting resistance, for steel, stainless steel and die steel medium cutting and finishing.

Face Milling

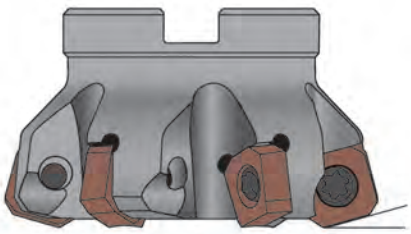
SNMU 1305ANTR HT

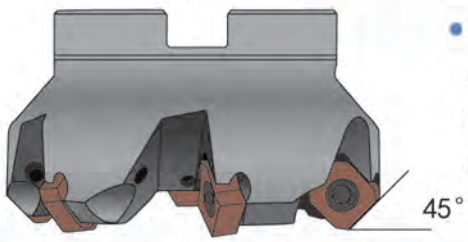
Economical And Multipurpose Milling

- Designing of double-sided insert makes it have 8 cutting edges.
- It has better cost performance than single-sided face milling.
- With innovative chipbreaker and wide front angle, it has own wiper. While reducing cutting resistance, it can guarantee the glossiness of workpiece which is processed.
- As there are different kinds of materials to choose, it is suitable for steel, stainless steel, grey cast iron and high-temp alloy.



Wiper



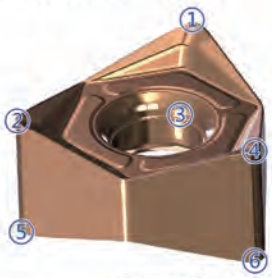


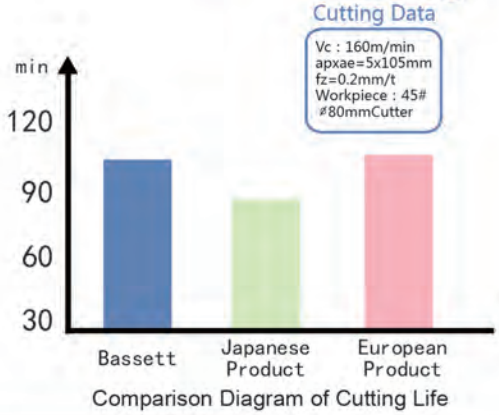
- Various clamping, can not only provide high speed and fast feed, but but also apply to common milling.

Fast Feed Cutter **45° Face Milling Cutter**

WNMU 080608PTN CM

- Economical Square Shoulder Milling Double-sided And Six Edges

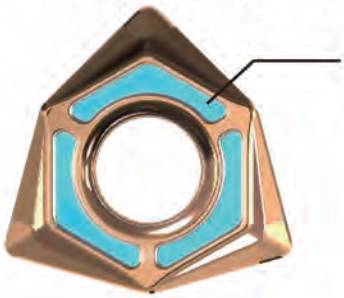




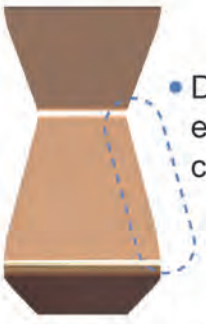
Comparison Diagram of Cutting Life

Square Shoulder Milling Series

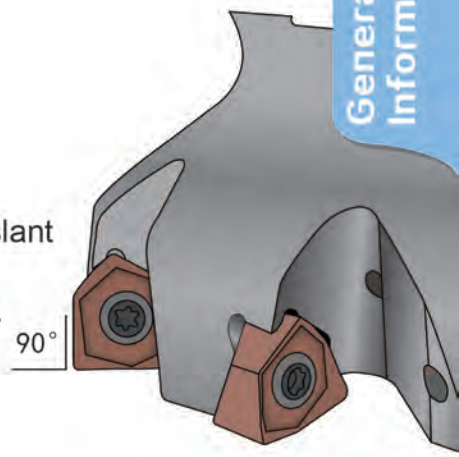
The characteristics are small cutting resistance and large cutting depth, compared with AP square shoulder milling, it is more efficient and economical.



Improved Positioning Surface Clamping Stably

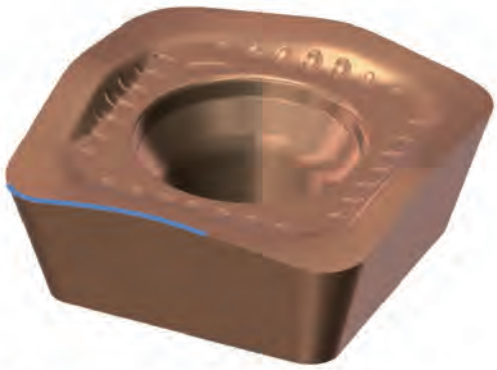


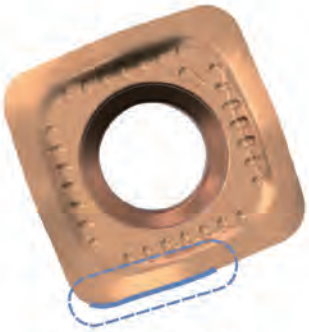
- Designing of the slant edge can reduce cutting resistance.



fast feed series

SOMT 140520 ER X

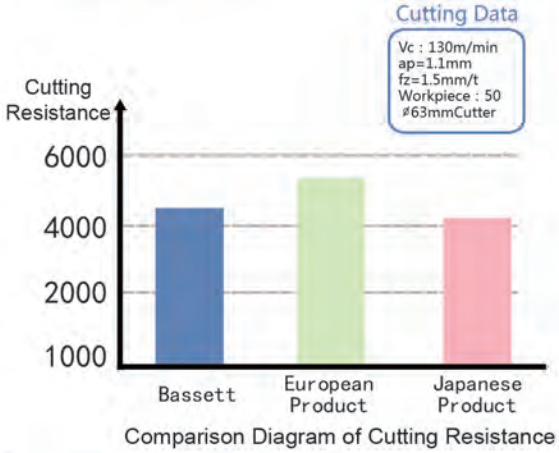




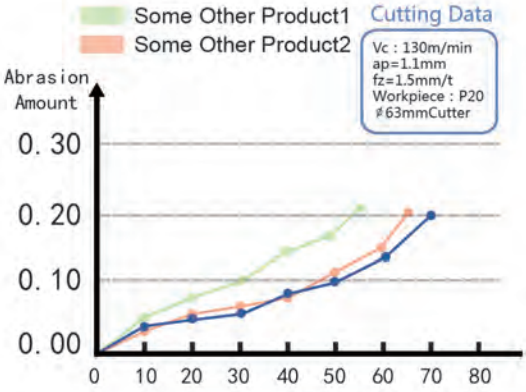
Cutting Part

The Characteristic:

- Better edge makes the edge sharper, and reduce cutting resistance.
- The design of the tool improves the ability of vibration resistance when cutting.
- The chipbreaker with shape X can make high evacuation, high resistance to chipping, which realize high speed work. (Spiral machining, slanting down milling, grooving and face milling, step surface milling)
- The choice of materials makes inserts are widely used in steel, die steel and stainless steel.



Comparison Diagram of Cutting Resistance



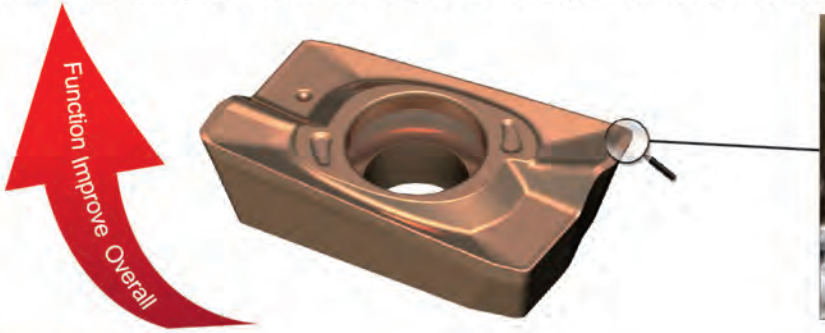
Comparison Diagram of Cutting Life

Products Series

Inserts	Product Model	Cutting Edge	Applicable Working Conditions	Page
	EPMT..MT		For steel, die steel and stainless steel grooving, step surface milling and profiling.	B17
	SDMT..MT		For steel, die steel, stainless steel large face milling, grooving, spiral milling	B17
	WDMT..MT		For steel, die steel, stainless steel grooving, step surface milling, vertical milling, spiral milling	B18
	SOMT..X		For steel, die steel, stainless steel spiral milling, slanting down milling, grooving and face milling, step surface milling.	B18
	SNMU..HT		Economical and fast feed milling, for steel, die steel and stainless steel large face milling, slanting down milling, step surface milling.	B14

Pushing Out A New Brand---- TE1028
Provide solutions for stainless steel economically cutting.

TE1028 is the upgrading product of the existing stainless steel cutting grade TE1008. The new grade can be applied to applications under many conditions, especially in stainless steel. The best combination of high technology coating and high toughness matrix, improves wear resistance, and saves time for changing inserts, which ensures efficient process with new grade and significant improvement in efficiency.



Cross-section Drawn

Characteristic:

- Advanced coating process with LM.A+PVD, and matrix is coated TiAlSiN on the surface.
- Compared with the original technology, it has the characteristics of high temperature resistance, strong oxidation resistance and strong wear resistance.
- It is used for medium to high speed cutting for steel and stainless steel.

Case 1

Application:	Profiling on Die Casting
Material:	Cast Steel And Carbon Steel (HRC 30-35)
Cutting Speed:	188m/min
Cutting Depth:	0.3-1.0mm
Cutting Width:	D×75%
Cooling Mode:	Coolant
Original Grade:	RPMW 1003 TE1008 Life: 6h 34min
New Grade:	RPMW 1003 TE1028 Life: 7h 42min

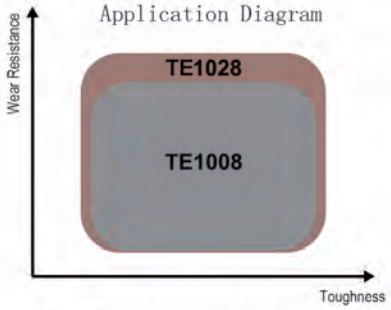
Case 2

Application:	Through Grooving And Square Shoulder Milling
Material:	304Stainless Steel
Cutting Speed:	140m/min
Cutting Depth:	0.2-0.8mm
Cutting Width:	D×75%
Cooling Mode:	Emulsion
Original Grade:	RPMW 1003 TE1008 Life: 5h 22min
New Grade:	RPMW 1003 TE1028 Life: 7h 34min

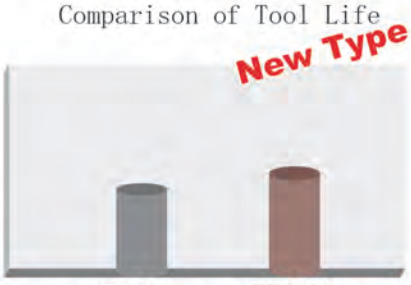
Case 3

Application:	Cavity Machining of Automobile Mould
Material:	Die Steel (HRC 40-48)
Cutting Speed:	110m/min
Cutting Depth:	0.15-0.6mm
Cutting Width:	D×75%
Cooling Mode:	Air Cooling
Original Grade:	RPMW 1003 TE1008 Life: 3h 16min
New Grade:	RPMW 1003 TE1028 Life: 3h 58min

Application Diagram

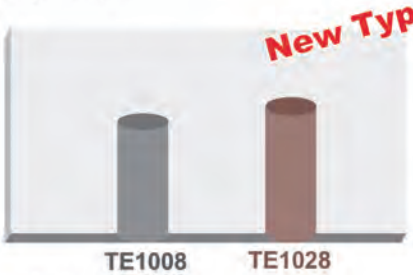


Comparison of Tool Life



Alloy Stee

- V : 160m/min
- Dry Cutting
- f : 0.1— 0.4 mm/tooth
- Ap: 1.0mm



Stainless Steel

- V :120m/min
- f :0.1 — 0.4 mm/tooth
- Ap: 1.0mm

Application Comparison Table for Milling Grade					
Workpiece Material	ISO	Coated Carbide Alloy		Uncoated Carbide Alloy	Cermet
		CVD	PVD		
P Steel	01		TE2108		
	10		TE2108 TE1009		
	20		TE1009 TE1028		
	30		TE1028 TE1008		
	40		TE1008 TE1308		
	50		TE1308 TE5508		
	60		TE5508		
M Stainless Steel	01				
	10		TE1028		
	20		TE1028 TE1008		
	30		TE1008 TE1308		
	40		TE1308 TE5508		
	50		TE5508		
K Cast Iron	01		TE4408		
	10		TE4408		
	20		TE4408 TE5503		
	30		TE5503		
	40				
	50				
S High-temp Alloys	01				
	10		TE2108		
	20		TE2108 TE1009		
	30		TE1009 TE1028		
	40		TE1028 TE1008		
H Hardened Material	01		TE1008		
	10		TE1108		
	20		TE1108		
	30				
	40				

Grade	ISO	workpiece material and application
NEW! TE1028	P15-P25	High speed machining of carbon steel and alloy steel an, high wear resistance.
	M15-M35	For stainless steel machining, high wear resistance, high oxidation resistance temperature.
	S15-S35	For high-temp alloys machining, high wear resistance.
TE1008	P20-P30	For high cutting speed on carbon steel and alloy steel, high toughness cutting edge.
	M20-M40	For stainless steel machining, high toughness milling grades.
	S20-S40	For low to medium speed milling on heat resistance alloy .
TE1009	P10-P20	Outstanding for high hardness material is, only suitable for hard material.
	S10-S30	For medium and general machining on high-temp alloys.
NEW! TE1308	P30-P40	For roughing on carbon steel, alloy steel and die steel at low cutting speed, high chipping resistance and vibration resistance.
	M25-M45	For generally interrupted machining on Stainless steel machining.
TE1108	H05-H25	For high cutting speed on dead hard steel, superfine grain grade, high wear resistance.
TE2108	P05-P15	For high milling speed of on carbon steel and alloy steel, high wear resistance and high bursting resistance.
	S10-S25	For finishing on high-temp alloys, high bursting resistance.
TE4408	K05-K15	For general machining on iron casting, high wear resistance and high heat resistance.
TE5508	P40-P50	For interrupted cutting on low carbon steel and low carbon alloy steel, low speed roughing of carbon steel and alloy steel.
	M25-M40	For roughing on stainless steel, interrupted cutting.
	K15-K25	For interrupted roughing on iron casting, high chipping resistance , sturdy grade.

Turning Inserts ISO Designation System

Relief Angle Symbol	
Symbol	Relief Angle
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
M	Others
S	Others

Tolerance Symbol						
Symbol	Tolerance (mm)			Tolerance (inch)		
	Corner Height (m)	Thickness (s)	I.C.Size (Ød)	Corner Height (m)	Thickness (s)	I.C.Size (Ød)
A	±0.005	±0.025	±0.025	±0.0002	±0.001	±0.001
F	±0.005	±0.025	±0.013	±0.0002	±0.001	±0.0005
C	±0.013	±0.025	±0.025	±0.0005	±0.001	±0.001
H	±0.013	±0.025	±0.013	±0.0005	±0.001	±0.0005
E	±0.025	±0.025	±0.025	±0.001	±0.001	±0.001
G	±0.025	±0.130	±0.025	±0.001	±0.005	±0.001
J	±0.005	±0.025	±0.05~±0.13	±0.0002	±0.001	±0.002~±0.005
K	±0.013	±0.025	±0.05~±0.13	±0.0005	±0.001	±0.002~±0.005
L	±0.025	±0.025	±0.05~±0.13	±0.001	±0.001	±0.002~±0.005
M	±0.08~±0.18	±0.130	±0.05~±0.13	±0.003~±0.007	±0.005	±0.002~±0.005
N	±0.08~±0.18	±0.025	±0.05~±0.13	±0.003~±0.007	±0.001	±0.002~±0.005
U	±0.13~±0.38	±0.130	±0.08~±0.25	±0.005~±0.0015	±0.005	±0.003~±0.01

Chipbreaker、Hole Symbol				
Symbol	Hole	Hole Shape	Chipbreaker	Shape
N	Without	—	Without	
R			Single-sided	
F			Double-sided	
A	With	With Hole	Without	
M			Single-sided	
G			Double-sided	
W		one countersink	Without	
T			Single-sided	
Q		twocountersinks	Without	
U			Double-sided	
X	—	—	—	Special

①	②	③	④	⑤
Shape Symbol	Relief Angle Symbol	Tolerance Symbol	Chipbreaker Hole Symbol	Cutting Edge Length Symbol
A	P	K	T	16

Shape Symbol			
Symbol	Shape	Corner Angle	Figure
H	Hexagon	120°	
O	Octagon	135°	
P	Pentagon	108°	
S	Square	90°	
T	Triangle	60°	
C	Rhombic	80°	
D		55°	
E		75°	
F		50°	
M		86°	
V		35°	
W	Trigon	80°	
L	Rectangle	90°	
A	Parellelogram	85°	
B		82°	
K		55°	
R	Round	—	

Cutting Edge Length Symbol									
Inch Symbol	I.C.Size (in)	I.C.Size (mm)	R	S	C	W	T	D	V
1	1/8"	3.18							
1.2	5/32"	3.97		03			06	04	
1.5	3/16"	4.76		04	04		08	05	
		5	05						
1.8	7/32"	5.56		05	05	03	09	06	
		6	06						
2	1/4"	6.35		06	06	04	11	07	11
2.5	5/16"	7.94		07	08	05	13	09	
		8	08						
3	3/8"	9.53	09	09	09	06	16	11	16
		10	10						
3.5	7/16"	11.11	11	11	11	7	19	13	19
		12	12						
4	1/2"	12.7	12	12	12	08	22	15	22
5	5/8"	15.88	15	15	16	10	27	19	
		16	16						
6	3/4"	19.05	19	19	19	13	33	23	
		20	20						
7	7/8"	22.225		22	22		38	27	
		25	25						
8	1"	25.4	25	25	25		44	31	
10	1 1/4"	31.75	31	31	32		55	38	
		32	32						
	1 1/2"	38.1		38					

Insert Shape:S,T,C,W,R										
I.C.Size (mm)	Tolerance of I.C.Size (Ød) (mm)		Tolerance of Corner Height (m) (mm)		I.C.Size	Tolerance of I.C.Size (Ød) (in)		Tolerance of Corner Height (m) (in)		
	Class M	Class U	Class M	Class U	(in)	Class M	Class U	Class M		Class U
6.35	±0.05	±0.08	±0.08	±0.13	1/4"	±0.002	±0.003	±0.003		±0.005
9.525					3/8"					
12.7	±0.08	±0.13	±0.13	±0.2	1/2"	±0.003	±0.005	±0.005		±0.008
15.88	±0.1	±0.18	±0.15	±0.27	5/8"	±0.004	±0.007	±0.006		±0.011
19.05					3/4"					
25.4	±0.13	±0.25	±0.18	±0.38	1"	±0.005	±0.010	±0.007		±0.015
31.75	±0.15	±0.25	±0.2	±0.38	1 1/4"	±0.006	±0.010	±0.008		±0.015
32					1.26"					

Insert Shape: D					
I.C.Size		Tolerance of I.C.Size (Ød)		Tolerance of Corner Height (m)	
mm	in	mm	in	mm	in
6.35	1/4"	±0.05	±0.002	±0.11	±0.004
9.53	3/8"	±0.05	±0.002	±0.11	±0.004
12.7	1/2"	±0.08	±0.003	±0.15	±0.006
15.88	5/8"	±0.10	±0.004	±0.18	±0.007
19.05	3/4"	±0.10	±0.004	±0.18	±0.007

Insert Shape: V					
I.C.Size		Tolerance of I.C.Size (Ød)		Tolerance of Corner Height (m)	
mm	in	mm	in	mm	in
6.35	1/4"	±0.05	±0.002	±0.15	±0.006
9.53	3/8"	±0.05	±0.002	±0.15	±0.006
12.7	1/2"	±0.08	±0.003	±0.20	±0.008
15.88	5/8"	±0.10	±0.004	±0.27	±0.011
19.05	3/4"	±0.10	±0.004	±0.27	±0.011

Cutting direction (optional)	
Symbol	direction
R	Right hand
L	Left hand
N	Neutral

(ISO)

⑥ Thickness Symbol **04**

⑦ Nose Radius Symbol **□**

⑧ Chamfer Angle Symbol **PD**

⑨ Chipbreaker Symbol **□**

⑩ Cutting Direction Symbol **R**

Thickness Symbol			
Inch Symbol	Metric Symbol	Thickness (in)	Thickness (mm)
	00		0.79
	T0		0.99
1	01	1/16"	1.59
1.2	T1	5/64"	1.98
1.5	02	3/32"	2.38
	T2		2.58
2	03	1/8"	3.18
2.5	T3	5/32"	3.97
3	04	3/16"	4.76
	T4		4.96
3.5	05	7/32"	5.56
	T5		5.95
4	06	1/4"	6.35
	T6		6.75
5	07	5/16"	7.94
6	09	3/8"	9.53
	T9		9.72
7	11	7/16"	11.11
8	12	1/2"	12.7
9		9/16"	14.29
10		5/8"	15.88

Nose radius Symbol			
Inch Symbol	Metric Symbol	Nose radius (in)	Nose radius (mm)
0	00		0.0
0.2		1/256"	0.1
0.5	02	1/128"	0.2
1	04	1/64"	0.4
2	08	1/32"	0.8
3	12	3/64"	1.2
4	16	1/16"	1.6
5		5/64"	
6	24	3/32"	2.4
7		7/64"	
8	32	1/8"	3.2
10		5/32"	
12		3/16"	
14		7/32"	
16		1/4"	
X	X	Others	Others
	00	Round inserts Diameter of insert	
	M0		

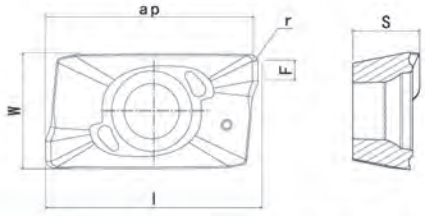
Chamfer Angle Symbol	
A=45°	C=75°
D=60°	P=11°
E=75°	D=15°
P=90°	E=20°
	F=25°

Chipbreaker Symbol
Chipbreaker designation Indicating the cutting properties of the chipbreaker

Cutting Edge (optional)	
Symbol	Shape
F	Sharp
E	Rounded
T	Chamfered
S	Chamfered and Rounded
K	Double-Chamfered
P	Double-Chamfered and Rounded

90° Square Shoulder Inserts

Dimension	W	l	ap	S	r	F
1135	6.7	11.4	10.2	3.5	0.8	1.4
1604	9.4	17.7	15.3	5.7	0.8	1.7



Machining Material																
P	Steel		●	●	●	●	◐		✱	●	●	◐		✱		
M	Stainless Steel			●	●		◐		✱	●	●	◐		✱		
K	Cast Iron				●				✱	●				✱		
S	High-temp Alloys			●	●	●			✱	●	●		●	✱		
H	Hardened Material															

Working Condition
● Stable Cutting
◐ General Cutting
✱ Unstable Cutting

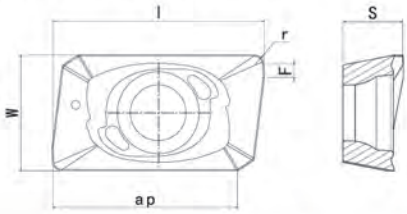
Insert Shape	ISO		Coated Grade													Cutting Data			
			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	APMT	**1135 PDR**		●	●	●	●	●		●	●	●	●	●	●		0.08	0.12	4	8
		1604 PDER		●	●	●	●	●		●	●	●	●	●	●		0.08	0.16	5	12

▶Introduction of Milling Grades B4,B5 ▶Introduction of ISO Code Rules B6,B7 ▶Suitable Holder And Cutter B22,B23,B26

● Prior Recommended

90° Square Shoulder Inserts

Dimension	W	l	ap	S	r	F
1135	6.35	11	0.8	3.5	0.8	1.2
1604	9.5	16.5	14.5	4.76	0.8	1.4



Machining Material																
P	Steel		●	●	●	●	◐		✱	●	●	◐		✱		
M	Stainless Steel			●	●		◐		✱	●	●	◐		✱		
K	Cast Iron				●				✱	●				✱		
S	High-temp Alloys			●	●	●			✱	●	●		●	✱		
H	Hardened Material															

Working Condition
● Stable Cutting
◐ General Cutting
✱ Unstable Cutting

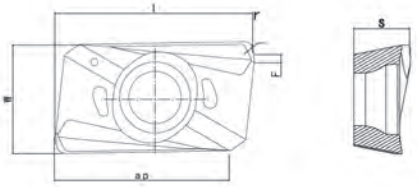
Insert Shape	ISO		Coated Grade													Cutting Data			
			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	APMT	**1135 PDR MM**		●	●	●	●	●		●	●	●	●	●	●		0.08	0.12	4	8
		1604 PDER MM		●	●	●	●	●		●	●	●	●	●	●		0.08	0.16	5	12

▶Introduction of Milling Grades B4,B5 ▶Introduction of ISO Code Rules B6,B7 ▶Suitable Holder And Cutter B22,B23,B26

● Prior Recommended

90° Square Shoulder Inserts

Dimension	W	l	ap	S	r	F
1135	6.35	11	10.2	3.5	0.4	1.5
1604	9.52	16.5	15.3	4.76	0.4	1.7



Machining Material			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108
P	Steel			●	●	●	●	◐		✱	●	●	◐		✱	
M	Stainless Steel				●	●		◐		✱	●	●	◐		✱	
K	Cast Iron					●				✱	●				✱	
S	High-temp Alloys				●	●	●			✱	●	●		●	✱	
H	Hardened Material															

Working Condition
● Stable Cutting
◐ General Cutting
✱ Unstable Cutting

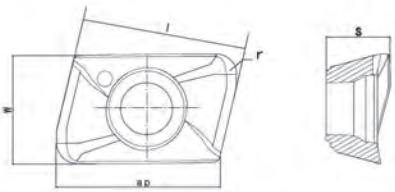
Insert Shape	ISO		Coated Grade														Cutting Data			
			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	APMT	**1135 PDR HH**		●	●	●	●	●		●	●	●	●	●	●		0.08	0.12	4	8
		1604 PDER HH		●	●	●	●	●		●	●	●	●	●	●		0.08	0.16	5	12

▶ Introduction of Milling Grades B4,B5 ▶ Introduction of ISO Code Rules B6,B7 ▶ Suitable Holder And Cutter B22,B23,B26

● Prior Recommended

90° Square Shoulder Inserts

Dimension	W	l	ap	S	r
070208	4.26	6.51	6.42	2.44	0.8



Machining Material			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108
P	Steel			●	●	●	●	◐		✱	●	●	◐		✱	
M	Stainless Steel				●	●		◐		✱	●	●	◐		✱	
K	Cast Iron					●				✱	●				✱	
S	High-temp Alloys				●	●	●			✱	●	●		●	✱	
H	Hardened Material															

Working Condition
● Stable Cutting
◐ General Cutting
✱ Unstable Cutting

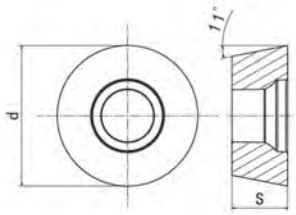
Insert Shape	ISO		Coated Grade														Cutting Data			
			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	JDMT	**070208 RM**		●	●	●	●	●		●	●	●	●	●	●		0.08	0.12	4	8

▶ Introduction of Milling Grades B4,B5 ▶ Introduction of ISO Code Rules B6,B7 ▶ Suitable Holder And Cutter B22,B23,B26

● Prior Recommended

Round Milling Inserts

Dimension	d	S
1003	10	3.2
1204	12	4.8



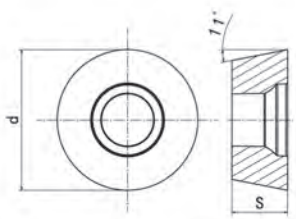
Machining Material		Working Condition
	Steel	● Stable Cutting
	Stainless Steel	◐ General Cutting
	Cast Iron	✱ Unstable Cutting
	High-temp Alloys	
	Hardened Material	

Insert Shape	ISO		Coated Grade													Cutting Data			
			TE1108	TE2108	TE1028 (new)	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	RPMW	1003			●	●	●	●		●	●	●	●	●	●		0.10	0.25	1.00	5.00
		1204			●	●	●	●		●	●	●	●	●	●		0.15	0.32	1.00	6.00

▶ Introduction of Milling Grades B4,B5 ▶ Introduction of ISO Code Rules B6,B7 ▶ Suitable Holder And Cutter B21,B24 ● Prior Recommended

