2011 METALWORKING CUTTING TOOLS

TaeguTec
Member IMC Group

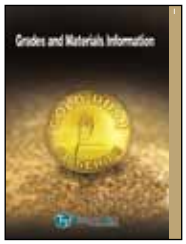
Concise Catalogue Guide

TaeguTec now proudly presents its brand new 2011 Concise Catalogue that introduces a complete range of standard cutting tool products. Within this catalogue, customers will find the 'perfect fit' solution for a wide variety of machining applications. Thorough reading of the catalogue before purchasing of new tools will enable the customer to efficiently access and identify the most specific product and information for their exact needs.

- The contents of this catalogue are based on the metric system.
- This catalogue is mainly composed of TaeguTec standard cutting tool products. Tailor made cutting tools do not appear in this catalogue.
- The below instructions will guide you to the required product fast and efficiently.

STEP1: Select an application line from the main Table of Contents. (Each line is distinguishable with alphabetical initials and colors.)
STEP2: Choose the required machining solutions and tools from each Application Section contents or Application Program Section.
STEP3: Required information on the tooling products can be acquired from the Product Pages.
STEP4: Additional information on products such as holders, inserts and other components are available from the Reference Pages that are indicated in each designation table.

- In cases where the product designation is already at hand, it is easier to look at the Index at the end of the catalogue.
- A User Guide for each product line contains recommended working conditions as well as technical information. Information regarding the TaeguTec grades and work materials are highlighted in the Grades and Materials Information.



- Economical cutting tools can be recommended by TaeguTec technical engineers, if customers provide information such as workpiece materials, drawings, cutting conditions and any additional information.
- All products introduced in this catalogue can also be found and downloaded from the e-Catalogue on the TaeguTec website. The e-catalogue is updated on a weekly-basis where the latest TaeguTec product information is readily available.

e-Catalogue

Should you require more information and data from TaeguTec, please contact the nearest TaeguTec Global Service Center or visit our website. *www.taegutec.com*

TaeguTec

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It Just Gets Better

A

TaeguTurn

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New Products

TURN•RUSH HB chipbreaker

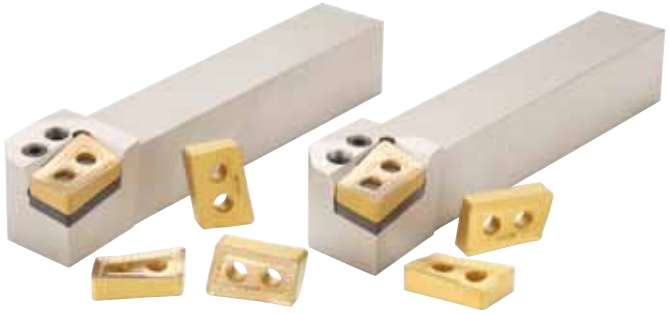
For semi heavy turning

- Low cutting forces and an optimized chip-breaker suitable for semi heavy machining
- Hook lever clamping system gives unique contact surface with large convex
- 3 dimensional geometry that is exchangeable with the ISO standard holder

TOPDUTY 40mm helix cutting edge

For large part machining in the wind power, shipbuilding and power plant industries

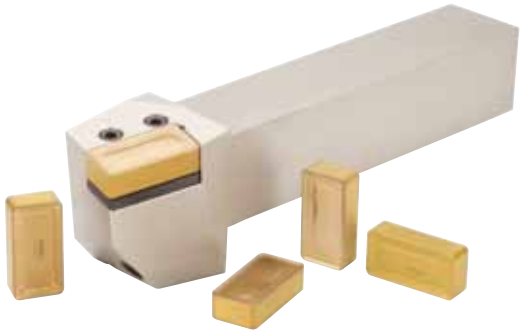
- High helix cutting edge with 40mm cutting edge
- Unique geometry gives low cutting force
- Suitable for low-powered machines



TOPDUTY 50mm cutting edge

For large part machining in the wind power, shipbuilding and power plant industries

- 50mm cutting edge enables cutting up to 45mm depth of cut
- Rectilinear shaped cutting edge ideal for heavy roughing on a high-powered machine



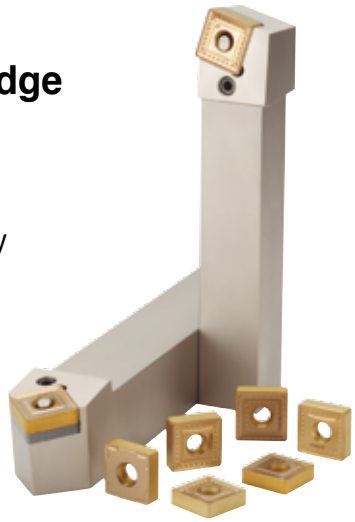
TOPDUTY Double sided H series chipbreaker

New Double-Sided Chipbreaker Insert for Rough and Finish Machining

- Utilizes both sides to improve economy & cost reduction
- Offers a variety of sizes and chip breakers to meet customers specific heavy rough machining requirements
- Economy is further improved by using one tool holder for rough to finish machining

New Products

TOPDUTY Double sided insert with 32mm cutting edge

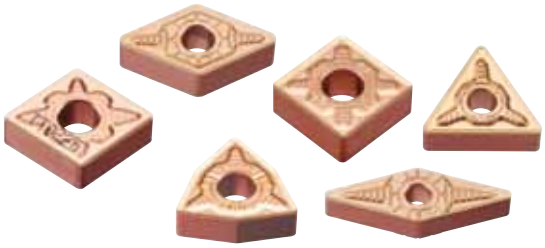


Brand New Double-Sided Insert

- The upper-side has a negative chip breaker type that is suitable for heavy machining
- The under-side is designed to minimize the cutting load and break chips effectively when machining depths of cut less than 5mm
- Strong clamping force due to hook lever system

T-TURN EM chipbreaker

For stainless steels machining



- Cooling effectiveness & stability:
  Broad boss face and heat dissipating design improves surface contact ratio and heat transfer
- Low cutting force:
  -Sharp land design reduces cutting forces and prevents built-up edges
  -Broad ship groove is suitable for smooth chip evacuation for medium machining applications

T-TURN Positive insert with PC chipbreaker

New single sided 'PC' chipbreaker is suited to semi-finish and medium machining

- Low cutting forces credit to its positive rake angle
- Wide application range
- Suitable for a wide variety of materials
- For semi-finish to medium application

T-TURN RA chipbreaker with positive insert

For rough machining of medium and large sized components.

- Better chip control range at low feed rates and D.O.C
- Suitable for heavy & interrupted machining
- Broad chip control range

T-TURN RX chipbreaker for semi rough machining of Large Parts

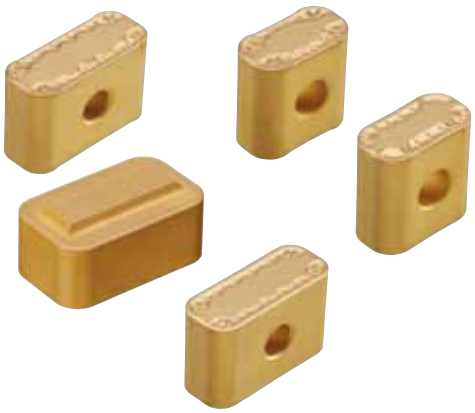
For semi rough machining and large sized components

- Negative and positive cutting edge: improves stability and machinability
- Helical cutting edge: increases tool life by minimizing cutting resistance
- Extensive application: applicable to a broad range of workpieces

New Products

TOPRAIL For rail wheel machining

Best solution for rail wheel profiling



- The tangential type inserts are suitable for radius and rough machining of wheel profiles
- Economical and productive insert options are based on individual cutting conditions (roughing, semi-finishing and finishing)

TOPFEED HF chipbreaker

For high feed machining

- Maximum edge life for turning: Double sided and 6 cutting edges
- Ultra high feed machining condition: Max feed rate=3.0mm/r, Max D.O.C=2.5mm
- Quick change and rigid clamping force: Due to hook lever clamping design

TOPMINI SA chipbreaker

Ground positive ISO inserts for high precision turning

- High precision is guaranteed with the peripherally ground geometry
- Low cutting forces due to the dynamic inclined sharp cutting edge with a wide groove geometry
- Suitable for Swiss sliding head turning centers with its soft cutting and excellent surface finish Small corner radius size: R0.1, 0.2 and 0.4mm

TOPMINI Back Clamping Holder

Quick change holder for Swiss type lathes

- Quick insert changeover with simple lever clamp design
- Both front and side clamping is available
- Rigid and stable clamping force guaranteed with unique backward and downward two-directional clamping force
- No limitations – can be used with all Swiss-type turning machines

TOPMINI Boring bar and insert for small component machining

New range of inserts and boring bars suitable for the turning of small workpieces

Insert Features
- Produced in two insert types - ground & pressed-to-size
- Micro size Insert (IC=3.97, 4.76mm)
- Excellent surface finish prevents micro chipping and prolongs tool life
- Available in both right-hand and left-hand operation types

Boring bar Features
- Improves chip evacuation
- Stable machining with reduced chatter
- Bore machining as small as 6mm diameter possible
- Shanks available in steel and carbide

C-ADAPTER

Quick change holders for ISO turning

- Wide range of quick change heads for ISO turning tool.
- Possible for high precision during machining due to stable clamping force.

MODULARBAR

Head exchangeable modular boring bar

- Auto-centring and excellent durability due to detachable triangular anti-rotator
- Strong adjoining force and high precision even after repeated head exchange
- Internal coolant
- Shank Diameter range from 25mm up to 32mm

COMBICLAMP Multi clamp for T-Holder

Multi functional clamp system

- Compatibility: Applicable to the existing T-Holders when clamp is changed
- Versatility: 3 different types of insert for one T-Holder
- Durability: The new carbide clamp shows better wear resistance compared to existing cast iron machining applications
- Stability: Due to the gap adjusting structure in the insert's contact area, it proves much stronger with a stable joint force

New Products

T-TURN Ceramic grade

TC430 Whisker reinforced ceramic grade for machining high strength and high temperature alloy material

- SiC whisker reinforced ceramics grade.
- High hardness and high fracture toughness.
- Suitable for general turning and milling applications.
- Possible to machine at high speed cutting for Ni-base superalloy (Inconel, Waspaloy, Rene, etc.), hardened steels and hard castings

T-TURN CBN grades

TB610, TB670, TB730

Excellent cutting performance for hardened steel and cast iron

TB610
- Excellent oxidation resistance and chemical stability.
- From continuous to light interrupted turning.
- For machining hard steel, alloy steel, tool steel and case hardened steel.

TB670
- High hardness and impact resistance.
- From continuous to severe interrupted turning.
- For alloy steel, tool steel, case hardened steel and chilled cast iron.

TB730
- High hardness and high fracture toughness.
- General turning and milling.
- For gray cast iron, nodular cast iron and carbide rolls.

T-TURN PCD chipbreaker insert

CB - New geometricized PCD insert

- Serrated cutting edge ensures maximum chip control and low cutting resistance that performs remarkably well even in low depth of cut and low feed
- Unique cutting edge geometry guarantees excellent chipping resistance

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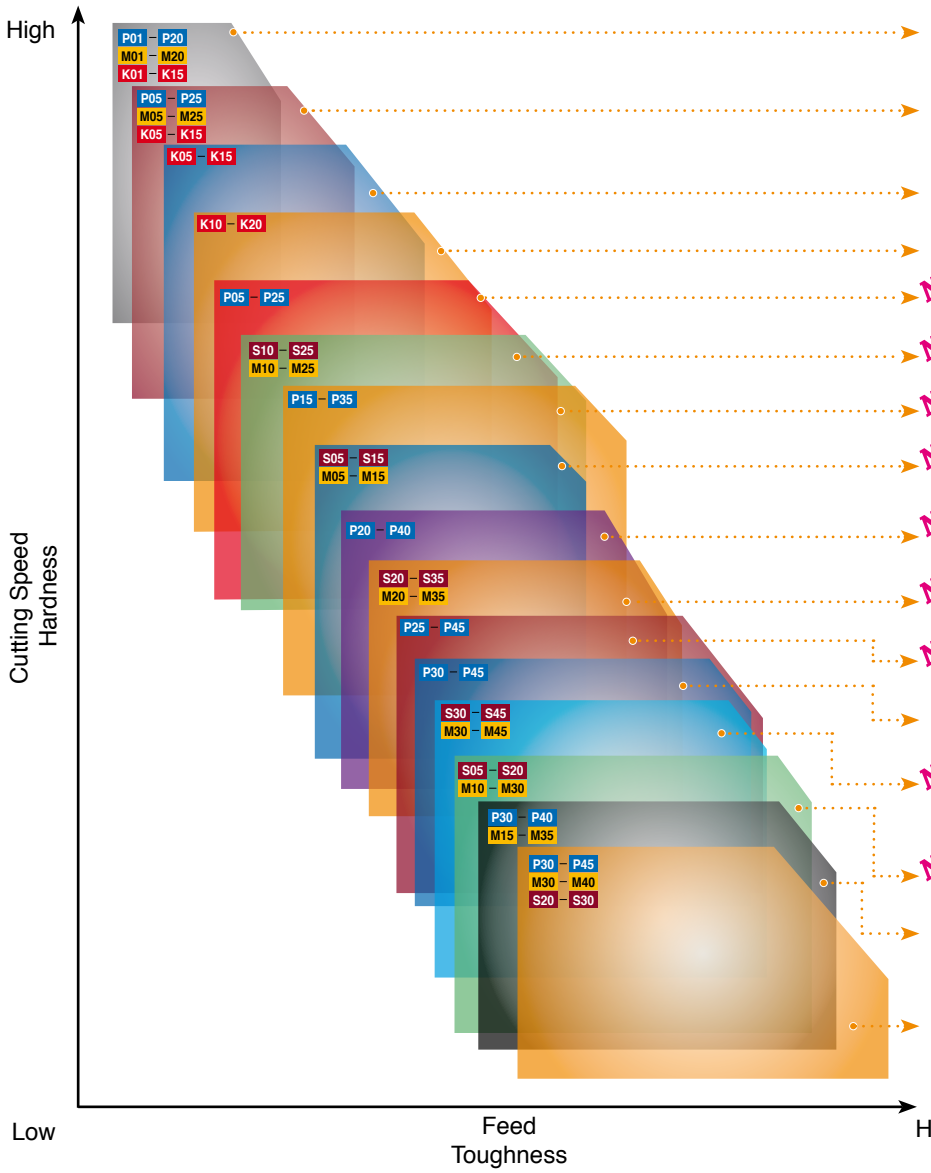
Insert Materials

Insert Grades



PV3010	• Steel • Cast Iron • Stainless Steel
CT3000	• Steel • Cast Iron • Stainless Steel
TT1300	• Gray Cast Iron
TT7310	• Gray & Ductile Cast Iron
New TT8115	• Steel
New TT9215	• Stainless Steel • High-Temp. Alloys
New TT8125	• Steel
New TT5080	• High-Temp. Alloys • Stainless Steel
New TT5100	• Low Carbon Steel • Low Carbon Alloy Steel
New TT9225	• Stainless Steel • High-Temp. Alloys
New TT8135	• Steel
TT7100	• Low Carbon Steel • Low Carbon Alloy Steel
New TT9235	• Stainless Steel • High-Temp. Alloys
New TT9080	• Stainless Steel • High-Temp. Alloys
TT9020	• Stainless Steel • Mild Steel
TT8020	• Stainless Steel • High-Temp. Alloys • Low Carbon Alloy Steel • Low Carbon Steel

- **PV3010**: **PVD** Coated cermet, **CT3000**: Uncoated cermet
- **TT1300, TT7310, TT8115, TT8125, TT8135, TT5100, TT7100, TT9215, TT9225, TT9235**: CVD coated carbide
- **TT5080, TT8020, TT9080, TT9020**: PVD coated carbide

Coated Carbide, Cermet and Carbide Grades

Grades	ISO	Characteristics & Applications
TT1300 CVD Coated	K05 – K15	• For high speed turning of cast iron • Thick aluminum oxide coating on a high wear resistant substrate • First choice for machining cast iron (Rough and Finish)
TT7310 CVD Coated	K10 – K20	• For machining of ductile cast iron & gray cast iron • Excellent wear and chipping resistance
TT8115 CVD Coated	P05 – P25	• For high speed turning continuous cutting on steels • Excellent wear resistance and heat-resistance
TT9215 CVD Coated	S10 – S25 M10 – M25	• Excellent insert wear resistance • For high cutting speed & continuous cutting on stainless steels
TT8125 CVD Coated	P15 – P35	• For a wide range of turning on steels • Very good combination of wear resistance and toughness • For general use on steels
TT5080 PVD Coated	S05 – S15 M05 – M15	• For a wide range of turning of high-temp alloys • Very hard submicron substrate with good fracture toughness
TT5100 CVD Coated	P20 – P40	• For a wide range of turning of mild steel, low carbon steel and low carbon alloy steel • Excellent chipping resistance and sticking resistance
TT9225 CVD Coated	S20 – S35 M20 – M35	• Excellent combination of insert wear resistance & fracture resistance • For general use on stainless steel • For continuous and interrupted cutting on stainless steel
TT8135 CVD Coated	P25 – P40	• Tough carbide substrate • For a wide range of medium to roughing applications at low cutting speed on steels • For heavy turning
TT7100 CVD Coated	P30 – P45	• Very tough carbide substrate base - with a CVD coating • This combination provides both excellent toughness and chipping resistance • For heavy turning
TT9235 CVD Coated	S30 – S45 M30 – M45	• Excellent combination of insert wear resistance & toughness • For low cutting speed & interrupted cutting
TT9080 PVD Coated	M10 – M30 S15 – S25	• Very hard submicron substrate • For turning small components
TT9020 PVD Coated	P30 – P40 M15 – M35	• Submicron substrate with PVD coating • For stainless steel
TT8020 PVD Coated	P30 – P45 M30 – M40 S20 – S30	• For medium to low speed turning of stainless steel, exotic alloys and low carbon steel • Toughest grade in turning grade • For interrupted cut on stainless steel and exotic alloys
PV3010 PVD Coated Cermet	P01 – P20 M01 – M20 K01 – K15	• For high surface finish turning of steel, stainless steel and cast iron • Excellent wear resistance and low coefficient of friction • Long tool life
CT3000 Uncoated Cermet	P05 – P25 M05 – M25 K05 – K15	• Excellent surface finish turning on steel, stainless steel and cast iron • Excellent wear resistance and low coefficient of friction
K10 Carbide	K05 – K20 N10 – N20	• General turning of cast iron, exotic alloy and non-ferrous materials including aluminum and copper alloy • Excellent wear resistant grade

Recommended Cutting Speeds: V=m/min							
Materials							
Low Carbon Steel	Low Carbon Alloy Steel	Carbon Steel	Alloy Steel	Stainless Steel	High Temp. Alloy	Cast Iron	Aluminum Alloy
						150 - 450	
						150 - 420	
440-800	330-660	170-440	110-380				
				170-250	40-80		
250-600	150-500	100-350	80-300				
				150-250	30-100		
150-500	70-350	70-250	70-220				
				130-220	30-70		
100-400	70-320	70-250	70-220				
60-350	60-300	70-200	70-180				
				110-170	30-60		
				50-160	20-40		
				50-150			
70-300	70-250	70-150	70-130	50-150	20-30		
300-800	150-600	150-400	100-350	200-300		100-300	
250-700	150-550	150-350	100-320	200-270		100-350	
					20-50	80-180	60-1500

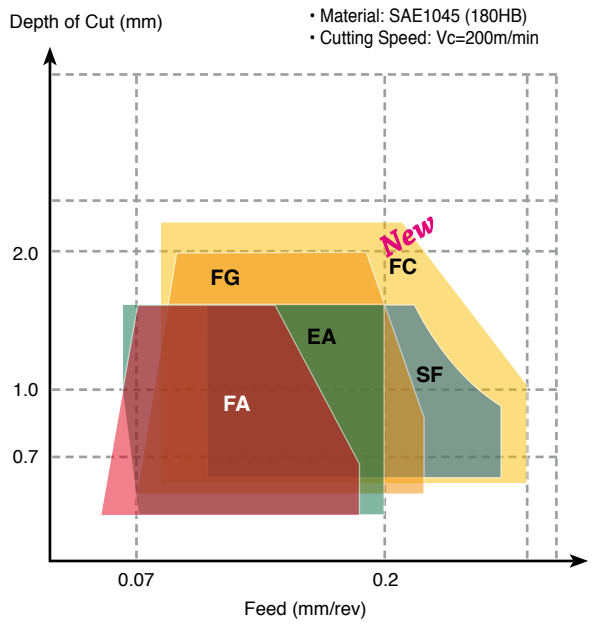
CBN, PCD and Ceramic Grades

Grades	Composition	Characteristics & Applications
KP300 PCD	PCD + Binder	• For general use on aluminum alloy • Excellent combination of wear resistance and toughness
New **TB610** CBN	CBN + Binder	• Excellent wear resistant grade with low CBN content • Continuous cutting at high cutting speeds on hardened steels
TB650 CBN	CBN + Binder	• High wear resistant grade with moderate fracture toughness • Can be applied to light interrupted cutting applications
New **TB670** CBN	CBN + Binder	• Excellent combination of wear resistance and toughness • For general use on hardened steel • For continuous and interrupted cutting
New **TB730** CBN	CBN + Binder	• Excellent toughness with high CBN content • For high speed machining of cast iron • Can be applied to interrupted cutting on hardened steel and other materials
KB90A CBN	CBN + Binder	• Solid CBN with excellent impact resistance • For high speed machining of cast iron • Can be applied to rough to medium machining of hardened steel
AW20 CERAMIC	Al_2O_3 + ZrO_2	• Excellent wear resistant grade with chemical stability and temperature resistance • For high speed continuous turning of cast iron • For finishing applications on hard materials
AB2010 COATED CERAMIC	(Al_2O_3 +TiCN) +TiN PVD Coating	• Excellent wear resistance and tool life • Very good combination with improved wear and fracture resistance • Finishing operations on hardened steels and hardened cast irons
AB20 CERAMIC	Al_2O_3 +TiCN	• High wear resistant grade with excellent cutting edge stability • For high speed continuous turning of hardened steel and other hard materials • For finishing applications on cast iron.
AB30 CERAMIC	Al_2O_3 +TiC	• Mixed ceramic with good toughness and wear resistance • For general use on hardened steel, cast iron and hard materials • Can be applied to interrupted cutting conditions
New **TC430** CERAMIC	Whisker	• SiC whisker reinforced ceramic grade • General turning and milling • For Ni-base superalloy, inconel, waspaloy and rene
New **AS500** CERAMIC	SiAlON	• For roughing to finishing cast iron applications • For higher cutting speeds compared to AS10 • Wet and dry cutting
SC10 COATED CERAMIC	AS10 + CVD	• Wear resistant grade with excellent toughness and thermal shock resistance • For high speed turning of cast iron • Wet and dry cutting
AS10 CERAMIC	Si_3N_4	• High wear resistant grade with excellent toughness and thermal shock resistance • For general use on cast iron • Wet and dry cutting
AS20 CERAMIC	Si_3N_4	• Very tough Si_3N_4 ceramic grade with high cutting edge stability • For roughing to finishing applications with high temperature nickel based alloys • Wet and dry cutting

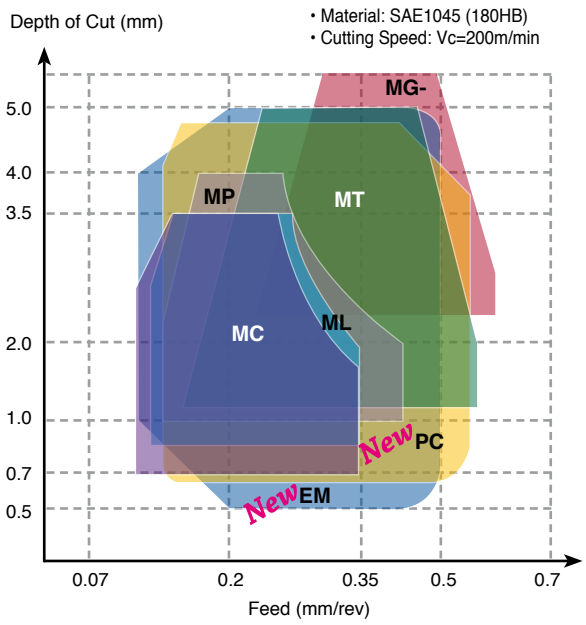
Recommended Cutting Conditions: V=m/min, f=mm/rev							
Materials							
Grey cast iron (180-220HB)	Ductile cast iron (200-240HB)	Chilled cast iron (400-700HB)	H.S.S. Roll	Sintered metal	Hardened steel (46-65HRC)	Aluminum Alloy	Ni-Based super alloy
						600-3000 0.05-0.3	
					100-250 0.05-0.2		
		80-150 0.1-0.2	50-100 0.2-0.6	100-300 0.05-0.2	80-200 0.05-0.2		
		80-150 0.1-0.25	30-80 0.2-0.6	100-300 0.1-0.3	80-180 0.1-0.3		
500-1000 0.1-0.3	300-800 0.1-0.3	80-150 0.1-0.3		80-250 0.1-0.25	60-150 0.1-0.3		
500-1000 0.1-0.3	300-700 0.1-0.3	80-150 0.1-0.3					
400-1000 0.1-0.5	300-600 0.1-0.2						
		50-200 0.05-0.2			80-300 0.05-0.2		
300-800 0.1-0.3		50-200 0.05-0.2	50-100 0.2-0.5		50-250 0.05-0.2		
300-800 0.1-0.5	250-500 0.1-0.3	50-150 0.05-0.2	50-80 0.2-0.5		50-200 0.1-0.25		
			50-100 0.2-0.7				150-400 0.1-0.3
400-1000 0.2-0.6	200-600 0.1-0.5		20-60 0.2-0.7				
300-1000 0.2-0.8	250-600 0.2-0.6						
400-800 0.2-0.8	200-500 0.2-0.6						
							100-300 0.1-0.3