Round Milling Inserts

Dimension	d	S
08T2	8	2.78
10T3	10	3.97
1204	12	4.76
1606	16	6.35

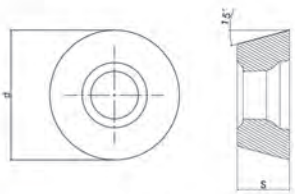


Machining Material			Working Condition
P	Steel		● Stable Cutting
M	Stainless Steel		◐ General Cutting
K	Cast Iron		✱ Unstable Cutting
S	High-temp Alloys		
H	Hardened Material		

Insert Shape	ISO		Coated Grade													Cutting Data			
			TE1108	TE2108	TE1028 (new)	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	RPMT	08T2 PM			●	●	●	●			●	●	●	●			0.10	0.20	1.00	4.00
		10T3 PM			●	●	●	●			●	●	●	●			0.10	0.25	1.00	5.00
		1204 PM			●	●	●	●			●	●	●	●			0.15	0.32	1.00	6.00
		1606 MI			●	●	●	●		●	●	●	●		●		0.15	0.32	1.00	6.00

▶ Introduction of Milling Grades B4,B5 ▶ Introduction of ISO Code Rules B6,B7 ▶ Suitable Holder And Cutter B21,B24 ● Prior Recommended

Round Milling Inserts



Dimension	d	S
1204	12	4.8

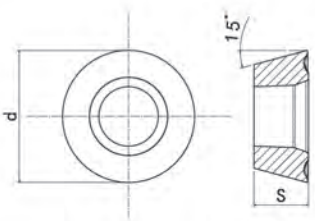
Machining Material			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108
	P	Steel			●	●	●	☾			●	●	☾			
	M	Stainless Steel			●	●		☾			●	●	☾			
	K	Cast Iron				●					●					
	S	High-temp Alloys			●	●	●				●	●		●		
	H	Hardened Material														

Working Condition
● Stable Cutting
☾ General Cutting
✱ Unstable Cutting

Insert Shape	ISO		Coated Grade														Cutting Data			
			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	RDMW	**1204 MOT PM**			●	●	●	●			●	●	●	●			0.15	0.3	1.00	6.00

▶Introduction of Milling Grades B4,B5 ▶Introduction of ISO Code Rules B6,B7 ▶Suitable Holder And Cutter B20,B21,B25 ● Prior Recommended

Round Milling Inserts



Dimension	d	S
0803	8	3.2
10T3	10	4.0
1204	12	4.8
1605	16	4.8

Machining Material			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108
	P	Steel			●	●	●	☾			●	●	☾			
	M	Stainless Steel			●	●		☾			●	●	☾			
	K	Cast Iron				●					●					
	S	High-temp Alloys			●	●	●				●	●		●		
	H	Hardened Material														

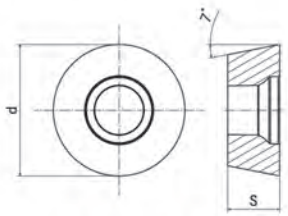
Working Condition
● Stable Cutting
☾ General Cutting
✱ Unstable Cutting

Insert Shape	ISO		Coated Grade														Cutting Data			
			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	RDMT	**0803 MZ**			●	●	●	●			●	●	●	●			0.15	0.3	1.00	4.00
		10T3 MZ			●	●	●	●			●	●	●	●			0.15	0.3	1.00	5.00
		1204 MZ			●	●	●	●			●	●	●	●			0.15	0.3	1.00	6.00
		1605 MZ			●	●	●	●			●	●	●	●			0.15	0.3	1.00	6.00

▶Introduction of Milling Grades B4,B5 ▶Introduction of ISO Code Rules B6,B7 ▶Suitable Holder And Cutter B20,B21,B25 ● Prior Recommended

Round Roughing Milling Inserts

Dimension	d	S
1606	16	4.8



Machining Material			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108
	P	Steel			●	●	●	◐		✱	●	●	◐		✱	
	M	Stainless Steel			●	●		◐		✱	●	●	◐		✱	
	K	Cast Iron				●				✱	●				✱	
	S	High-temp Alloys			●	●	●			✱	●	●			✱	
	H	Hardened Material														

Working Condition
● Stable Cutting
◐ General Cutting
✱ Unstable Cutting

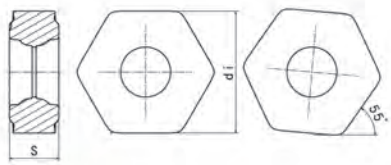
Insert Shape	ISO		Coated Grade													Cutting Data			
			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	RCMT	**1606 MZ**			●	●	●	●		●	●	●	●		●		0.40	0.75	3.00	7.00
	RCMT	**1606 MZS**			●	●	●	●		●	●	●	●		●		0.40	0.80	3.00	7.00

▶Introduction of Milling Grades B4,B5 ▶Introduction of ISO Code Rules B6,B7

● Prior Recommended

Hexagon Profiling

Dimension	di	S
0504	13	4.76



Machining Material			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108
	P	Steel		●		●	●			✱	●				✱	
	M	Stainless Steel				●					●					
	K	Cast Iron				●	●		●	✱	●				✱	
	S	High-temp Alloys				●	●				●			●		
	H	Hardened Material														●

Working Condition
● Stable Cutting
◐ General Cutting
✱ Unstable Cutting

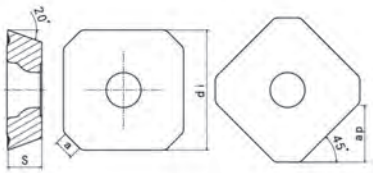
Insert Shape	ISO		Coated Grade													Cutting Data			
			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	HNMU	**050410 CI**		●		●	●		●	●	●			●	●	●	0.08	0.12	4.00	8.00

▶Introduction of Milling Grades B4,B5 ▶Introduction of ISO Code Rules B6,B7

● Prior Recommended

Square Milling Inserts

Dimension	di	a	ap	S
1204	12.7	1.7	6.5	4.76
13T3	13.4	2	6.5	3.97



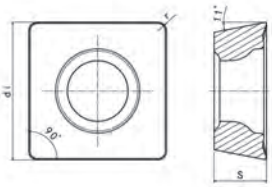
Machining Material			Working Condition
	P	Steel	● Stable Cutting
	M	Stainless Steel	◐ General Cutting
	K	Cast Iron	✱ Unstable Cutting
	S	High-temp Alloys	
	H	Hardened Material	

Insert Shape	ISO		Coated Grade													Cutting Data			
			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	SEKT	**1204AFTN MT**			●	●	●	●	●	●	●	●	●				0.08	0.12	4.00	8.00
	SEMT	**13T3ANTN MT**			●	●	●	●	●	●	●	●	●				0.08	0.12	4.00	8.00

▶ Introduction of Milling Grades B4,B5 ▶ Introduction of ISO Code Rules B6,B7 ● Prior Recommended

Square Milling Inserts

Dimension	di	S	r
1204	12.7	4.8	0.8



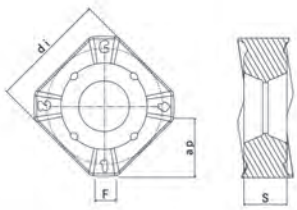
Machining Material			Working Condition
	P	Steel	● Stable Cutting
	M	Stainless Steel	◐ General Cutting
	K	Cast Iron	✱ Unstable Cutting
	S	High-temp Alloys	
	H	Hardened Material	

Insert Shape	ISO		Coated Grade													Cutting Data			
			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	SPMT	**120408PTN MI**		●		●	●	●		●	●	●	●	●	●	●	0.08	0.12	4.00	8.00

▶ Introduction of Milling Grades B4,B5 ▶ Introduction of ISO Code Rules B6,B7 ● Prior Recommended

Square Double-sided Face Milling With 8 Edges

Dimension	F	di	ap	S
1305	3	13	6	6.2



Machining Material			Working Condition
	P	Steel	● Stable Cutting
	M	Stainless Steel	◐ General Cutting
	K	Cast Iron	✱ Unstable Cutting
	S	High-temp Alloys	
	H	Hardened Material	

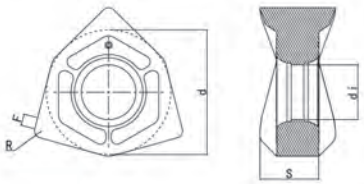
Insert Shape	ISO		Coated Grade													Cutting Data			
			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	SNMU	**1305ANTR HT**				●	●	●	●	●	●	●	●		●		0.20	0.30	2.00	6.00
	SNHU	**1305ANTR HT**							●								0.15	0.30	2.00	6.00

▶Introduction of Milling Grades B4,B5 ▶Introduction of ISO Code Rules B6,B7 ▶Suitable Holder And Cutter B27

● Prior Recommended

Hexagon Face Milling Inserts

Dimension	di	d	F	S	R
0806	6.2	14	1.5	6.65	0.8



Machining Material			Working Condition
	P	Steel	● Stable Cutting
	M	Stainless Steel	◐ General Cutting
	K	Cast Iron	✱ Unstable Cutting
	S	High-temp Alloys	
	H	Hardened Material	

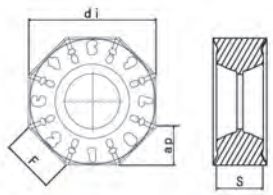
Insert Shape	ISO		Coated Grade													Cutting Data			
			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	WNMU	**080608 PTN CM**			●	●	●	●	●	●	●	●	●				0.08	0.12	4.00	8.00

▶Introduction of Milling Grades B4,B5 ▶Introduction of ISO Code Rules B6,B7

● Prior Recommended

Octagonal Double-sided Face Milling Inserts With 16 Edges

Dimension	F	di	ap	S
0505	5	13	3.5	5.2



Machining Material			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108
	P	Steel			●	●	●	◐	●	✱	●		◐		✱	
	M	Stainless Steel			●	●		◐			●	●	◐			
	K	Cast Iron			●	●	●	◐	●		●		◐			
	S	High-temp Alloys			●	●	●	◐			●		◐			
	H	Hardened Material														

Working Condition
● Stable Cutting
◐ General Cutting
✱ Unstable Cutting

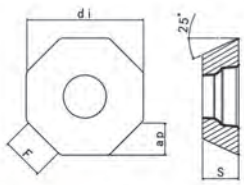
Insert Shape	ISO		Coated Grade														Cutting Data			
			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	ONMU	**050505 HT**			●	●	●	●		●	●	●	●		●		0.30	0.32	1.50	3.00
		050505 HC			●	●	●	●		●	●	●	●		●		0.25	0.32	1.50	3.00
		050505 CI							●								0.25	0.32	1.50	3.00

▶Introduction of Milling Grades B4,B5 ▶Introduction of ISO Code Rules B6,B7 ▶Suitable Holder And Cutter B27

● Prior Recommended

Octagonal Single-sided Face Milling Inserts With 8 Edges

Dimension	F	d1	ap	S
05T3	5	13	3.5	4



Machining Material			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108
	P	Steel		●	●	●	●	◐			●		◐	●		●
	M	Stainless Steel			●	●		◐			●	●	◐			
	K	Cast Iron			●	●	●	◐	●		●		◐			
	S	High-temp Alloys			●	●		◐			●		◐			
	H	Hardened Material														

Working Condition
● Stable Cutting
◐ General Cutting
✱ Unstable Cutting

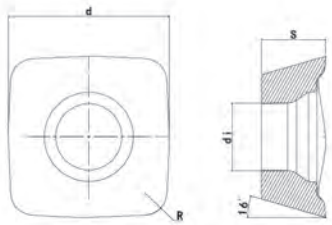
Insert Shape			Coated Grade														Cutting Data			
			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	OFCW	**05T3TN MR**		●	●	●	●	●	●		●	●	●	●		●	0.30	0.32	1.50	3.00

▶Introduction of Milling Grades B4,B5 ▶Introduction of ISO Code Rules B6,B7

● Prior Recommended

Square Fast Feed Inserts

Dimension	d	di	R	S
1405	14.1	5.8	2.0	5.56



Machining Material			Working Condition
	P	Steel	● Stable Cutting
	M	Stainless Steel	◐ General Cutting
	K	Cast Iron	✱ Unstable Cutting
	S	High-temp Alloys	
	H	Hardened Material	

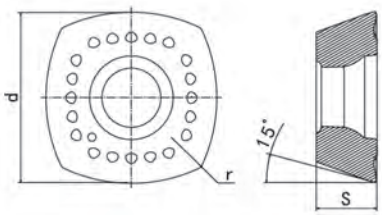
Insert Shape	ISO		Coated Grade													Cutting Data			
			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	SOMT	**140520ER MD**			●	●	●	●	●	●	●		●		●		0.5	1.2	0.2	0.8

▶ Introduction of Milling Grades B4,B5 ▶ Introduction of ISO Code Rules B6,B7

● Prior Recommended

Square Fast Feed Inserts

Dimension	d	S	r
1205	13	5.2	3
1505	15.9	5.6	0.8



Machining Material			Working Condition
	P	Steel	● Stable Cutting
	M	Stainless Steel	◐ General Cutting
	K	Cast Iron	✱ Unstable Cutting
	S	High-temp Alloys	
	H	Hardened Material	

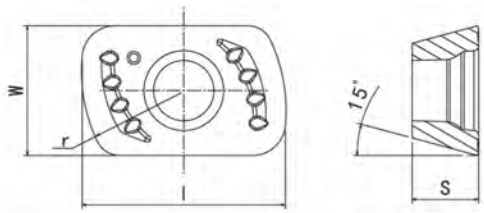
Insert Shape	ISO		Coated Grade													Cutting Data			
			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	SDMT	**1205ZDTN MT**			●	●	●	●	●	●	●		●		●		0.5	1.5	0.5	1.5
		1505ZDTN MT			●	●	●	●	●	●	●		●		●		0.5	1.8	0.5	1.8

▶ Introduction of Milling Grades B4,B5 ▶ Introduction of ISO Code Rules B6,B7

● Prior Recommended

Parallelogram Fast Feed Inserts

Dimension	W	L	r	S
0603	6. 35	10	8	3. 18



Machining Material			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108
P	Steel					●	●	●		✱	●		●		✱	
M	Stainless Steel					●		●		✱	●		●		✱	
K	Cast Iron					●	●	●	●	✱	●		●		✱	
S	High-temp Alloys					●	●	●		✱	●		●		✱	
H	Hardened Material															

Working Condition
● Stable Cutting
● General Cutting
✱ Unstable Cutting

Insert Shape	ISO		TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	EPMT	0603TN MT				●	●	●	●	●	●		●		●		0. 5	1	0. 2	1

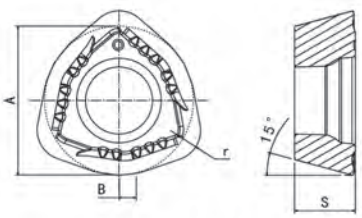
Coated Grade / Cutting Data

▶ Introduction of Milling Grades B4,B5 ▶ Introduction of ISO Code Rules B6,B7

● Prior Recommended

Hexagon Fast Feed Inserts

Dimension	A	B	r	S
04T2	6. 5	0. 8	1. 5	2. 8
06T3	10	1. 2	2	3. 97
0805	13	1. 5	2	5. 5



Machining Material			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108
P	Steel					●	●	●		✱	●		●		✱	
M	Stainless Steel					●		●		✱	●		●		✱	
K	Cast Iron					●	●	●	●	✱	●		●		✱	
S	High-temp Alloys					●	●	●		✱	●		●		✱	
H	Hardened Material															

Working Condition
● Stable Cutting
● General Cutting
✱ Unstable Cutting

Insert Shape	ISO		TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	WDMT	04T215ZER MT				●	●	●	●	●	●		●		●		0. 5	1. 2	0. 2	0. 8
		06T320ZER MT				●	●	●	●	●	●		●		●		0. 5	1. 5	0. 2	1
		080520ZER MT				●	●	●	●	●	●		●		●		0. 5	2	0. 3	1

Coated Grade / Cutting Data

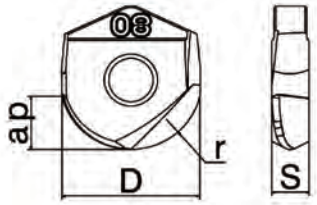
▶ Introduction of Milling Grades B4,B5 ▶ Introduction of ISO Code Rules B6,B7

● Prior Recommended

Ball knife series

Ball Nose Milling Inserts

Dimension	D	ap	S	r
D16	16	8.0	4.2	8.0
D20	20	10.0	5.2	10.0
D25	25	12.5	6.2	12.5
D30	30	15.0	7.2	15.0



Machining Material															
P	Steel		●									●		●	
M	Stainless Steel														
K	Cast Iron														
S	High-temp Alloys														
H	Hardened Material														

Working Condition
● Stable Cutting
◐ General Cutting
✱ Unstable Cutting

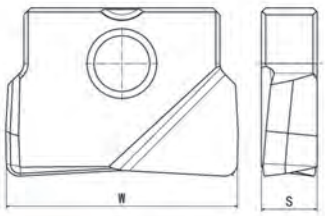
Insert Shape	ISO		Coated Grade													Cutting Data			
			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	HBR	**D16 PS**		●										●		●	0.03	0.64	2.5	8.0
		D20 PS		●										●		●	0.03	0.64	3.0	10.0
		D25 PS		●										●		●	0.03	0.64	3.5	12.0
		D30 PS		●										●		●	0.03	0.64	4.0	15.0

▶ Introduction of Milling Grades B4,B5 ▶ Introduction of ISO Code Rules B6,B7

● Prior Recommended

Flat Bottom R Angle Milling Inserts

Dimension	W	S
D10	10	2.6
D12	12	3
D17	17	4
D20	20	5



Machining Material															
P	Steel		●									●		●	
M	Stainless Steel														
K	Cast Iron														
S	High-temp Alloys														
H	Hardened Material														

Working Condition
● Stable Cutting
◐ General Cutting
✱ Unstable Cutting

Insert Shape	ISO		Coated Grade													Cutting Data			
			TE1108	TE2108	TE1028	TE1008	TE1009	TE1308	TE4408	TE5508	TE1008	TE1028	TE1308	TE2108	TE5508	TE1108	fmin	fmax	apmin	apmax
	THC	**D10–R1.5 DM**		●										●		●	0.03	0.45	1.00	6.00
		D10–R2.0 DM		●										●		●	0.03	0.45	1.00	6.00
		D12–R1.5 DM		●										●		●	0.05	0.50	2.00	8.00
		D12–R2.0 DM		●										●		●	0.05	0.50	2.00	8.00
		D17–R1.0 DM		●										●		●	0.08	0.55	3.00	11.00
		D17–R1.5 DM		●										●		●	0.08	0.55	3.00	11.00
		D17–R2.0 DM		●										●		●	0.08	0.55	3.00	11.00
		D20–R1.5 DM		●										●		●	0.10	0.64	5.00	14.00
		D20–R2.0 DM		●										●		●	0.10	0.64	5.00	14.00

▶ Introduction of Milling Grades B4,B5 ▶ Introduction of ISO Code Rules B6,B7

● Prior Recommended

Clamping

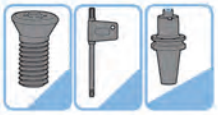
BASSETT™

Model		Amount of Teeth	Dimension				Adaptive Insert	Pictures of Inserts
			D	d	L	L1		
TDRP	**4R-12-130-1T**	1	12	12	130	40	RP..08..	
	4R-13-130-1T	1	13	12	130	40		
	4R-17-160-2T	2	17	16	160	40		
	4R-17-200-2T	2	17	16	200	50		
	4R-21-160-2T	2	21	20	160	50		
	4R-21-200-2T	2	21	20	200	50		
	5R-21-160-2T	2	21	20	160	50	RP..10..	
	5R-21-200-2T	2	21	20	200	50		
	5R-25-160-2T	2	25	20	160	50		
	5R-25-200-2T	2	25	20	200	50		
	5R-26-160-2T	2	26	25	160	50		
	5R-26-200-2T	2	26	25	200	60		
	5R-26-250-2T	2	26	25	250	60		
	5R-30-160-2T	2	30	25	160	50		
	5R-30-200-2T	2	30	25	200	60		
	5R-30-250-2T	2	30	25	250	60		
	5R-35-160-3T	3	35	32	160	50		
	5R-35-200-3T	3	35	32	200	50		
	5R-35-250-3T	3	35	32	250	50		
	6R-32-160-2T	2	32	25	160	50	RP..12..	
	6R-32-200-2T	2	32	25	200	50		
	6R-35-160-3T	3	35	32	160	50		
	6R-35-200-3T	3	35	32	200	50		
	6R-35-250-3T	3	35	32	250	60		
	6R-35-300-3T	3	35	32	300	60		

▶ Introduction of Milling Inserts B10

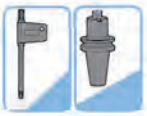
Model		Amount of Teeth	Dimension				Adaptive Insert	Pictures of Inserts
			D	d	L	L1		
TDRD	**4R-10-120-1T**	1	10	10	120	40	RD..08..	
	4R-12-120-2T	2	12	12	120	40		
	4R-12-100-1T	1	12	12	100	40		
	4R-13-130-1T	1	13	12	130	40		
	4R-17-160-2T	2	17	16	160	40		
	4R-17-200-2T	2	17	16	200	40		
	4R-21-160-2T	2	21	21	160	40		
	4R-21-200-2T	2	21	20	200	50		
	5R-21-160-2T	2	21	20	160	50	RD..10..	
	5R-21-200-2T	2	21	20	200	50		
	5R-26-160-2T	2	26	25	160	50		
	5R-26-200-2T	2	26	25	200	60		
	5R-26-250-2T	2	26	25	250	60		
	5R-30-160-2T	2	30	25	160	50		
	5R-30-200-2T	2	30	25	200	60		
	5R-30-250-2T	2	30	25	250	60		
	5R-30-300-2T	2	30	25	300	60		
	5R-30-160-3T	3	30	25	160	50		
	5R-35-200-3T	3	35	32	200	50		
	5R-35-250-3T	3	35	32	250	60		
	5R-35-300-3T	3	35	32	300	60		
	5R-35-350-3T	3	35	32	350	60		
	5R-35-400-3T	3	35	32	400	60		

▶ Introduction of Milling Inserts B11



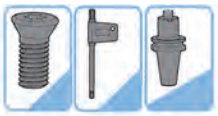
Model		Amount of Teeth	Dimension				Adaptive Insert	Pictures of Inserts
			D	d	L	L1		
TDRD	**6R-32-160-2T**	2	26	25	160	50	RD..12..	
	6R-32-160-2T	2	26	25	200	50		
	6R-32-160-2T	2	26	25	250	60		
	6R-32-160-2T	2	30	25	160	50		
	6R-32-160-2T	2	30	25	200	50		
	6R-32-160-2T	2	30	25	250	60		
	6R-32-160-2T	3	35	32	160	50		
	6R-32-160-2T	3	35	32	200	50		
	6R-32-160-2T	3	35	32	250	60		
	6R-32-160-2T	3	35	32	300	60		
	6R-32-160-2T	3	35	32	350	60		

▶ Introduction of Milling Inserts B11



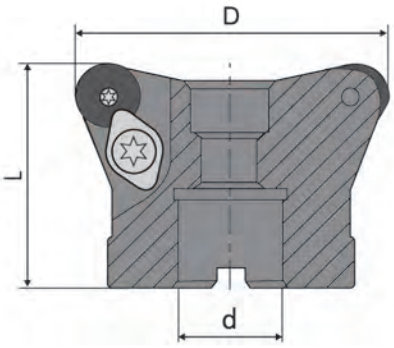
Model		Amount of Teeth	Dimension					Adaptive Insert	Pictures of Inserts
			D	d	L	L1	a		
BAP	300R-10-100-1T	1	10	10	100	30	9	AP..1135..	
	300R-10-120-1T	1	10	10	120	30	9		
	300R-12-130-1T	1	12	12	130	30	9		
	300R-13-130-1T	1	13	12	130	30	9		
	300R-16-120-2T	2	16	16	120	40	9		
	300R-16-160-2T	2	16	16	160	40	9		
	300R-17-120-2T	2	17	16	120	40	9		
	300R-17-160-2T	2	17	16	160	40	9		
	300R-17-200-2T	2	17	16	200	40	9		
	300R-20-120-2T	2	20	20	120	50	9		
	300R-20-160-2T	2	20	20	160	50	9		
	300R-20-200-2T	2	20	20	200	50	9		
	300R-21-120-2T	2	21	20	120	50	9		
	300R-21-160-2T	2	21	20	160	50	9		
	300R-21-200-2T	2	21	20	200	50	9		
	300R-21-250-2T	2	21	20	250	50	9		
	300R-21-300-2T	2	21	20	300	50	9		
	300R-16-250-2T	2	16	25	250	50	9		
	300R-20-250-2T	2	20	25	250	50	9		
	300R-22-150-2T	2	22	25	150	50	9		
	300R-25-160-3T	3	25	25	160	50	9		
	300R-25-200-3T	3	25	25	200	50	9		

▶ Introduction of Milling Inserts B8, B9



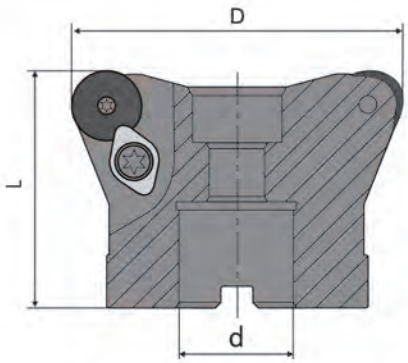
Model		Amount of Teeth	Dimension					Adaptive Insert	Pictures of Inserts
			D	d	L	L1	a		
BAP	**400R-25-160-2T**	2	25	25	160	50	14	AP..1604..	
	400R-25-200-2T	2	25	25	200	50	14		
	400R-26-160-2T	2	26	25	160	50	14		
	400R-26-200-2T	2	26	25	200	50	14		
	400R-26-250-2T	2	26	25	250	50	14		
	400R-26-300-2T	2	26	25	300	50	14		
	400R-30-160-2T	2	30	25	160	50	14		
	400R-30-200-2T	2	30	25	200	50	14		
	400R-30-250-2T	2	30	25	250	50	14		
	400R-30-300-2T	2	30	25	300	50	14		
	400R-32-160-3T	3	32	32	160	60	14		
	400R-32-200-3T	3	32	32	200	60	14		
	400R-32-250-3T	3	32	32	250	60	14		
	400R-32-300-3T	3	32	32	300	60	14		
	400R-33-160-3T	3	33	32	160	60	14		
	400R-33-200-3T	3	33	32	200	60	14		
	400R-35-160-3T	3	35	32	160	60	14		
	400R-35-200-3T	3	35	32	200	60	14		
	400R-35-250-3T	3	35	32	250	60	14		
	400R-35-300-3T	3	35	32	300	60	14		
	400R-35-350-3T	3	35	32	350	60	14		
	400R-35-400-3T	3	35	32	400	60	14		

▶ Introduction of Milling Inserts B8,B9



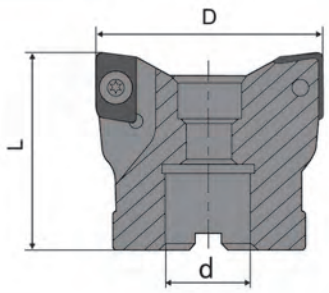
Model		Amount of Teeth	Dimension			Adaptive Insert	Pictures of Inserts
			D	d	L		
TERP	**5R-50-22-4T**	3/4	50	22	50	RP..1003..	
	5R-63-22-4T	4/5	63	22	50		
	5R-63-25.4-4T	4	63	25. 4	50		
	5R-80-27-5T	5/6	80	27	50		
	5R-100-32-6T	6	100	32	50		
	5R-125-40-7T	7	125	40	50		
	5R-160-40-8T	8	160	40	50		
	6R-50-22-4T	3/4	50	22	42	RP..1204..	
	6R-50-25.4-4T	4	50	25. 4	50		
	6R-63-22-4T	4/5	63	22	50		
	6R-63-25.4-4T	4/5	63	25. 4	50		
	6R-80-22-4T	4/5	80	22	42		
	6R-100-32-6T	6/8	100	32	50		
	6R-125-40-6T	6/7	125	40	50		
	6R-160-40-8T	8/9	160	40	50		
	6R-200-40-9T	9	200	40	50		
	6R-200-60-9T	9	200	60	50		
	6R-250-40-12T	12	250	40	50		

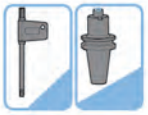
▶ Introduction of Milling Inserts B10



Model		Amount of Teeth	Dimension			Adaptive Insert	Pictures of Inserts
			D	d	L		
TERD	**5R-40-22-4T**	3/4	50	22	50	RD..10T3..	
	5R-63-22-4T	4/5	63	22	50		
	5R-80-27-6T	6	80	27	50		
	5R-100-32-6T	6	100	32	50		
	6R-50-22-4T	3/4	50	22	50	RD..1204..	
	6R-63-22-4T	4/5	63	22	50		
	6R-63-25.4-4T	4/5	63	25. 4	50		
	6R-80-27-6T	6	80	27	50		
	6R-100-32-6T	6	100	32	50		
	6R-125-40-6T	6	125	40	50		
	6R-160-40-6T	6	160	40	50		
	8R-63-22-4T	3/4	63	22	50	RD..1604..	
	8R-63-25.4-4T	4/5	63	25. 4	50		
	8R-80-25.4-5T	4/5	80	25. 4	50		
	8R-80-27-6T	6	80	27	50		
	8R-100-25.4-5T	5	100	25. 4	50		
	8R-100-32-6T	6	100	32	50		
	8R-125-40-6T	6	125	40	50		
	8R-160-40-8T	8	160	40	50		
	8R-200-60-9T	9	200	60	50		
	8R-250-60-10T	10	250	60	50		

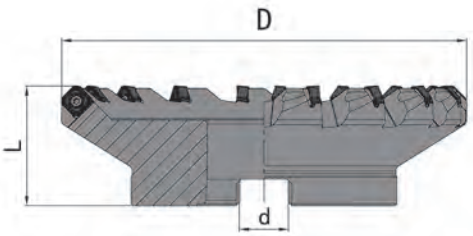
▶ Introduction of Milling Inserts B11





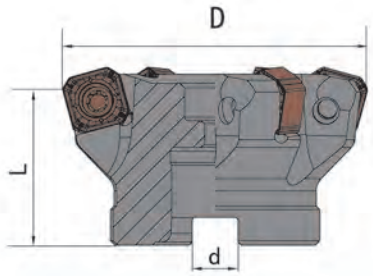
Model		Amount of Teeth	Dimension			Adaptive Insert	Pictures of Inserts
			D	d	L		
BAP300R	**40-16-5T**	5	40	16	42	AP..1135..	
	50-22-6T	6	50	22	50		
	63-22-7T	7	63	22	50		
BAP400R	**50-22-4T**	3/4	50	22	42	AP..1604..	
	50-25.4-4T	4	50	25. 4	50		
	63-22-4T	4	63	22	50		
	63-25.4-4T	4	63	25. 4	50		
	80-27-5T	5	80	27	50		
	100-31.75-6T	6	100	31. 75	50		
	100-32-6T	5/6	100	32	50		
	125-40-6T	6/7/8	125	40	63		
	160-40-8T	8/9	160	40	63		
	200-40-10T	10	200	40	63		
	200-60-9T	9	200	60	63		
	250-40-12T	12	250	40	63		
	250-60-10T	10	250	60	63		

▶ Introduction of Milling Inserts D6



Model		Amount of Teeth	Dimension			Weight	Model of Inserts	Adaptive Insert
			D	d	L			
MT45SO	**50-22R-12-4T**	4	50	22	40	0.3	SN..1305.. ON..0505..	
	63-22R-12-6T	6	63	22	40	0.5		
	80-27R-12-7T	6	80	27	50	1.2		
	80-27R-12-10T	10	80	32	50	1.2		
	100-32R-12-8T	8	100	32	50	1.8		
	100-32R-12-12T	12	100	32	50	1.8		
	125-40R-12-10T	10	125	40	63	3		
	125-40R-12-16T	16	125	40	63	3		
	160-40R-12-12T	12	160	40	63	4.6		
	200-60R-12-10T	10	200	60	63	6.5		
	200-60R-12-18T	18	200	60	63	6.5		
	250-60R-12-20T	20	250	60	63	10.8		
	250-60R-12-24T	24	250	60	63	10.8		
	315-60R-12-15T	15	315	60	63	18		
	315-60R-12-22T	22	315	60	63	18		

▶ Introduction of Milling Inserts B14,B15

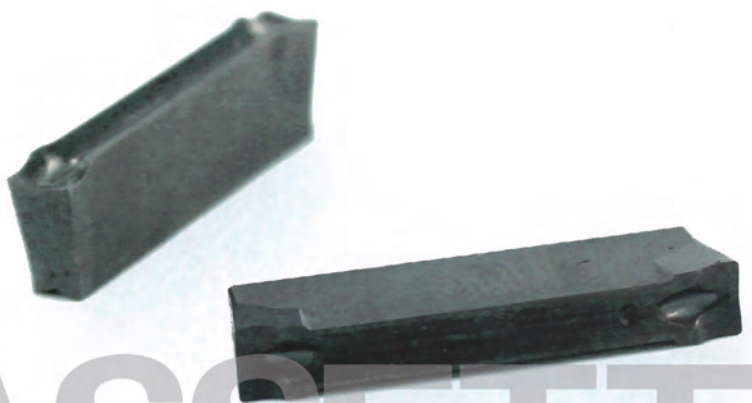


Model		Amount of Teeth	Dimension			Weight	Model of Inserts	Adaptive Insert
			D	d	L			
FF-SOF	**D50-22R-4T**	4	50	22	40	0.3	SN..1305..	
	D63-22R-6T	6	63	22	40	0.5		
	D80-27R-7T	7	80	27	50	1.2		
	D100-32R-8T	8	100	32	50	1.2		
	D125-40R-10T	10	120	40	63	1.8		

▶ Introduction of Milling Inserts B14,B15

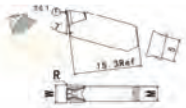
C

Parting and Grooving



BASSETT™

TDSG JS–Single–ended Groove–turn Inserts



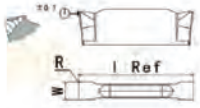
Machining Material			TE5508	TE1019	TE4408	TE0619
	P	Steel	◐	●		
	M	Stainless Steel	◐	◐		●
	K	Cast Iron	◐		●	
	S	High-temp Alloys				●
	H	Hardened Material				●

Working Condition: ● Stable Cutting ◐ General Cutting ✲ Unstable Cutting

Insert Shape	ISO		PVD TE5508	PVD TE1019	PVD TE4408	PVD TE0619	Dimension W$^{\pm 0.05}$	Dimension R$^{\pm 0.02}$	Dimension M	Cutting Data fmin	Cutting Data fmax
	TDSG	**2201N JS**	●	●	●	●	2201	0. 20	1. 4	0. 15	0. 2
		3002N JS	●	●	●	●	3002	0. 22	2. 4	0. 15	0. 2
		4002N JS	●	●	●	●	4002	0. 25	3. 4	0. 15	0. 24

▶ Introduction of Grooving Grades B5 ▶Adaptive Holder and Blade C4,C5 ● Prior Recommended

TDCG JS–Double–ended Groove–turn Inserts



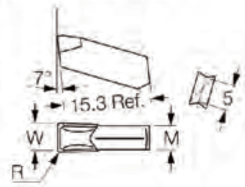
Machining Material			TE5508	TE1019	TE4408	TE0619
	P	Steel	◐	●		
	M	Stainless Steel	◐	◐		●
	K	Cast Iron	◐			
	S	High-temp Alloys				●
	H	Hardened Material				●

Working Condition: ● Stable Cutting ◐ General Cutting ✲ Unstable Cutting

Insert Shape	ISO		PVD TE5508	PVD TE1019	PVD TE4408	PVD TE0619	Dimension	W	W$^{\pm 公差}$	R	T_{max-r}	l Ref.	Cutting Data fmin	Cutting Data fmax
	TDCG	**1502N JS**	●	●		●	1502	1. 5	0. 03	0. 2	18	20. 9	0. 03	0. 1
		2002N JS	●	●		●	2002	2	0. 03	0. 2	18	19. 8	0. 04	0. 1
		3002N JS	●	●		●	3002	3	0. 04	0. 2	–	20. 1	0. 04	0. 13
		4003N JS	●	●		●	4003	4	0. 04	0. 3	–	18. 8	0. 05	0. 15
		5003N JS	●	●		●	5003	5	0. 04	0. 3	–	19. 1	0. 05	0. 16
		6003N JS	●	●		●	6003	6	0. 04	0. 3	–	19. 1	0. 05	0. 32

▶ Introduction of Grooving Grades B5 ▶Adaptive Holder and Blade C3,C5 ● Prior Recommended

TDCG CH- Single-ended Groove-turn Inserts



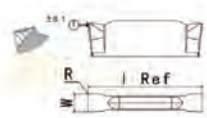
Machining Material							
P	Steel	◐	●				
M	Stainless Steel	◐	◐		●		
K	Cast Iron	◐		●			
S	High-temp Alloys				●		
H	Hardened Material				●		

Working Condition: ● Stable Cutting ◐ General Cutting ✤ Unstable Cutting

Insert Shape	ISO		PVD TE5508	PVD TE1019	PVD TE4408	PVD TE0619	尺寸 $W^{\pm0.05}$	尺寸 $R^{\pm0.02}$	尺寸 M	Cutting Data fmin	Cutting Data fmax
	TDSG	3002N CH	●	●	●	●	3. 00	0. 22	2. 4	0. 15	0. 2
		4002N CH	●	●	●	●	4. 00	0. 25	3. 4	0. 15	0. 24

▶ Introduction of Grooving Grades B5 ▶Adaptive Holder and Blade C4,C5 ● Prior Recommended

TDCG CH- Double-ended Groove-turn Inserts

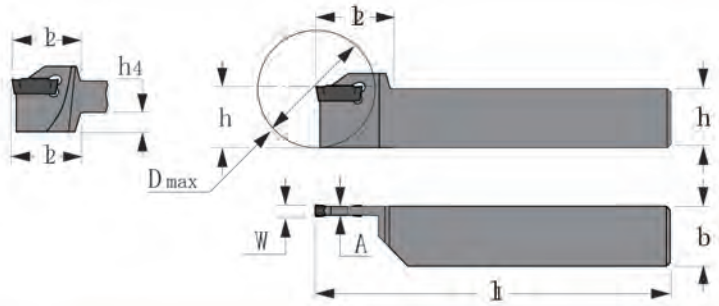


Machining Material					
P	Steel	●	●	◐	
M	Stainless Steel				
K	Cast Iron			◐	●
S	High-temp Alloys				
H	Hardened Material				

Working Condition: ● Stable Cutting ◐ General Cutting ✤ Unstable Cutting

Insert Shape	ISO		PVD TE0619	PVD TE1019	PVD TE5508	PVD TE4408	Dimension	W	$W^{\pm公差}$	R	T_{max-r}	IRef.	Cutting Data fmin	Cutting Data fmax
	TDCG	2002N CH	●	●	●	●	2202	2	0. 03	0. 2	18	19. 9	0. 05	0. 13
		3002N CH	●	●	●	●	3002	3	0. 04	0. 2	18	20. 1	0. 1	0. 2
		4003N CH	●	●	●	●	4002	4	0. 04	0. 3	-	18. 8	0. 1	0. 24
		5003N CH	●	●	●	●	5003	5	0. 04	0. 3	-	19. 1	0. 12	0. 28
		6003N CH	●	●	●	●	6002	6	0. 04	0. 3	-	19. 1	0. 15	0. 32

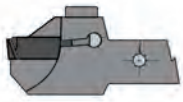
▶ Introduction of Grooving Grades B5 ▶Adaptive Holder and Blade C3,C5 ● Prior Recommended



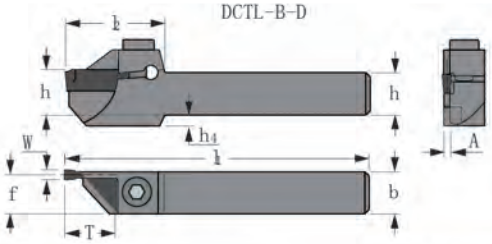
Model of Holder		Dimension								Adaptive Inserts	Wrench
		W	h	b	A	l1	l2	h4	Dmax		
TDTR/L	**1010-2**	2	10	10	1.8	150	29	6.6	35	TD..2	L33B
	1212-2	2	12	12	1.8	150	29	6.6	35	TD..2	L33B
	1616-2	2	16	16	1.8	150	29	2.6	35	TD..2	L33B
	2012-2	2	20	12	1.8	125	29	/	35	TD..2	L33A
	1212-3	3	12	12	2.5	150	29	6.6	35	TD..3	L33B
	1616-3	3	16	16	2.5	150	29	6.6	35	TD..3	L33B
	2012-3	3	20	12	2.5	125	29	/	35	TD..3	L33A
	2020-3	3	20	20	2.5	125	29	/	35	TD..3	L33A
	2525-3	3	25	25	2.5	150	29	/	35	TD..3	L33A
	2020-4	4	20	20	3.4	125	31	/	51	TD..4	L33A
	2020-4	4	25	25	3.4	150	31	/	51	TD..4	L33A
	2020-5	5	20	20	4	125	33	/	59	TD..5	L33A
	2525-5	5	25	25	4	150	33	/	76	TD..5	L33A
	2525-6	6	25	25	5.3	150	33	/	76	TD..6	L33A

▶ Introduction of Grooving C1-C2

DCTL-BC-D



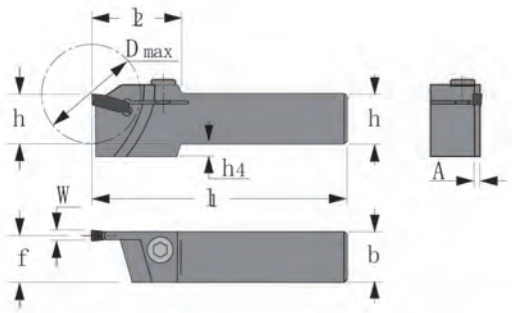
DCTL-B-D

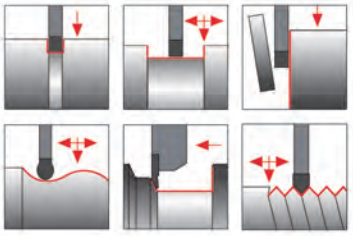


Model of Holder		Dimension							Adaptive Inserts
		W	h	b	A	l1	l2	h4	
DCTR/L	**10B-2D30**	2	10	10	1.6	140	29.6	6.6	TG..2
	12B-2D30	2	12	12	1.6	140	29.6	3.5	TG..2
	16B-2D30	2	16	16	1.6	140	30.6	/	TG..2
	20B-2D35	2	25	20	1.6	140	32.1	/	TG..2
	25B-2D35	2	25	25	1.6	140	32.1	/	TG..2
	12B-3D30	3	12	12	2.4	140	29.6	3.5	TG..3
	16B-3D35	3	16	16	2.4	140	32.1	2.6	TG..3
	20B-3D40	3	20	20	2.4	140	35.6	/	TG..3
	25B-3D40	3	25	25	2.4	140	35.6	/	TG..3

▶ Introduction of Grooving C1-C2

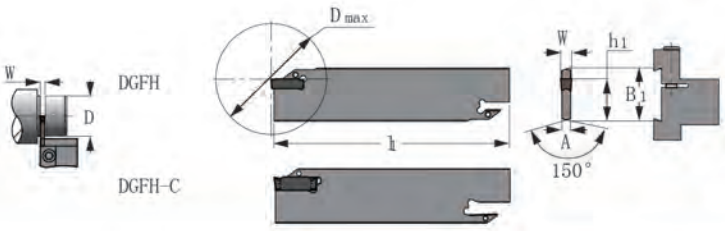
Single Grooving Holder





Model of Holder		Dimension								Adaptive Inserts	Wrench
		W	h	b	A	l1	l2	h4	Dmax		
TDGR/L	**20-2**	2	20	20	1.7	120	33	/	34	TDS..2	LM4.0
	25-2	2	25	25	1.7	140	33	/	34	TDS..2	LM4.0
	16-3	3	16	16	2.5	110	36	4	40	TDS..3	LM5.0
	16-3	3	16	16	2.4	78	33	4	34	TDS..3	LM5.0
	20-3	3	20	20	2.5	120	36	/	40	TDS..3	LM5.0
	25-3	3	25	25	2.5	140	36	/	40	TDS..3	LM5.0
	16-4	4	16	16	3.2	110	36	4	40	TDS..4	LM5.0
	20-4	4	20	20	3.5	120	36	/	40	TDS..4	LM5.0
	25-4	4	25	25	3.5	140	36	/	40	TDS..4	LM5.0
	25-425	4	25	25	3.5	140	41	/	50	TDS..4	LM5.0
	2 5-5	5	25	25	4.2	140	41	/	50	TDS..5	LM5.0
	3 2-5	5	32	32	4.2	150	41	/	50	TDS..5	LM5.0
	25-630	6	25	25	5.4	140	45	/	60	TDS..6	LM5.0
	32-632	6	32	32	5.4	170	50	/	64	TDS..6	LM5.0

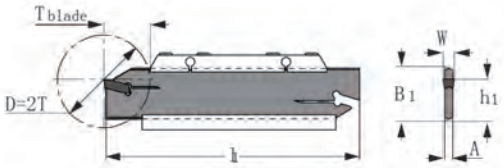
▶ Introduction of Grooving C2

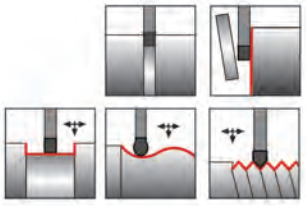


Model of Holder		Dimension						Adaptive Inserts
		W	A	B	l1	h1	Dmax	
GDFH	2 6-2	2	1.6	26	110	21.4	39	TD. . 2
	2 6-3	3	2.4	26	110	21.4	39	TD. . 3
	26C-3	3	2.4	26	110	21.4	39	TD. . 3
	2 6-4	4	3.2	26	110	21.4	80	TD. . 4
	32-1.4	4	2.5	32	150	24.8	26	TD. . 4
	3 2-2	2	1.8	32	150	24.8	39	TD. . 2
	3 2-3	3	2.4	32	150	24.8	39	TD. . 3
	32C-3	3	2.4	32	150	24.8	39	TD. . 3
	3 2-4	4	3.2	32	150	24.8	100	TD. . 4
	32C-4	4	3.2	32	150	24.8	69	TD. . 4
	3 2-5	5	4	32	150	24.8	120	TD. . 5
	3 2-6	6	5.2	32	150	24.8	120	TD. . 6
	4 5-3	3	2.4	45	225	38	160	TD. . 3
	4 5-4	4	3.2	45	225	38	160	TD. . 4
	4 5-5	5	4	45	225	38	160	TD. . 5
	4 5-6	6	5.2	45	225	38	160	TD. . 6

▶ Introduction of Grooving C1-C2

Single Grooving Plate





Model of Holder		Dimension						Adaptive Inserts
		W	A	B	l1	h1	Dmax	
GJFH	**CGHN 26-3D**	3	2.4	26	110	21.4	15.0	TDS. . 3
	CGHN 26-4D	4	3.2	26	110	21.4	15.0	TDS. . 4
	CGHN 26-5D	5	4.0	26	110	21.4	20.0	TDS. . 5
	CGHN 32-3D	3	2.4	26	110	21.4	19.0	TDS. . 3
	CGHN 32-4D	4	3.2	26	110	21.4	21.0	TDS. . 4
	CGHN 32-5D	5	4.0	32	150	24.8	26.0	TDS. . 5
	CGHN 32-6D	6	5.2	32	150	24.8	26.0	TDS. . 6

▶ Introduction of Grooving C2

D turning

Application Comparison Table of Turning Grade

Workpiece Material	ISO	Coated Carbide Alloy		Uncoated Carbide Alloy	Cermet
		CVD	PVD		
P Steel	01	TE0690			
	10	TE1090			
	20	TE2790			
	30	TE2880			
	40	TE2890			
	50	TE2980			
	60	TE5580			
M Stainless Steel	01		TE0608		
	10		TE1008		
	20				
	30	TE5580			
	40				
	50				
K Cast Iron	01				
	10	TE4480			
	20				
	30	TE5580			
	40				
	50				
S High-temp Alloys	01				
	10		TE1008		
	20	TE5580			
	30		TE0608		
	40				
H Hardened Material	01				
	10	TE0690			
	20				
	30				
	40				

Grade	ISO	Introduction
TE0608	M05-M15	For high speed machining on stainless steel, high hardness and high wear resistance.
	S10-S20	High-temp alloys machining, high hardness and high wear resistance.
TE0690	P05-P15	For finishing on carbon steel and alloy steel , good wear resistance.
	H05-H20	For finishing on hard material, good wear resistance, suitable for continuous cutting.
TE1090	P10-P25	Good wear resistance and high hardness, suitable for finishing and semi-finishing of alloy steel.
NEW! TE1008	M10-M20	Good wear resistance, suitable for high speed cutting in stable working conditions of stainless steel.
	S25-S30	Low speed feed, high-temp alloys for medium to low cutting.
TE2790	P10-P20	For generally continuous finishing on steel, good heat resistance.
NEW! TE2880	P20-P30	Suitable for interrupted medium machining on steel, good chipping resistance.
NEW! TE2890	P20-P30	Suitable for occasionally interrupted finishing and semi-finishing on steel.
NEW! TE2980	P30-P40	Suitable for interrupted machining on steel, good chipping resistance and wear resistance.
TE4480	K05-K20	For general machining on cast iron, good wear resistance.
TE5508	P30-P45	For interrupted cutting on low carbon steel and low carbon alloy steel, good toughness for roughing, suitable for unstable working conditions.
	M30-M40	Good toughness and wear resistance, recommended for interrupted cutting of stainless steel.
	K25-K40	For interrupted roughing on cast iron. Ductile cutting, sturdy grade.
	S20-S30	For interrupted cutting on high-temp alloys.

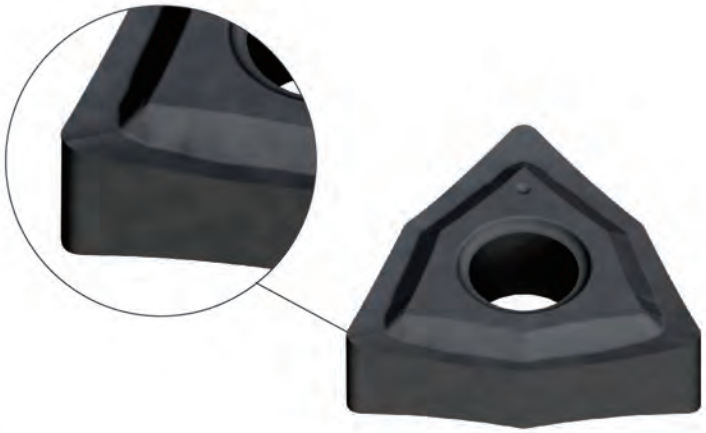
NEW

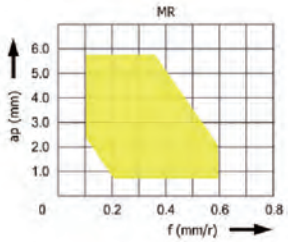
New Product of Turning

NEW!

WNMG 080408 BBQ TE1008/TE0608

BBQ Geometry：
Finishing of Stainless Steel
Excellent design of cutting edge, provides fluent evacuation.
Mature formula of matrix, adding high performance PVD coated technology, good wear resistance and chipping resistance.





NEW!

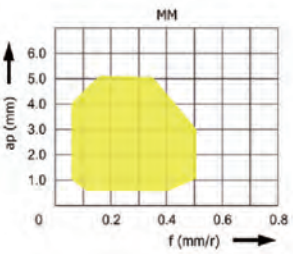
WNMG 080408 BM TE1008/TE0608

BM Geometry：
Semi-roughing And Medium Machining of Stainless Steel
Perfect combination of ultrafine particle matrix and PVD coated, improves wear resistance and impact resistance.

Test Report

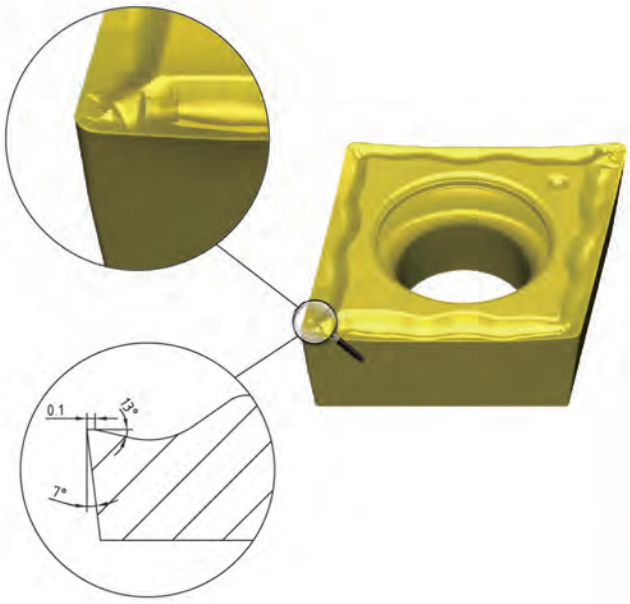
- SL25 SenJing NC Lathe
- Working Procedure
- Cooling Mode:Cutting Fluid
- Workpiece:Diameter200MMBarstock
- Material:SUS304Stainless Steel
- Testing Time:2017

Technical Parameters		WNWG 080408 BM TE1008	WNMG 080408 XX(A Brand of Japan)
Workpiece Diameter	D=200MM	otal Number of Processed Length：58950	otal Number of Processed Length：42640
Inserts on Trial	Vc(m/min):120	Shape of Iron Scurf：Model C	Shape of Iron Scurf：Model C
	Ap(mm):1.5	Surface Roughness：R1.6	Surface Roughness：R1.6
	Fn(mm):0.12	Final State：Broken Angle	Final State：chipping
Summary:			



NEW

Turning Geometry-positive



SF new Chipbreaker

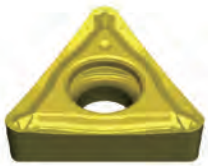
SF Features

- The SF chipbreaker has excellent evacuation in high speed and continuous cutting.
- Wide front angle edge can reduce cutting contact.
- Excellent cutting control, high resistance to crater wear,suitable for thin and long holder.

NEW

SF Series

55°Rhombic（Positive）-DCMT
DCMT SF-Finishing Inserts

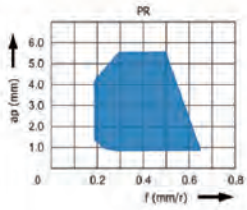
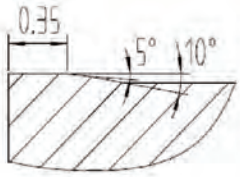
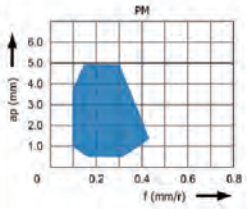
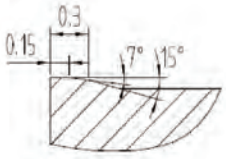
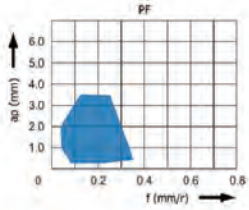
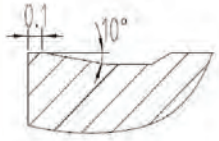
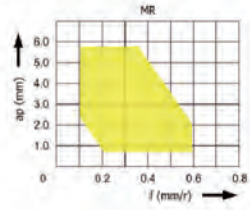
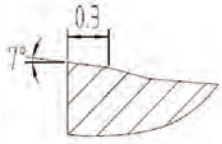
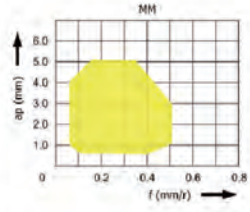
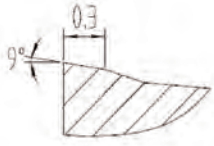


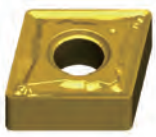
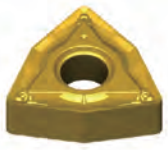
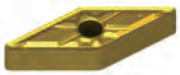
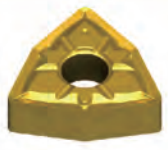
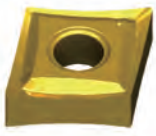
60° Triangle（Positive）-TCMT
TCMT SF-Finishing Inserts

80°Rhombic（Positive）-CCMT
CCMT SF-Finishing Inserts

90°Square（Positive）-SCMT
SCMT SF-Finishing Inserts

Turning Geometry-Negative

Geometry	Application Features	Chipbreaker Range	Section of Chipbreaker
UR	UR for rough cutting action of carbon steels, cast steels and alloy steels. Double-sided chipbreaker. Variable rake angle and land width realize enough edge sharpness and strength at different depth of cut.		
RN	RN for semi-finishing of general steel, cast iron and alloy steel, double-sided chipbreaker. Strong flat cutting edge.		
MR	MR for finishing of general steel, alloy steel and stainless steel, double-sided chipbreaker. Sharp tool nose and strong cutting edge. Good chip control under small cutting depth. Good strength under big cutting depth.		
BM	BM for roughing cutting of steel and stainless steel, double-sided chipbreaker. Applicable for semi-finishing . Suitable for general materials.		
BBQ	BBQ for medium cutting of stainless steel, double-sided chipbreaker. Small cutting resistance, fluent evacuation.		