Negative Inserts

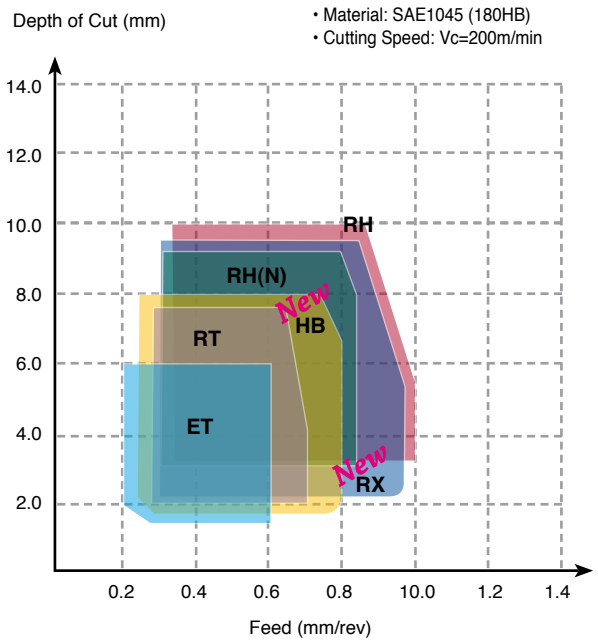
For Finishing Applications



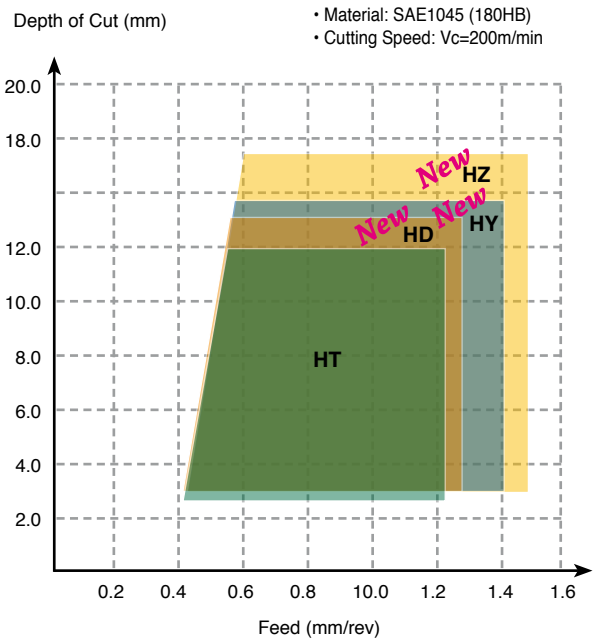
For Medium Applications



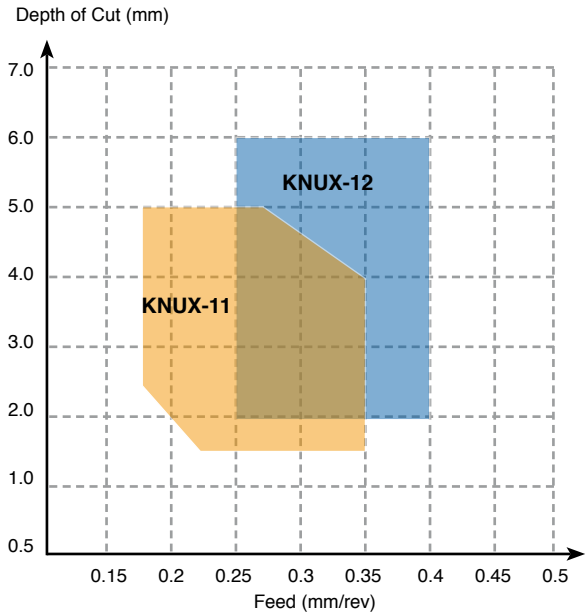
For Roughing Applications



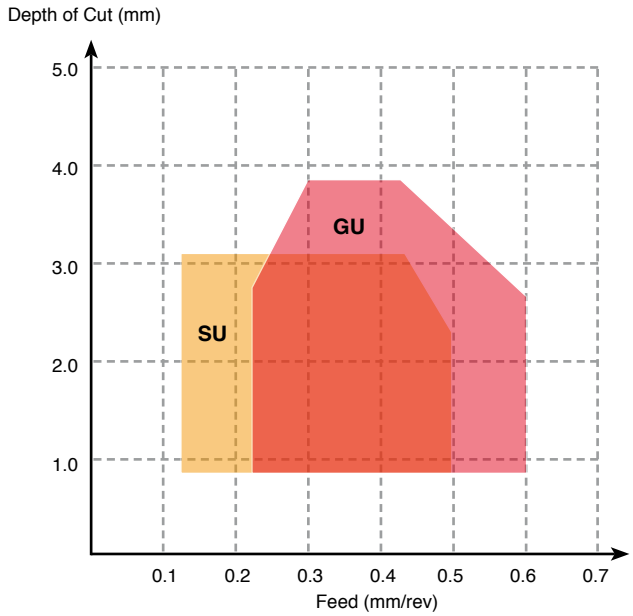
For Heavy Machining



KNUX Type

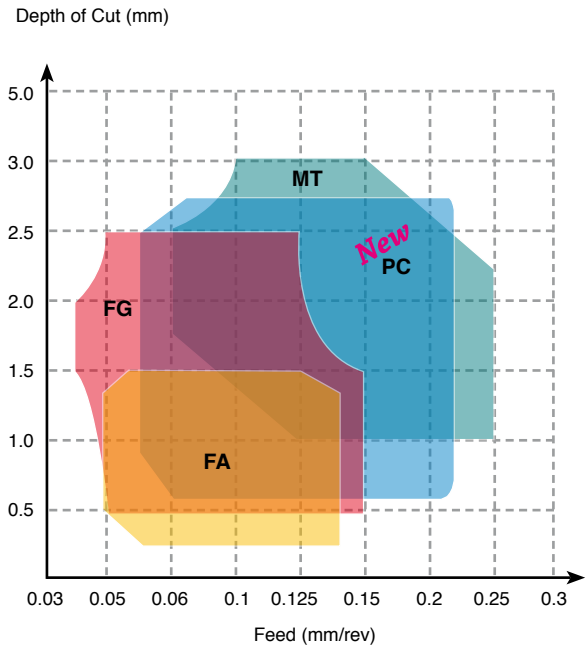


HNMG Type

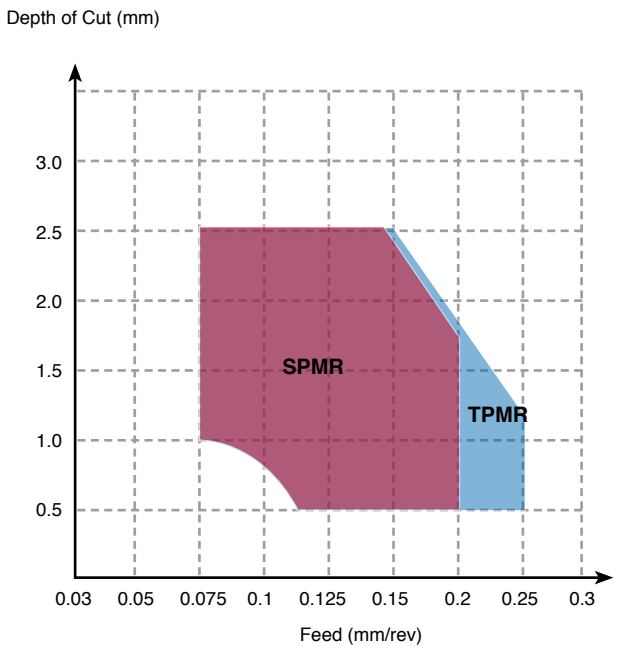


Positive Inserts

For Finish to Medium Applications

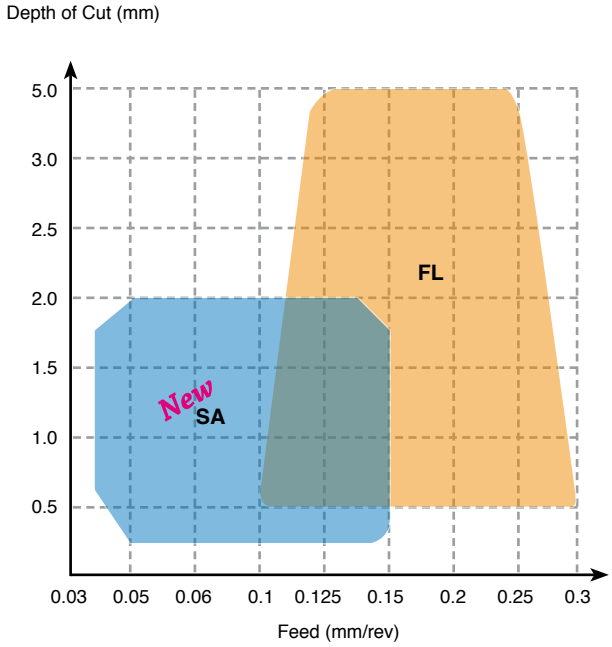


For Medium Applications

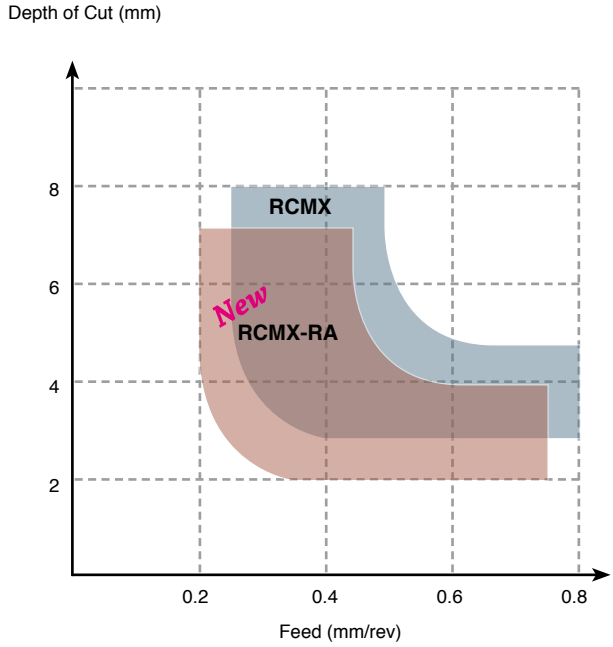


Positive Inserts

Ground Insert for Finishing Applications

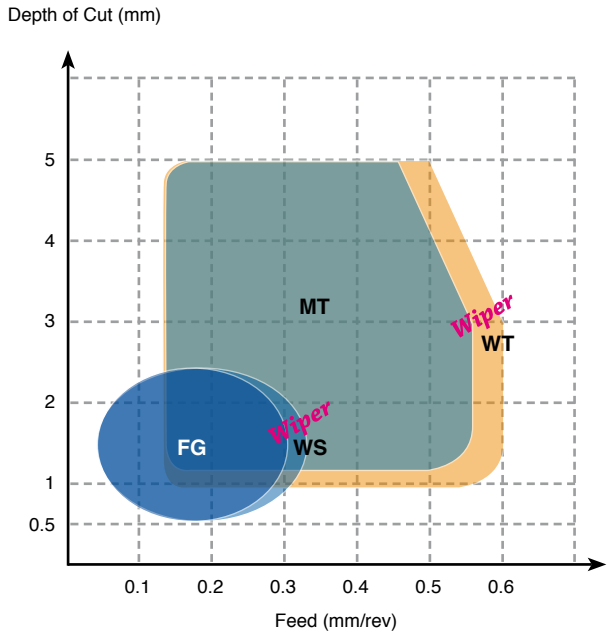


Round Insert for Roughing Applications

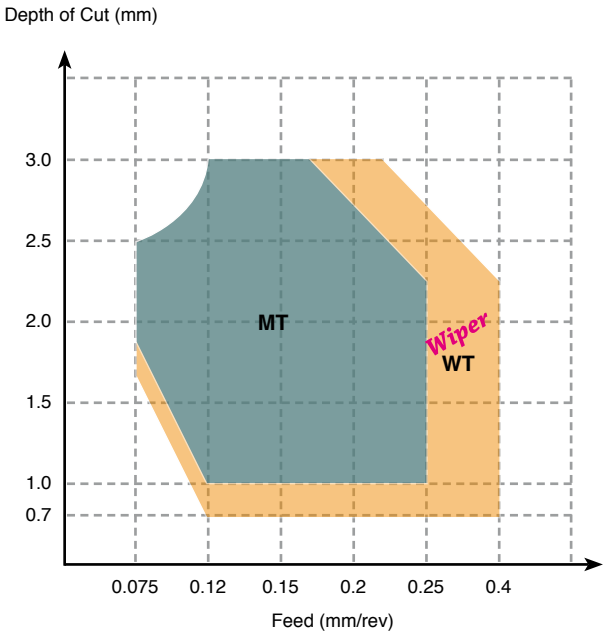


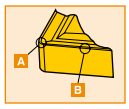
'WS' and 'WT' Wiper Inserts for High Feed Turning

Negative Inserts

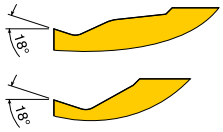
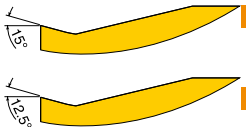
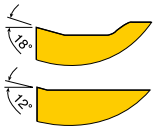
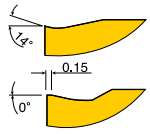
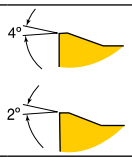
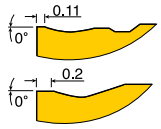
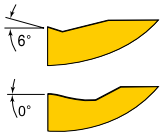
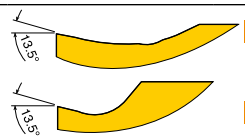
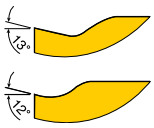
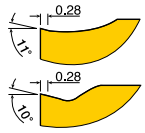
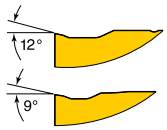
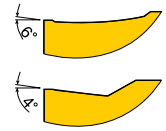


Positive Inserts

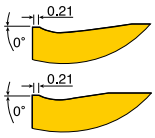
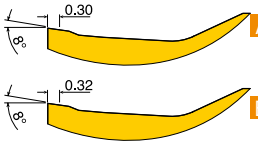
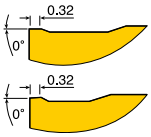
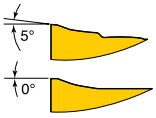
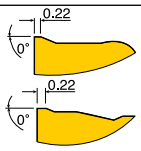
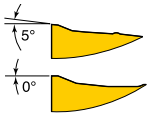
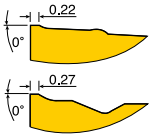
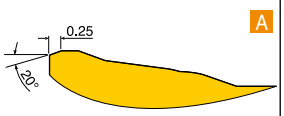
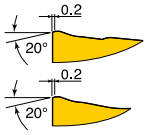
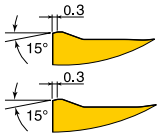
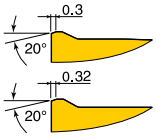
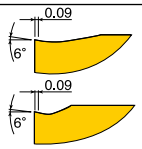
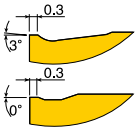




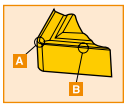
Negative Inserts

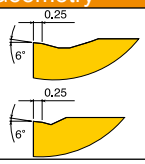
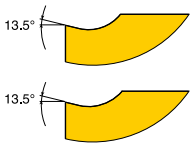
Chipbreaker Name and Geometry				Applications and Features
FA		CNMG 1204		• For super finish applications • Steel, stainless steel and heat resistant alloy machining • Excellent chip control
EA		CNMG 1204		• For finishing applications • Exotic materials • Excellent chip control at low feeds and depths of cut
FG		WNMG 0604		• For finish and semi finish applications • Steel, stainless steel and cast iron machining • Low cutting forces
SF		CNMG 1204		• For finishing applications • Stainless steel and heat resistant alloy machining • Low cutting forces
New FC		CNMG 1204		• Ideal for finishing applications • Low carbon steel & low carbon alloy steel • Effective chip breaking in both turning and facing operations
MC		CNMG 1204		• For medium applications • Steel and cast iron machining • Strong rake geometry • Excellent chip control on medium turning applications
New PC		CNMG 1204		• For medium to semi-finishing applications • Steel & Automotive component • Positive geometry • Excellent chip control on medium applications
VF		DNMG 1504		• For slender workpiece applications • Vibration free • Steel and stainless steel machining • High positive rake geometry to minimize cutting forces
ML		CNMG 1204		• For medium light applications • Stainless steel, steel and aluminum • Very high positive rake geometry to minimize built-up-edge and cutting forces
MP		CNMG 1204		• For medium machining applications • Steel and stainless steel • High positive rake geometry to optimize machining and provide stable machining conditions
New EM		CNMG 1204		• For medium applications • Stainless steel machining • Sharp land design for low cutting force
MT		WNMG 0804		• For medium rough applications • Steel, cast iron and stainless steel • Tough rake angle for general use

T-TURN Chipbreakers

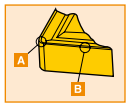
Chipbreaker Name and Geometry			Applications and Features
MG-		CNMG 1204  A B	• For medium rough applications • Steel and cast iron machining • Strong rake geometry • Suitable for manual lathes
ET		CNMG 1204  A B	• For roughing applications on exotic materials • Low cutting force • Wide chip control range when roughing
RT		CNMG 1906  A B	• For roughing applications • Steel and cast iron machining • Very strong rake geometry
New HB		CNMX 1607  A B	• For semi heavy roughing applications • Steel and alloy steel machining • Double sided semi-heavy turn insert • Stable contact surface with seat
RH(N)		CNMM 1906  A B	• For high feed roughing applications • Steel, cast iron and stainless steel machining • Very strong rake geometry
New RX		CNMM 1906  A B	• For semi heavy roughing applications • Steel, stainless steel and cast iron machining • Strong cutting edge with flat land • Low cutting force
RH		CNMM 1906  A B	• For roughing applications • Steel, stainless steel and cast iron machining • Very strong rake geometry
HT		SNMM 1906  A	• For heavy roughing applications • Low cutting force for low horse power machines • Excellent chip control due to changeable land and a flexible chip breaker
New HD		CNMD 2509  A B	• For heavy roughing applications • For all kinds of shafts, connecting-rods and ship building components • Flexible chip breaker offers excellent chip evacuation
New HY		CNMM 2509  A B	• For heavy roughing applications • For large depth of cut and high feed • Strong cutting edge credit to a wide land and large land angle
New HZ		CNMM 2509  A B	• For heavy roughing applications • For large depth of cut and high feed • Extremely strong cutting edge credit to a wide land and large land angle • Suitable for high cutting conditions
Wiper WS		CNMG 1204  A B	• For super finish applications • Steel, cast iron and stainless steel machining • Excellent chip control and low cutting forces
Wiper WT		CNMG 1204  A B	• For medium to rough machining applications • Steel, cast iron and stainless steel machining • Stable cutting and low cutting forces at high feed rates

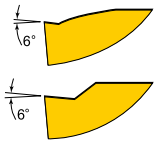
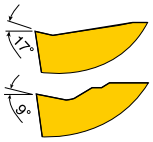
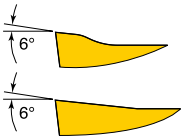
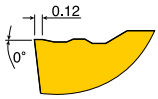
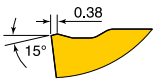
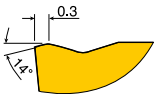
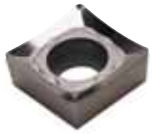
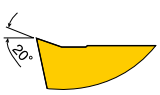
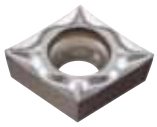
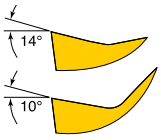
HNMG Type Inserts

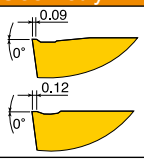


	Chipbreaker Name and Geometry		Applications and Features
GU		HNMG  A B	• For medium applications • For general turning of steels and cast irons • Strong rake geometry
SU		HNMG  A B	• For exotic materials • Stainless steels, super alloys, low carbon steels, low carbon alloy steel machining • Sharp geometry to minimize built-up edge

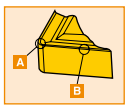
Positive Inserts

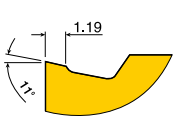
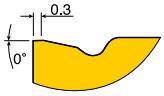


	Chipbreaker Name and Geometry		Applications and Features
FA		DCMT 11T3  A B	• For super finish applications • Very tight chipbreaker • Excellent chip control
FG		CCMT 09T3  A B	• For finish to medium light applications • Steel and stainless steel machining • Low cutting forces • Excellent chip control
New PC		CCMT 09T3  A B	• For medium applications • Suitable for a wide variety of meterials • Low cutting force
MT		CCMT 09T3  A	• For medium to medium rough applications • Steel, stainless steel and cast iron machining • Negative rake geometry for general use
PMR-		TPMR 1103 A	• For medium to medium rough applications • Steel, stainless steel and cast iron • Positive rake geometry
New RA		RCMX 3209  A	• For heavy and interrupted machining applications • Steel, stainless steel and cast iron machining • Optimized chip groove geometry
CMX-		RCMX 1204  A	• For high feed roughing applications • Steel, stainless steel and cast iron machining • Strong rake geometry
FL		CCGT 1204  A	• For finish to medium applications • Aluminum machining • Very high positive rake geomerty to minimize built-up-edge
New SA		CCGT 09T3  A B	• For finish to medium applications • Steel & aluminum machining • Low cutting force

Chipbreaker Name and Geometry			Applications and Features
Wiper WT		CCMT 09T3 	• For medium to rough machining applications • Steel, cast iron and stainless steel machining • Stable cutting and low cutting forces at high feed rates

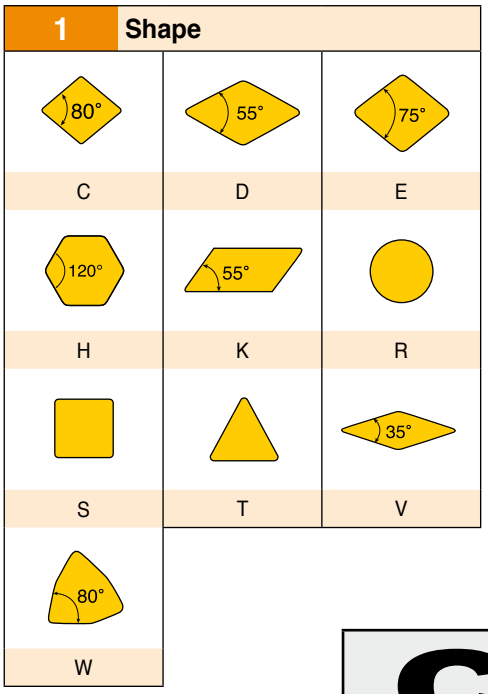
KNUX Type Inserts



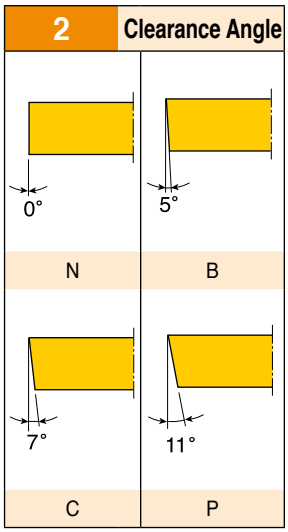
Chipbreaker Name and Geometry			Applications and Features
11		KNUX 1604 	• For medium light to medium applications • Steel and stainless steel machining • Positive rake geometry to minimize cutting forces • Excellent chip control
12		KNUX 1604 	• For medium to medium rough applications • Steel and stainless steel • Strong rake geomerty • Wide chip control range

Insert Designation System

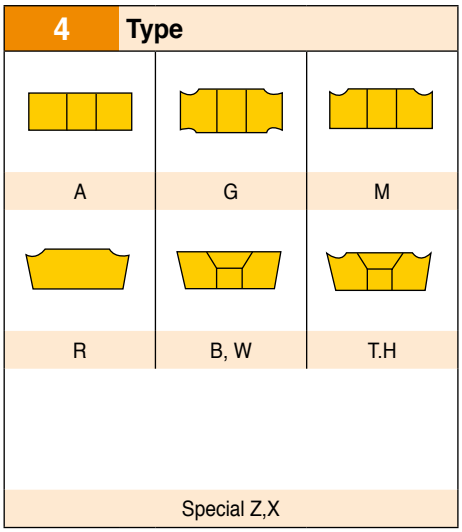
1 Shape

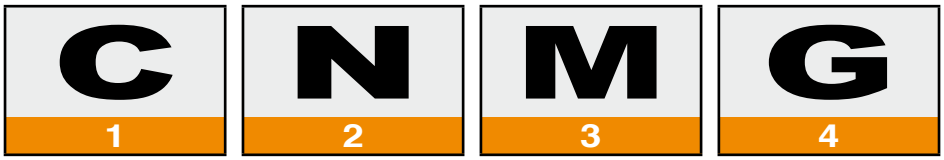


2 Clearance Angle

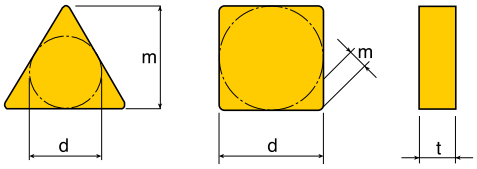


4 Type





3 Tolerance

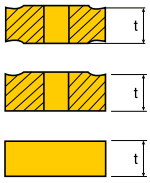


Class	m	t	d
A	±0.005	±0.025	±0.025
F	±0.005	±0.025	±0.013
C	±0.013	±0.025	±0.025
H	±0.013	±0.025	±0.013
E	±0.025	±0.025	±0.025
G	±0.025	±0.13	±0.025
M	±0.08 - ±0.18	±0.13	±0.05 - ±0.13
U	±0.13 - ±0.38	±0.13	±0.08 - ±0.25

Diameter of IC	Tolerance			
	On m		On d	
	Class M	Class U	Class M	Class U
6.35	±0.08	±0.13	±0.05	±0.08
9.52	±0.08	±0.13	±0.05	±0.08
12.70	±0.13	±0.20	±0.08	±0.13
15.88	±0.15	±0.27	±0.10	±0.18
19.05	±0.15	±0.27	±0.10	±0.18
25.40	±0.18	±0.38	±0.13	±0.25
31.75	±0.18	±0.38	±0.13	±0.25

T-TURN Insert Designation System

6 Thickness

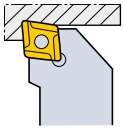


01 = 1.59mm
T1 = 1.98mm
02 = 2.38mm
T2 = 2.78mm
03 = 3.18mm
T3 = 3.97mm
04 = 4.76mm
05 = 5.56mm
06 = 6.35mm
07 = 7.94mm
09 = 9.52mm

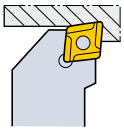
7 Corner Radius

01 = 0.1mm
02 = 0.2mm
04 = 0.4mm
05 = 0.5mm
08 = 0.8mm
12 = 1.2mm
16 = 1.6mm
20 = 2.0mm
24 = 2.4mm
32 = 3.2mm

8 Hand of Insert



R: Right hand



L: Left hand

9 Chipbreaker

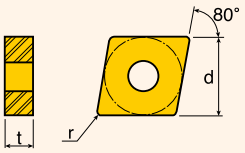
For chipbreakers,
see page A17 - A20

12	04	08	(R)	MP
5	6	7	8	9

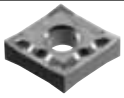
5 Cutting Edge Length

I.C(mm)	C	D	E	R	S	T	V	W	K	H
3.97	03	04			03	06		02		
4.76	04	05			04	08	08			
5.56	05	06			05	09	09	03		
6.35	06	07			06	11	11	04		
7.94	08	09			07	13	13	05		
8.0				08						
9.52	09	11		09	09	16	16	06	16	
10.0				10						
12.0				12						
12.7	12	15	13		12	22	22	08		05
15.88	16	19		15	15	27	27	10		
16.0				16						
19.05	19	23		19	19	33	33	13		10
20.0				20						
25.0				25						
25.4	25	31		25	25	44	44	17		
31.75	32	38			31	54	54	21		
32.0				32						

Negative 80° Rhombic Inserts



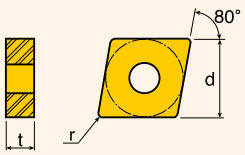
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
For Roughing	CNMA	120404	0.15 - 0.50	1.0 - 5.0			●	●														●	
		120408	0.15 - 0.60	1.0 - 6.0			●	●														●	
		120412	0.15 - 0.70	1.5 - 6.0			●	●															
		120416	0.20 - 0.80	2.0 - 6.0																			
		160612	0.15 - 0.70	2.0 - 8.0			●																
		160616	0.20 - 0.80	2.0 - 8.0			330	250														150	
		190604	0.15 - 0.50	2.0 - 10.0																			
		190608	0.15 - 0.70	2.0 - 10.0				●															
		190612	0.15 - 0.70	2.0 - 10.0			●	●															
		190616	0.15 - 1.00	3.0 - 10.0			●	●														●	
Wiper For Roughing	CNMA	120408 WT	0.15 - 0.8	0.7 - 5.0			330	250															
 For Medium	CNGG	120401 ML	0.03 - 0.10	0.1 - 1.0													●						
		120402 ML	0.05 - 0.15	0.2 - 1.2													●	60				●	
		120404 ML	0.10 - 0.30	0.8 - 3.5													●	260				●	
		120408 ML	0.12 - 0.35	1.0 - 3.5													●						
For Medium	CNMG	090308	0.20 - 0.50	1.0 - 3.5					●	●					●								
		120404	0.17 - 0.45	1.0 - 5.0		●	●	●	●	●	●				●			●				●	
		120408	0.23 - 0.60	1.5 - 5.0		●	●	●	●	●	●				●	●		●			●		●
		120412	0.25 - 0.60	2.0 - 5.0			●	●	●	●					●								
		120416	0.27 - 0.60	2.5 - 5.0																			
		160408	0.25 - 0.60	2.0 - 6.5						●													
		160604	0.20 - 0.45	2.0 - 6.5						●													
		160608	0.25 - 0.60	2.0 - 6.5		290	330	250	●	290 ●	265	195			●	205	170		150			190	150	120
		160612	0.27 - 0.60	2.0 - 6.5		250				●													
		160616	0.29 - 0.60	2.0 - 6.5																			
		190604	0.20 - 0.45	3.0 - 8.0					●	●					●								
		190608	0.25 - 0.60	3.0 - 8.0			●	●	●	●	●				●								
		190612	0.30 - 0.60	3.0 - 8.0			●		●	●	●				●	●							
		190616	0.35 - 0.70	3.0 - 8.0					●	●	●				●								
		190624	0.35 - 0.80	3.0 - 8.0																			
For Finishing	CNMG	120404 EA	0.05 - 0.30	0.15 - 1.5		340				●		● 70	● 50	● 40				60	150		● 40		
		120408 EA	0.07 - 0.40	0.15 - 1.5		● 270			● 340	● 310		● 200	● 170	● 140	240		●	260	130		● 130		
For Medium	CNMG	120408 EM	0.13 - 0.50	0.5 - 5.0								●	●	●			●				●		
		120412 EM	0.15 - 0.55	0.5 - 5.0								●	●	●							●		
		120416 EM	0.17 - 0.60	0.5 - 5.0								●	●	●									
		160608 EM	0.13 - 0.50	0.5 - 6.5								●	●	●			●						
		160612 EM	0.15 - 0.55	0.5 - 6.5								● 70	● 50	● 40			●	60			30		
		160616 EM	0.17 - 0.60	0.5 - 6.5								● 180	● 150	● 120			●	250			110		
		190608 EM	0.13 - 0.50	0.5 - 8.0								●	●	●			●						
		190612 EM	0.15 - 0.55	0.5 - 8.0								●	●	●			●						
		190616 EM	0.17 - 0.60	0.5 - 8.0								●	●	●			●						

- For toolholders, see page A84, A85, A98, A99, A128, A136, A149, A154, A162
- For dimensions, see page A23

● Marked: Standard Items

Negative 80° Rhombic Inserts



- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

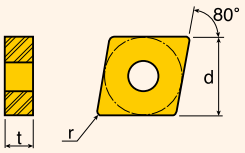
Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
For Roughing	CNMG	120408 ET	0.17 - 0.55	1.2 - 5.5						●		●	●	●	●		●			●			
		120412 ET	0.20 - 0.60	1.2 - 5.5					●			●	●				●			●			
		160612 ET	0.25 - 0.60	2.5 - 7.0					280	●		● 70	● 50	● 40	215		● 60			30			
		190612 ET	0.25 - 0.60	3.0 - 9.0						●		● 160	● 130	● 100			● 235			90			
		190616 ET	0.30 - 0.65	3.0 - 9.0									●	●			●						
For Finishing	CNMG	120404 FA	0.05 - 0.20	0.2 - 2.0	360	● 340			●	●					●								
		120408 FA	0.05 - 0.25	0.3 - 2.0	300	● 270			340 ●	310 ●					240								
New For Finishing	CNMG	090304 FC	0.07 - 0.20	0.5 - 2.0		●			●	●			●										
		090308 FC	0.10 - 0.25	0.7 - 2.0		●			●	●			●										
		120404 FC	0.05 - 0.30	0.2 - 2.5	● 360 300	● 340 270			● 340	● 310		● 70 200	● 50 170	● 40 140	● 240								
		120408 FC	0.08 - 0.35	0.3 - 2.5					●	●		●	●	●	●								
		120412 FC	0.10 - 0.40	0.3 - 2.5					●	●		●	●	●									
For Finishing	CNMG	090304 FG	0.07 - 0.20	0.5 - 2.0		●				●					●								
		090308 FG	0.10 - 0.25	0.7 - 2.0	360	340				●					●								
		120404 FG	0.05 - 0.30	0.2 - 2.5	● 300	● 270			340 ●	310 ●					240 ●								
		120408 FG	0.08 - 0.35	0.3 - 2.5	●	●			●	●					●								
For Medium	CNMG	120404 MC	0.10 - 0.30	0.5 - 3.5		●			●	●					●			●					
		120408 MC	0.12 - 0.35	0.7 - 3.5		● 310 265		● 265	● 310	● 280	220				● 215	● 170		● 150					
		120412 MC	0.15 - 0.40	0.7 - 3.5					●	●					●								
For Medium	CNMG	120404 ML	0.10 - 0.30	0.8 - 3.5		●			●	●		●	●		●		●	●				●	
		120408 ML	0.12 - 0.35	1.0 - 3.5		● 340			● 340	● 310		70 200	50 170		● 240		● 60 260	● 190 130				● 600	
		120412 ML	0.15 - 0.35	1.3 - 3.5																			
OLD For Medium	CNMG	090304 MP✓	0.10 - 0.30	0.8 - 3.0						●					●								
		090308 MP✓	0.12 - 0.35	1.0 - 3.0					●						●								
		120404 MP	0.10 - 0.30	0.8 - 4.0					●	●		● 70	● 50	● 40	●		● 60	● 180					
		120408 MP	0.12 - 0.40	1.0 - 4.0					● 330	● 300	● 210	● 180	● 150	● 120	● 225	● 190	● 250	● 120					
		120412 MP	0.15 - 0.50	1.5 - 4.0						●		●	●	●	●		●	●					
		160612 MP✓	0.15 - 0.50	2.5 - 6.0						●													
OLD For Medium	CNMG	090304 MT	0.12 - 0.40	0.8 - 3.5					●	●					●								
		090308 MT	0.17 - 0.45	1.0 - 3.5			●		●	●					●								
		120404 MT	0.15 - 0.40	1.0 - 5.0		●	●	●	●	●					●		●	●					
		120408 MT	0.17 - 0.55	1.2 - 5.0		●	●	●	●	●	●	●	●	●	●	●	●	●					
		120412 MT	0.20 - 0.55	1.5 - 5.0			●	●	●	●	●	●	●	●	●	●	●	●					
		160608 MT✓	0.20 - 0.55	2.0 - 6.5	330 285	310 265	● 385	265	310	● 250	195	70 180	50 150	40 120	215	180	60 235	150 110					
		160612 MT✓	0.25 - 0.55	2.0 - 6.5			●			●	●				●		●	●					
		160616 MT✓	0.30 - 0.55	2.0 - 6.5																			
		190608 MT	0.23 - 0.55	3.0 - 8.0			●		●	●		●	●	●	●			●					
		190612 MT	0.25 - 0.55	3.0 - 8.0					●	●	●		●	●	●		●	●					
		190616 MT✓	0.30 - 0.55	3.0 - 8.0						●													

- For toolholders, see page A84, A85, A98, A99, A128, A136, A149, A154, A162
- For dimensions, see page A23

✓ Marked: Old type chipbreaker

● Marked: Standard Items

Negative 80° Rhombic Inserts



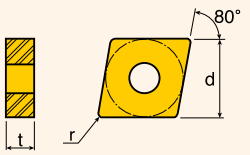
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
New For Medium	CNMG	090308 PC	0.10 - 0.25	0.6 - 2.0					●	●													
		120404 PC	0.10 - 0.40	0.4 - 5.0					●	●		●	●	●									
		120408 PC	0.15 - 0.50	0.5 - 5.0					●	●	●	●	●	●	●					●			
		120412 PC	0.17 - 0.55	0.6 - 5.0					●	●		●	●	●						●			
		120416 PC	0.20 - 0.60	0.8 - 5.0					●	●					●								
		160608 PC	0.20 - 0.55	2.0 - 6.5					● 310	● 250	195	70 180	50 150	40 120	215					30 140			
		160612 PC	0.25 - 0.55	2.0 - 6.5					●	●													
		160616 PC	0.30 - 0.55	2.0 - 6.5					●														
		190608 PC	0.23 - 0.55	3.0 - 8.0					●	●													
		190612 PC	0.25 - 0.55	3.0 - 8.0					●	●													
		190616 PC	0.30 - 0.55	3.0 - 8.0					●	●													
For Roughing	CNMG	120408 RT	0.25 - 0.70	2.5 - 6.0			●	●	●	●	●	●	●	●	●	●	●						
		120412 RT	0.25 - 0.70	2.5 - 6.0			●	●	●	●	●	●	●	●	●	●							
		120416 RT	0.30 - 0.70	2.5 - 6.0				●	●														
		160612 RT	0.25 - 0.70	3.0 - 7.0			●		●	●	●				●	●							
		160616 RT	0.30 - 0.85	3.0 - 7.0				330 250	● 290	● 265	● 195	70 160	50 130	40 100	205	170		140					
		190608 RT	0.25 - 0.70	3.0 - 9.0					●	●	●				●								
		190612 RT	0.25 - 0.70	3.0 - 9.0			●	●	●	●	●		●	●	●	●	●						
		190616 RT	0.30 - 0.85	3.0 - 9.0				●	●	●	●				●	●		●					
		250924 RT	0.45 - 1.00	5.0 - 12.0					●	●	●				●	●							
For Finishing	CNMG	120404 SF	0.08 - 0.25	0.5 - 1.5		340			340	310					240		● 60	● 30					
		120408 SF	0.10 - 0.30	0.7 - 1.5		●			●	●					●		● 260	● 130					
Wiper For Finishing	CNMG	120404 WS	0.05 - 0.35	0.5 - 2.0		● 325 270			● 325	● 280													
Wiper For Medium	CNMG	120408 WT	0.15 - 0.60	1.0 - 5.0		● 280	● 345	240	● 280	● 250		70			● 195								
		120412 WT	0.20 - 0.80	1.0 - 5.0		240			●	●		160			●								

- For toolholders, see page A84, A85, A98, A99, A128, A136, A149, A154, A162
- For dimensions, see page A23

● Marked: Standard Items

Negative 80° Rhombic Inserts



- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

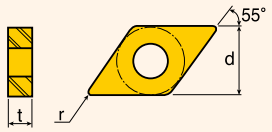
Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
For Heavy	CNMM	190612 HT	0.35 - 0.9	4.0 - 9.0					●	●	●				●								
		190616 HT	0.45 - 1.0	4.0 - 9.0					●	●	●												
		190624 HT	0.55 - 1.2	4.0 - 9.0					●	●	●		50										
		250724 HT	0.55 - 1.3	5.0 - 12.0					270	245	170		● 120		190	150							
		250924 HT	0.55 - 1.3	5.0 - 12.0					●	●	●					●							
		250932 HT	0.65 - 1.3	5.0 - 13.0						●													
New For Heavy	CNMM	190624 HY	0.50 - 1.10	4.0 - 12.0					●	●													
									260	235													
		250924 HY	0.55 - 1.50	4.0 - 15.0					●	●													
New For Heavy	CNMM	250924 HZ	0.55 - 1.50	4.0 - 15.0					● 260	● 235													
RH(N)	CNMM	120408 RH	0.30 - 0.70	2.5 - 6.0					●	●					●								
		120408 RH(N)	0.25 - 0.60	2.0 - 5.0						●					●								
		120412 RH	0.30 - 0.80	2.5 - 6.0					●	●					●								
		160608 RH	0.30 - 0.70	3.0 - 8.0						●													
		160612 RH	0.30 - 0.80	3.0 - 8.0					●	●													
		160616 RH	0.45 - 1.00	4.0 - 8.0						●													
		190608 RH ✱	0.30 - 0.70	3.0 - 9.0						●			50	40									
		190612 RH	0.35 - 0.80	4.0 - 9.0					● 270	● 245	● 170		● 120	100	● 190	150							
RH		190612 RH(N)	0.30 - 0.70	3.0 - 8.0																			
		190616 RH	0.45 - 1.00	4.0 - 9.0					●	●	●		●	●	●								
		190616 RH(N)	0.45 - 0.90	3.0 - 8.0																			
		190624 RH	0.55 - 1.20	4.0 - 9.0					●	●	●		●	●	●								
For Roughing		250724 RH ✱	0.55 - 1.20	5.0 - 12.0																			
		250924 RH ✱	0.55 - 1.20	5.0 - 12.0						●					●								
New For Roughing	CNMM	120408 RX	0.20 - 0.55	0.7 - 7.0					●	●	●												
		120412 RX	0.25 - 0.70	1.0 - 7.0					●	●	●												
		160612 RX	0.25 - 0.70	1.0 - 9.0					●	●	●												
		160616 RX	0.30 - 0.90	1.5 - 9.0					●	●	●												
		160624 RX	0.35 - 1.20	2.0 - 9.0					●	●	●												
		190608 RX	0.20 - 0.55	0.7 - 10.0					● 270	● 245	● 170												
		190612 RX	0.25 - 0.70	1.0 - 10.0					●	●	●												
		190616 RX	0.30 - 0.90	1.5 - 10.0					●	●	●												
		190624 RX	0.35 - 1.10	2.0 - 10.0					●	●	●												
		250724 RX	0.35 - 1.20	2.0 - 12.0					●	●	●												
		250924 RX	0.35 - 1.20	2.0 - 12.0					●	●	●												

- For toolholders, see page A84, A85, A98, A99, A128, A136, A149, A154, A162
- For dimensions, see page A23

✱ Marked: Chipbreaker shape is not the same as shown in the catalogue.