80° Rhombic	55° Rhomboic	90° Square	60° Triangle	35° Rhomboic	80° Hexagon
					
CNMG UR	DNMG UR	SNMG UR			WNMG UR
D 9	D 11	D 12			D 15
					
CNMG RN	DNMG RN	SNMG RN	TNMG RN		WNMG RN
D 9	D 11	D 12	D 13		D 15
					
CNMG MR	DNMG MR	SNMG MR	TNMG MR	VNMG MR	WNMG MR
D 9	D 11	D 12	D 13	D 14	D 15
					
CNMG BM	DNMG BM	SNMG BM	TNMG BM	VNMG BM	WNMG BM
D 10	D 11	D 12	D 13	D 14	D 15
					
CNMG BBQ	DNMG BBQ	SNMG BBQ	TNMG BBQ		WNMG BBQ
D 10	D 11	D 12	D 13		D 15

② Relief Angle Symbol

Symbol	Relief Angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Others

③ Tolerance Symbol

Symbol	Tolerance (mm)			Tolerance (inch)		
	Corner Height (m)	Thickness (s)	I.C.Size (Ød)	Corner Height (m)	Thickness (s)	I.C.Size (Ød)
A	±0.005	±0.025	±0.025	±0.0002	±0.001	±0.001
F	±0.005	±0.025	±0.013	±0.0002	±0.001	±0.0005
C	±0.013	±0.025	±0.025	±0.0005	±0.001	±0.001
H	±0.013	±0.025	±0.013	±0.0005	±0.001	±0.0005
E	±0.025	±0.025	±0.025	±0.001	±0.001	±0.001
G	±0.025	±0.130	±0.025	±0.001	±0.005	±0.001
J	±0.005	±0.025	±0.05~±0.13	±0.0002	±0.001	±0.002~±0.005
K	±0.013	±0.025	±0.05~±0.13	±0.0005	±0.001	±0.002~±0.005
L	±0.025	±0.025	±0.05~±0.13	±0.001	±0.001	±0.002~±0.005
M	±0.08~±0.18	±0.130	±0.05~±0.13	±0.003~±0.007	±0.005	±0.002~±0.005
N	±0.08~±0.18	±0.025	±0.05~±0.13	±0.003~±0.007	±0.001	±0.002~±0.005
U	±0.13~±0.38	±0.130	±0.08~±0.25	±0.005~±0.0015	±0.005	±0.003~±0.01

④ Chipbreaker、Hole Symbol

Symbol	Hole	Hole Shape	Chipbreaker	Shape
N	Without	—	Without	
R			Single-sided	
F			Double-sided	
A	With	With Hole	Without	
M			Single-sided	
G			Double-sided	
W		one countersink	Without	
T			Single-sided	
Q		twocountersinks	Without	
U			Double-sided	
X	—	—	—	Special

①	②	③	④	⑤
Shape Symbol	Relief Angle Symbol	Tolerance Symbol	Chipbreaker And Hole Symbol	Cutting Edge Length Symbol
C	N	M	G	12

① Shape Symbol

Symbol	Shape	Corner Angle	Figure
H	Hexagon	120°	
O	Octagon	135°	
P	Pentagon	108°	
S	Square	90°	
T	Triangle	60°	
C	Rhombic	80°	
D		55°	
E		75°	
F		50°	
M		86°	
V		35°	
W	Trigon	80°	
L	Rectangle	90°	
A	Parellelogram	85°	
B		82°	
K		55°	
R	Round	—	

⑤ Cutting Edge Length Symbol

Inch Symbol	I.C.Size (in)	I.C.Size (mm)	R	S	C	W	T	D	V
1	1/8"	3.18							
1.2	5/32"	3.97		03			06	04	
1.5	3/16"	4.76		04	04		08	05	
		5	05						
1.8	7/32"	5.56		05	05	03	09	06	
		6	06						
2	1/4"	6.35		06	06	04	11	07	11
2.5	5/16"	7.94		07	08	05	13	09	
		8	08						
3	3/8"	9.53	09	09	09	06	16	11	16
		10	10						
3.5	7/16"	11.11	11	11	11	7	19	13	19
		12	12						
4	1/2"	12.7	12	12	12	08	22	15	22
5	5/8"	15.88	15	15	16	10	27	19	
		16	16						
6	3/4"	19.05	19	19	19	13	33	23	
		20	20						
7	7/8"	22.225		22	22		38	27	
		25	25						
8	1"	25.4	25	25	25		44	31	
10	1 1/4"	31.75	31	31	32		55	38	
		32	32						
	1 1/2"	38.1		38					

Insert Shape:S,T,C,W,R								
I.C.Size (mm)	Tolerance of I.C.Size (Ød) (mm)		Tolerance of Corner Height (m) (in)		I.C.Size (in)	Tolerance of I.C.Size (Ød) (in)		Tolerance of Corner Height (m) (in)	
	Class M	Class U	Class M	Class U		Class M	Class U	Class M	Class U
6.35	±0.05	±0.08	±0.08	±0.13	1/4"	±0.002	±0.003	±0.003	±0.005
9.525					3/8"				
12.7	±0.08	±0.13	±0.13	±0.2	1/2"	±0.003	±0.005	±0.005	±0.008
15.88	±0.1	±0.18	±0.15	±0.27	5/8"	±0.004	±0.007	±0.006	±0.011
19.05					3/4"				
25.4	±0.13	±0.25	±0.18	±0.38	1"	±0.005	±0.010	±0.007	±0.015
31.75	±0.15	±0.25	±0.2	±0.38	1 1/4"	±0.006	±0.010	±0.008	±0.015
32					1.26"				

Insert Shape：D					
I.C.Size		Tolerance of I.C.Size (Ød)		Tolerance of Corner Height (m)	
mm	in	mm	in	mm	in
6.35	1/4"	±0.05	±0.002	±0.11	±0.004
9.53	3/8"	±0.05	±0.002	±0.11	±0.004
12.7	1/2"	±0.08	±0.003	±0.15	±0.006
15.88	5/8"	±0.10	±0.004	±0.18	±0.007
19.05	3/4"	±0.10	±0.004	±0.18	±0.007

Insert Shape：V					
I.C.Size		Tolerance of I.C.Size (Ød)		Tolerance of Corner Height (m)	
mm	in	mm	in	mm	in
6.35	1/4"	±0.05	±0.002	±0.15	±0.006
9.53	3/8"	±0.05	±0.002	±0.15	±0.006
12.7	1/2"	±0.08	±0.003	±0.20	±0.008
15.88	5/8"	±0.10	±0.004	±0.27	±0.011
19.05	3/4"	±0.10	±0.004	±0.27	±0.011

⑥ Thickness Symbol **04**

⑦ Nose Radius Symbol **08**

⑧ Chipbreaker Symbol **BM**

(ISO)

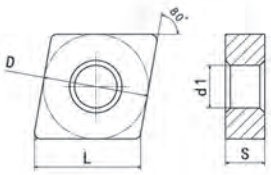
⑥ Thickness Symbol			
Inch Symbol	Metric Symbol	Thickness (in)	Thickness (mm)
	00		0.79
	T0		0.99
1	01	1/16"	1.59
1.2	T1	5/64"	1.98
1.5	02	3/32"	2.38
	T2		2.58
2	03	1/8"	3.18
2.5	T3	5/32"	3.97
3	04	3/16"	4.76
	T4		4.96
3.5	05	7/32"	5.56
	T5		5.95
4	06	1/4"	6.35
	T6		6.75
5	07	5/16"	7.94
6	09	3/8"	9.53
	T9		9.72
7	11	7/16"	11.11
8	12	1/2"	12.7
9		9/16"	14.29
10		5/8"	15.88

⑦ Nose radius Symbol			
Inch Symbol	Metric Symbol	Nose radius (in)	Nose radius (mm)
0	00		0.0
0.2		1/256"	0.1
0.5	02	1/128"	0.2
1	04	1/64"	0.4
2	08	1/32"	0.8
3	12	3/64"	1.2
4	16	1/16"	1.6
5		5/64"	
6	24	3/32"	2.4
7		7/64"	
8	32	1/8"	3.2
10		5/32"	
12		3/16"	
14		7/32"	
16		1/4"	
X	X	Others	Others
	00	Round inserts Diameter of insert	
	M0		

⑧ Chipbreaker Symbol
Chipbreaker designation Indicating the cutting properties of the chipbreaker

Cutting direction (optional)	
Symbol	direction
R	Right hand
L	Left hand
N	Neutral

80° Rhombic with hole



Dimension	L	D	d1	S
0903	9.7	9.5	3.8	3.2
1204	12.9	12.7	5.2	4.8
1606	16.1	15.9	15.9	6.4
1906	19.3	19.1	19.1	6.4

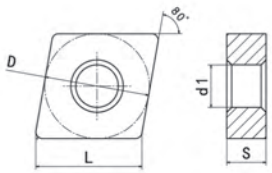
Machining Material			Working Condition
P	Steel	◐ ✱ ● ✱	● Stable Cutting
M	Stainless Steel	● ●	◐ General Cutting
K	Cast Iron	◐ ● ✱	✱ Unstable Cutting
S	High-temp Alloys	✱ ● ●	
H	Hardened Material	●	

Insert Shape	ISO		Radius	Coated Grade									Cutting Data			
			R	TE1090	TE2790	TE2880	TE2890	TE2980	TE0690	TE4480	TE5508	TE0608	TE1008	fmin	fmax	apmin	apmax
 Roughing	CNMG	**120408 UR**	0.8			●		●	●	●	●			0.15	0.36	1.00	4.50
		120412 UR	1.2			●		●	●	●	●			0.23	0.44	1.00	5.00
		120416 UR	1.6			●		●	●	●	●			0.30	0.48	1.00	5.00
		160608 UR	0.8			●			●					0.25	0.50	1.00	6.00
		160612 UR	1.2			●			●					0.30	0.60	2.00	7.00
		160616 UR	1.6			●			●					0.30	0.70	2.00	7.00
		190608 UR	0.8			●			●					0.30	0.72	3.00	8.00
		190612 UR	1.2			●		●	●					0.30	0.80	3.00	8.00
		190616 UR	1.6			●		●	●					0.40	0.85	4.00	10.00
		190624 UR	2.4			●		●	●					0.40	1.20	4.00	10.00
 Roughing And Semi-roughing	CNMG	**120404 RN**	0.4			●		●	●	●	●			0.14	0.32	1.00	4.00
		120408 RN	0.8			●		●	●	●	●			0.16	0.36	1.00	4.50
		120412 RN	1.2			●		●	●	●	●			0.22	0.40	1.50	5.00
		160612 RN	1.2			●			●					0.22	0.60	2.00	7.00
		160616 RN	1.6			●			●					0.22	0.75	2.00	7.00
		190608 RN	0.8			●			●					0.20	0.70	1.50	8.00
		190612 RN	1.2			●			●	●	●			0.20	0.70	2.00	7.00
 Medium Machining	CNMG	**090304 MR**	0.4			●			●			●	●	0.10	0.40	0.50	3.00
		090308 MR	0.8			●			●			●	●	0.15	0.50	0.50	4.00
		120404 MR	0.4			●		●	●	●	●	●	●	0.10	0.40	0.30	4.00
		120408 MR	0.8			●		●	●	●	●	●	●	0.15	0.50	0.30	4.50
		120412 MR	1.2			●		●	●	●	●	●	●	0.20	0.60	0.80	5.00
		160612 MR	1.2			●			●			●	●	0.15	0.60	0.80	5.00
		190608 MR	0.8			●			●			●	●	0.10	0.50	0.50	5.00
		190612 MR	1.2						●			●	●	0.15	0.50	0.80	5.00

▶Introduction of Turning Grade D1-D2 ▶Introduction of Turning Geometry D5-D6
▶Turning Inserts ISO Designation System D7-D8 ▶Suitable Holder D21,D35

● Prior Recommended

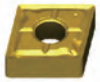
80° Rhombic with hole



Dimension	L	D	d1	S
0903	9.7	9.5	3.8	3.2
1204	12.9	12.7	5.2	4.8
1606	16.1	15.9	15.9	6.4
1906	19.3	19.1	19.1	6.4

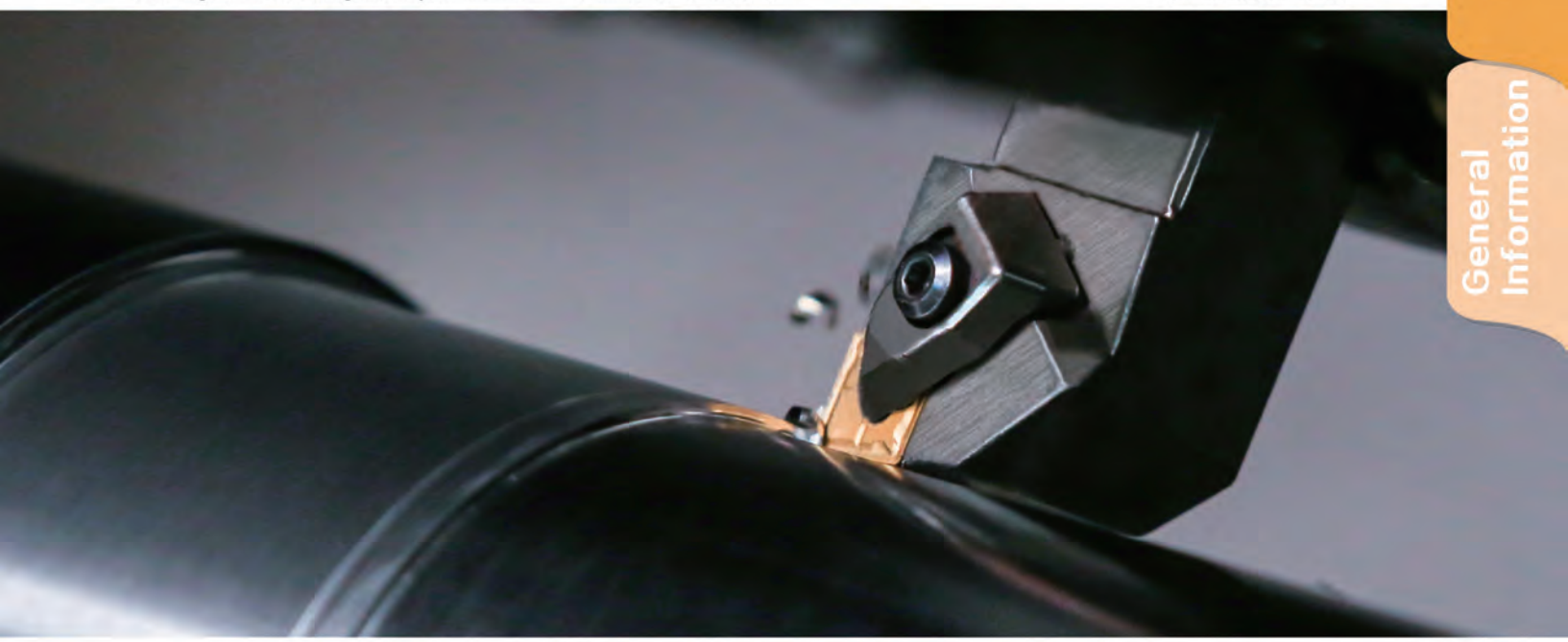
Machining Material												
P	Steel	●	●		◐		●					
M	Stainless Steel									●	●	
K	Cast Iron		●		◐							
S	High-temp Alloys									●	●	
H	Hardened Material						●					

Working Condition
● Stable Cutting
◐ General Cutting
✱ Unstable Cutting

Insert Shape	ISO		Radius	Coated Grade									Cutting Data			
			R	TE1090	TE2790	TE2880	TE2890	TE2980	TE0690	TE4480	TE5508	TE0608	TE1008	fmin	fmax	apmin	apmax
 Semi-finishing	CNMG	**090304 BM**	0.4	○	●		●		●			●	●	0.06	0.30	0.30	2.00
		090308 BM	0.8	○	●		●		●			●	●	0.08	0.40	0.40	2.00
		120404 BM	0.4	○	●		●		●			●	●	0.06	0.30	0.30	2.50
		120408 BM	0.8	○	●		●		●			●	●	0.08	0.40	0.40	2.50
		120412 BM	1.2	○	●		●		●			●	●	0.10	0.50	0.50	2.50
		160608 BM	0.8	○	●		●		●			●	●	0.08	0.40	0.40	3.00
		160612 BM	1.2	○	●		●		●			●	●	0.10	0.50	0.50	3.00
		190612 BM	1.2	○	●		●		●			●	●	0.10	0.50	0.50	3.00
 Finishing	CNMG	**120404 BBQ**	0.4	○	●		●		●			●	●	0.14	0.24	1.00	4.00
		120408 BBQ	0.8	○	●		●		●			●	●	0.14	0.24	1.00	4.00
		120412 BBQ	1.2	○	●		●		●			●	●	0.18	0.32	1.00	4.50
		—	—											—	—	—	—

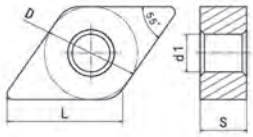
▶Introduction of Turning Grade D1-D2 ▶Introduction of Turning Geometry D5-D6
▶Turning Inserts ISO Designation System D7-D8 ▶Suitable Holder D21,D35

○ Generally Recommended
● Prior Recommended



55° Rhombic with hole

Dimension	L	D	d1	S
1504	15.5	12.7	5.2	4.8
1506	15.5	12.7	5.2	6.4
1104	11.6	9.5	3.8	4.8



Machining Material			TE1090	TE2790	TE2880	TE2890	TE2980	TE0690	TE4480	TE5508	TE0608	TE1008
	P	Steel	●	●	◐	◐	✱	●		✱		
	M	Stainless Steel									●	●
	K	Cast Iron		●	◐	◐	◐		●			
	S	High-temp Alloys								✱	●	●
	H	Hardened Material						●				

Working Condition

● Stable Cutting
◐ General Cutting
✱ Unstable Cutting

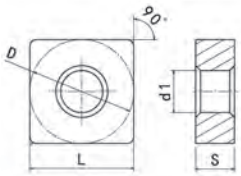
Insert Shape	ISO		Radius R	Coated Grade									Cutting Data			
				TE1090	TE2790	TE2880	TE2890	TE2980	TE0690	TE4480	TE5508	TE0608	TE1008	fmin	fmax	apmin	apmax
 Roughing	DNMG	**150412 UR**	1.2			●		○	●	●	●			0.25	0.60	1.00	4.00
		150612 UR	1.2			●		○	●	●	●			0.25	0.50	2.00	6.00
		150616 UR	1.6			●		○	●	●	●			0.25	0.60	2.00	8.00
		—	—											—	—	—	—
 Roughing and Semi-roughing	DNMG	**110408 RN**	0.8			●		○	●	●	●			0.10	0.30	0.50	3.00
		110412 RN	1.2			●		○	●	●	●			0.15	0.40	0.50	3.00
		150408 RN	0.8			●		○	●	●	●			0.15	0.40	1.00	3.50
		150412 RN	1.2			●		○	●	●	●			0.20	0.50	1.00	4.00
		150608 RN	0.8			●		○	●	●	●			0.15	0.40	1.00	3.50
		150612 RN	1.2			●		○	●	●	●			0.20	0.50	1.00	4.50
 Medium Machining	DNMG	**110404 MR**	0.4	●	●		●	○	●			●		0.20	0.50	0.30	3.00
		110408 MR	0.8	●	●		●	○	●			●		0.20	0.50	0.50	3.00
		150404 MR	0.4	●	●		●	○	●			●		0.20	0.50	0.30	3.00
		150408 MR	0.8	●	●		●	○	●			●		0.20	0.50	0.50	3.50
		150412 MR	1.2	●	●		●	○	●			●		0.20	0.50	0.80	4.00
		150604 MR	0.4	●	●		●	○	●			●	●	0.20	0.50	0.30	3.00
		150608 MR	0.8	●	●		●	○	●			●	●	0.20	0.50	0.50	3.50
		150612 MR	1.2	●	●		●	○	●			●	●	0.20	0.50	0.80	4.50
 Medium Machining	DNMG	**110404 BM**	0.4	●	●		●	○	●			●		0.10	0.30	1.00	3.00
		150404 BM	0.4	●	●		●	○	●			●		0.10	0.30	1.00	3.00
		150408 BM	0.8	●	●		●	○	●			●		0.10	0.30	1.00	3.50
		150604 BM	0.4	●	●		●	○	●			●	●	0.10	0.24	1.00	3.00
		150608 BM	0.8	●	●		●	○	●			●	●	0.10	0.24	1.00	3.50
		150612 BM	1.2	●	●		●	○	●			●	●	0.10	0.24	1.00	3.50
 Finishing	DNMG	**110404 BBQ**	0.4	●	●		●	○	●			●		0.12	0.30	0.40	3.00
		110408 BBQ	0.8	●	●		●	○	●			●		0.12	0.30	0.40	3.00
		150404 BBQ	0.4	●	●		●	○	●			●		0.12	0.30	1.00	3.50
		150408 BBQ	0.8	●	●		●	○	●			●		0.12	0.30	1.00	4.00
		150604 BBQ	0.4	●	●		●	○	●			●	●	0.12	0.24	0.50	4.00
		150608 BBQ	0.8	●	●		●	○	●			●	●	0.12	0.24	1.00	3.50

▶ Introduction of Turning Grade D1-D2 ▶ Introduction of Turning Geometry D5-D6
▶ Turning Inserts ISO Designation System D7-D8 ▶ Suitable Holder D22,D36

○ Generally Recommended
● Prior Recommended

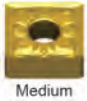
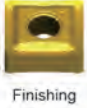
90° Square with hole

Dimension	L	D	d1	S
1204	12.7	12.7	5.2	4.8
1506	15.9	15.9	6.4	6.4
1906	19.1	19.1	7.9	6.4



Machining Material			TE1090	TE2790	TE2880	TE2890	TE2980	TE0690	TE4480	TE5508	TE0608	TE1008
	P	Steel	●	●	◐	◐	◐	●		✱		
	M	Stainless Steel									●	●
	K	Cast Iron		●	◐	◐	◐		●	✱		
	S	High-temp Alloys								✱	●	●
	H	Hardened Material						●				

Working Condition
● Stable Cutting
◐ General Cutting
✱ Unstable Cutting

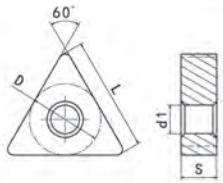
Insert Shape	ISO		Radius	Coated Grade									Cutting Data			
			R	TE1090	TE2790	TE2880	TE2890	TE2980	TE0690	TE4480	TE5508	TE0608	TE1008	fmin	fmax	apmin	apmax
 Roughing	SNMG	**120412 UR**	1.2			●		●	●	●	●			0.30	0.70	2.00	5.00
		120416 UR	1.6			●		●	●	●	●			0.30	0.70	2.50	6.00
		150608 UR	0.8			●		●	●	●	●			0.30	0.70	2.50	8.00
		150612 UR	1.2			●		●	●	●	●			0.30	0.70	2.50	8.00
		150616 UR	1.6			●		●	●	●	●			0.30	0.70	2.50	8.00
		190612 UR	1.2			●		●	●	●	●			0.40	0.85	3.00	8.00
		190616 UR	1.6			●		●	●	●	●			0.40	0.85	3.00	10.00
 Roughing and Semi-roughing	SNMG	**120408 RN**	0.8			●		●	●	●	●			0.20	0.45	1.00	5.00
		120412 RN	1.2			●		●	●	●	●			0.25	0.50	1.40	5.00
		150612 RN	1.2			●		●	●	●	●			0.30	0.60	2.00	7.00
		190612 RN	1.2			●		●	●	●	●			0.40	0.60	2.00	7.00
		190616 RN	1.6			●		●	●	●	●			0.40	0.65	2.00	9.00
 Medium Machining	SNMG	**120404 MR**	0.4	●	●		●	○	●			●	●	0.20	0.45	1.00	5.00
		120408 MR	0.8	●	●		●	○	●			●	●	0.20	0.45	1.00	5.00
		120412 MR	1.2	●	●		●	○	●			●	●	0.25	0.50	1.40	5.00
		150608 MR	0.8	●	●		●	○	●			●	●	0.20	0.50	1.00	5.00
		150612 MR	1.2	●	●		●	○	●			●	●	0.20	0.50	2.00	7.00
		190608 MR	0.8	●	●		●	○	●					0.40	0.60	2.00	7.00
		190612 MR	1.2	●	●		●	○	●					0.40	0.65	2.00	9.00
 Medium Machining	SNMG	**120404 BM**	0.4	●	●		●	○	●			●	●	0.06	0.30	0.30	2.50
		120408 BM	0.8	●	●		●	○	●			●	●	0.08	0.40	0.40	2.50
		120412 BM	1.2	●	●		●	○	●			●	●	0.10	0.50	0.50	2.50
		—	—											—	—	—	—
 Finishing	SNMG	**120408 BBQ**	0.8	●	●		●	○	●			●	●	0.08	0.40	0.40	2.00
		—	—											—	—	—	—
		—	—											—	—	—	—
		—	—											—	—	—	—

▶Introduction of Turning Grade D1-D2 ▶Introduction of Turning Geometry D5-D6
▶Turning Inserts ISO Designation System D7-D8 ▶Suitable Holder D22,D36

○ Generally Recommended
● Prior Recommended

60° Triangle with hole

Dimension	L	D	d1	S
1103	11	6.4	2.7	3.2
1604	16.5	9.5	3.8	4.8
2204	22	12.7	5.2	4.8



Machining Material											
P	Steel	●	●	◐	◐	✱	●		✱		
M	Stainless Steel									●	◐
K	Cast Iron		●	◐	◐	◐		●	✱		
S	High-temp Alloys								✱		
H	Hardened Material						●				

Working Condition

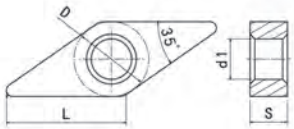
● Stable Cutting
◐ General Cutting
✱ Unstable Cutting

Insert Shape	ISO		Radius	Coated Grade										Cutting Data			
			R	TE1090	TE2790	TE2880	TE2890	TE2980	TE0690	TE4480	TE5508	TE0608	TE1008	fmin	fmax	apmin	apmax
 Roughing and Semi-roughing	TNMG	**160404 RN**	0.4			●		○	●	●	●			0.15	0.30	0.40	5.00
		160408 RN	0.8			●		○	●	●	●			0.20	0.40	0.80	5.00
		160412 RN	1.2			●		○	●	●	●			0.25	0.50	1.00	5.00
		220408 RN	0.8			●		○	●	●	●			0.20	0.40	0.80	7.00
		220412 RN	1.2			●		○	●	●	●			0.25	0.50	1.00	7.00
		220416 RN	1.6			●		○	●	●	●			0.30	0.60	1.50	7.00
 Medium Machining	TNMG	**110304 MR**	0.4	●	●		●	○	●					0.15	0.30	0.40	5.00
		110308 MR	0.8	●	●		●	○	●			●	●	0.20	0.40	0.80	5.00
		160404 MR	0.4	●	●		●	○	●			●	●	0.25	0.50	1.00	5.00
		160408 MR	0.8	●	●		●	○	●			●	●	0.20	0.40	0.80	7.00
		160412 MR	1.2	●	●		●	○	●			●	●	0.25	0.50	1.00	7.00
		220408 MR	0.8	●	●		●	○	●					0.30	0.60	1.50	7.00
		220412 MR	1.2	●	●		●	○	●					0.20	0.50	2.00	8.00
		220416 MR	1.6	●	●		●	○	●					0.20	0.50	2.00	10.00
 Medium Machining	TNMG	**160404 BM**	0.4	●	●		●	○	●			●	●	0.15	0.30	0.40	5.00
		160408 BM	0.8	●	●		●	○	●			●	●	0.20	0.40	0.80	5.00
		160412 BM	1.2	●	●		●	○	●			●	●	0.10	0.40	0.50	2.50
		220404 BM	0.4	●	●		●	○	●			●	●	0.25	0.50	1.00	5.00
		220408 BM	0.8	●	●		●	○	●			●	●	0.20	0.40	0.80	7.00
		220412 BM	1.2	●	●		●	○	●			●	●	0.25	0.50	1.00	7.00
 Finishing	TNMG	**160404 BBQ**	0.4	●	●		●	○	●			●	●	0.15	0.30	0.50	3.00
		160408 BBQ	0.8	●	●		●	○	●			●	●	0.12	0.24	1.00	3.00
		220404 BBQ	0.4	●	●		●	○	●			●	●	0.14	0.32	0.50	3.50
		220408 BBQ	0.8	●	●		●	○	●			●	●	0.14	0.32	1.00	3.50

▶ Introduction of Turning Grade D1-D2 ▶ Introduction of Turning Geometry D5-D6
▶ Turning Inserts ISO Designation System D7-D8 ▶ Suitable Holder D24,D37

○ Generally Recommended
● Prior Recommended

35° Rhombic with hole



Dimension	L	D	d1	S
1604	16.6	9.5	3.8	4.8

Machining Material													Working Condition
	P	Steel	●	●		◐	✱						● Stable Cutting
	M	Stainless Steel									●	●	◐ General Cutting
	K	Cast Iron		●		◐	◐						✱ Unstable Cutting
	S	High-temp Alloys									●	●	
	H	Hardened Material											

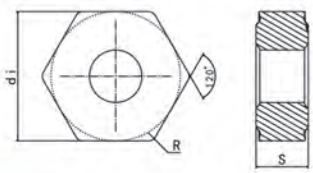
Insert Shape	ISO		Radius	Coated Grade										Cutting Data			
			R	TE1090	TE2790	TE2880	TE2890	TE2980	TE0690	TE4480	TE5508	TE0608	TE1008	fmin	fmax	apmin	apmax
 Medium Machining	VNMG	**160404 MR**	0.4	●	●		●	○				●	●	0.20	0.50	1.00	5.00
		160408 MR	0.8	●	●		●	○				●	●	0.20	0.50	1.00	5.00
		—	—											—	—	—	—
 Semi-finishing	VNMG	**160408 BM**	0.8	●	●		●	○				●	●	0.12	0.30	1.00	4.00
		—	—											—	—	—	—
		—	—											—	—	—	—

►Introduction of Turning Grade D1-D2 ►Introduction of Turning Geometry D5-D6
►Turning Inserts ISO Designation System D7-D8 ►Suitable Holder D25,D37

○ Generally Recommended
● Prior Recommended

Hexagon Turning Inserts for Roughing

Dimension	di	S	R
0504	12.7	4.76	0.8



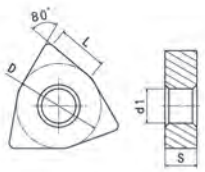
Machining Material													Working Condition
	P	Steel		●		◐	✱			✱			● Stable Cutting
	M	Stainless Steel											◐ General Cutting
	K	Cast Iron		●		◐	◐			✱			✱ Unstable Cutting
	S	High-temp Alloys								✱			
	H	Hardened Material											

Insert Shape	ISO		Radius	Coated Grade										Cutting Data			
			R	TE1090	TE2790	TE2880	TE2890	TE2980	TE0690	TE4480	TE5508	TE0608	TE1008	fmin	fmax	apmin	apmax
	HNMG	**050408 MU**	0.8		●		●	●			●			0.20	0.50	1.00	5.00
		—	—											—	—	—	—
		—	—											—	—	—	—
		—	—											—	—	—	—

►Introduction of Turning Grade D1-D2 ►Introduction of Turning Geometry D5-D6
►Turning Inserts ISO Designation System D7-D8

● Prior Recommended

80° Hexagon with hole



Dimension	L	D	d1	S
0604	6.5	9.5	3.8	4.8
0804	8.7	12.7	5.2	4.8
06T3	6.5	9.5	3.8	4.0

Machining Material												
P	Steel	●	●	◐	◐	✱	●		✱			Working Condition
M	Stainless Steel									●	●	● Stable Cutting
K	Cast Iron		●	◐	◐	◐		●	✱			◐ General Cutting
S	High-temp Alloys								✱	●	●	✱ Unstable Cutting
H	Hardened Material						●					

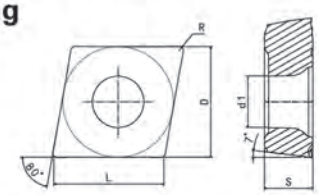
Insert Shape	ISO		Radius	Coated Grade									Cutting Data			
			R	TE1090	TE2790	TE2880	TE2890	TE2980	TE0690	TE4480	TE5508	TE0608	TE1008	fmin	fmax	apmin	apmax
 Roughing	WNMG	080408 UR	0.8			●		○	●	●	●			0.18	0.40	1.00	5.00
		080412 UR	1.2			●		○	●	●	●			0.23	0.44	2.00	5.00
		080416 UR	1.6			●		○	●	●	●			0.30	0.48	2.00	8.00
		—	—											—	—	—	—
 Roughing and Semi-roughing	WNMG	06T304 RN	0.4			●		○	●	●	●			0.14	0.40	1.00	3.50
		06T308 RN	0.8			●		○	●	●	●			0.16	0.45	1.00	3.50
		06T312 RN	0.4			●		○	●	●	●			0.18	0.45	1.00	4.00
		060404 RN	0.4			●		○	●	●	●			0.14	0.40	1.00	3.50
		060408 RN	0.8			●		○	●	●	●			0.16	0.45	1.00	3.50
		060412 RN	1.2			●		○	●	●	●			0.18	0.45	1.00	4.00
		080404 RN	0.4			●		○	●	●	●			0.14	0.32	1.00	4.50
		080408 RN	0.8			●		○	●	●	●			0.16	0.44	1.00	4.50
		080412 RN	1.2			●		○	●	●	●			0.22	0.40	1.00	4.50
 Medium Machining	WNMG	060408 MR	0.8	●	●		●	○	●			●	●	0.20	0.50	1.00	5.00
		080404 MR	0.4	●	●		●	○	●			●	●	0.20	0.50	1.00	5.00
		080408 MR	0.8	●	●		●	○	●			●	●	0.20	0.50	1.00	5.00
		080412 MR	1.2	●	●		●	○	●			●	●	0.20	0.50	1.00	5.00
		080416 MR	1.6	●	●		●	○	●			●	●	0.20	0.50	1.00	5.00
 Medium Machining	WNMG	080404 BM	0.4	●	●		●	○	●			●	●	0.12	0.28	1.00	4.00
		080408 BM	0.8	●	●		●	○	●			●	●	0.12	0.28	1.00	4.00
		080412 BM	1.2	●	●		●	○	●			●	●	0.15	0.32	1.00	4.50
		—	—											—	—	—	—
 Finishing	WNMG	06T304 BBQ	0.4	●	●		●	○	●			●	●	0.14	0.30	1.00	3.50
		06T308 BBQ	0.8	●	●		●	○	●			●	●	0.14	0.30	1.00	3.50
		060404 BBQ	0.4	●	●		●	○	●			●	●	0.14	0.30	1.00	4.00
		060408 BBQ	0.8	●	●		●	○	●			●	●	0.14	0.30	1.00	3.50
		080404 BBQ	0.4	●	●		●	○	●			●	●	0.14	0.35	1.00	3.50
		080408 BBQ	0.8	●	●		●	○	●			●	●	0.14	0.35	1.00	4.00
		080412 BBQ	1.2	●	●		●	○	●			●	●	0.14	0.35	1.00	4.00

▶Introduction of Turning Grade D1-D2 ▶Introduction of Turning Geometry D5-D6
▶Turning Inserts ISO Designation System D7-D8 ▶Suitable Holder D25,D38

○ Generally Recommended
● Prior Recommended

80° Rhombic with hole (Positive)–CCMT

CCMT SF–inserts for finishing



Dimension	D	S	L	d1
0602	6. 35	2. 38	6. 45	2. 8
09T3	9. 52	3. 97	9. 7	4. 4
1204	12. 7	4. 76	12. 9	5. 5

Machining Material												Working Condition
	P	Steel	●	●		◐		●				● Stable Cutting
	M	Stainless Steel								●	●	◐ General Cutting
	K	Cast Iron	●	●		◐						✱ Unstable Cutting
	S	High-temp Alloys								●	●	
	H	Hardened Material						●				

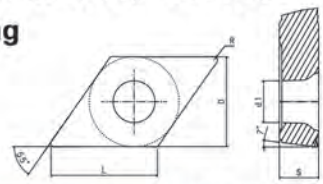
Insert Shape	ISO		Coated Grade									Cutting Data			
			TE1090	TE2790	TE2880	TE2890	TE2980	TE0690	TE4480	TE5508	TE0608	TE1008	fmin	fmax	apmin	apmax
	CCMT	**060202 SF**	○	●		●		●			●	●	0. 40	0. 75	3. 00	7. 00
		060204 SF	○	●		●		●			●	●	0. 40	0. 80	3. 00	7. 00
		060208 SF	○	●		●		●			●	●	0. 40	0. 75	3. 00	7. 00
		09T302 SF	○	●		●		●			●	●	0. 40	0. 80	3. 00	7. 00
		09T304 SF	○	●		●		●			●	●	0. 40	0. 75	3. 00	7. 00
		09T308 SF	○	●		●		●			●	●	0. 40	0. 80	3. 00	7. 00
		120404 SF	○	●		●		●			●	●	0. 40	0. 75	3. 00	7. 00
		120408 SF	○	●		●		●			●	●	0. 40	0. 80	3. 00	7. 00

▶Introduction of Turning Grade D1-D2 ▶Introduction of Turning Geometry D5-D6
▶Turning Inserts ISO Designation System D7-D8 ▶Suitable Holder D26,D38,D39

○ Generally Recommended
● Prior Recommended

55° Rhombic with hole (Positive) –DCMT

DCMT SF–inserts for finishing



Dimension	D	S	L	d1
0702	6. 35	2. 38	7. 70	2. 8
11T3	9. 52	3. 97	11. 6	4. 4

Machining Material												Working Condition
	P	Steel	●	●		◐		●				● Stable Cutting
	M	Stainless Steel								●	●	◐ General Cutting
	K	Cast Iron	●	●		◐						✱ Unstable Cutting
	S	High-temp Alloys								●	●	
	H	Hardened Material						●				

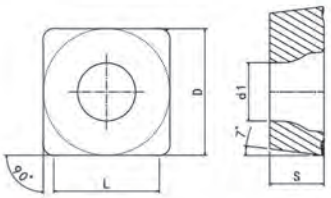
Insert Shape	ISO		Coated Grade									Cutting Data			
			TE1090	TE2790	TE2880	TE2890	TE2980	TE0690	TE4480	TE5508	TE0608	TE1008	fmin	fmax	apmin	apmax
	DCMT	**070202 SF**	○	●		●		●			●	●	0. 40	0. 75	3. 00	7. 00
		070204 SF	○	●		●		●			●	●	0. 40	0. 80	3. 00	7. 00
		070208 SF	○	●		●		●			●	●	0. 40	0. 75	3. 00	7. 00
		11T302 SF	○	●		●		●			●	●	0. 40	0. 80	3. 00	7. 00
		11T304 SF	○	●		●		●			●	●	0. 40	0. 75	3. 00	7. 00
		11T308 SF	○	●		●		●			●	●	0. 40	0. 80	3. 00	7. 00
		11T312 SF	○	●		●		●			●	●	0. 40	0. 80	3. 00	7. 00

▶Introduction of Turning Grade D1-D2 ▶Introduction of Turning Geometry D5-D6
▶Turning Inserts ISO Designation System D7-D8 ▶Suitable Holder D27,D42

○ Generally Recommended
● Prior Recommended

90° Square with hole(Positive)–SCMT

SCMT SF–inserts for finishing



Dimension	D	S	L	d1
09T3	9.52	3.97	9.52	4.4
1204	12.7	4.76	12.7	5.5

Machining Material											
P	Steel	●	●		◐		●				
M	Stainless Steel								●	●	
K	Cast Iron	●	●		◐						
S	High-temp Alloys								●	●	
H	Hardened Material						●				

Working Condition
● Stable Cutting
◐ General Cutting
✱ Unstable Cutting

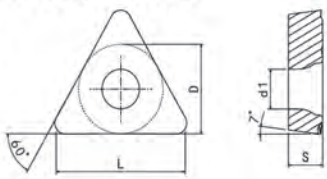
Insert Shape	ISO		Coated Grade									Cutting Data			
			TE1090	TE2790	TE2880	TE2890	TE2980	TE0690	TE4480	TE5508	TE0608	TE1008	fmin	fmax	apmin	apmax
	SCMT	**09T304 SF**	○	●		●		●			●	●	0.40	0.75	3.00	7.00
		09T308 SF	○	●		●		●			●	●	0.40	0.80	3.00	7.00
		120404 SF	○	●		●		●			●	●	0.40	0.75	3.00	7.00
		120408 SF	○	●		●		●			●	●	0.40	0.80	3.00	7.00

►Introduction of Turning Grade D1-D2 ►Introduction of Turning Geometry D5-D6
►Turning Inserts ISO Designation System D7-D8 ►Suitable Holder D28,D29

○ Generally Recommended
● Prior Recommended

60° Triangle with hole(Positive)–TCMT

TCMT SF–inserts for finishing



Dimension	D	S	L	d1
1102	6.35	2.38	11.0	2.8
16T3	9.52	3.97	16.5	4.4

Machining Material											
P	Steel	●	●		◐		●				
M	Stainless Steel								●	●	
K	Cast Iron	●	●		◐						
S	High-temp Alloys								●	●	
H	Hardened Material						●				

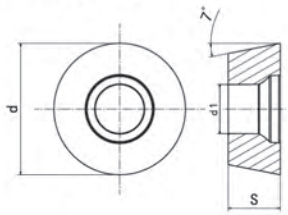
Working Condition
● Stable Cutting
◐ General Cutting
✱ Unstable Cutting

Insert Shape	ISO		Coated Grade									Cutting Data			
			TE1090	TE2790	TE2880	TE2890	TE2980	TE0690	TE4480	TE5508	TE0608	TE1008	fmin	fmax	apmin	apmax
	TCMT	**110204 SF**	○	●		●		●			●	●	0.40	0.75	3.00	7.00
		110208 SF	○	●		●		●			●	●	0.40	0.80	3.00	7.00
		16T304 SF	○	●		●		●			●	●	0.40	0.75	3.00	7.00
		16T308 SF	○	●		●		●			●	●	0.40	0.80	3.00	7.00
		—											—	—	—	—

►Introduction of Turning Grade D1-D2 ►Introduction of Turning Geometry D5-D6
►Turning Inserts ISO Designation System D7-D8 ►Suitable Holder D25,D30,D41

○ Generally Recommended
● Prior Recommended

Round Turning Inserts for Roughing



Dimension	d	S	d1
1606	16	6.45	5.5

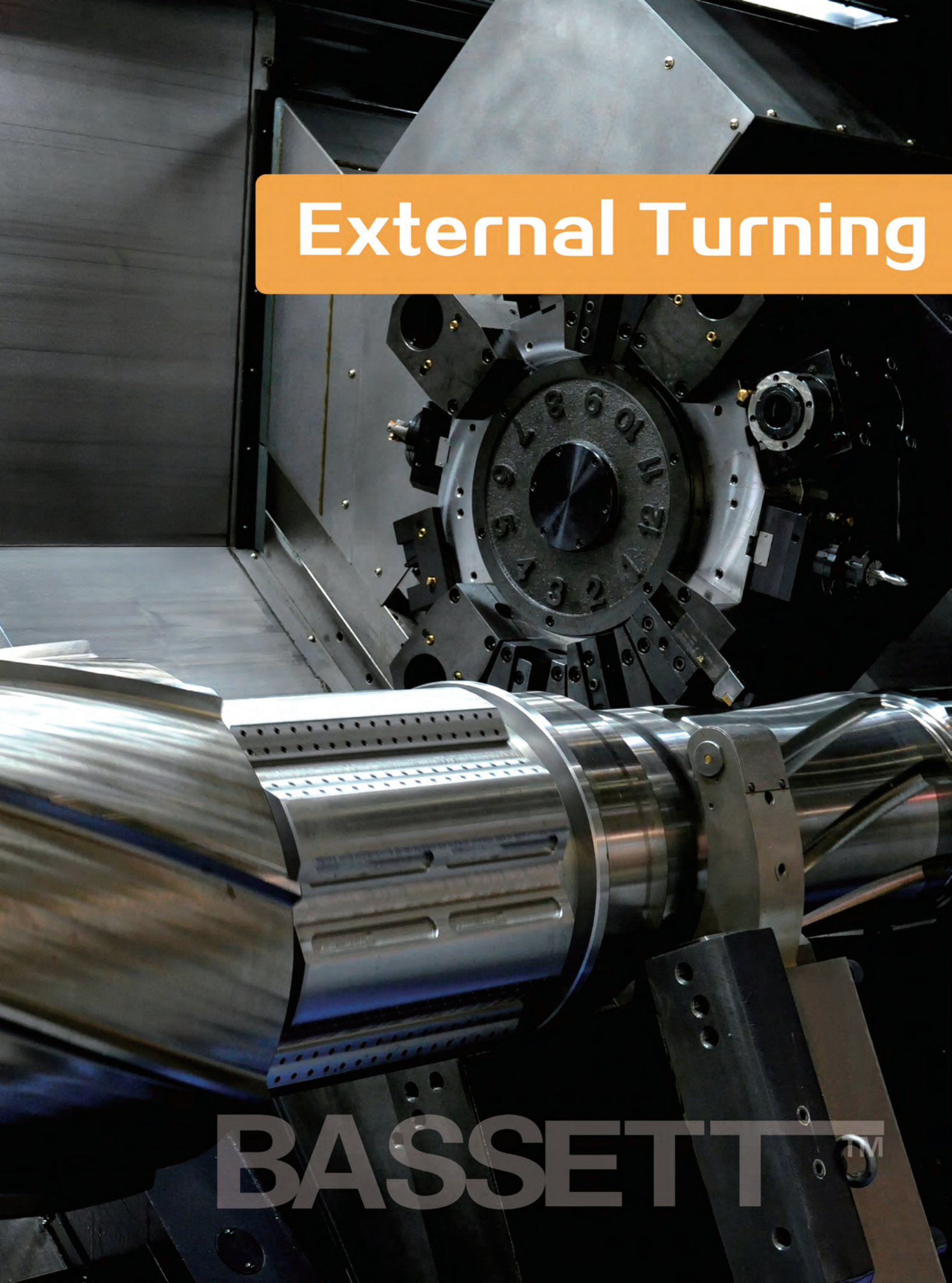
Machining Material												
P	Steel			◐		◐		◐	✱			
M	Stainless Steel											
K	Cast Iron			◐		◐			✱			
S	High-temp Alloys								✱			
H	Hardened Material											

Working Condition
● Stable Cutting
◐ General Cutting
✱ Unstable Cutting

Insert Shape	ISO		Coated Grade										Cutting Data			
			TE1090	TE2790	TE2880	TE2890	TE2980	TE0690	TE4480	TE5508	TE1019	TE1008	fmin	fmax	apmin	apmax
	RCMT	**1606 MZ**			●		○		●	●			0.40	0.75	3.00	7.00
					●		○		●	●			0.40	0.80	3.00	7.00
					●		○		●	●			0.40	0.75	3.00	7.00
					●		○		●	●			0.40	0.80	3.00	7.00
	RCMT	**1606 MZS**			●		○		●	●			0.40	0.75	3.00	7.00
					●		○		●	●			0.40	0.80	3.00	7.00
					●		○		●	●			0.40	0.75	3.00	7.00
					●		○		●	●			0.40	0.80	3.00	7.00

▶Introduction of Turning Grade D1-D2 ▶Introduction of Turning Geometry D5-D6
▶Turning Inserts ISO Designation System D7-D8 ▶Suitable Holder D31,D32

○ Generally Recommended
● Prior Recommended



External Turning

BASSETT™

External Turning

Shape of Inserts	Cutting Geometry						
	Model	MCLNR/L	MCBNR/L	MCMNN	SCACR/L	SCLCR/L	
	Lead Angel	95°	75°	50°	90°	95°	
	Insert Model	09 12 16 19	12 16 19	12 16 19	06 09 12	06 09 12	
	Page	D21	D21	D21	D26	D26	

Shape of Inserts	Cutting Geometry						
	Model	MDJNR/L	MDPNN	MDQNR/L	SDJCR/L	SDNCN	
	Lead Angel	93°	62.5°	107.5°	93°	62.5°	
	Insert Model	11 15	11 15	11 15	07 11	07 11	
	Page	D22	D22	D22	D27	D27	

Shape of Inserts	Cutting Geometry						
	Model	MSBNR/L	MSKNR/L	MSSNR/L	SSBCR/L	SSKCR/L	SSSCR/L
	Lead Angel	75°	75°	45°	75°	75°	45°
	Insert Model	12 15 19	12 15 19	12 15 19	09 12	09 12	09 12
	Page	D23	D23	D23	D28	D28	D29

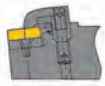
Shape of Inserts	Cutting Geometry						
	Model	MTJNR/L	MTFNR/L	MTGNR/L	STFCR/L	STGCR/L	
	Lead Angel	93°	91°	91°	91°	91°	
	Insert Model	16 22	16 22	16 22	09 11 16	09 11 16	
	Page	D24	D24	D24	D29	D30	

Shape of Inserts	Cutting Geometry						
	Model	MVQNR/L	MVVNN	SVJCR/L	SVVCN		
	Lead Angel	117.5°	72.5°	93°	72.5°		
	Insert Model	16	16	11 16	11 16		
	Page	D25	D25	D30	D31		

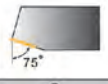
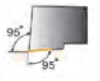
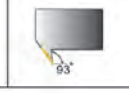
Shape of Inserts	Cutting Geometry						
	Model	MWLNR/L					
	Lead Angel	95°					
	Insert Model	06 08					
	Page	D25					

Shape of Inserts	Cutting Geometry						
	Model	SRACR/L	SRDCN/L	SRGCR/L			
	Lead Angel						
	Insert Model	08 10 12 16	08 10 12	08 10 12			
	Page	D31	D32	D32			

① Compression Method of Insert Symbol

		
C Top Clamp	D Multi Clamp With Top And Hole	M Multi Clamp
		
P Locating Pin	S Screw Clamp	W Wedge Clamp

② Holder Type And Lead Angle Symbol

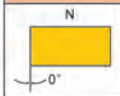
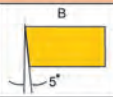
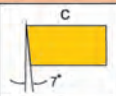
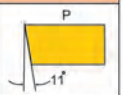
A	B	C	D	E
				
F	G	H	J	K
				
L	M	N	P	Q
				
R	S	T	U	V
				
W	Y	Z	X	
				

③ Shape Symbol

C	D	H	K	L
				
R	S	T	V	W
				

①	②	③	④	⑤	⑥	⑦	⑧	⑨
M	W	L	N	L	25	25	M	12

④ Relief Angle Symbol

N	B	C	P
			
N	B	C	P

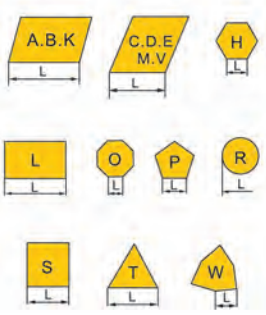
⑤ Cutting Direction Symbol

L	N	R
		

⑧ Length Symbol

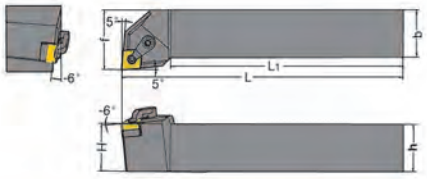
A	32
B	40
C	50
D	60
E	70
F	80
G	90
H	100
K	125
M	150
P	170
R	200
S	250
T	300
U	350
V	400
W	450

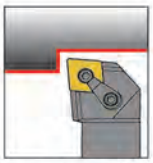
⑨ Cutting Edge Length Symbol



⑥ Width Symbol

⑦ Height Symbol

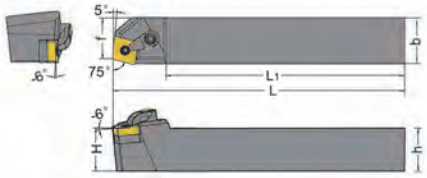


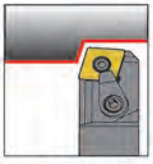


Lead Angle:95°

Holder Model		Dimension						Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
		h	b	L	L1	H	f						
MCLNR/L	2020K09	20	20	125	100	20	25	CN. . 0903. .	MY0619	MC0904	MX0513	ML0625	L2. 5, L3
	2525M09	25	25	150	120	25	32						
	2525M12	25	25	150	120	25	32	CN. . 1204. .	MY0619	MC1204	MX0617	ML0625	L2. 5, L3
	3232P12	32	32	170	135	32	40						
	2525M16	25	25	150	120	25	32	CN. . 1606. .	MY0823	MC1604	MX0822	ML0828	L3, L4
	3232P16	32	32	170	135	32	40						
	3232P19	32	32	170	135	32	40	CN. . 1906. .	MY0823	MC1904	MX1022	ML0828	L4

▶ Introduction of Turning D9-D10 ▶ISO Designation System D20

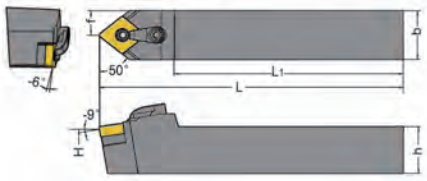




Lead Angle: 75°

Holder Model		Dimension						Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
		h	b	L	L1	h1	f						
MCBNR/L	2020K12	20	20	125	100	20	17						
	2525M12	25	25	150	120	25	22	CN. . 1204. .	MY0619	MC1204	MX0617	ML0625	L2. 5, L3
	3232P12	32	32	170	135	32	27						
	2525M16	25	25	150	120	25	22	CN. . 1606. .	MY0823	MC1604	MX0822	ML0828	L3, L4
	3232P16	32	32	170	135	32	27						
	3232P19	32	32	170	135	32	27	CN. . 1906. .	MY0823	MC1904	MX1022	ML0828	L4
	4040R19	40	40	200	155	40	35						

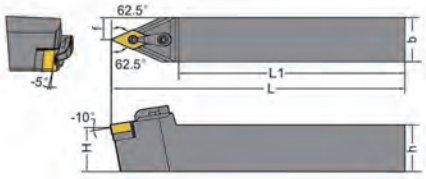
▶ Introduction of Turning D9-D10 ▶ISO Designation System D20

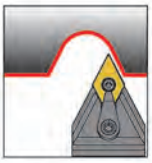


Lead Angle: 45°

Holder Model		Dimension						Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
		h	b	L	L1	h1	f						
MCMNN	2020K12	20	20	125	100	20	10						
	2525M12	25	25	150	120	25	12. 5	CN. . 1204. .	MY0619	MC1204	MX0617	ML0625	L2. 5, L3
	3232P12	32	32	170	135	32	16						
	2525M16	25	25	150	120	25	13	CN. . 1606. .	MY0823	MC1604	MX0822	ML0828	L3, L4
	3232P16	32	32	170	135	32	16						
	3232P19	32	32	170	135	32	16	CN. . 1906. .	MY0823	MC1904	MX1022	ML0828	L4
	4040S19	40	40	250	200	40	20						

▶ Introduction of Turning D9-D10 ▶ISO Designation System D20

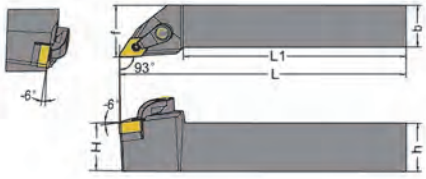


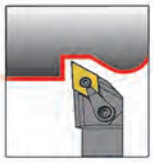


Lead Angle: 62.5°

Holder Model		Dimension						Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
		h	b	L	L1	h1	f						
MDPNN	2020K11	20	20	125	100	20	10	DN. . 1104. .	MY0619	MD1103	MX0513	ML0625	L2, L3
	2525M11	25	25	150	120	25	12. 5						
	2020K15	20	20	125	100	20	10	DN. . 1504. .		MD1504			
	2525M15	25	25	150	120	25	13	DN. . 1506. .	MY0621	MD1506	MX0619	ML0625	L2. 5, L3
	3232P15	32	32	170	135	32	16						