● Marked: Standard Items

Negative 55° Rhombic Inserts



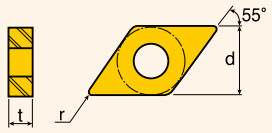
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
For Medium	DNGG	150401 ML	0.03 - 0.10	1.0 - 1.0													●					●	
		150402 ML	0.05 - 0.15	0.2 - 1.2													● 70					●	
		150404 ML	0.10 - 0.30	0.8 - 3.5													● 250						
		150408 ML	0.12 - 0.35	1.0 - 3.5													●						
For Roughing	DNMA	110408 *	0.15 - 0.50	0.8 - 3.0																			
		110412 *	0.15 - 0.50	0.8 - 3.0																			
		150404	0.15 - 0.50	0.4 - 4.0																			
		150604	0.15 - 0.50	0.4 - 4.0			330	250															
		150408	0.15 - 0.65	0.8 - 4.0				●															
		150608	0.15 - 0.65	0.8 - 4.0			●	●															
		150412	0.15 - 0.65	1.2 - 4.0				●															
		150612	0.15 - 0.65	1.2 - 4.0				●															
For Medium	DNMG	150404	0.17 - 0.45	1.0 - 4.0						●													
		150604	0.17 - 0.45	1.0 - 4.0		●	●		●	●					●								
		150408	0.17 - 0.55	1.5 - 4.0					●	●													
		150608	0.17 - 0.55	1.5 - 4.0		● 290	●	●	●	●	●				●								●
		150412	0.25 - 0.55	1.5 - 4.0		250	330	250	290	265	195				205								
		150612	0.25 - 0.55	1.5 - 4.0			●	●	●	●					●								
		150416	0.25 - 0.65	2.5 - 4.0																			
		150616	0.25 - 0.65	2.5 - 4.0					●														
New For Finishing	DNMG	150404 EA	0.05 - 0.2	0.1 - 1.5								●	●	●			●			●			
		150408 EA	0.10 - 0.4	0.1 - 1.5								● 70	● 50	● 40			● 60			● 30			
		150604 EA	0.05 - 0.2	0.1 - 1.5								● 200	● 180	● 140			● 260			● 140			
		150608 EA	0.10 - 0.4	0.1 - 1.5								●	●	●			●			●			
New For Medium	DNMG	110408 EM *	0.13 - 0.50	0.5 - 4.0								●	●	●			●						
		150408 EM	0.13 - 0.50	0.5 - 5.0								● 70	● 50	● 40			● 60			● 30			
		150608 EM	0.13 - 0.50	0.5 - 5.0								● 180	● 150	● 120			● 250			● 140			
		150412 EM	0.15 - 0.55	0.5 - 5.0								●	●	●			●						
		150612 EM	0.15 - 0.55	0.5 - 5.0								●	●	●			●						
For Finishing	DNMG	150408 FA	0.05 - 0.20	0.2 - 2.0	360	340			●														
									340	310					240								
		150608 FA	0.05 - 0.20	0.2 - 2.0	300	● 270			●	●													
New For Finishing	DNMG	110404 FC	0.07 - 0.20	0.5 - 2.0	●	●			●	●													
		110408 FC	0.10 - 0.25	0.7 - 2.0		●			●	●			●										
		150404 FC	0.05 - 0.30	0.2 - 2.5					●				●										
		150604 FC	0.05 - 0.30	0.2 - 2.5	● 360	● 340			●	●		70	50	● 40									
		150408 FC	0.08 - 0.35	0.3 - 2.5	300	270			●	●		● 200	● 170	180	●								
		150608 FC	0.08 - 0.35	0.3 - 2.5	●				●	●		●	●	●	●								
		150412 FC	0.08 - 0.35	0.5 - 2.5					●	●													
		150612 FC	0.08 - 0.35	0.5 - 2.5					●	●													
OLD For Finishing	DNMG	110404 FG *	0.07 - 0.20	0.5 - 2.0	●	●			●	●					●		●						
		110408 FG *	0.10 - 0.25	0.7 - 2.0	●	●			●	●					●		●						
		150404 FG	0.07 - 0.20	0.5 - 2.0		●			●	●					●								
		150604 FG	0.07 - 0.20	0.5 - 2.0	● 360	● 340			● 340	● 310					● 240		60	130					
		150408 FG √	0.10 - 0.25	0.7 - 2.0	● 300	● 270			●	●					●		260						
		150412 FG	0.12 - 0.25	1.0 - 2.0					●	●													
		150608 FG √	0.10 - 0.25	0.7 - 2.0	●	●			●	●					●								

- For toolholders, see page A81, A82, A85, A86, A92, A93, A99, A128, A136, A140, A141, A142, A149, A154
- For dimensions, see page A23
- ✱ Marked: Insert with screw hole
- √ Marked: Old type chipbreaker

● Marked: Standard Items

Negative 55° Rhombic Inserts



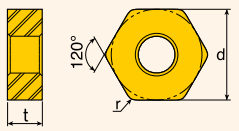
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
For Medium	DNMG	150604 MC	0.10 - 0.30	0.5 - 3.5					●	●					●								
		150408 MC	0.12 - 0.35	0.7 - 3.5					●	●					●								
		150412 MC	0.15 - 0.35	1.0 - 3.5					310	280	195				215	170		150					
		150608 MC	0.12 - 0.35	0.7 - 3.5					●	●	●				●	●		●					
		150612 MC	0.15 - 0.35	1.0 - 3.5					●						●								
For Medium	DNMG	150404 ML	0.10 - 0.30	0.8 - 3.5						●		●	●		●		●						
		150604 ML	0.10 - 0.30	0.8 - 3.5					●	●					●		● 60	30					
		150408 ML	0.12 - 0.35	1.0 - 3.5					340	310		●	●		● 240		● 260	● 130				● 600	
		150608 ML	0.12 - 0.35	1.0 - 3.5					●	●					●		●	●				●	
OLD For Medium	DNMG	150404 MP	0.10 - 0.30	0.8 - 4.0					●				●										
		150604 MP	0.10 - 0.30	0.8 - 4.0					●	●		70	● 50	● 40	●		● 60	180					
		150408 MP	0.12 - 0.40	1.0 - 4.0					330	● 300		●	●		● 225		●						
		150608 MP	0.12 - 0.40	1.0 - 4.0					●	●		● 180	● 150	● 120	●		● 250	● 120					
		150612 MP ✓	0.15 - 0.40	1.0 - 4.0								●	●	●									
For Medium	DNMG	110408 MT ✱	0.17 - 0.40	1.0 - 3.0			●	●	●	●					●								
		110412 MT ✱	0.20 - 0.45	1.0 - 3.0					●						●								
		150404 MT	0.15 - 0.40	0.8 - 4.0		●			●	●					●								
		150604 MT	0.15 - 0.40	0.8 - 4.0		● 310	●	●	●	●		70	50	40	●		● 60	30					
		150408 MT	0.17 - 0.50	1.0 - 4.0		265	380	● 265	● 310	● 280	● 195	● 180	● 150	● 120	● 215	180	235	● 110					
		150608 MT	0.17 - 0.50	1.0 - 4.0		●	●	●	●	●		●	●	●	●	●	●	●					
		150412 MT	0.20 - 0.50	1.3 - 4.0																			
		150612 MT	0.20 - 0.50	1.3 - 4.0					●	●		●	●	●	●		●	●					
New For Medium	DNMG	110408 PC ✱	0.17 - 0.40	0.5 - 3.0					●	●													
		150404 PC	0.10 - 0.40	0.4 - 4.0						●			●										
		150604 PC	0.10 - 0.40	0.4 - 4.0					●	●		●	●	●	●								
		150408 PC	0.15 - 0.50	0.5 - 4.0					● 330	● 300		● 70	● 50	● 40	220								
		150608 PC	0.15 - 0.50	0.5 - 4.0					●	●		● 180	● 150	● 120	●								
		150412 PC	0.17 - 0.55	0.6 - 4.0					●	●													
		150612 PC	0.17 - 0.55	0.6 - 4.0					●	●			●	●									
For Roughing	DNMG	150408 RT	0.25 - 0.65	2.0 - 4.0					●		●												
		150608 RT	0.25 - 0.65	2.0 - 4.0			●	●	●	●	●				●								
		150412 RT	0.25 - 0.65	2.5 - 4.0			330	250	290	● 265	195				205								
		150612 RT	0.25 - 0.65	2.5 - 4.0			●	●		●													
		150616 RT	0.25 - 0.70	2.5 - 5.5					●	●					●								
Right Hand Shown For Medium	DNMG	150404 L-VF	0.10 - 0.35	0.7 - 4.5						●													
		150404 R-VF	0.10 - 0.35	0.7 - 4.5						●					●								
		150604 L-VF	0.10 - 0.35	0.7 - 4.5					●	●					●								
		150604 R-VF	0.10 - 0.35	0.7 - 4.5		●			●	●					●	●							
		150408 L-VF	0.12 - 0.45	1.0 - 4.5		340			340	310					240	170							
		150408 R-VF	0.12 - 0.45	1.0 - 4.5					●	●													
		150608 L-VF	0.12 - 0.45	1.0 - 4.5					●	●					●								
		150608 R-VF	0.12 - 0.45	1.0 - 4.5		●			●	●													
Wiper For Finishing	DNMG	150408 WS	0.10 - 0.30	0.8 - 4.0		● 310			● 310	● 280			● 50										
		150608 WS	0.10 - 0.30	0.8 - 4.0		● 265			●	●			● 150										
Wiper For Medium	DNMG	150412 WT	0.15 - 0.60	1.0 - 5.0		240			280	250					195								
		150612 WT	0.15 - 0.60	1.0 - 5.0		280			●	●													

- For toolholders, see page A81, A82, A85, A86, A92, A93, A99, A128, A136, A140, A141, A142, A149, A154
- For dimensions, see page A23
- ✱ Marked: Insert with screw hole
- ✓ Marked: Old type chipbreaker

● Marked: Standard Items

Negative 120° Hexagonal Inserts



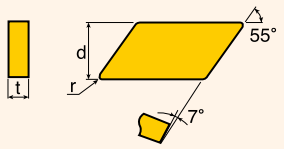
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
For Medium	HNMG	050408 GU	0.15 - 0.60	0.5 - 3.5			● 275	● 245		● 280					● 215								
		100612 GU	0.25 - 0.70	1.0 - 5.0																			
For Medium	HNMG	050408 SU	0.15 - 0.50	0.5 - 3.5											● 215		● 60						
		100612 SU	0.25 - 0.70	1.0 - 5.0													160						

- For toolholders, see page A100, A149
- For dimensions, see page A23

● Marked: Standard Items

Negative 55° Rhombic Inserts



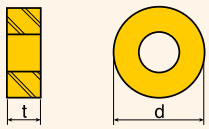
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grades & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
Right Hand Shown For Medium	KNUX	160405 L11	0.15 - 0.35	1.5 - 5.0					●	●	●		●		●								
		160405 R11	0.15 - 0.35	1.5 - 5.0		● 270	● 320		● 270	● 220	● 150		● 50		● 170	● 140		● 130			● 145		
		160410 L11	0.21 - 0.45	2.0 - 5.0		230			●	●			● 150		●								
		160410 R11	0.21 - 0.45	2.0 - 5.0					●	●			●		●								
Right Hand Shown For Roughing	KNUX	160405 L12	0.24 - 0.50	2.0 - 5.0						●													
		160405 R12	0.24 - 0.50	2.0 - 5.0			320		● 270	● 220					● 170								
		160410 L12	0.30 - 0.60	2.5 - 6.0						●													
		160410 R12	0.30 - 0.60	2.5 - 6.0						●					●								

- For toolholders, see page A79, A80, A134
- For dimensions, see page A23

● Marked: Standard Items

Negative Round Inserts



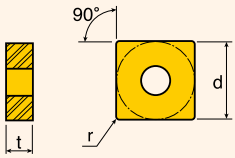
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grades & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
For Roughing	RNMG	120400	0.30 - 0.60	2.0 - 5.0					●	●					●								
		150600	0.35 - 0.70	3.5 - 7.0																			
		190600	0.45 - 0.80	4.5 - 9.0			330		290	265	195				205								
		250900	0.55 - 1.20	4.0 - 12.0																			
		310900	0.65 - 1.20	5.5 - 14.0																			

- For toolholders, see page A87
- For dimensions, see page A23

● Marked: Standard Items

Negative Square Inserts



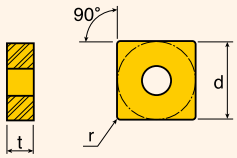
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
Right Hand Shown For Medium	SNGG	090304 L	0.12 - 0.35	1.0 - 3.0		●																	
		090308 L	0.15 - 0.40	1.0 - 3.0																			
		090308 R	0.15 - 0.35	1.0 - 3.0		270																	
		120404 L	0.15 - 0.35	1.0 - 4.0		200															150		
		120404 R	0.12 - 0.35	1.0 - 4.0		●																	
		120408 L	0.15 - 0.40	1.0 - 4.0																			
		120408 R	0.15 - 0.35	1.0 - 4.0		●															●		
For Roughing	SNMA	120408	0.15 - 0.70	1.0 - 6.0			●	●														●	
		120412	0.20 - 0.80	1.5 - 6.0			●	●															
		120416	0.30 - 1.00	2.0 - 6.0				●															
		150612	0.20 - 0.80	2.0 - 8.0			●																
		150616	0.30 - 1.00	2.0 - 8.0				330	250	280												150	
		190612	0.20 - 0.80	2.0 - 10.0			●	●														●	
		190616	0.30 - 1.00	2.0 - 10.0				●															
		250716	0.30 - 1.00	3.0 - 13.0																			
		250724	0.40 - 1.20	3.0 - 13.0				●	●														
For Medium	SNMG	090304	0.17 - 0.45	0.8 - 3.5		●				●					●								
		090308	0.20 - 0.50	1.0 - 3.5		●			●	●					●								
		120404	0.17 - 0.45	1.0 - 5.0			●		●	●	●				●							●	
		120408	0.23 - 0.60	1.5 - 5.0		●	●	●	●	●	●				●			●			●		●
		120412	0.25 - 0.60	2.0 - 5.0			●	●		●					●								
		120416	0.35 - 0.70	2.0 - 5.0						●					●								
		150608	0.25 - 0.60	1.5 - 6.0						●					●								
		150612	0.25 - 0.60	2.0 - 6.0		290				●													
		150616	0.35 - 0.70	2.0 - 6.0		250		330	250	● 290	265	195			205	170		140			190	150	120
		190604	0.17 - 0.45	3.0 - 8.0						●													
		190608	0.25 - 0.60	3.0 - 8.0			●	●	●	●	●				●								
		190612	0.30 - 0.60	3.0 - 8.0			●	●	●	●	●				●								
		190616	0.35 - 0.70	3.0 - 8.0					●	●					●								
		250716	0.35 - 0.70	4.0 - 12.0					●	●	●				●								
		250724	0.50 - 1.00	5.0 - 12.0					●	●					●								
		250924	0.50 - 1.00	5.0 - 12.0						●						●							
New For Finishing	SNMG	120404 EA	0.05 - 0.2	0.1 - 1.5								● 70	● 50	● 40			●	60		●	30		
		120408 EA	0.1 - 0.4	0.1 - 1.5								● 200	● 170	● 140				260		●	140		
New For Medium	SNMG	120408 EM	0.13 - 0.50	0.8 - 5.0								●	●	●			●			●			
		120412 EM	0.15 - 0.55	0.8 - 5.0								●	●	●			●			●			
		150612 EM	0.15 - 0.55	0.8 - 6.5								70	50	40				50			30		
		150616 EM	0.17 - 0.60	0.8 - 6.5								180	150	120				250			140		
		190612 EM	0.15 - 0.55	0.8 - 8.0																			
		190616 EM	0.17 - 0.60	0.8 - 8.0																			
New For Finishing	SNMG	090304 FC	0.07 - 0.20	0.5 - 2.0		●			●	●			●										
		090308 FC	0.10 - 0.25	0.7 - 2.0	350	340				●			50										
		120404 FC	0.05 - 0.30	0.2 - 2.5		●			● 340	● 310			●		220								
		120408 FC	0.08 - 0.35	0.2 - 2.5	● 300	● 270				●			170										
		120412 FC	0.10 - 0.40	0.3 - 2.5		●			●	●			●										