▶ Introduction of Turning D11 ▶ISO Designation System D20

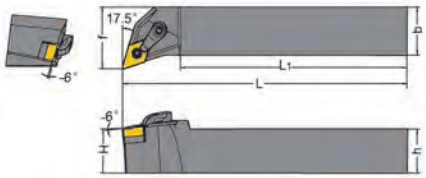




Lead Angle: 93°

Holder Model		Dimension						Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
		h	b	L	L1	h1	f						
MDJNR/L	2020K11	20	20	125	100	20	25	DN. . 1104. .	MY0619	MD1103	MX0513	ML0625	L2, L3
	2525M11	25	25	150	120	25	32						
	2020K15	20	20	125	100	20	25	DN. . 1504. .		MD1504			
	2525M15	25	25	150	120	25	32	DN. . 1506. .	MY0621	MD1506	MX0619	ML0625	L2. 5, L3
	3232P15	32	32	170	135	32	40						

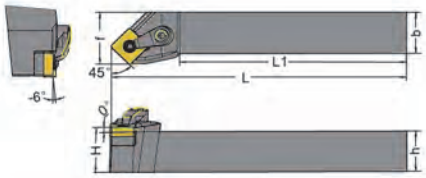
▶ Introduction of Turning D11 ▶ISO Designation System D20



Lead Angle: 107.5°

Holder Model		Dimension						Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
		h	b	L	L1	h1	f						
MDQNR/L	2020K11	20	20	125	100	20	25	DN. . 1104. .	MY0619	MD1103	MX0513	ML0625	L2, L3
	2525M11	25	25	150	120	25	32						
	2020K15	20	20	125	100	20	25	DN. . 1504. .		MD1504			
	2525M15	25	25	150	120	25	32	DN. . 1506. .	MY0621	MD1506	MX0619	ML0625	L2. 5, L3
	3232P15	32	32	170	135	32	40						

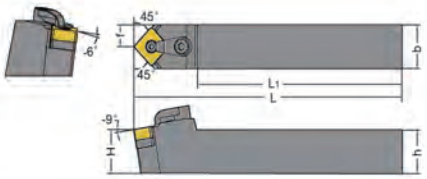
▶ Introduction of Turning D11 ▶ISO Designation System D20



Lead Angle: 45°

Holder Model		Dimension						Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
		h	b	L	L1	h1	f						
MSSNR/L	2020K12	20	20	125	100	20	25						
	2525M12	25	25	150	120	25	32	SN. . 1204. .	MY0619	MS1204	MX0617	ML0625	L2. 5, L3
	3232P12	32	32	170	135	32	40						
	2525M15	25	25	150	120	25	32	SN. . 1506. .	MY0823	MS1504	MX0822	ML0828	L3, L4
	3232P15	32	32	170	135	32	40						
	3232P19	32	32	170	135	32	40	SN. . 1906. .	MY0823	MS1904	MX1022	ML0828	L4
	4040R19	40	40	250	200	40	50						

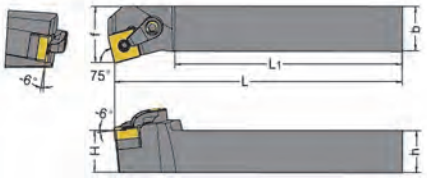
▶ Introduction of Turning D12 ▶ISO Designation System D20

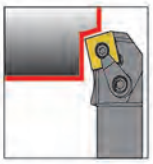


Lead Angle: 45°

Holder Model		Dimension						Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
		h	b	L	L1	h1	f						
MSDNN	2020K12	20	20	125	100	20	10						
	2525M12	25	25	150	120	25	12. 5	SN. . 1204. .	MY0619	MS1204	MX0617	ML0625	L2. 5, L3
	3232P12	32	32	170	135	32	16						
	2525M15	25	25	150	120	25	12. 5	SN. . 1506. .	MY0823	MS1504	MX0822	ML0828	L3, L4
	3232P15	32	32	170	135	32	16						
	3232P19	32	32	170	135	32	16	SN. . 1906. .	MY0823	MS1904	MX1022	ML0828	L4
	4040R19	40	40	250	200	40	20						

▶ Introduction of Turning D12 ▶ISO Designation System D20

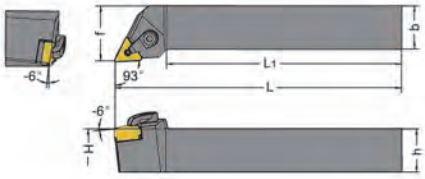




Lead Angle: 75°

Holder Model		Dimension						Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
		h	b	L	L1	h1	f						
MSKNR/L	2020K12	20	20	125	100	20	25						
	2525M12	25	25	150	120	25	32	SN. . 1204. .	MY0619	MS1204	MX0617	ML0625	L2. 5, L3
	3232P12	32	32	170	135	32	40						
	2525M15	25	25	150	120	25	32	SN. . 1506. .	MY0823	MS1504	MX0822	ML0828	L3, L4
	3232P15	32	32	170	135	32	40						
	3232P19	32	32	170	135	32	40	SN. . 1906. .	MY0823	MS1904	MX1022	ML0828	L4
	4040R19	40	40	250	200	40	50						

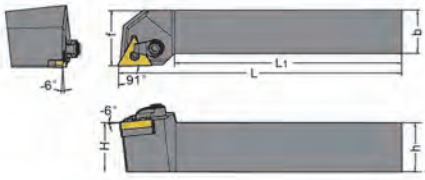
▶ Introduction of Turning D12 ▶ISO Designation System D20

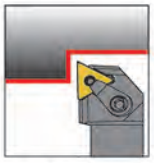


Lead Angle: 93°

Holder Model		Dimension						Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
		h	b	L	L1	h1	f						
MTJNR/L	2020K16	20	20	125	100	20	10						
	2525M16	25	25	150	120	25	12.5	TN..1604..	MY0619	MT1603	MX0513	ML0625	L2, L3
	3232P16	32	32	170	135	32	16						
	2525M22	25	25	150	120	25	12.5	TN..2204..	MY0819	MT2204	MX0617	ML0828	L2.5, L4
	3232P22	32	32	170	135	32	16						

▶Introduction of Turning D11 ▶ISO Designation System D20

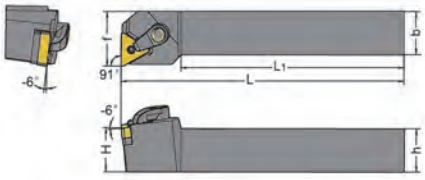


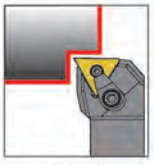


Lead Angle: 91°

Holder Model		Dimension						Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
		h	b	L	L1	h1	f						
MTGNR/L	2020K16	20	20	125	100	20	25						
	2525M16	25	25	150	120	25	32	TN..1604..	MY0513	MT1603	MX0513	ML0625	L2, L3
	3232P16	32	32	170	135	32	37						
	3232P22	32	32	170	135	32	40	TN..2204..	MY0819	MT2204	MX0617	ML0828	L2.5, L4

▶Introduction of Turning D13 ▶ISO Designation System D20

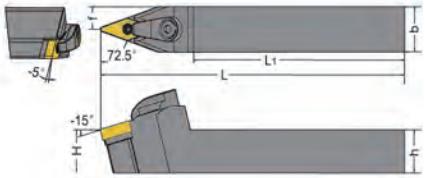


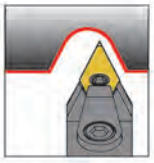


Lead Angle: 91°

Holder Model		Dimension						Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
		h	b	L	L1	h1	f						
MTFNR/L	2020K16	20	20	125	100	20	25						
	2525M16	25	25	150	120	25	32	TN..1604..	MY0619	MT1603	MX0513	ML0625	L2, L3
	3232P16	32	32	170	135	32	40						
	2525M22	25	25	150	120	25	32						
	3225P22	32	25	170	135	32	32	TN..2204..	MY0819	MT2204	MX0617	ML0828	L2.5, L4
	3232P22	32	32	170	135	32	40						
	4040S22	40	40	250	200	40	50						

▶Introduction of Turning D13 ▶ISO Designation System D20

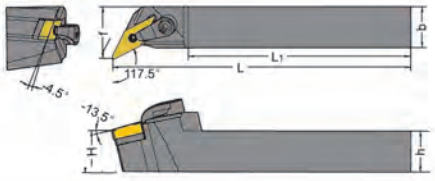




Lead Angle: 72.5°

Holder Model		Dimension						Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
		h	b	L	L1	h1	f						
MVVNN	2020K16	20	20	125	100	20	10	VN. . 1604. .	MY0826	MV1603	MX0513	ML0828	L2, L4
	2525M16	25	25	150	120	25	12. 5						
	3232P16	32	32	170	135	32	16						

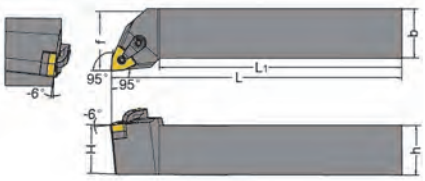
▶ Introduction of Turning D14 ▶ISO Designation System D20

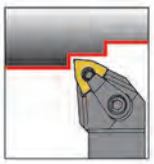


Lead Angle: 117.5°

Holder Model		Dimension						Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
		h	b	L	L1	h1	f						
MVQNR/L	2020K16	20	20	125	100	20	25	VN. . 1604. .	MY0621	MV1603	MX0513	ML0625	L2, L3
	2525M16	25	25	150	120	25	32						
	3232P16	32	32	170	135	32	40	VN. . 1604. .	MY0826	MV1603	MX0513	ML0828	L2, L4

▶ Introduction of Turning D14 ▶ISO Designation System D20

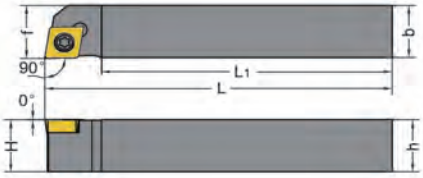




Lead Angle: 95°

Holder Model		Dimension						Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
		h	b	L	L1	h1	f						
MWLNR/L	2020K08	20	20	125	100	20	25	WN. . 0604. .	MY0619	MW0603	MX0513	ML0625	L2, L3
	2525M08	25	25	150	120	25	32						
	2020K08	20	20	125	100	20	25						
	2525M08	25	25	150	120	25	32	WN. . 0804. .	MY0619	MW0804	MX0617	ML0625	L2. 5, L3
	3232P08	32	32	170	135	32	40						

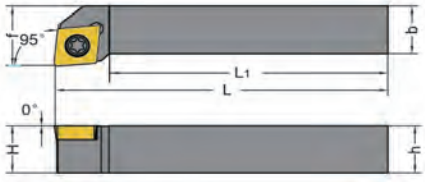
▶ Introduction of Turning D15 ▶ISO Designation System D20

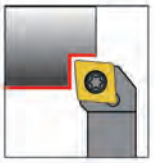


Lead Angle: 90°

Holder Model		Dimension						Inserts	Screw of Inserts	Plate Screw
		h	b	L	L1	H	f			
SCACR/L	1212F06	12	12	80	68	12	12	CC. . 0602. .	SC250744	T8
	1212H06	12	12	100	80	12	12			
	1212F09	12	12	80	68	12	12			
	1212H09	12	12	100	80	12	12			
	1616H09	16	16	100	80	16	16	CC. . 09T3. .	SC350960	T15
	2020K09	20	20	125	100	20	20			
	2525M09	15	15	150	120	15	15			
	1616H12	16	16	100	80	16	16			
	2020K12	20	20	125	100	20	20	CC. . 1204	SC501260	T20
	2525M12	25	25	150	120	25	25			

▶ Introduction of Turning D16 ▶ISO Designation System D20

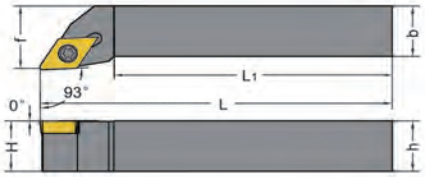


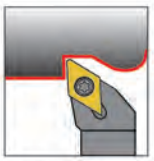


Lead Angle: 95°

Holder Model		Dimension						Inserts	Screw of Inserts	Plate Screw
		h	b	L	L1	H	f			
SCLCR/L	1212F06	12	12	80	68	12	16			
	1212H06	12	12	100	80	12	16			
	1616H06	16	16	100	80	16	20	CC. . 0602. .	SC250744	T8
	2020K06	20	20	125	100	20	25			
	1212F09	12	12	80	68	12	16			
	1212H09	12	12	100	80	12	16			
	1616H09	16	16	100	80	16	20	CC. . 09T3. .	SC350960	T15
	2020K09	20	20	125	100	20	25			
	2525M09	25	25	150	120	25	32			
	3232P09	32	32	170	135	32	40			
	1616H12	16	16	100	80	16	20			
	2020K12	20	20	125	100	20	25	CC. . 1204. .	SC501260	T20
	2525M12	25	25	150	120	25	32			
	3232P12	32	32	170	135	32	40			

▶ Introduction of Turning D16 ▶ISO Designation System D20





Lead Angle: 93°

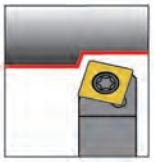
Holder Model		Dimension						Inserts	Screw of Inserts	Plate Screw
		h	b	L	L1	H	f			
SDJCR/L	1010E07	10	10	60	52	10	12			
	1010F07	10	10	80	68	10	12			
	1212F07	12	12	70	62	12	16	DC. . 0702. .	SC250744	T8
	1212H07	12	12	80	68	12	16			
	1616K07	16	16	80	68	16	20			
	2020K07	20	20	100	80	20	25			
	1212F11	12	12	125	100	12	16			
	1616H11	16	16	80	68	16	20			
	2020K11	20	20	100	60	20	25	DC. . 11T3. .	SC350960	T15
	2525M11	25	25	100	80	25	32			
	3232P11	32	32	125	100	32	40			

▶ Introduction of Turning D16 ▶ISO Designation System D20

Lead Angle: 62.5°

Holder Model		Dimension						Inserts	Screw of Inserts	Plate Screw
		h	b	L	L1	H	f			
SDNCN	1212F07	12	12	80	68	12	6			
	1212H07	12	12	100	80	12	6	DC. . 0702. .	SC250744	T8
	1616H07	16	16	125	100	16	8			
	1212F11	12	12	80	68	12	6			
	1212H11	12	12	100	60	12	6			
	1616H11	16	16	100	80	16	8	DC. . 11T3. .	SC350960	T15
	2020K11	20	20	125	100	20	10			
	2525M11	25	25	150	120	25	12. 5			
	3232P11	32	32	150	120	32	16			

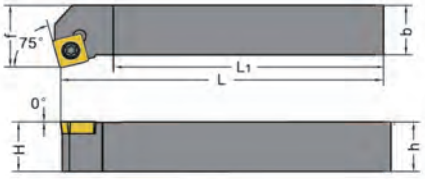
▶ Introduction of Turning D16 ▶ISO Designation System D20

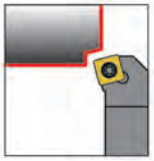


Lead Angle: 75°

Holder Model		Dimension						Inserts	Screw of Inserts	Plate Screw
		h	b	L	L1	H	f			
SSBCR/L	1212F09	12	12	60	68	12	9.5			
	1212H09	12	12	100	80	12	9.5	SC..09T3..	SC350960	T15
	1616H09	16	16	100	80	16	13			
	2020K09	20	20	125	100	20	17			
	1616H12	16	16	100	80	16	13			
	2020K12	20	20	125	100	20	17	SC..1204..	SC501260	T20
	2525M12	25	25	150	120	25	22			

▶ Introduction of Turning D17 ▶ISO Designation System D20

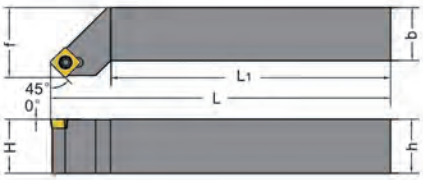


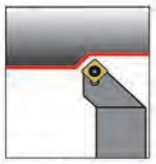


Lead Angle: 75°

Holder Model		Dimension						Inserts	Screw of Inserts	Plate Screw
		h	b	L	L1	H	f			
SSKCR/L	1212F09	12	12	80	68	12	16			
	1212H09	12	12	100	80	12	16			
	1616H09	16	16	100	80	16	20	SC..09T3..	SC350960	T15
	2020K09	20	20	125	100	20	25			
	2525M09	25	25	150	120	25	32			
	2020K12	20	20	125	100	20	25			
	2525M12	25	25	150	120	25	32	SC..1204..	SC501260	T20
	3232P12	32	32	170	135	32	40			

▶ Introduction of Turning D17 ▶ISO Designation System D20

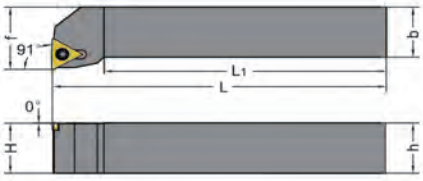


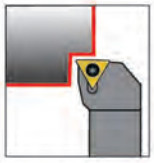


Lead Angle: 45°

Holder Model		Dimension						Inserts	Screw of Inserts	Plate Screw
		h	b	L	L1	H	f			
SSSCR/L	1212F09	12	12	80	68	12	16			
	1212H09	12	12	100	80	12	16			
	1616H09	16	16	100	80	16	20	SC..09T3..	SC350960	T15
	2020K09	20	20	125	100	20	25			
	2525M09	25	25	150	120	25	32			
	2020K12	20	20	125	100	20	25			
	2525M12	25	25	150	120	25	32	SC..1204..	SC501260	T20
	3232P12	32	32	170	135	32	40			

▶ Introduction of Turning D17 ▶ISO Designation System D20

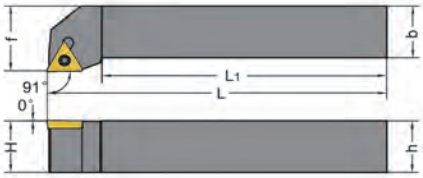


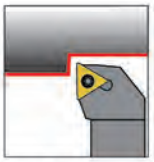


Lead Angle: 91°

Holder Model		Dimension						Inserts	Screw of Inserts	Plate Screw
		h	b	L	L1	H	f			
STFCR/L	1212F09	12	12	80	68	12	16	TC..0902..	SC220756	T6
	1212F11	12	12	80	68	12	16			
	1212H11	12	12	100	80	12	16	TC..1102..	SC250744	T8
	1616H11	16	16	100	80	16	20			
	1616H16	16	16	100	80	16	20			
	2020K16	20	20	125	100	20	25			
	2525M16	25	25	150	120	25	32	TC..16T3..	SC350960	T15
	3232P16	32	32	170	135	32	40			

▶ Introduction of Turning D17 ▶ISO Designation System D20

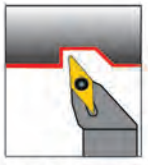




Lead Angle: 91°

Holder Model		Dimension						Inserts	Screw of Inserts	Plate Screw
		h	b	L	L1	H	f			
STGCR/L	1212F09	12	12	80	68	12	16	TC. . 0902. .	SC220756	T6
	1212H09	12	12	100	80	12	16			
	1212F11	12	12	80	68	12	16			
	1212H11	12	12	100	80	12	16			
	2020K11	20	20	125	100	20	25	TC. . 1102. .	SC250744	T8
	1616H11	16	16	100	80	16	20			
	1616H16	16	16	100	80	16	20			
	2020K16	20	20	125	100	20	25			
	2525M16	25	25	150	120	25	32	TC. . 16T3. .	SC350960	T15
	3232P16	32	32	170	138	32	40			

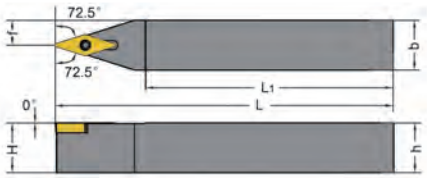
▶ Introduction of Turning D17 ▶ISO Designation System D20



Lead Angle: 93°

Holder Model		Dimension						Inserts	Screw of Inserts	Plate Screw
		h	b	L	L1	H	f			
SVJCR/L	1212F11	12	12	80	68	12	16			
	1212H11	12	12	100	80	12	16			
	1616H11	16	16	100	80	16	20	VC. . 1103. .	SC250744	T8
	2020K11	20	20	125	100	20	26			
	2525M11	25	25	150	120	25	32			
	1616H16	16	16	100	80	16	20			
	2020K16	20	20	125	100	20	25	VC. . 1604. .	SC350960	T15
	2525M16	25	25	150	120	25	32			
	3232P16	32	32	170	135	32	40			

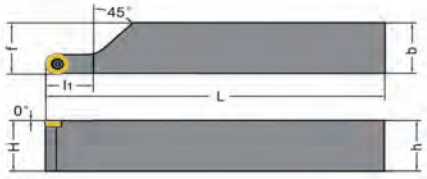
▶ Introduction of Turning D17 ▶ISO Designation System D20

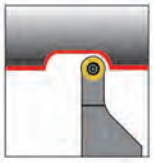


主偏角：72.5 °

Holder Model		Dimension						Inserts	Screw of Inserts	Plate Screw
		h	b	L	L1	H	f			
SVVCN	1212F11	12	12	80	68	12	6			
	1212H11	12	12	100	80	12	6			
	1616H11	16	16	100	80	16	8	VC. . 1103. .	SC250744	T8
	2020K11	20	20	125	100	20	10			
	2525M11	25	25	150	120	25	12. 5			
	1616H16	16	16	100	80	16	8			
	2020K16	20	20	125	100	20	10	VC. . 1604. .	SC350960	T15
	2525M16	25	25	150	120	25	12. 5			
	3232P16	32	32	170	135	32	16			

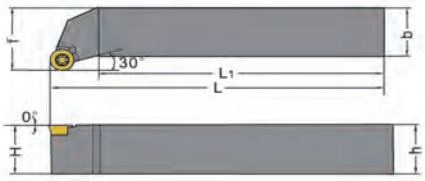
▶ Introduction of Turning D17 ▶ISO Designation System D20





Holder Model		Dimension						Inserts	Screw of Inserts	Plate Screw
		h	b	L	L1	H	f			
SRACR/L	1616H08	16	16	100	16	16	16. 5			
	2020K08	20	20	125	16	20	20. 5			
	2525M08	25	25	150	16	25	25. 5	RC. . 0802. .	SC300760	T8
	3232P08	32	32	170	16	32	32. 5			
	2020K10	20	20	125	20. 3	20	20. 4			
	2525M10	25	25	150	20. 3	25	25. 4	RC. . 1003. .	SC350960	T15
	3232P10	32	32	170	20. 3	32	32. 4			
	2020K12	20	20	125	20. 3	20	20. 5			
	2525M12	25	25	150	20. 3	25	25. 4	RC. . 1204. .	SC350960	T20
	3232P12	32	32	170	20. 3	32	32. 5			
	2525M16	25	25	150	25	25	25. 5	RC. . 1604. .	SC400960	T20
	3232P16	32	32	170	25	32	32. 5			
	3232P20	32	32	170	30	32	32. 5	RC. . 2006. .	SC400960	T20

▶ Introduction of Turning D17 ▶ISO Designation System D20



Holder Model		Dimension						Inserts	Screw of Inserts	Plate Screw
		h	b	L	L1	H	f			
SRGCR/L	1616H08	16	16	100	80	16	20			
	2020K08	20	20	125	100	20	25	RC. . 0802. .	SC300760	T8
	2525M08	25	25	150	120	25	32			
	2020K10	20	20	125	100	20	25			
	2525M10	25	25	150	120	25	32	RC. . 1003. .	SC350960	T15
	2020K12	20	20	125	100	20	25			
	2525M12	25	25	150	120	25	32	RC. . 1204. .	SC350960	T20
	3232P12	32	32	170	135	32	40			

▶ Introduction of Turning D18 ▶ISO Designation System D20

Holder Model		Dimension						Inserts	Screw of Inserts	Plate Screw
		h	b	L	L1	H	f			
SRDCN/L	1212F08	12	12	80	16	12	6			
	1212H08	12	12	100	16	12	6			
	1616H08	16	16	100	16	16	8	RC. . 0802. .	SC300760	T8
	2020K08	20	20	125	16	20	10			
	2525M08	25	25	150	16	25	12. 5			
	1010 E10	10	10	70	20. 3	10	5			
	1010F10	10	10	80	20. 3	10	5			
	1212F10	12	12	80	20. 3	12	6			
	1212H10	12	12	100	20. 3	12	6	RC. . 1003. .	SC350960	T15
	1616H10	16	16	100	20. 3	16	8			
	2020K10	20	20	125	20. 3	20	10			
	2525M10	25	25	150	20. 3	25	12. 5			
	1212H12	12	12	100	25	12	6			
	1616H12	16	16	100	25	16	8			
	2020K12	20	20	125	25	20	10	RC. . 1204. .	SC350960	T20
	2525M12	25	25	150	25	25	12. 5			
	3232P12	32	32	170	25	32	16			

▶ Introduction of Turning D18 ▶ISO Designation System D20

Internal Turning

BASSETT™

Internal Turning

Shape of Inserts	Cutting Geometry						
	Model	MCKNR/L	MCLNR/L	SCFCR/L	SCLCR/L		
	Lead Angel	75°	95°	91°	95°		
	Insert Model	12 16 19	12 16 19	06 09 12	06 09 12		
	Page	D35	D38	D35	D39		

Shape of Inserts	Cutting Geometry						
	Model	MDUNR/L	SDQCR/L	SDUCR/L			
	Lead Angel	93°	107.5°	93°			
	Insert Model	11 15	07 11	07 11			
	Page	D36	D40	D40			

Shape of Inserts	Cutting Geometry						
	Model	MSKNR/L	MSSNR/L				
	Lead Angel	75°	45°				
	Insert Model	12	12				
	Page	D36	D36				

Shape of Inserts	Cutting Geometry						
	Model	MTFNR/L	STFCR/L	MTWNR/L	STFCR/L		
	Lead Angel	91°	91°	60°	91°		
	Insert Model	16 22	09 11 16	16	09 11 16		
	Page	D37	D41	D37	D41		

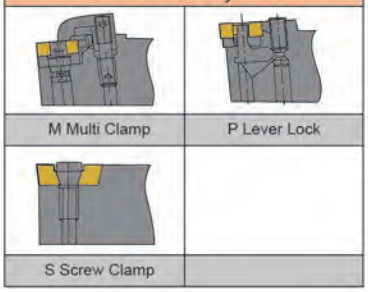
Shape of Inserts	Cutting Geometry						
	Model	MVUNR/L	SVQCR/L	SVUCR/L			
	Lead Angel	93°	117.5°	93°			
	Insert Model	16	11 16	08 11 16			
	Page	D37	D42	D42			

Shape of Inserts	Cutting Geometry						
	Model	MWLNR/L	SWLCR/L				
	Lead Angel	95°	95°				
	Insert Model	06 08	04 06				
	Page	D38	D43				

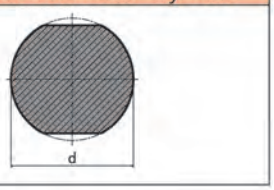
① Holder Symbol	
A	Steel Internal Cooling Holder
C	Carbide Alloy Holder
E	Carbide Alloy Internal Cooling Holder
H	High-speed Steel Holder
S	Steel Holder

③ Holder Length Symbol	
D	32
E	40
F	50
G	60
H	32
J	40
M	50
N	60
Q	70
R	80
S	90
T	100
U	125
V	150
W	170
Y	200