- For toolholders, see page A88, A89, A100, A101, A128, A129, A150, A162
- For dimensions, see page A23

● Marked: Standard Items

Negative Square Inserts



- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

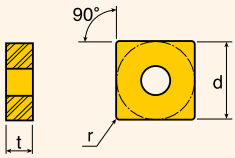
Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
OLD For Finishing	SNMG	090304 FG	0.07 - 0.20	0.5 - 2.0											●								
		090308 FG	0.10 - 0.25	0.7 - 2.0		340				●		●											
		120404 FG √	0.07 - 0.20	0.5 - 3.0		● 270			340	● 310					● 240		260						
		120408 FG √	0.10 - 0.25	0.7 - 3.0	●	●			●	●													
For Medium	SNMG	120408 MC	0.12 - 0.35	0.7 - 3.5					●	●					●								
		120412 MC	0.15 - 0.40	0.7 - 3.5					310	280					215			150					
For Medium	SNMG	120408 ML	0.12 - 0.35	1.0 - 3.5					●	●					●			● 190				●	
		120412 ML	0.15 - 0.35	1.0 - 3.5					340	310 ●					240	240		130				600	
OLD For Medium	SNMG	120404 MP √	0.10 - 0.30	0.8 - 4.0						●					●								
		120408 MP	0.12 - 0.40	1.0 - 4.0					●	●		● 70	● 50	● 40	●		● 60	● 180					
		120412 MP	0.15 - 0.40	1.3 - 4.0					330	300 ●		180	● 150	120	225		250	120					
		150608 MP	0.25 - 0.60	1.5 - 6.0					●														
OLD For Medium	SNMG	090308 MT	0.15 - 0.45	1.0 - 3.5					●	●					●								
		120404 MT √	0.12 - 0.40	1.0 - 5.0		●				●					●								
		120408 MT	0.17 - 0.55	1.2 - 5.0		● 310	●	●	●	●			● 50	● 40	●		● 60	● 150					
		120412 MT √	0.20 - 0.55	1.5 - 5.0			● 385	265	● 310	● 280	195	●	● 150	120	● 215		● 235	● 110					
		150612 MT √	0.30 - 0.65	2.0 - 7.0		265				●	●												
		190608 MT	0.17 - 0.55	3.0 - 8.0						●			●	●									
		190612 MT	0.20 - 0.55	3.0 - 8.0						●			●	●	●			●					
New For Medium	SNMG	090308 PC	0.10 - 0.25	0.6 - 2.0						●													
		120404 PC	0.12 - 0.40	0.4 - 5.0					●	●			50										
		120408 PC	0.15 - 0.50	0.5 - 5.0					340 ●	310 ●			● 150		● 220								
		120412 PC	0.15 - 0.50	0.6 - 5.0					●	●			●										
For Roughing	SNMG	120408 RT	0.25 - 0.70	2.5 - 6.0					●	●					●								
		120412 RT	0.30 - 0.70	2.5 - 6.0				●	●	●		●		●									
		120416 RT	0.40 - 0.70	2.5 - 6.0					●	●													
		150612 RT	0.30 - 0.70	3.0 - 7.0						●			50	40	●								
		190612 RT	0.30 - 0.75	3.0 - 9.0			330	250	● 290	● 265	● 195		● 120	● 100	● 205		●	140					
		190616 RT	0.40 - 0.90	3.0 - 9.0					●	●	●		●	●	●		●	●					
		250724 RT	0.40 - 1.00	5.0 - 12.0																			
		250924 RT	0.40 - 1.00	5.0 - 12.0							●												
For Heavy	SNMM	190612 HT	0.35 - 0.9	4.0 - 9.0					●	●	●				●								
		190616 HT	0.45 - 1.0	4.0 - 9.0					●	●	●					●							
		190624 HT	0.55 - 1.2	4.0 - 9.0					●	●	●		50										
		250724 HT	0.55 - 1.3	5.0 - 12.0					● 270	● 245	● 170		● 120		● 190	● 150							
		250924 HT	0.55 - 1.3	5.0 - 12.0					●	●	●					●							
		250932 HT	0.65 - 1.3	5.0 - 13.0																			

- For toolholders, see page A88, A89, A100, A101, A128, A129, A150, A162
- For dimensions, see page A23

√ Marked: Old type chipbreaker

● Marked: Standard Items

Negative Square Inserts



- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

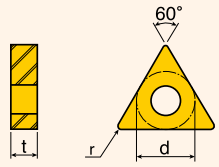
Insert	Designation		Recommended Machining Conditions feed (mm/rev)	ap (mm)	Grade & Vc (m/min) Cermet PV3010	CT3000	CVD Coated TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	PVD Coated TT5080	TT8020	TT9020	TT9080	Uncoated P20	K10	K20
New For Heavy	SNMM	190624 HY	0.50 - 1.10	4.0 - 12.0					●	●													
									280	235													
		250924 HY	0.55 - 1.50	4.0 - 15.0					●	●													
New For Heavy	SNMM	250924 HZ	0.55 - 1.50	4.0 - 15.0					● 280	● 235													
RH(N)	SNMM	120408 RH	0.30 - 0.70	2.5 - 6.0						●					●								
		120408 RH(N)	0.25 - 0.60	2.5 - 5.0											●								
		120412 RH	0.30 - 0.80	2.5 - 6.0						●					●								
		120412 RH(N)	0.30 - 0.70	3.0 - 5.0																			
		150612 RH	0.30 - 0.80	3.0 - 7.0						●					●								
		190608 RH ✱	0.30 - 0.70	3.0 - 9.0						●													
		190612 RH	0.30 - 0.80	4.0 - 9.0						●	●		● 40	● 30	●	●							
		190612 RH(N)	0.30 - 0.70	3.0 - 8.0					270	245	170		120	100	190	150		130					
RH For Roughing	SNMM	190616 RH	0.45 - 1.00	4.0 - 9.0					●	●	●		●	●	●			●					
		190616 RH(N)	0.40 - 0.90	3.0 - 8.0																			
		190624 RH	0.55 - 1.20	4.0 - 9.0						●	●		●	●	●								
		250716 RH ✱	0.55 - 1.00	5.0 - 12.0						●													
		250724 RH ✱	0.55 - 1.20	5.0 - 12.0					●	●	●				●								
		250924 RH ✱	0.55 - 1.20	5.0 - 12.0						●													
New For Roughing	SNMM	120408 RX	0.20 - 0.55	0.7 - 7.0					●	●	●												
		120412 RX	0.25 - 0.70	1.0 - 7.0					●	●	●												
		150612 RX	0.25 - 0.70	1.0 - 9.0					●	●	●												
		190612 RX	0.25 - 0.70	1.0 - 10.0					●	●	●												
		190616 RX	0.30 - 0.90	1.5 - 10.0					● 270	● 245	170												
		190624 RX	0.35 - 1.10	2.0 - 10.0					●	●	●												
		250724 RX	0.35 - 1.20	2.0 - 12.0					●	●	●												
		250924 RX	0.35 - 1.20	2.0 - 12.0					●	●	●												

- For toolholders, see page A88, A89, A100, A101, A128, A129, A150, A162
- For dimensions, see page A23

● Marked: Standard Items

✱ Marked: Chipbreaker shape is not the same as shown in the catalogue.

Negative Triangular Inserts



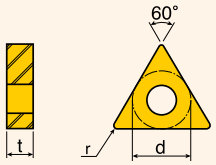
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions feed (mm/rev)	ap (mm)	Grade & Vc (m/min) Cermet PV3010	CT3000	CVD Coated TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	PVD Coated TT5080	TT8020	TT9020	TT9080	Uncoated P10	P20	K10
Left Hand Shown For Medium	TNGG	160404 L	0.12 - 0.30	1.0 - 3.5		●				●												●	
		160404 R	0.12 - 0.30	1.0 - 3.5		●				●					●							●	
		160408 L	0.15 - 0.35	1.3 - 3.5		●				●													
		160408 R	0.15 - 0.35	1.3 - 3.5		● 290				●												●	
		220404 L	0.12 - 0.30	1.0 - 5.0		● 290				310					250						180	150 ●	
		220404 R	0.12 - 0.30	1.0 - 5.0		●				●												●	
		220408 L	0.15 - 0.35	1.3 - 5.0		●																	
		220408 R	0.15 - 0.35	1.3 - 5.0		●				●												●	

- For toolholders, see page A82, A90, A101, A102, A103, A129, A137, A148, A155, A163
- For dimensions, see page A23

● Marked: Standard Items

Negative Triangular Inserts



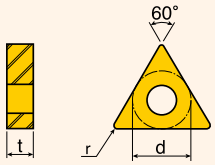
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
For Roughing	TNMA	110304	0.15 - 0.30	0.5 - 2.0																			
		160404	0.15 - 0.30	1.0 - 4.0			●	●															●
		160408	0.15 - 0.40	1.0 - 4.0			●	●															●
		160412	0.20 - 0.50	1.5 - 4.5				●															
		160416	0.20 - 0.50	1.0 - 4.5		250	330	250															150
		220404	0.15 - 0.30	1.5 - 5.0																			
		220408	0.15 - 0.40	1.5 - 5.0			●	●	●														●
		220412	0.20 - 0.50	1.5 - 5.0			●																
		220416	0.20 - 0.61	2.0 - 5.0																			
For Medium	TNMG	110304	0.15 - 0.40	1.2 - 3.0						●													
		110308	0.17 - 0.40	1.5 - 3.0																			
		160404	0.17 - 0.45	1.5 - 3.5		●	●	●	●	●					●						●	●	
		160408	0.17 - 0.55	2.0 - 3.5			●	●	●	●					●			●					
		160412	0.25 - 0.55	2.0 - 3.5					●														
		220404	0.17 - 0.45	1.5 - 5.0					●	●					●								
		220408	0.17 - 0.55	2.0 - 5.0		290	● 330	250	● 265	● 235	195				● 205	● 170		150			190	150	
		220412	0.25 - 0.55	2.0 - 5.0		250			●	●													
		220416	0.30 - 0.60	2.0 - 5.0					●	●													
		270608	0.17 - 0.55	2.0 - 5.0						●													
		270612	0.25 - 0.55	3.0 - 7.0						●													
		270616	0.30 - 0.60	3.0 - 7.0						●													
		330716	0.35 - 0.70	3.0 - 9.0						●	●					●							
		330924	0.40 - 0.80	3.0 - 9.0																			
New For Finishing	TNMG	160404 EA	0.05 - 0.2	0.1 - 1.5								● 60	● 40	● 30			● 60			● 30			
		160408 EA	0.10 - 0.4	0.1 - 1.5								● 200	● 170	● 140			● 260			● 130			
New For Medium	TNMG	160408 EM	0.13 - 0.50	0.8 - 4.5								●	●	●			●			●			
		160412 EM	0.15 - 0.55	0.8 - 4.5								70	● 50	● 40			● 60			● 30			
		220408 EM	0.13 - 0.50	0.8 - 6.0								● 180	● 150	● 120			250			130			
		220412 EM	0.15 - 0.55	0.8 - 6.0									●	●									
New For Finishing	TNMG	160404 FC	0.05 - 0.30	0.2 - 2.5		●			●	●			●										
		160408 FC	0.08 - 0.35	0.2 - 2.5		340 270			● 310	● 310		●	● 50 170	● 40 140	●					● 30 130			
		160412 FC	0.10 - 0.40	0.3 - 2.5					●	●		●	●	●									
For Finishing	TNMG	110304 FG	0.07 - 0.20	0.5 - 1.5		●									●								
		160404 FG	0.07 - 0.20	0.5 - 2.0	● 360	● 340			●	●					●								
		160408 FG	0.10 - 0.25	0.7 - 2.0	● 300	● 270			● 340	● 310					● 240								
		160412 FG	0.13 - 0.30	0.7 - 2.0																			
		220408 FG	0.10 - 0.25	0.7 - 2.0					●	●													
Right hand shown For Medium	TNMG	160404 L-FS	0.15 - 0.30	0.8 - 3.0		●				●					●								
		160404 R-FS	0.15 - 0.30	0.8 - 3.0		● 340				● 310					● 240			● 190					
		160408 L-FS	0.20 - 0.40	1.0 - 3.5						●								130					
		160408 R-FS	0.20 - 0.40	1.0 - 3.5						●					●								
For Medium	TNMG	160408 MC	0.17 - 0.40	0.7 - 3.5					● 310	● 280					● 215			● 150					

- For toolholders, see page A82, A90, A101, A102, A103, A129, A137, A148, A155, A163
- For dimensions, see page A23

● Marked: Standard Items

Negative Triangular Inserts



- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

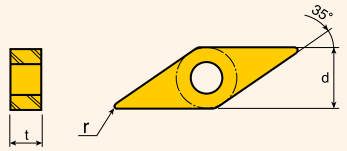
Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
For Medium	TNMG	160404 ML	0.10 - 0.30	0.8 - 3.5					●	●					●		●	●				●	
		160408 ML	0.12 - 0.35	1.0 - 3.5					●	●	●				●		●	●				●	
		160412 ML	0.15 - 0.35	1.5 - 3.5					340	310	220				240		60	190					600
		220404 ML	0.10 - 0.30	1.0 - 4.0						●					●		260	130					
		220408 ML	0.12 - 0.35	1.0 - 4.0						●					●							●	
For Medium	TNMG	160404 MP	0.10 - 0.30	0.8 - 3.5					●	●			●	●	●		●	●					
		160408 MP	0.12 - 0.40	1.0 - 3.5					●	●			●	●	●		●	●		●			
		160412 MP	0.15 - 0.40	1.5 - 3.5					●	330	300		●	50 ●	40 ●		●	60 180					
		220404 MP	0.12 - 0.35	1.0 - 3.5						●			●	150	120		●	250 120					
		220408 MP	0.12 - 0.40	1.0 - 4.0						●			●		●		●	●					
		220412 MP	0.15 - 0.40	1.0 - 4.0																			
OLD For Medium	TNMG	110308 MT	0.17 - 0.40	1.0 - 3.0						●													
		160404 MT	0.17 - 0.40	1.0 - 3.5		●	●	●	●	●					●		●	●					
		160408 MT	0.17 - 0.50	1.2 - 3.5		●	●	●	●	●			●		●		●	●					
		160412 MT	0.20 - 0.50	1.5 - 3.5	330	310		310	●	●	●		●	50 ●	40 ●			60 150					
		220404 MT √	0.15 - 0.40	1.2 - 5.0	285	265	385	265	280	● 215	● 195			150	120	215		235 110					
		220408 MT √	0.17 - 0.50	1.2 - 5.0					●	●					●			●					
		220412 MT	0.20 - 0.50	1.5 - 5.0						●					●			●					
		270612 MT √	0.20 - 0.50	3.0 - 7.0						●													
New For Medium	TNMG	160404 PC	0.15 - 0.40	1.0 - 3.5					●	●			●							●			
		160408 PC	0.15 - 0.50	0.5 - 4.5					●	●		●	●	50 ●	40 ●					●			
		160412 PC	0.17 - 0.55	0.6 - 4.5					●	340 ●	310	195		● 150	120	● 215				●			30 140
		220408 PC	0.17 - 0.50	1.2 - 5.0					●	●													
		220412 PC	0.20 - 0.50	1.5 - 5.0					●	●													
For Roughing	TNMG	160408 RT	0.25 - 0.65	2.0 - 5.0				●		●	●												
		160412 RT	0.25 - 0.65	2.0 - 5.0				●		●													
		220408 RT	0.25 - 0.65	2.0 - 7.0			330	250		● 265						205							
		220412 RT	0.25 - 0.65	2.5 - 7.0						●													
		330924 RT	0.35 - 0.70	3.0 - 9.0						●													
For Finishing	TNMG	160408 SF	0.10 - 0.30	0.7 - 1.5		● 340			340	310					● 240		● 60 260						
Right hand shown For Medium	TNMG	160404 L-VF	0.10 - 0.30	0.7 - 3.5		●			●	●					●								
		160404 R-VF	0.10 - 0.30	0.7 - 3.5	●	● 340			●	●					●								
		160408 L-VF	0.12 - 0.35	1.0 - 3.5					340	310					240								
		160408 R-VF	0.12 - 0.35	1.0 - 3.5					●	●					●								
For Roughing	TNMM	160408 RH	0.30 - 0.70	2.0 - 7.0						●													
		220408 RH	0.30 - 0.70	2.0 - 7.0						●													
		220412 RH	0.30 - 0.70	2.5 - 7.0					● 270	● 245					190								
		220416 RH	0.40 - 0.85	3.0 - 7.0																			
		270612 RH	0.30 - 0.80	3.0 - 8.0																			
New For Roughing	TNMM	160408 RX	0.20 - 0.55	0.7 - 6.0					●	●	●												
		160412 RX	0.25 - 0.70	1.0 - 7.0					●	●	●												
		220408 RX	0.20 - 0.55	0.7 - 7.5					● 270	● 245	● 170												
		220412 RX	0.25 - 0.70	1.0 - 7.5					●	●	●												
		220416 RX	0.30 - 0.90	1.5 - 7.5					●	●	●												