④ Compression Method of Holder Symbol

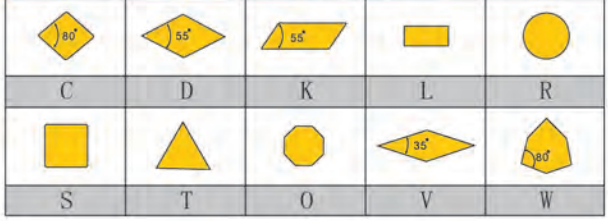


② Holder Diameter Symbol

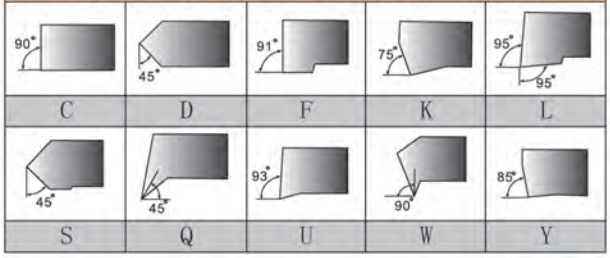


①	②	③	④	⑤	⑥	⑦	⑧	⑨
S	12	S	M	T	F	C	R	12

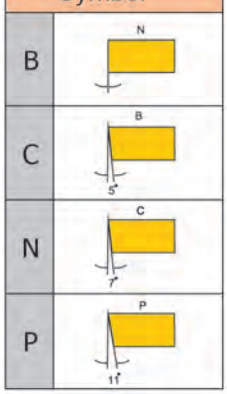
⑤ Insert Shape Symbol



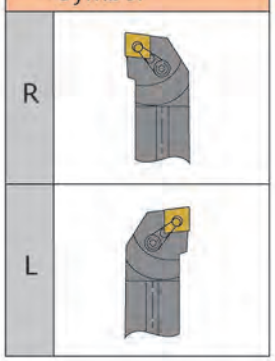
⑥ Holder Type And Lead Angle Symbol



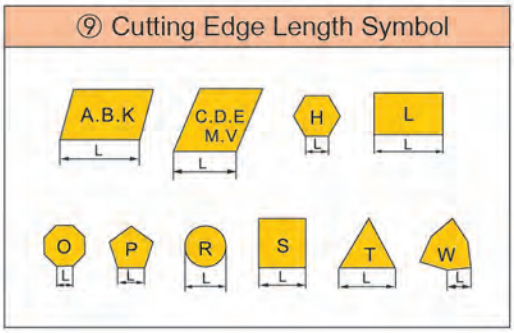
⑦ Relief Angle Symbol

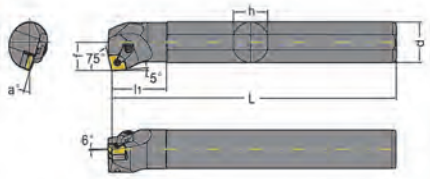


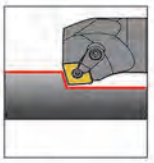
⑧Cutting Direction Symbol



⑨ Cutting Edge Length Symbol



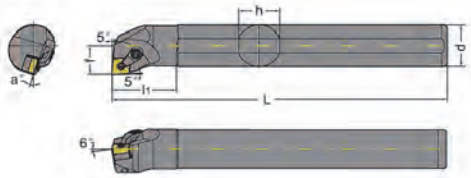


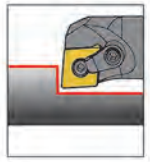


Lead Angle：75 °

Holder Model	Dimension							Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
	Dmin	φd	L	l1	h	f	a°						
S16N-MCKNR/L12	21	16	160	27	15	12	17°		MY0515-A	MC1204	MX0611	ML0516	L2.5
S20Q-MCKNR/L12	26	20	180	34	18	14	15°		MY0515	MC1204	MX0613	ML0520	L2.5
S25R-MCKNR/L12	32	25	200	43	23	16.5	12°		MY061910	MC1204	MX0613	ML0620	L2.5.L3
S32S-MCKNR/L12	40	32	250	54	30	22.5	17°	CN..1204..					
S40T-MCKNR/L12	50	40	300	68	37	26	15°		MY0619	MC1204	MX0617	ML0625	L2.5.L3
S50U-MCKNR/L12	60	50	350	85	47	33	12°						
S60V-MCKNR/L12	70	60	400	102	56	36	10°						
S50U-MCKNR/L19	60	50	350	85	47	32.5	12°	CN..1906..	MY0823	MC1904	MX1022	ML0828	L4
H20Q-MCKNR/L12	26	20	180	34	18	14	15°	CN..1204..	MY0515	MC1204	MX0613	ML0520	L2.5
H25R-MCKNR/L12	32	32	200	43	23	16.5	12°		MY061910	MC1204	MX0613	ML0620	L2.5，L3

▶ Introduction of Turning D9,D10　▶ISO Designation System D34

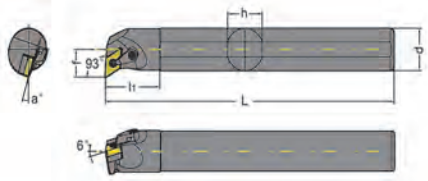


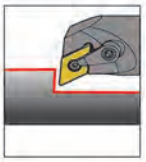


Lead Angle：45 °

Holder Model	Dimension							Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
	Dmin	φd	L	l1	h	f	a°						
S16N-MCLNR/L12	22	16	160	27	15	11	17°		MY0515-A	MC1204	MX0611	ML0516	L2.5
S16Q-MCLNR/L12	22	16	180	27	15	11	17°						
S20Q-MCLNR/L12	25	20	180	34	18	13	15°		MY0515	MC1204	MX0613	ML0520	L2.5
S20R-MCLNR/L12	25	20	200	34	18	13	15°						
S25R-MCLNR/L12	32	25	200	43	23	16.5	12°	CN..1204..	MY061910	MC1204	MX0613	ML0620	L2.5.L3
S32S-MCLNR/L12	40	32	250	54	30	22.5	17°						
S40T-MCLNR/L12	50	40	300	68	37	26	15°						
S45U-MCLNR/L12	55	45	350	77	42	29.5	15°		MY0619	MC1204	MX0617	ML0625	L2.5.L3
S50U-MCLNR/L12	60	50	350	85	47	31	12°						
S60V-MCLNR/L12	70	60	400	102	56	36	10°						
S40T-MCLNR/L16	50	40	300	68	37	26	15°	CN..1606..	MY0823	MC1606	MX0822	ML0828	L3，L4
S50U-MCLNR/L16	60	50	350	85	47	31	12°						
S50U-MCLNR/L19	60	50	350	85	47	31	12°	CN..1906..	MY0823	MC1904	MX1022	ML0828	L4
S60V-MCLNR/L19	70	60	400	102	56	36	10°						
H20Q-MCLNR/L12	25	20	180	34	18	13	15°		MY0515			ML0520	L2.5
H25R-MCLNR/L12	32	25	200	43	43	16.5	12°	CN..1204..	MY061910	MC1204	MX0613	ML0620	L2.5.L3
H32S-MCLNR/L12	40	32	250	54	54	22.5	17°		MY0619		MX0617	ML0625	L2.5.L3

▶ Introduction of Turning D9,D10　▶ISO Designation System D34

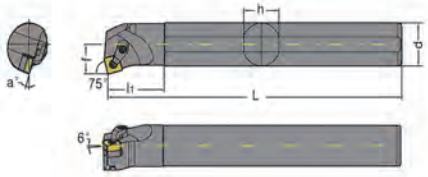


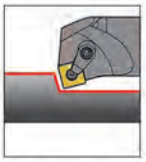


Lead Angle: 93 °

Holder Model	Dimension							Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
	Dmin	ϕd	L	l1	h	f	a°						
S16N-MDUNR/L11	22	16	160	27	15	10	17°		MY0515-A	MD1104	MX0510	ML0516	L2.5, L3
S20Q-MDUNR/L11	25	20	180	34	18	12	15°	DN..1104..	MY0515	MD1104	MX0510	ML0516	L2.5, L3
S25R-MDUNR/L11	32	25	200	43	23	16	12°		MY0619	MD1104	MX0510	ML0620	L2, L3
S25R-MDUNR/L15	32	25	200	43	23	16	12°				MX0613	ML0620	L2.5, L3
S32S-MDUNR/L15	40	32	250	54	30	21	17°						
S40T-MDUNR/L15	50	40	300	68	37	26	15°	DN..1504..	MY0621	MD1504	MX0617	ML0625	L2.5, L3
S50U-MDUNR/L15	60	50	350	85	47	32	12°						
H25R-MDUNR/L15	32	25	200	43	23	16	12°				MX0613	ML0620	L2.5, L3
H32S-MDUNR/L15	40	32	250	54	30	21	17°				MX0617	ML0625	L2.5, L3

▶ Introduction of Turning D11 ▶ISO Designation System D34

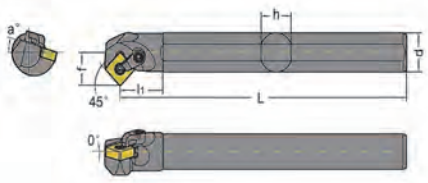


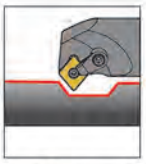


Lead Angle: 75 °

Holder Model	Dimension							Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
	Dmin	ϕd	L	l1	h	f	a°						
S16N-MSKNR/L12	22	16	160	27	15	11	17°		MY0515-A		MX0611	ML0516	L2.5
S20Q-MSKNR/L12	25	20	180	34	18	13	15°		MY0515		MX0611	ML0516	L2.5
S25R-MSKNR/L12	32	25	200	43	23	17	12°	SN..1204..	MY061910	MS1204	MX0613	ML0620	L2.5, L3
S32S-MSKNR/L12	40	32	250	54	30	22	17°						
H20Q-MSKNR/L12	25	20	180	34	18	13	15°		MY0515		MX0611	ML0516	L2.5
H25R-MSKNR/L12	32	25	200	43	23	17	12°		MY061910		MX0613	ML0620	L2.5, L3

▶ Introduction of Turning D12 ▶ISO Designation System D34

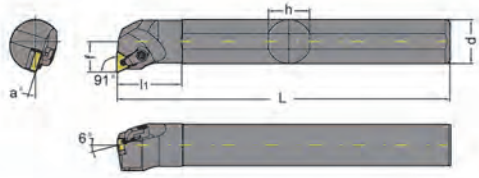




Lead Angle: 45 °

Holder Model	Dimension							Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
	Dmin	ϕd	L	l1	h	f	a°						
S16N-MSSNR/L12	26	16	160	27	15	15	17°		MY0515-A		MX0611	ML0516	
S20Q-MSSNR/L12	30	20	180	34	18	17	15°		MY0515		MX0613	ML0520	
S25R-MSSNR/L12	35	25	200	43	23	19.5	12°	SN..1204..	MY061910	MS1204	MX0613	ML0620	L2.5, L3
S32S-MSSNR/L12	42	32	250	54	30	23	17°		MY0619		MX0617	ML0625	
A20Q-MSSNR/L12	30	20	180	34	18	17	15°		MY0515-A		MX0611	ML0516	L2.5
A25R-MSSNR/L12	35	25	200	43	23	19.5	12°		MY061910		MX0613	ML0620	L2.5, L3

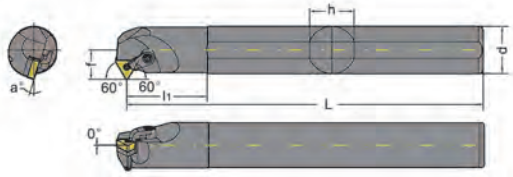
▶ Introduction of Turning D12 ▶ISO Designation System D34



Lead Angle：91 °

Holder Model	Dimension							Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
	Dmin	ϕd	L	l1	h	f	a°						
S16N-MTFNR/L16	22	16	160	27	15	11	17°		MY0515-A		MX0510	ML0516	L2, L2. 5
S20Q-MTFNR/L16	25	20	180	34	18	13	15°		MY0515		MX0510	ML0520	L2, L2. 5
S25R-MTFNR/L16	32	25	200	43	23	16. 5	12°		MY061910		MX0510	ML0620	L2, L3
S32S-MTFNR/L16	41	32	250	54	30	22. 5	17°	TN. . 1604. .	MY0619	MT1603	MX0513	ML0625	L2, L3
H20Q-MTFNR/L16	25	20	180	34	18	13	15°		MY0515-A		MX0510	ML0520	L2, L2. 5
H25R-MTFNR/L16	32	25	200	43	23	16. 5	12°		MY0515		MX0510	ML0620	L2, L3
H32S-MTFNR/L16	40	32	250	54	30	22. 5	17°		MY061910		MX0513	ML0625	L2, L3

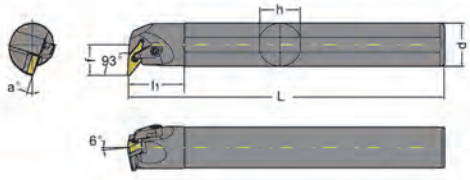
▶ Introduction of Turning D13 ▶ISO Designation System D34



Lead Angle：60 °

Holder Model	Dimension							Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
	Dmin	ϕd	L	l1	h	f	a°						
S16N-MTWNR/L16	23	16	160	27	15	12	17°		MY0515-A			ML0516	L2. L2. 5
S20Q-MTWNR/L16	27	20	180	34	18	14	15°		MY061910	MT1603	MX0510	ML0620	
S25R-MTWNR/L16	32	25	200	43	23	16. 5	12°						
S32S-MTWNR/L16	39	32	250	54	30	20	17°						L2, L3
H20Q-MTWNR/L16	27	20	180	34	18	14	15°	TN. . 1604. .	MY0515	MT1603	MX0510	ML0520	L2. L2. 5
H25R-MTWNR/L16	32	25	200	43	23	16. 5	12°		MY061910			ML0620	L2, L3
A16N-MTWNR/L16	23	16	160	27	15	12	17°		MY0515-A	MT1603	MX0510	ML0516	L2. L2. 5
A20Q-MTWNR/L16	27	20	180	34	18	14	15°		MY061910	MT1603	MX0510	ML0620	L2, L3
A25R-MTWNR/L16	32	25	200	43	23	16. 5	12°						

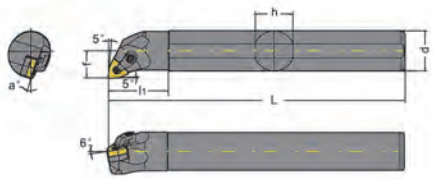
▶ Introduction of Turning D13 ▶ISO Designation System D34



Lead Angle：93 °

Holder Model	Dimension							Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
	Dmin	ϕd	L	l1	h	f	a°						
S25R-MVUNR/L16	32	25	200	43	23	17	12°		MY0621	MV1603	MX0510	ML0625	L2, L3
S32S-MVUNR/L16	42	32	250	54	30	23	17°						
H25R-MVUNR/L16	32	25	200	43	23	17	12°	VN. . 1604. .	MY0621	MV1603	MX0510	ML0625	L2, L3
H32S-MVUNR/L16	42	32	250	54	30	23	17°				MX0513		
A25R-MVUNR/L16	32	25	200	43	23	17	12°		MY0621	MV1603	MX0510	ML0625	L2, L3
A32S-MVUNR/L16	42	32	250	54	30	23	17°				MX0513		

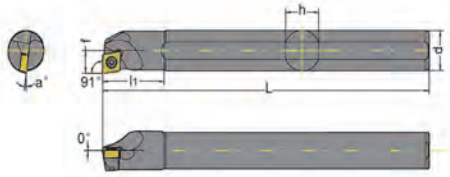
▶ Introduction of Turning D14 ▶ISO Designation System D34



Lead Angle：95 °

Holder Model	Dimension							Inserts	Plate	Insert Pad	Middle Screw	Plate Screw	Plate Screw
	Dmin	ϕd	L	l1	h	f	a°						
S16N-MWLNR/L06	22	16	160	27	15	11	17°		MY0515	MW0604	MX0510	ML0516	L2 , L2. 5
S20Q-MWLNR/L06	25	20	180	34	18	13	15°	WN. . 0604. .	MY0515	MW0604	MX0510	ML0520	L2 , L2. 5
S25R-MWLNR/L06	32	25	200	43	23	16. 5	12°						
S16N-MWLNR/L08	22	16	160	27	15	11	15°		MY0515		MX0611	ML0516	L2. 5
S20Q-MWLNR/L08	25	20	180	34	18	13	15°		MY0515		MX0611	ML0520	
S25R-MWLNR/L08	32	25	200	43	23	16. 5	12°	WN. . 0804. .	MY061910	MW0804	MX0613	ML0620	L2. 5 L3
S32S-MWLNR/L08	41	32	250	54	30	22	17°		MY0619		MX0613	ML0625	
S40T-MWLNR/L08	50	40	300	68	37	26	15°				MX0617	ML0625	

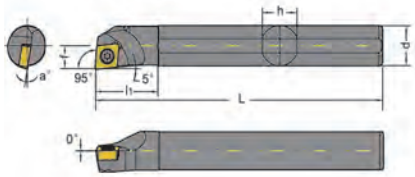
▶ Introduction of Turning D15 ▶ISO Designation System D34



Lead Angle：91 °

Holder Model	Dimension							Inserts	Screw of Inserts	Plate Screw
	Dmin	ϕd	L	l1	H	F	a°			
S10K-SCFCR/L06	12	10	125	17	9	6	12		SC250644	
S12M-SCFCR/L06	14	12	150	20	11	7	10			
S14N-SCFCR/L06	16	14	160	24	13	8	10	CC. . 0602. .		T8
S16N-SCFCR/L06	18	16	160	27	15	9	8		SC250744	
S16N-SCFCR/L09	18	16	160	27	15	9. 5	10			
S20Q-SCFCR/L09	23	20	180	34	18	11. 5	8		SC350860	
S25R-SCFCR/L09	28	25	200	43	23	14	6	CC. . 09T3. .	SC350960	T15
S20Q-SCFCR/L12	25	20	180	34	18	12	10			
S25R-SCFCR/L12	30	25	200	43	23	14. 5	8			
S32S-SCFCR/L12	38	32	250	54	30	18	6	CC. . 1204. .	SC061260	T20
S40T-SCFCR/L12	48	40	300	68	37	22	4			

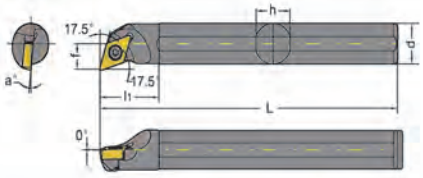
▶ Introduction of Turning D16 ▶ISO Designation System D34

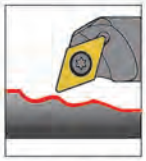


Lead Angle: 95 °

Holder Model	Dimension							Inserts	Screw of Inserts	Plate Screw
	Dmin	ϕd	L	l1	H	F	a°			
S07K-SCLCR/L06	9	8	125	12	7	4.5	15°		SC250544	
S08K-SCLCR/L06	10	8	125	14	7	5	13°			
S10K-SCLCR/L06	13	10	125	17	9	6	12°	CC..0602..	SC250644	T8
S12M-SCLCR/L06	16	12	150	20	11	7	10°			
S14N-SCLCR/L06	18	14	160	36	15	8	12°		SC250744	
S16N-SCLCR/L06	20	16	160	27	15	9	8°			
S12M-SCLCR/L09	16	12	150	20	11	9	12°			
S14N-SCLCR/L09	18	14	160	24	13	9	12°		SC350850	
S16N-SCLCR/L09	20	16	160	27	15	9.5	10°			
S20Q-SCLCR/L09	25	20	180	34	18	11.5	8°			
S20R-SCLCR/L09	25	20	200	34	18	11.5	8°	CC..09T3..		T15
S25R-SCLCR/L09	31	25	200	43	23	14	6°		SC350960	
S32S-SCLCR/L09	39	32	250	54	30	17.5	4°			
S40T-SCLCR/L09	50	40	300	68	37	21	0°			
S50U-SCLCR/L09	60	50	350	85	47	26	0°			
S20Q-SCLCR/L12	25	20	180	34	18	12	10°		SC501060	
S25R-SCLCR/L12	32	25	200	43	23	14.5	8°			
S32S-SCLCR/L12	39	32	250	54	30	18	6°	CC..1204..	SC501260	T20
S40T-SCLCR/L12	50	40	300	68	37	22	4°			
S50U-SCLCR/L12	60	50	350	85	47	26	0°			
H07K-SCLCR/L06	9	8	125	14	7	4.5	15°		SC250544	
H08K-SCLCR/L06	10	8	125	16	7	5	13°	CC..0602..		T8
H10K-SCLCR/L06	13	10	125	20	9	6	12°		SC250644	
H12M-SCLCR/L06	16	12	150	24	11	7	10°			
H12M-SCLCR/L09	16	12	150	24	11	9	12°	CC..09T3..	SC350860	T15
H16N-SCLCR/L09	20	16	160	32	15	9.5	10°			
C08K-SCLCR/L06	10	8	125	14	7	5	13°		SC250544	
C10M-SCLCR/L06	13	10	150	17	9	6	12°	CC..0602..	SC250644	T8
C12Q-SCLCR/L06	16	12	180	20	11	7	10°			
C12Q-SCLCR/L09	16	12	180	20	11	9	12°		SC350860	
C16R-SCLCR/L09	20	16	200	27	15	9.5	10°	CC..09T3..		T15
C20S-SCLCR/L09	25	20	250	34	18	11.5	8°		SC350960	
C20S-SCLCR/L12	25	20	250	34	18	12	10°	CC..1204..	SC501060	T20

►Introduction of Turning D16 ►ISO Designation System D34

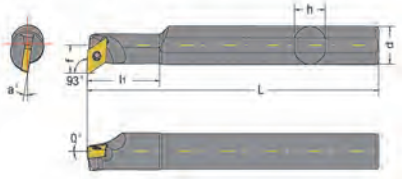


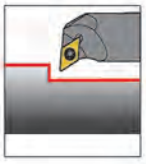


Lead Angle：107.5°

Holder Model	Dimension							Inserts	Screw of Inserts	Plate Screw
	Dmin	φd	L	l1	H	F	a°			
S10K-SDQCR/L07	13	10	125	17	9	7	10°			
S12M-SDQCR/L07	16	12	150	20	11	9	8°		SC250644	
S14N-SDQCR/L07	18	14	160	24	13	9.5	6°	DC..0702..		T8
S16N-SDQCR/L07	20	16	160	27	15	10.5	6°		SC250744	
S20Q-SDQCR/L07	25	20	180	34	18	13	6°			
S14N-SDQCR/L11	18	14	160	24	13	9.5	6°			
S16N-SDQCR/L11	20	16	160	27	15	10.5	8°		SC350860	
S20Q-SDQCR/L11	25	20	180	34	18	13	6°	DC..11T3..		T15
S25R-SDQCR/L11	32	25	200	43	23	16	4°			
S32S-SDQCR/L11	39	32	250	54	30	20	4°		SC350960	
S40T-SDQCR/L11	50	40	300	68	37	24	2°			
H10K-SDQCR/L07	13	10	125	20	9	7	10°		SC250644	
H12M-SDQCR/L07	16	12	150	24	11	9	8°			
H16N-SDQCR/L07	20	16	160	32	15	10.5	6°	DC..0702..	SC250744	T8
C10K-SDQCR/L07	13	10	150	17	9	7	10°			
C12M-SDQCR/L07	16	12	180	20	11	9	8°		SC250644	
C16N-SDQCR/L07	20	16	200	27	15	10.5	6°		SC250744	
C20Q-SDQCR/L11	25	20	250	34	19	13	6°	DC..11T3..	SC350960	T15

▶Introduction of Turning D16 ▶ISO Designation System D34

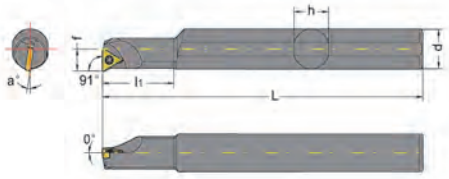


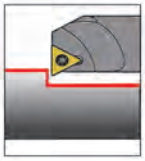


Lead Angle：93°

Holder Model	Dimension							Inserts	Screw of Inserts	Plate Screw
	Dmin	φd	L	l1	H	F	a°			
S10K-SDUCR/L07	15	10	125	17	9	8	10°		SC250644	
S12M-SDUCR/L07	17	12	150	20	11	9	8°			
S14N-SDUCR/L07	19	14	160	24	13	10	6°	DC..0702..		T8
S16N-SDUCR/L07	22	16	160	27	15	11	6°		SC250744	
S20Q-SDUCR/L07	25	20	180	34	18	13	6°			
S16N-SDUCR/L11	22	16	160	27	15	11	8°			
S20Q-SDUCR/L11	25	20	180	34	18	13	6°			
S25R-SDUCR/L11	32	25	200	43	23	16	4°	DC..11T3..	SC350960	T15
S32S-SDUCR/L11	39	32	250	54	30	20	4°			
S40T-SDUCR/L11	50	40	300	68	37	24	2°			
S50U-SDUCR/L11	60	50	350	85	47	29	0°			
H10K-SDUCR/L07	15	10	125	20	9	8	10°		SC250644	
H12M-SDUCR/L07	17	12	150	24	11	9	8°			
H16N-SDUCR/L07	22	16	160	32	15	11	6°	DC..0702..	SC250744	T8
C10K-SDUCR/L07	15	10	125	17	9	8	10°			
C12M-SDUCR/L07	17	12	150	20	11	9	8°		SC250644	
C16N-SDUCR/L07	22	16	160	27	15	11	6°		SC250744	
C20Q-SDUCR/L11	25	20	180	34	18	13	6°	DC..11T3..	SC350960	T15

▶Introduction of Turning D16 ▶ISO Designation System D34

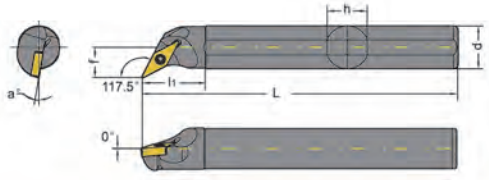




Lead Angle：91 °

Holder Model	Dimension							Inserts	Screw of Inserts	Plate Screw
	Dmin	ϕd	L	l1	H	F	a°			
S08K-STFCR/L09	11	8	125	14	7	5.5	15°			
S10K-STFCR/L09	13	10	125	17	9	6	13°	TC..0902..	SC220656	T6
S12M-STFCR/L09	16	12	150	20	11	7	10°			
S14N-STFCR/L09	16	14	160	24	13	8	10°			
S10K-STFCR/L11	12	10	125	17	9	6	12°			
S12M-STFCR/L11	14	12	150	20	11	7	10°		SC220644	
S14N-STFCR/L11	16	14	160	24	13	8	10°	TC..1102..		T8
S16N-STFCR/L11	20	16	160	27	15	9	8°		SC250744	
S20Q-STFCR/L11	25	20	180	34	18	11	6°			
S20Q-STFCR/L16	25	20	180	34	18	11.5	8°			
S25R-STFCR/L16	31	25	200	43	23	14	6°			
S32S-STFCR/L16	39	32	250	54	30	17.5	4°	TC..16T3..	SC350960	T15
S40T-STFCR/L16	50	40	300	68	37	21.5	2°			
S50U-STFCR/L16	60	50	350	85	47	26.5	0°			
H08K-SCLCR/L06	9	8	125	17	7	4.5	12°	TC..0601..	SC200460	T6

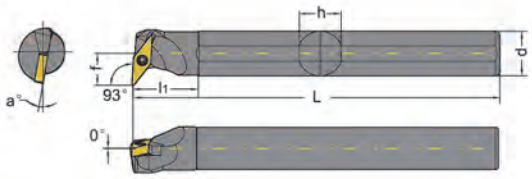
▶ Introduction of Turning D17 ▶ISO Designation System D34

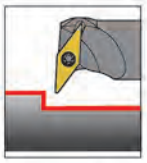


Lead Angle：117.5 °

Holder Model	Dimension							Inserts	Screw of Inserts	Plate Screw
	Dmin	ϕd	L	l1	H	F	a°			
S16N-SVQCR/L11	22	16	160	27	15	11.5	8°	VC..1103..	SC250744	T8
S20Q-SVQCR/L11	27	20	180	34	18	14	6°			
S20Q-SVQCR/L16	27	20	180	34	18	14	8°			
S25R-SVQCR/L16	32	25	200	43	23	16.5	6°			
S32S-SVQCR/L16	41	32	250	54	30	22.5	8°	VC..1604..	SC350960	T15
S40T-SVQCR/L16	50	40	300	68	37	27	6°			
S50U-SVQCR/L16	61	50	350	85	47	32	4°			
H16N-SVQCR/L11	22	16	160	32	15	11.5	8°	VC..1103..	SC250744	T8

▶ISO Designation System D34





Lead Angle：93 °

Holder Model	Dimension							Inserts	Screw of Inserts	Plate Screw
	Dmin	ϕd	L	l1	H	F	a°			
S12M-SVUCR/L08	16	12	150	20	11	11	8°	VC..0802..	SC220656	T6
S16N-SVUCR/L11	22	16	160	27	15	11.5	10°			
S20Q-SVUCR/L11	27	20	180	34	18	14	8°	VC..1103..	SC250744	T8
S25R-SVUCR/L11	32	25	200	43	23	17	4°			
S20Q-SVUCR/L16	31	20	180	34	18	19	8°			
S25R-SVUCR/L16	35	25	200	43	23	20	6°			
S32S-SVUCR/L16	42	32	250	54	30	22.5	8°	VC..1604..	SC350960	T15
S40T-SVUCR/L16	51	40	300	68	37	27	6°			
S50U-SVUCR/L16	60	50	350	85	47	32	4°			
H16N-SVUCR/L11	22	16	160	32	15	11.5	10°	VC..1103..	SC250744	T8