- For toolholders, see page A82, A90, A101, A102, A103, A129, A137, A148, A155, A163
- For dimensions, see page A23

√ Marked: Old type chipbreaker

● Marked: Standard Items

Negative 35° Rhombic Inserts



- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

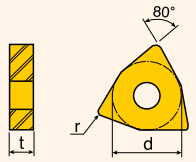
Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
For Medium	VNGG	160401 ML	0.03 - 0.10	0.1 - 1.0																			
		160402 ML	0.05 - 0.15	0.2 - 1.2								70	50				60						
		160404 ML	0.10 - 0.27	0.8 - 3.0								180	● 150				260					●	600
		160408 ML	0.10 - 0.30	0.8 - 3.5								●	●				●					●	
For Medium	VNMG	160404	0.17 - 0.40	1.0 - 3.0		●	●	●	●	●					●								
		160408	0.17 - 0.50	1.5 - 3.0		● 290 250	● 330	● 250	● 290	● 265					● 205								
		160412	0.20 - 0.50	1.5 - 3.0			●			●													
New For Finishing	VNMG	160404 EA	0.05 - 0.2	0.1 - 1.5								70	50	40									
		160408 EA	0.08 - 0.3	0.2 - 2.5								200	170	160									
New For Medium	VNMG	160408 EM	0.13 - 0.50	0.8 - 3.5								● 70 180	● 50 150	● 40 120						● 30 110			
For Finishing	VNMG	160408 FA	0.05 - 0.25	0.3 - 2.0	360 300	340 270			● 340	● 310					● 240		60 260	30 130					
New For Finishing	VNMG	130404 FC	0.08 - 0.20	0.5 - 1.5		●			●	●			●										
		130408 FC	0.10 - 0.23	0.5 - 2.0	360	● 340			● 340	● 310		70	● 50	40	240								
		160404 FC	0.05 - 0.30	0.3 - 2.5	● 300	● 270			●	●		200	● 170	140	●								
		160408 FC	0.08 - 0.35	0.3 - 2.5	●	●			●	●		●	●	●	●								
For Finishing	VNMG	130404 FG ✱	0.08 - 0.20	0.5 - 1.5		●			●	●					●		●						
		130408 FG ✱	0.10 - 0.23	0.5 - 2.0	360	● 340			● 340	● 310			50		240		60	30					
		160404 FG	0.08 - 0.20	0.5 - 2.0	● 300	● 270			●	●			● 170		●		● 260	● 130					
		160408 FG	0.10 - 0.23	0.5 - 2.0	●	●			●	●					●		●						
For Medium	VNMM	160404 ML	0.10 - 0.27	0.8 - 3.0																		●	
		160408 ML	0.12 - 0.32	1.0 - 3.0					280	280					215 ●							●	280
OLD For Medium	VNMG	130404 MT ✱	0.15 - 0.36	0.8 - 2.5					●						●								
		130408 MT ✱	0.17 - 0.36	1.0 - 2.5		310			●	●		70	50	40	●		60	150					
		160404 MT √	0.15 - 0.36	0.8 - 3.0		● 265	385		● 310	● 280		180	● 150	120	● 215		● 235	110					
		160408 MT	0.17 - 0.36	1.0 - 2.5		●	●	●	●	●			●	●	●		●	●					
New For Medium	VNMG	160404 PC	0.15 - 0.36	0.4 - 3.0			●		● 310	● 290			● 50										
		160408 PC	0.17 - 0.36	0.5 - 3.0					●	●			● 150										

- For toolholders, see page A83, A97, A102, A129, A145
- For dimensions, see page A23

✱ Marked: Insert with screw hole
√ Marked: Old type chipbreaker

● Marked: Standard Items

Negative 80° Trigon Inserts



- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

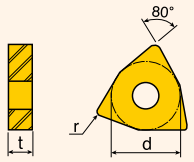
Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
For Roughing	WNMA	060408	0.15 - 0.70	1.0 - 4.0																			
		060412	0.20 - 0.80	1.5 - 4.0																			
		080408	0.15 - 0.70	1.0 - 5.0			● 330	● 250															
		080412	0.20 - 0.80	1.5 - 5.0				●															
		080416	0.20 - 0.80	1.5 - 5.0				●															
New For Finishing	WNMG	080404 EA	0.05 - 0.2	0.1 - 1.5								● 70	● 50	● 40			● 60			● 30			
		080408 EA	0.1 - 0.4	0.1 - 1.5								● 200	● 170	● 140			● 260			● 140			
New For Medium	WNMG	060408 EM	0.13 - 0.50	0.8 - 3.0								●	●	●			●			●			
		060412 EM	0.15 - 0.55	0.8 - 3.0								● 70	● 50	● 40			● 60			● 30			
		080404 EM	0.10 - 0.45	0.8 - 4.0								● 180	● 150	● 120			● 250			140			
		080408 EM	0.12 - 0.45	0.8 - 4.0								●	●	●			●			●			
		080412 EM	0.12 - 0.45	0.8 - 4.0								●	●	●			●			●			
For Roughing	WNMG	080408 ET	0.15 - 0.55	0.8 - 4.5								● 70 160	● 50 130	● 40 100			● 60 235						
New For Finishing	WNMG	060404 FC	0.07 - 0.20	0.5 - 2.0		●			●	●			●										
		060408 FC	0.10 - 0.25	0.5 - 2.0																			
		080404 FC	0.07 - 0.20	0.5 - 2.0	360 300	● 340 270			● 340	● 280		70 160	● 50 130										
		080408 FC	0.07 - 0.20	0.5 - 2.0		●			●	●		●	●		●								
		080412 FC	0.10 - 0.25	0.5 - 2.0																			
For Finishing	WNMG	060404 FG	0.07 - 0.20	0.5 - 2.0		●			●	●					●		●						
		060408 FG	0.10 - 0.25	0.7 - 2.0	● 360	340			● 340	310					240		60						
		080404 FG	0.07 - 0.20	0.5 - 2.0	● 300	● 270			●	●					●		● 260						
		080408 FG	0.10 - 0.25	0.7 - 2.0		●			●	●					●								
For Medium	WNMG	060404 MC	0.10 - 0.30	0.5 - 2.5																			
		060408 MC	0.12 - 0.35	0.7 - 3.0					● 310	280					● 215								
		080408 MC	0.12 - 0.35	0.7 - 3.5					●	●					●								
		080412 MC	0.15 - 0.40	0.7 - 3.5					●	●													
For Medium	WNMG	080408 ML	0.12 - 0.35	1.0 - 3.5					340	● 310		● 70 180	● 50 150		● 220		● 60 260	● 190 130				● 600	
		080412 ML	0.15 - 0.35	1.3 - 3.5																			
OLD For Medium	WNMG	060408 MP	0.12 - 0.35	1.0 - 3.0					●	●			●	●			●						
		060412 MP	0.15 - 0.40	1.3 - 3.0																			
		080404 MP ✓	0.10 - 0.35	1.0 - 4.0					330	● 300		70 180	50 150	40 120	225		60 250	180 120					
		080408 MP	0.12 - 0.40	1.0 - 4.0					●	●		●	●	●	●		●	●					
		080412 MP	0.15 - 0.40	1.3 - 4.0						●		●	●		●								

- For toolholders, see page A84, A101, A130, A135, A150
- For dimensions, see page A23

✓ Marked: Old type chipbreaker

● Marked: Standard Items

Negative 80° Trigon Inserts



- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

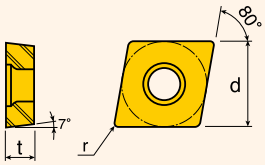
Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
OLD For Medium	WNMG	060404 MT	0.12 - 0.40	1.0 - 3.0			●		●	●			●		●								
		060408 MT	0.15 - 0.45	1.2 - 3.0			●		●	●			●	●	●			●					
		060412 MT	0.23 - 0.50	1.5 - 3.0		310			●	●		70	50	40			60	150					
		080404 MT √	0.12 - 0.40	1.0 - 4.0		● 265	385	● 265	● 310	● 280	195	180	● 150	120	● 215	180	● 235	● 110					
		080408 MT	0.17 - 0.55	1.2 - 4.0		●	●	●	●	●	●	●	●	●	●		●	●					
		080412 MT	0.25 - 0.55	1.5 - 4.0			●	●	●	●		●	●	●	●		●						
New For Medium	WNMG	060408 PC	0.15 - 0.50	0.5 - 4.0					●	●													
		060412 PC	0.17 - 0.50	0.6 - 4.0					●	●													
		080408 PC	0.15 - 0.50	0.5 - 4.0				270	● 340	● 310	195	● 70	● 50	● 40						● 30			
		080412 PC	0.17 - 0.50	0.6 - 4.0					●	●	●	● 180	● 150	120						● 140			
		080416 PC	0.20 - 0.50	0.8 - 4.0					●	●													
For Roughing	WNMG	080408 RT	0.25 - 0.70	2.5 - 4.0			●	●	●	●		●	●	●	●	●	●						
		080412 RT	0.25 - 0.70	2.5 - 4.0			● 330	● 250	● 290	● 265	195	70 180	50 150	40 120	● 205	170	40						
		080416 RT	0.30 - 0.75	2.5 - 4.0					●	●													
Wiper For Finishing	WNMG	080408 WS	0.07 - 0.35	0.5 - 2.0					280	250													
Wiper For Medium	WNMG	060408 WT	0.15 - 0.60	0.7 - 3.5					●	●					●								
		060412 WT	0.20 - 0.80	0.7 - 3.5		310		●															
		080408 WT	0.15 - 0.60	1.0 - 4.0		● 265	345	240	● 250	●	175				● 195								
		080412 WT	0.20 - 0.80	1.0 - 4.0				●	●	●	●				●								

- For toolholders, see page A84, A101, A130, A135, A150
- For dimensions, see page A23

√ Marked: Old type chipbreaker

● Marked: Standard Items

Positive 7° Clearance 80° Rhombic Inserts



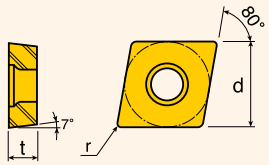
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
Right hand shown For Finishing	CCET	060201 L-GF	0.02 - 0.15	0.2 - 1.5																			
		060201 R-GF	0.02 - 0.15	0.2 - 1.5																			
		060202 L-GF	0.03 - 0.17	0.3 - 1.5															●				
		060202 R-GF	0.03 - 0.17	0.3 - 1.5																			
		060204 L-GF	0.05 - 0.20	0.3 - 1.5															●				
		060204 R-GF	0.05 - 0.20	0.3 - 1.5															●	150			
		09T301 L-GF	0.02 - 0.15	0.2 - 2.5															●	150			
		09T301 R-GF	0.02 - 0.15	0.2 - 2.5															●				
		09T302 L-GF	0.03 - 0.17	0.3 - 2.5																			
		09T302 R-GF	0.03 - 0.17	0.3 - 2.5															●				
		09T304 L-GF	0.05 - 0.20	0.3 - 2.5																			
		09T304 R-GF	0.05 - 0.20	0.3 - 2.5															●				
Wiper Right hand shown For Finishing Can be applied only to toolhoders with 95° approach angle	CCET	0602003 L-GW	0.02 - 0.15	0.1 - 1.5																			
		0602003 R-GW	0.02 - 0.15	0.1 - 1.5															●	150			
		09T3003 L-GW	0.02 - 0.15	0.1 - 2.5																150			
		09T3003 R-GW	0.02 - 0.15	0.1 - 2.5															●				
New For Finishing	CCGT	0301003 R-FF	0.03 - 0.10	0.05 - 0.3		●																	
		0301003 L-FF	0.03 - 0.10	0.05 - 0.3		●																	
		030101 R-FF	0.03 - 0.12	0.08 - 0.4		●																	
		030101 L-FF	0.03 - 0.12	0.08 - 0.4		●																	
		030102 R-FF	0.03 - 0.15	0.1 - 0.4		●																	
		030102 L-FF	0.03 - 0.15	0.1 - 0.4		●																	
		030104 R-FF	0.05 - 0.20	0.1 - 0.4		●																	
		030104 L-FF	0.05 - 0.20	0.1 - 0.4		●	150																
		0401003 R-FF	0.03 - 0.10	0.05 - 0.4																			
		0401003 L-FF	0.03 - 0.10	0.05 - 0.4																			
		040101 R-FF	0.03 - 0.12	0.1 - 0.5		●																	
		040101 L-FF	0.03 - 0.12	0.1 - 0.5		●																	
		040102 R-FF	0.03 - 0.15	0.1 - 0.5		●																	
		040102 L-FF	0.03 - 0.15	0.1 - 0.5		●																	
		040104 R-FF	0.05 - 0.20	0.1 - 0.5		●																	
		040104 L-FF	0.05 - 0.20	0.1 - 0.5		●																	
New For Finishing	CCGT	060201 SA	0.02 - 0.15	0.1 - 1.5													●		●				
		060202 SA	0.02 - 0.15	0.1 - 1.5													●		●				
		060204 SA	0.03 - 0.20	0.1 - 2.4													● 120		●	100			
		09T301 SA	0.02 - 0.15	0.1 - 2.5													● 100		●	90			
		09T302 SA	0.02 - 0.15	0.1 - 2.5													●		●				
		09T304 SA	0.03 - 0.20	0.1 - 2.5													●		●				

- For toolholders, see page A78, A91, A130, A138, A139, A153
- For dimensions, see page A23

● Marked: Standard Items

Positive 7° Clearance 80° Rhombic Inserts



- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

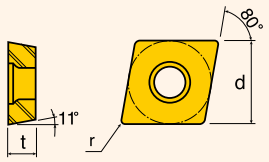
Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
For Finishing	CCMT	060202 FA	0.05 - 0.15	0.1 - 1.5		●									●		●						
		060204 FA	0.05 - 0.15	0.1 - 1.5	●	●				●							●						
		09T302 FA	0.05 - 0.15	0.1 - 2.0	● 360	● 270			310						● 240		● 60	190					
		09T304 FA	0.05 - 0.20	0.1 - 2.0	● 300	●				●							● 260	130					
		09T308 FA	0.10 - 0.25	0.2 - 2.0		●									●								
OLD For Finishing	CCMT	060204 FG	0.05 - 0.15	0.3 - 1.5	●	●				●			●	●	●		●	●					
		09T304 FG	0.07 - 0.20	0.4 - 2.0	● 360	● 340			●	●			● 50	● 40	●		● 60	● 190					
		09T308 FG	0.10 - 0.25	0.6 - 2.0	● 290	● 270			● 340	● 310			● 170	● 140	● 240		● 260	● 130					
		120408 FG √	0.10 - 0.25	0.6 - 2.0						●					●								
For Medium	CCMT	060204 MT	0.07 - 0.20	0.5 - 2.0	●	●	●	●	●	●			●	●	●		●	●				●	
		060208 MT	0.13 - 0.30	0.7 - 2.0		●	●	●	●	●					●								
		09T304 MT	0.10 - 0.25	0.7 - 3.5	● 340	● 310	●	●	●	●	●		● 50	● 40	●		● 60	● 150					
		09T308 MT	0.13 - 0.30	1.0 - 3.5	280	● 250	● 385	● 250	● 310	● 280	● 195		● 160	● 120	● 215		● 235	● 110				150	
		120404 MT	0.10 - 0.25	1.0 - 5.0		●	●	●	●	●					●								
		120408 MT	0.13 - 0.30	1.3 - 5.0		●	●	●	●	●	●		●	●	●		●	●					
		120412 MT	0.17 - 0.35	1.5 - 5.0					●	●													
New For Semi Finishing	CCMT	060204 PC	0.06 - 0.18	0.3 - 2.0					●	●			●							●			
		060208 PC	0.08 - 0.25	0.4 - 2.0		●			●	●			●							●			
		09T304 PC	0.08 - 0.25	0.35 - 3.0		● 340			●	●			● 50		●					● 30			
		09T308 PC	0.10 - 0.28	0.5 - 3.0		● 270			● 340	● 310			● 170		● 250					140			
		120404 PC	0.08 - 0.25	0.4 - 4.0		●			●	●			●							●			
		120408 PC	0.10 - 0.30	0.7 - 4.0		●			●	●			●							●			
		120412 PC	0.12 - 0.35	1.0 - 4.0		●			●	●			●							●			
Wiper For Medium	CCMT	09T308 WT	0.10 - 0.40	0.7 - 3.0		280 240	● 345	240	● 280	● 250					● 195								