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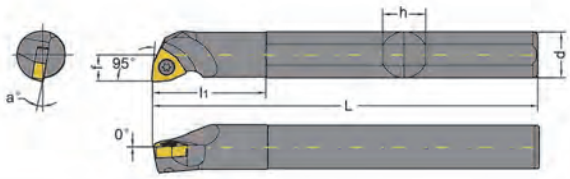

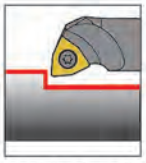

Lead Angle：95 °

Holder Model	Dimension							Inserts	Screw of Inserts	Plate Screw
	Dmin	ϕd	L	l1	H	F	a°			
S08K-SWLCR/L04	10	8	125	14	7	5	13°	WC..0402..	SC250544	T8
S10K-SWLCR/L04	13	10	125	17	9	6.5	10°		SC250644	
S12M-SWLCR/L06	16	12	150	20	11	7.5	13°			
S14N-SWLCR/L06	18	14	160	24	13	8.5	12°		SC350860	
S16N-SWLCR/L06	20	16	160	27	15	9.5	10°	WC..06T3..		T15
S20Q-SWLCR/L06	25	20	180	34	18	11.5	8°		SC350960	
S25R-SWLCR/L06	31	25	200	43	23	14	6°			
H08K-SWLCR/L04	10	8	125	16	7	5	13°	WC..0402..	SC250544	T8
H10K-SWLCR/L04	13	10	125	20	9	6.5	10°		SC250644	
H12M-SWLCR/L06	16	12	150	24	11	7.5	13°			
H14N-SWLCR/L06	18	14	160	28	13	8.5	12°	WC..06T3..	SC350860	T15
H16N-SWLCR/L06	20	16	160	32	15	9.5	10°			

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E

General Information

Discussion on Carbon Steel And Alloy Steel According to Structural Use

Model	Korea	ISO	Japan	America	Britain	Germany	France	Russia
	KS	ISO	JIS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	GOCT
Carbon Steel	SM10C	C10	S10C	1010	040A10 045A10 045M10	C10E C10R	XC10	–
	SM15C	C15E4 C15M2	S15C	1015	055M15	C15E C15R	–	–
	SM20C	–	S20C	1020	070M20 C22, C22E C22R	C22 C22E C22R	C22 C22E C22R	–
	SM25C	C25 C25E4 C25M2	S25C	1025	C25 C25E C25R	C25 C25E C25R	C25 C25E C25R	–
	SM30C	C30 C30E4 C30M2	S30C	1030	080A30 080M30 CC30 C30E C30R	C30 C30E C30R	C30 C30E C30R	30 Г
	SM35C	C35 C35E4 C35M2	S35C	1035	C35 C35E C35R	C35 C35E C35R	C35 C35E C35R	35 Г
	SM40C	C40 C40E4 C40M2	S40C	1039 1040	080M40 C40 C40E C40R	C40 C40E C40R	C40 C40E C40R	40 Г
	SM43C	–	S43C	1042 1043	080A42	–	–	40 Г
	SM45C	C45 C45E4 C45M2	S45C	1045 1046	C45 C45E C45R	C45 C45E C45R	C45 C45E C45R	45 Г
	SM48C	–	S458C	–	080A47	–	–	45 Г
	SM50C	C50 C50E4 C50M2	S50C	1049	080M50 C50 C50E C50R	C50 C50E C50R	C50 C50E C50R	50 Г
	SM53C	–	S53C	1050 1053	–	–	–	50 Г
	SM55C	C55 C55E4 C55M2	S55C	1055	070M55 C55 C55E C55R	C55 C55E C55R	C55 C55E C55R	–
	SM58C	C60 C60E4 C60M2	S58C	1059 1060	C60 C60E C60R	C60 C60E C60R	C60 C60E C60R	60 Г

Model		Korea	ISO	Japan	America	Britain	Germany	France	Russia
		KS	ISO	JIS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	GOCT
Alloy Steel	Nickel Chromium Steel	SNC236	–	SNC236	–	–	–	–	40XH
		SNC415 (H)	–	SNC415 (H)	–	–	–	–	–
		SNC631 (H)	–	SNC631 (H)	–	–	–	–	30XH3A
		SNC815 (H)	15NiCr13	SNC815 (H)	–	655M13 (655 H13)	15NiCr13	–	–
		SNC836	–	SNC836	–		–	–	–
	Nickel Chromium Molybdenum Steel	SNCM220	20NiCrMo2 20NiCrMoS2	SNCM220	8615 8617 (H) 8620 (H) 8622 (H)	805A20 805M20 805A22 805M22	20NiCrMo2 20NiCrMoS2	20NCD2	–
		SNCM240	40CrNiMo2 41CrNiMoS2	SNCM240	8637 8640	–	–	–	–
		SNCM415 SNCM420 (H) SNCM431	– –	SNCM415 SNCM420 (H) SNCM431	– 4320 (H)	– –	– –	– –	– 20XH2M (20XHM)
	Chromium Steel	SCr415 (H)	–	SCr415 (H)	–	–	17Cr3 17CrS3	–	15X 15XA
		SCr420 (H)	20Cr4 (H) 20CrS4	SCr420 (H)	5120 (H)	–	–	–	20X
		SCr430 (H)	34Cr4 34CrS4	SCr430 (H)	5130 (H) 5132 (H)	34Cr4 34CrS4	37Cr4 34CrS4	34Cr4 34CrS4	30X
		SCr435 (H)	34Cr4	SCr435 (H)	5135 (H)	37Cr4	37Cr4	37Cr4	35X
		SCr440 (H)	37Cr4 37CrS4	SCr440 (H)	5140 (H)	530M40 41Cr4	41Cr4 41CrS4	41Cr4 41CrS4	40X
		SCr445 (H)		SCr445 (H)					45X
	Chromium Molybdenum Cast Steel	SCM415 (H)	–	SCM415 (H)	–	–	–	–	–
		SCM418 (H)	18CrMo4 18CrMoS4	SCM418 (H)	–	–	18CrMo4 18CrMoS4	–	20XM
		SCM420 (H)	–	SCM420 (H)	–	708M20 (708 H20)	–	–	20XM
		SCM430	–	SCM430	4130	–	–	–	30XM 30XMA
		SCM432	–	SCM432	–	–	–	–	–
		SCM435 (H)	34CrMo4 34CrMoS4	SCM435 (H)	4135 (H) 4137 (H)	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	35XM
		SCM440 (H)	42CrMo4	SMC440 (H)	4140 (H)	708M70	42CrMo4	42CrMo4	–
		SCM445 (H)	–	SMC445 (H)	4145 (H) 4147 (H)	–	–	–	–

Tool Steel

Model	Korea	ISO	Japan	America	Britain	Germany	France	Russia
	KS	ISO	JIS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	GOCT
High-speed Steel	SKH2	HS18-0-1	SKH2	T1				
	SKH3	–	SKH3	T4				
	SKH4	–	SKH4	T5				
	SKH10	–	SKH10	T15				
	SKH51	HS6-5-2	SKH51	M2	BM2	S6/5/2	Z85 WDCV	
	SKH52	HS6-6-2	SKH52	M3-1				
	SKH53	HS6-5-3	SKH53	M3-2				
	SKH54	HS6-5-4	SKH54	M4				
	SKH55	HS6-5-2-5	SKH55	M35	BM35	S6/5/2/5	6-5-2-5	
	SKH56	–	SKH56	M36				
	SKH57	HS10-4-3-10	SKH57	–				
	SKH58		SKH58	M7		S2/9/2		
	SKH59		SKH59	M42				
Alloy Tool Steel	STS11	–	SKS11	F2				
	STS2	–	SKS2	–				
	STS21	–	SKS21	–				
	STS5	–	SKS5	–				
	STS51	–	SKS51	L6				
	STS7	–	SKS7	–				
	STS8	–	SKS8	–				
	STS4	–	SKS4	–				
	STS41	–	SKS41	–				
	STS43	105V	SKS43	W2-9 1/				
	STS44	–	SKS44	W2-8 1-2				
	STS3	–	SKS3	–		105WCr6	105WC13	
	STS31	105WCr1	SKS31	–				
	STS93	–	SKS93	–				
	STS94	–	SKS94	–				
	STS95	–	SKS95	–	BD3	X210Cr12	Z200C12	
	STD1	210Cr12	SKD1	D3				
	STD11	–	SKD11	D2	BA2	X100CrMoV5 1	Z100CDV5	
	STD12	100CrMoV5	SKD12	A2				
	STD4	–	SKD4	–	BH21	X30WCrV9 3	Z30WCV9	
	STD5	X30WCrV9-3	SKD5	H21				
	STD6	X37CrMoV5-1	SKD6	H11	BH13	X40CrMoV5 1	Z40CDV5	
	STD61	X40CrMoV5-1	SKD61	H13				
	STD62	X35CrWMoV5	SKD62	H12				
	STD7	32CrMoV12-28	SKD7	H10				
	STD8	–	SKD8	H19				
	STF3	–	SKT3	–		55NiCrMoV6	55NCDV7	
	STF4	55NiCrMoV7	SKT4	L6				
Mild Steel	SUM11	–	SUM11	1110				
	SUM12	–	SUM12	1109				
	SUM21	9S20	SUM21	1212				
	SUM22	11SMn28	SUM22	1213	230M07	9SMn28	S250	
	SUM22L	11SMnPb28	SUM22L	12L13		9SMnPb28	S250Pb	
	SUM23	–	SUM23	1215	240M07	9SMn36	S 300	
	SUM23L	–	SUM23L	–				
	SUM24L	11SMnPb28	SUM24L	12L14		9SMnPb36	S300Pb	
	SUM25	12SMn35	SUM25	–				
	SUM31	–	SUM31	1117				
	SUM31L	–	SUM31L	–				
	SUM32	–	SUM32	–				
	SUM41	–	SUM41	1137				
	SUM42	–	SUM42	1141				
	SUM43	44SMn28	SUM43	1144				
High Carbon Chromium Steel	STB1	–	SUJ1	–				
	STB2	B1	SUJ2	52100	534A99	100Cr6	100Cr6	
	STB3	B2	SUJ3	ASTM A 485 Grade 1				
	STB4	–	SUJ4	–				
	STB5	–	SUJ5	–				

Stainless Steel

Model		Korea	ISO	Japan	America		Britain	Germany	France	Russia
		KS	ISO	JIS	UNS	AISIS AE	BS BS/EN	DIN DIN/EN	NF NF/EN	GOCT
Stainless Steel	Austenite	STS201	X12CrMnNiN17-7-5	SUS201	S20100	201	284S16	X12CrNi17-7	Z12CMN17-07-Az	12X17・9A
		STS202	X12CrMnNiN18-9-5	SUS202	S20200	202	301S21	X2CrNiN18-7		07X16H6
		STS301	X10CrNi18-8	SUS301	S30100	301		X12CrNi17-7	Z11CN17-08	
		STS301L	X2CrNiN18-7	SUS301L						
		STS301J1		SUS301J1			302S25			12X18H9
		STS302		SUS302	S30200	302		X10CrNiS18-9	Z12CN18-09	
		STS302B	X12CrNiSi18-9-3	SUS302B	S30215	302B	303S21			
		STS303	X10CrNiS18-9	SUS303	S30300	303	303S41		Z8CNF18-09	12X18H10E
		STS303Se		SUS303Se	S30323	303SE		X5CrNi18-10		
		STS303CU		SUS303Cu			304S31			08X18H10
		STS304	X5CrNi18-9	SUS304	S30400	304	304S11	X2CrNiN19-11	Z7CN18-09	
		STS304L	X2CrNi19-11	SUS304L	S30403	304L		X2CrNiN18-10	Z3CN19-11	
		STS304N1	X5CrNiN18-8	SUS304N1	S30451	304N			Z6CN19-09Az	
		STS304LN	X2CrNiN18-8	SUS304LN	S30453	304LN		X5CrNi18-12	Z3CN18-10Az	
		STS304J1		SUS304J1			305S19			06X18H11
		STS305	X6CrNi18-12	SUS305	S30500	305			Z8CN18-12	
		STS309S		SUS309S	S30908	309S	310S31	X5CrNiMo27-12-2	Z10CN24-13	10X23H18
		STS310S	X6CrNi25-20	SUS310S	S31008	310S	316S31	X5CrNiMo27-13-3	Z8CN25-20	
		STS316	X5CrNiMo17-12-2	SUS316	S31600	316		X2CrNiTi17-13-2	Z7CND17-12-02	
		STS316L	X2CrNiMo17-12-2	SUS316L	S31603	316L			Z3CND17-12-02	
		STS316N		SUS316N	S31651	316N	317S16	X6CrNiTi18-10		
		STS317		SUS317	S31700	317	321S31	X6CrNiNb18-10		08X18H10T
	Ferrite	STS321	X6CrNiTi18-10	SUS321	S32100	321	347S31		Z6CNT18-10	08X18H12
		STS347	X6CrNiNb18-10	SUS347	S34700	347		X6CrAl13	Z6CNNb18-10	
		STS384	X3NiCr18-16	SUS384	S38400	384	405S17		Z6CN18-16	
		STS405	X6CrAl13	SUS405	S40500	405			Z8CA12	
		STS410L		SUS410L				X6Cr17	Z3C14	
		STS429		SUS429	S42900	429	430S17	X7CrS18		12X17
		STS430	X6Cr17	SUS430	S43000	430		X6CrMo17-1	Z8C17	
		STS430F	X7CrS17	SUS430F	S43020	430F	434S17		Z8CF17	
		STS434	X6CrMo17-1	SUS434	S43400	434			Z8CD17-01	
		STS444	X2CrMoTi18-2	SUS444	S44400	444			Z3CDT18-02	
		STSXM27		SUSXM27	S44627			X10Cr13	Z1CD26-01	
	Martensite	STS403		SUS403	S40300	403	410S21			
		STS410L	X12Cr13	SUS410L	S41000	410	416S21	X20Cr13	Z13C13	
		STS416	X12CrS13	SUS416	S41600	416	420S29	X20CrNi17-2	Z11CF13	
		STS420J1	X20Cr13	SUS420J1	S42000	420	431S29		Z20C13	
		STS431	X196CrNi16-2	SUS431	S43100	431			Z15CN16-02	
		STS440A	X70CrMo15	SUS440A	S44002	440A		X7CrNiAl17-7	Z70C15	
	Precipitation Hardening	S S630	X5CrNiCuNb16-4	SUS630	S17400	S17400			Z6CNU17-04	09X17H7I
		STS631	X7CrNiAl17-7	SUS631	S17700	S17700			Z9CNA17-07	
		STS631J1		SUS631J1						

Cast Iron

Model		Korea	ISO	Japan	America	Britain	Germany	France	Russia
		KS	ISO	JIS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	GOCT
Cast Iron	Gray Cast Iron	GC100 GC150 GC200 GC250 GC300 GC350	100, 150, 200 250, 300, 350	FC100 FC150 FC200 FC250 FC300 FC350	No 20 B No 25 B No 30 B No 35 B No 45 B No 50 B No 55 B	 Grade 150 Grade 220 Grade 260 Grade 300 Grade 350 Grade 400	GG10 GG15 GG20 GG25 GG30 GG35 GG40	Ft 10 D Ft 15 D Ft 20 D Ft 25 D Ft 30 D Ft 35 D Ft 40 D	-
	Nodular Cast Iron	GCD400 GCD500 GCD600 GCD700	700-2, 600-3, 500-7 450-10, 400-15 400-18, 350-22	FCD400 FCD500 FCD600 FCD700	60-40-18 80-55-06 100-70-03	SNG 420/12 SNG 370/17 SNG 500/7 SNG 600/3 SNG 700/2	GGG 40 GGG 40.3 GGG 50 GGG 60 GGG 70	FCS 400-12 FGS 370-17 FGS 500-7 FGS 600-3 FGS 700-2	B
	Austenitic Tempering Nodular Cast Iron	FCAD	-	FCAD	-	EN-GJS-	EN-GJS-	EN-GJS-	-
	Austenitic Cast Iron	FCA- FCDA-	L-, S-	FCA- FCDA-	Type1, 2 Type D-2, D-3A Class1, 2	F1, F2 S2W, S5S	GGL-, GGG-,	L-, S-	

Tool Steel

Model		Korea	ISO	Japan	America		Britain	Germany	France	Russia
		KS	ISO	JIS	AISI SAE		BS BS/EN	DIN DIN/EN	NF NF/EN	GOCT
Heat Resistance Steel	Austenite	STR31		SUH31			331S2		Z35CNWS14-14	
		STR35		SUH35			349S52	X53CrMnNi21-9	Z52CMN21-09-Az	
		STR36		SUH36			349S54		Z55CMN21-09-Az	
		STR37		SUH37	S63008		381S34			
		STR38		SUH38	S63017					
		STR309		SUH309			309S24	CrNi2520	Z15CN24-13	
		STR310		SUH310	S30900		310S24		Z15CN25-20	
		STR330		SUH330	S31000	309			Z12NCS35-16	
		STR660		SUH660	N08330	310			Z6NCTV25-20	
		STR661		SUH661	S66286	N08330		CrAl1205		
	Ferrite	STR21		SUH21	R30155			X6CrTi12		
		STR409	X6CrTi12	SUH409			409S19		Z6CT12	
		STR409L	X2CrTi12	SUH409L	S40900				Z3CT12	
		STR446		SUH446		409		X45CrSi9-3	Z12C25	
	Martensite	STR1		SUH1	S44600		401S45		Z45CS9	
		STR3		SUH3	S65007	446			Z40CSD10	
		STR4		SUH4			443S65		Z80CSN20-02	
		STR11		SUH11						
		STR600		SUH600						
		STR616		SUH616	S42200					

Vickers Hardness 50kgf HV	Brinell Hardness 3000kgfHB Carbide Alloy Orb of Diameter 10mm	Brinell Hardness 3000kgfHB Carbide Alloy Orb of Diameter 10mm	Rockwell Hardness A Scaleplate 60kgf /	Rockwell Hardness B Scaleplate 100kgf /	Rockwell Hardness C Scaleplate 100kgf diamond	Rockwell Hardness D Scaleplate 100kgf diamond	Shaw Hardness HS	Tensile Strength Approximation
940	-	-	85.6	-	68.0	79.6	90	
920	-	-	85.3	-	67.5	76.5	90	
900	-	-	85.0	-	67.0	76.1	90	
880	-	(767)	84.7	-	66.4	75.7	90	
860	-	(757)	84.4	-	65.9	75.3	90	
840	-	(745)	84.1	-	65.3	74.8	90	
820	-	(733)	83.8	-	64.7	74.3	90	
800	-	(722)	83.4	-	64.0	74.8	88	
780	-	(710)	83.0	-	63.3	73.3	87	
760	-	(698)	82.6	-	62.5	72.6	86	
740	-	(684)	82.2	-	61.8	72.1	84	
720	-	(670)	81.8	-	61.0	71.5	83	
700	-	(656)	81.3	-	60.1	70.8	81	
690	-	(647)	81.1	-	59.7	70.5	-	
680	-	(638)	80.8	-	59.2	70.1	80	
670	-	630	80.6	-	58.8	69.8	-	
660	-	620	80.3	-	58.3	69.4	79	
650	-	611	80.0	-	57.8	69.0	-	
640	-	601	79.8	-	57.3	68.7	77	
630	-	591	79.5	-	56.8	68.3	-	
620	-	582	79.2	-	56.3	67.9	75	
610	-	573	78.9	-	55.7	67.5	-	
600	-	564	78.6	-	55.2	67.0	74	
590	-	551	78.4	-	54.7	66.7	-	2055
580	-	545	78.0	-	54.1	66.2	72	2020
570	-	535	77.8	-	53.6	65.8	-	1985
560	-	525	77.4	-	53.0	65.4	71	1950
550	(505)	517	77.0	-	52.3	64.8	-	1905
540	(496)	507	76.7	-	51.7	64.4	69	0860
530	(488)	497	76.4	-	51.1	63.9	-	1825
520	(480)	488	76.1	-	50.5	63.5	67	1795
510	(473)	479	75.7	-	49.8	62.9	-	1750
500	(465)	471	75.3	-	49.1	62.2	66	1705
490	(456)	460	74.9	-	48.4	61.6	-	1660
480	488	452	74.5	-	47.7	61.3	64	1620
470	441	442	74.1	-	46.9	60.7	-	1570
460	433	433	73.6	-	46.1	60.1	62	1530
450	425	425	73.3	-	45.3	59.4	-	1495
440	435	415	72.8	-	44.5	58.8	59	1460
430	405	405	72.3	-	43.6	58.2	-	1410
420	397	397	71.8	-	42.7	57.5	57	1370
410	388	388	71.4	-	41.8	56.8	-	1330
100	379	379	70.8	-	40.8	56.0	55	1290
390	369	369	70.3	-	39.8	55.2	-	1240
380	360	360	69.8	(100.0)	38.8	54.4	52	1205
370	350	350	69.2	-	39.9	56.6	-	1170
360	341	341	68.7	(109.0)	36.6	52.8	50	1130
350	331	331	68.1	-	35.5	51.9	-	1095
340	322	322	67.6	(108.0)	34.4	51.1	47	1070
330	313	313	67.0	-	33.3	50.2	-	1035

Vickers Hardness 50kgf HV	Brinell Hardness 3000kgfHB Carbide Alloy Orb of Diameter 10mm	Brinell Hardness 3000kgfHB Carbide Alloy Orb of Diameter 10mm	Rockwell Hardness A 60kgf /	Rockwell Hardness B 100kgf /	Rockwell Hardness C 100kgf	Rockwell Hardness D 100kgf	Shaw Hardness HS	Tensile Strength Approximation
320	303	303	66.4	(107.0)	32.2	49.4	45	1005
310	294	294	65.8	-	31.0	48.4	-	980
300	284	284	65.2	(105.5)	29.8	47.5	42	950
295	280	280	64.8	-	29.2	47.1	-	935
290	275	275	64.5	(104.5)	28.5	46.5	41	915
285	270	270	64.2	-	27.8	46.0	-	905
280	265	265	63.8	(103.5)	27.1	45.3	40	890
275	261	261	63.5	-	26.4	44.9	-	875
270	256	256	63.1	(102.0)	25.6	44.3	38	855
265	252	252	62.7	-	24.8	43.7	-	840
260	247	247	62.4	(101.0)	24.0	43.1	37	825
255	243	243	62.0	-	23.1	42.2	-	805
250	238	238	61.6	99.5	22.2	41.7	36	795
245	233	233	61.2	-	21.3	41.1	-	780
240	228	228	60.7	98.1	20.3	40.3	34	765
230	219	219	-	96.7	(18.0)	-	33	730
220	209	209	-	95.0	(15.7)	-	32	695
210	200	200	-	93.4	(13.4)	-	30	670
200	190	190	-	91.5	(11.0)	-	29	635
190	181	181	-	89.5	(8.5)	-	28	605
180	171	171	-	87.1	(6.0)	-	26	580
170	162	162	-	85.0	(3.0)	-	25	545
160	152	152	-	81.7	(0.0)	-	24	515
150	143	143	-	78.7	-	-	22	490
140	133	133	-	75.0	-	-	21	455
130	124	124	-	71.2	-	-	20	425
120	114	114	-	66.7	-	-	-	390
110	105	105	-	62.3	-	-	-	-
100	95	95	-	56.2	-	-	-	-
95	90	90	-	52.0	-	-	-	-
90	86	86	-	48.0	-	-	-	-
85	81	81	-	41.0	-	-	-	-

Annotating1.) Chart data based on ASTIME140 standard

Annotating2.) 1.1MPA²=1N/mm

2.() is not commonly used, only for reference

METAL CUTTING SAFETY

IMPORTANT SAFETY INSTRCUTIONS
Please read before using the tools in this catalog!
Projectile and Fragmentation Hazards

Modern metal cutting operations involve high spindle and cutter speeds and high temperatures and cutting forces. Hot metal chips may fly off of the workpiece during metal cutting. Although cutting tools are designed and manufactured to withstand high cutting forces and temperatures, they can sometimes fragment, particularly if they are subjected to over-stress, severe impact, or other abuse.

To avoid injury:

- Always wear appropriate personal protective equipment, including safety goggles, when operating metal cutting machines or working nearby.
- Always make sure all machine guards are in place.

Breathing and Skin Contact Hazards:

- Grinding carbide or other advanced cutting tool materials produces dust or mist containing metallic particles. Breathing in this dust or mist, especially over an extended period, can cause temporary or permanent lung disease or make existing medical conditions worse. Contact with this dust or mist can irritate one's eyes, skin, and mucous membranes and may make existing skin conditions worse.

To avoid injury:

- Always wear breathing protection and safety goggles when grinding.
- Provide ventilation control and collect and properly dispose of dust, mist, or sludge from grinding.
- Avoid skin contact with dust or mist.

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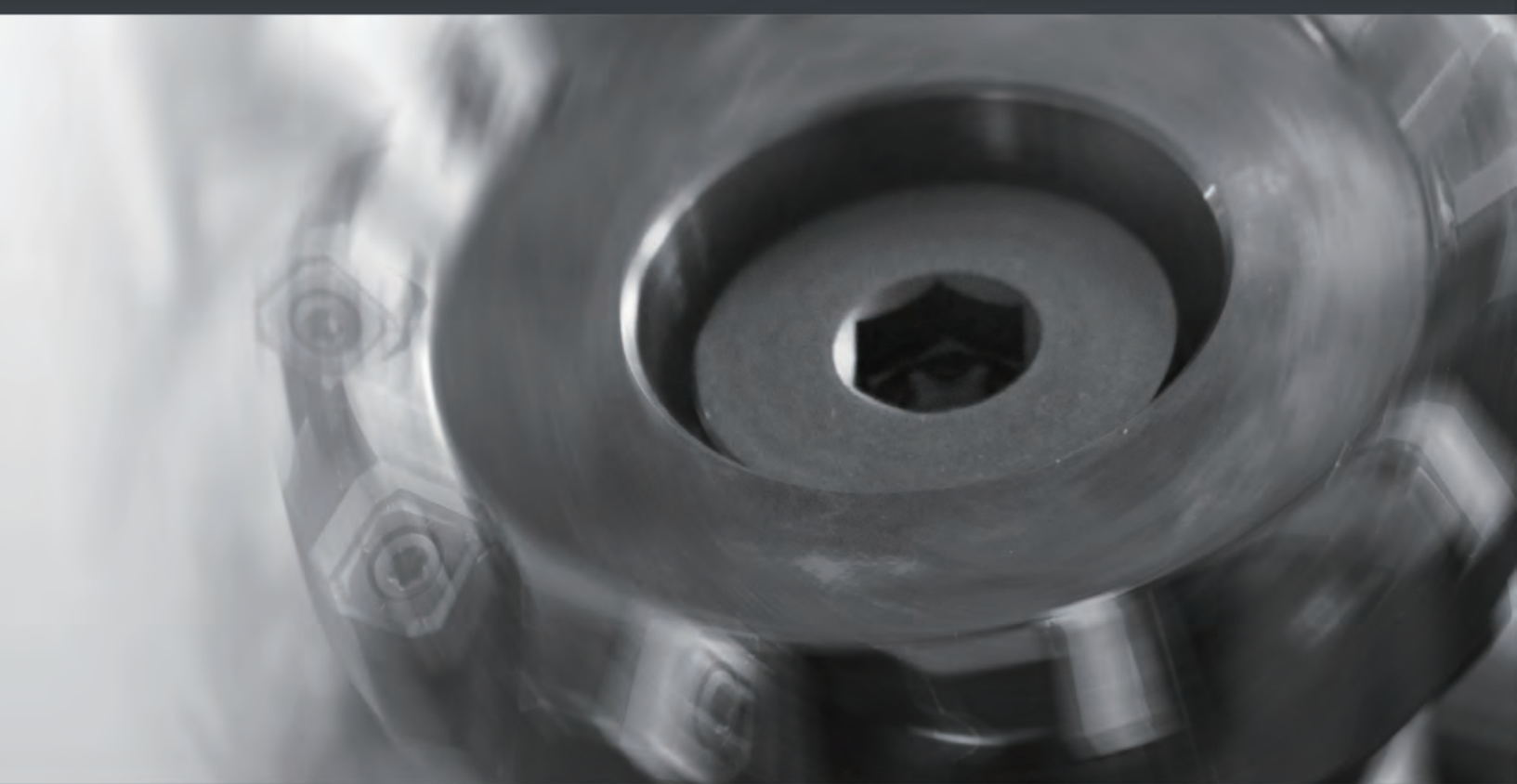

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