- For toolholders, see page A78, A91, A130, A138, A139, A153
- For dimensions, see page A23

√ Marked: Old type chipbreaker

● Marked: Standard Items

Positive 11° Clearance 80° Rhombic Inserts



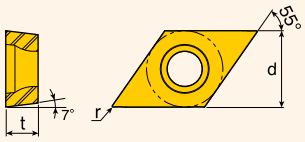
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
For Finishing	CPGT	080204 C	0.05 - 0.20	0.4 - 1.5		● 270																	
						200																	
		090304 C	0.05 - 0.20	0.4 - 2.0		● 240																	
For Finishing	CPMT	080204 FG	0.07 - 0.20	0.4 - 1.5		●				●					●								
		080208 FG	0.10 - 0.25	0.6 - 1.5		● 340				●					●								
		090304 FG	0.07 - 0.20	0.4 - 2.0		● 270			340	● 310					● 240								
		090308 FG	0.10 - 0.25	0.6 - 2.0					●	●					●								
New For Semi Finishing	CPMT	060204 PC	0.06 - 0.18	0.3 - 2.0		●							●		●		●						
		060208 PC	0.08 - 0.25	0.4 - 2.0		●							●		●		●						
		090304 PC	0.08 - 0.25	0.45 - 3.0		● 340				●			● 50		●		● 60						
		090308 PC	0.10 - 0.30	0.6 - 3.0		● 270				● 340			● 160		● 240		● 245						
		09T304 PC	0.08 - 0.25	0.45 - 3.0		●				●			●		●		●						
		09T308 PC	0.10 - 0.30	0.6 - 3.0		●				●			●		●		●						

- For toolholders, see page A140
- For dimensions, see page A23

● Marked: Standard Items

Positive 7° Clearance 55° Rhombic Inserts



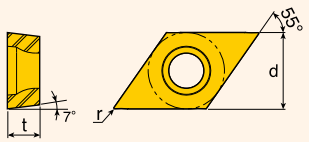
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
Right hand shown For Finishing	DCET	070201 L-GF	0.02 - 0.15	0.2 - 1.5																			
		070201 R-GF	0.02 - 0.15	0.2 - 1.5															●				
		070202 L-GF	0.03 - 0.17	0.3 - 1.5															●				
		070202 R-GF	0.03 - 0.17	0.3 - 1.5															●				
		070204 L-GF	0.05 - 0.20	0.3 - 1.5																			
		070204 R-GF	0.05 - 0.20	0.3 - 1.5															● 150				
		11T301 L-GF	0.02 - 0.15	0.2 - 2.5															150				
		11T301 R-GF	0.02 - 0.15	0.2 - 2.5															●				
		11T302 L-GF	0.03 - 0.17	0.3 - 2.5															●				
		11T302 R-GF	0.03 - 0.17	0.3 - 2.5															●				
		11T304 L-GF	0.05 - 0.20	0.3 - 2.5																			
		11T304 R-GF	0.05 - 0.20	0.3 - 2.5															●				
Wiper Right hand shown For Finishing Can be applied only to toolhoders with 93° approach angle	DCET	0702003 L-GW	0.02 - 0.15	0.1 - 1.5																			
		0702003 R-GW	0.02 - 0.15	0.1 - 1.5															● 150				
		11T3003 L-GW	0.02 - 0.15	0.1 - 2.5															150				
		11T3003 R-GW	0.02 - 0.15	0.1 - 1.5															●				
New For Finishing	DCGT	070201 SA	0.02 - 0.15	0.1 - 1.5													●		●				
		070202 SA	0.02 - 0.15	0.1 - 1.5													●		●				
		070204 SA	0.03 - 0.20	0.1 - 1.5													● 120		● 100				
		11T301 SA	0.01 - 0.05	0.1 - 2.5													● 100		● 90				
		11T302 SA	0.02 - 0.15	0.1 - 2.5													●		●				
		11T304 SA	0.03 - 0.20	0.1 - 2.5													●		●				

- For toolholders, see page A78, A92, A93, A130, A141, A142, A153
- For dimensions, see page A23

● Marked: Standard Items

Positive 7° Clearance 55° Rhombic Inserts



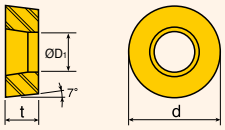
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions feed (mm/rev)	ap (mm)	Grade & Vc (m/min) Cermet PV3010	CT3000	CVD Coated TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	PVD Coated TT5080	TT8020	TT9020	TT9080	Uncoated P20	K10	K20
For Finishing	DCMT	070202 FA	0.05 - 0.15	0.1 - 1.5	● 360	● 340						60			● 240		● 60	190					
		11T302 FA	0.05 - 0.15	0.1 - 1.5	● 290	● 270			340	310		● 180			●		● 260	130					
For Finishing	DCMT	070204 FG	0.07 - 0.20	0.4 - 1.5	●	●			●	●			●	●	●		●	●					
		070208 FG	0.07 - 0.20	0.4 - 2.0	● 360	340			● 340	● 310		60	● 50	40	● 240		60	● 190					
		11T304 FG	0.10 - 0.25	0.6 - 1.5	● 290	● 270			●	●		● 180	● 170	● 150	●		● 260	● 130					
		11T308 FG	0.10 - 0.25	0.6 - 2.0	●	●			●	●			●	●	●		●						
For Medium	DCMT	11T304 MT	0.10 - 0.25	0.7 - 3.0		●	●	●	●	●	●		●	●	●		●	●					
		11T308 MT	0.13 - 0.30	1.0 - 3.0		● 270	● 385	● 250	● 310	● 280	195		● 50 170	● 40 150	● 215		● 60 235	● 150 110					● 120
		11T312 MT	0.17 - 0.35	1.5 - 3.0			●		●						●								
New For Semi Finishing	DCMT	070204 PC	0.06 - 0.18	0.3 - 2.0		●			●	●			●							●			
		070208 PC	0.08 - 0.25	0.4 - 2.0		● 340			●	●			● 50							● 30			
		11T304 PC	0.08 - 0.25	0.35 - 3.0		● 270			● 340	●			● 170							● 140			
		11T308 PC	0.10 - 0.28	0.5 - 3.0		●			●	●			●							●			
		11T312 PC	0.12 - 0.32	0.5 - 3.0		●			●	●			●							●			

- For toolholders, see page A78, A92, A93, A130, A141, A142, A153
- For dimensions, see page A23

● Marked: Standard Items

Positive 7° Clearance Round Inserts



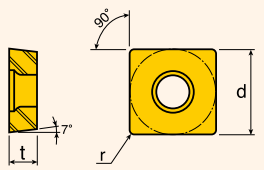
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions feed (mm/rev)	ap (mm)	Grade & Vc (m/min) Cermet PV3010	CT3000	CVD Coated TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	PVD Coated TT5080	TT8020	TT9020	TT9080	Uncoated P20	K10	K20
For Medium	RCMT	10T300 MT	0.20 - 0.50	1.0 - 4.0			●		●	●					●								
		120400 MT	0.30 - 0.60	2.0 - 5.0			● 385	250	● 310	● 280					215								
		160600 MT	0.40 - 0.80	3.0 - 7.0						●													
New For Semi Finishing	RCMT	120400 PC	0.2 - 0.6	1.3 - 4.5					● 280	● 250			● 50 160	● 40 150			● 60 200						
For Roughing	RCMX	100300	0.25 - 0.50	1.5 - 4.0			●	●	●	●					●								
		120400	0.30 - 0.60	2.5 - 5.0			●		●	●					●								
		160600	0.40 - 0.75	3.0 - 7.0			● 345	225	● 280	● 250					● 215							150	120
		200600	0.48 - 0.90	3.5 - 9.0			●	●	●	●					●							●	
		250700	0.55 - 1.20	4.0 - 12.0			●	●	●	●													
		320900	0.65 - 1.50	5.0 - 15.0					●	●													
New For Roughing	RCMX	100300 RA	0.20 - 0.50	1.0 - 4.0					●	●	●												
		120400 RA	0.25 - 0.60	2.0 - 5.0					●	●	●												
		160600 RA	0.35 - 0.75	2.5 - 7.0					● 280	● 250	● 195												
		200600 RA	0.40 - 0.90	3.0 - 9.0					●	●	●												
		250700 RA	0.50 - 1.20	3.5 - 12.0					●	●	●												
		320900 RA	0.60 - 1.50	4.0 - 15.0					●	●	●												

- For toolholders, see page A86, A87, A94, A131
- For dimensions, see page A23

● Marked: Standard Items

Positive 7° Clearance Square Inserts



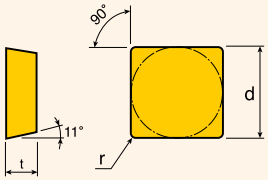
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
For Finishing	SCMT	09T304 FG	0.08 - 0.25	0.60 - 2.0									●				60	190					
									340	310					240								
		09T308 FG	0.10 - 0.25	0.60 - 2.0						●			●		●		260	● 130					
For Medium	SCMT	09T304 MT	0.10 - 0.25	0.70 - 3.5		●	●	●	●	●			●		●			●					
		09T308 MT	0.13 - 0.30	1.00 - 3.5		●	●	●	●	●	●		●	●	●		●	●					
		120404 MT	0.10 - 0.25	1.00 - 5.0		● 310	● 350	250	● 310	● 280	195		50	40	● 215	180	60	150					
		120408 MT	0.13 - 0.30	1.00 - 5.0		● 250	●	●	●	●			● 150	● 140	●		● 235	● 110					
		120412 MT	0.15 - 0.35	1.00 - 5.0					●		●												
New For Semi Finishing	SCMT	09T304 PC	0.08 - 0.25	0.35 - 3.0		●			●	●			●							●			
		09T308 PC	0.10 - 0.28	0.50 - 3.0		●			●	●			● 50							● 30			
		120404 PC	0.08 - 0.25	0.40 - 4.0		● 310			● 310	● 280			● 160							● 140			
		120408 PC	0.10 - 0.30	0.70 - 4.0		●			●	●			●							●			
		120412 PC	0.12 - 0.35	1.00 - 4.0		●			●	●			●							●			

- For toolholders, see page A94, A95, A142, A163
- For dimensions, see page A23

● Marked: Standard Items

Positive 11° Clearance Square Inserts



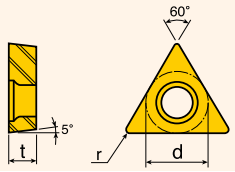
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated			Uncoated			
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	P20	P30	K10	K20
For Finishing	SPGN	090304	0.08 - 0.20	0.7 - 3.5																		●	
		090308	0.10 - 0.25	0.7 - 3.5					●													●	
		120304	0.08 - 0.20	1.0 - 5.0																●		●	
		120308	0.10 - 0.25	1.0 - 5.0					●	●										●	●	●	●
		120312	0.15 - 0.30	1.0 - 5.0																			
		120404	0.08 - 0.20	1.0 - 5.0																			●
		120408	0.10 - 0.25	1.0 - 5.0																			
		120412	0.15 - 0.30	1.0 - 5.0			330		250	220										170	140	150	120
		120416	0.18 - 0.33	1.0 - 5.0																			
		150404	0.08 - 0.20	1.5 - 7.0					●											●		●	
		150408	0.10 - 0.25	1.5 - 7.0																●			
		150412	0.15 - 0.30	1.5 - 7.0																			
		190404	0.08 - 0.20	1.5 - 9.0																			
		190408	0.10 - 0.25	1.5 - 9.0																●		●	
For Medium	SPMR	090304	0.10 - 0.25	0.7 - 3.5						●													
		090308	0.13 - 0.30	1.0 - 3.5					●	●													
		120304	0.10 - 0.25	1.0 - 5.0			340	230	280	250					190								
		120308	0.13 - 0.30	1.0 - 5.0					●	●					●								
For Medium	SPUN	090304	0.10 - 0.30	1.0 - 3.5																			
		090308	0.15 - 0.40	1.0 - 3.5																			
		120304	0.10 - 0.30	1.0 - 5.0					●	●										●			
		120308	0.15 - 0.40	1.0 - 5.0		● 250 200	330	200	● 250	● 220										● 170	● 140	● 150	120
		120312	0.20 - 0.50	1.0 - 5.0																			
		150404	0.10 - 0.30	1.5 - 7.0																			
		190412	0.20 - 0.50	1.5 - 9.0																			

- For toolholders, see page A80, A134, A161
- For dimensions, see page A23

● Marked: Standard Items

Positive 5° Clearance Triangular Inserts



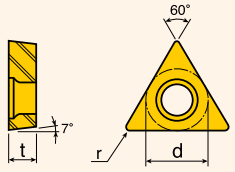
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
New For Finishing	TBGT	0601003 R-FF	0.03 - 0.1	0.05 - 0.3																			
		0601003 L-FF	0.03 - 0.1	0.05 - 0.3																			
		060101 R-FF	0.03 - 0.12	0.08 - 0.4		●																	
		060101 L-FF	0.03 - 0.12	0.08 - 0.4		● 150																	
		060102 R-FF	0.03 - 0.15	0.1 - 0.4		●																	
		060102 L-FF	0.03 - 0.15	0.1 - 0.4		●																	
		060104 R-FF	0.05 - 0.20	0.1 - 0.4		●																	
		060104 L-FF	0.05 - 0.20	0.1 - 0.4		●																	

- For toolholders, see page A144, A145
- For dimensions, see page A23

● Marked: Standard Items

Positive 7° Clearance Triangular Inserts



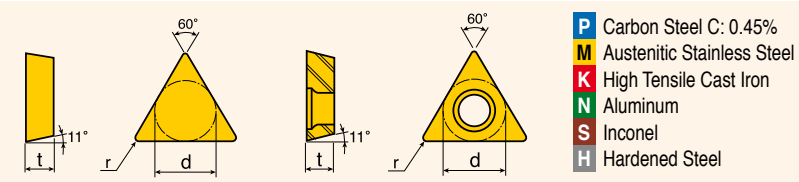
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
Right hand shown For Finishing	TCET	110301 L-GF	0.02 - 0.15	0.2 - 1.5																			
		110301 R-GF	0.02 - 0.15	0.2 - 1.5															● 150				
		110302 L-GF	0.03 - 0.17	0.3 - 1.5															150				
		110302 R-GF	0.03 - 0.17	0.3 - 1.5																			
		110304 R-GF	0.05 - 0.20	0.5 - 1.5																			
New For Finishing	TCGT	110201 SA	0.01 - 0.05	0.1 - 2.5													● 120		●				
		110202 SA	0.02 - 0.15	0.2 - 2.5													● 260		● 100				
		110204 SA	0.03 - 0.20	0.2 - 2.5													● 60		● 90				
For Finishing	TCMT	110202 FA	0.03 - 0.15	0.1 - 1.5		● 350				●							● 120						
		110204 FA	0.05 - 0.15	0.1 - 1.5	●	270				310							260 60						
For Finishing	TCMT	090208 FG	0.10 - 0.25	0.6 - 1.5	●	●				●					●								
		110204 FG	0.07 - 0.20	0.4 - 1.5	● 360	● 340				●			● 50	● 40	●		● 60	● 190					
		110208 FG	0.10 - 0.25	0.6 - 1.5	● 290	● 270			● 340	● 310			170	130	● 240		260	130					
		16T304 FG	0.07 - 0.20	0.4 - 2.0						●					●								
		16T308 FG	0.10 - 0.25	0.6 - 2.0		●			●	●			●	●	●								
For Medium	TCMT	090204 MT	0.10 - 0.25	0.6 - 2.0	●	●	●	●	●	●			●	●	●		●	●					
		090208 MT	0.13 - 0.30	0.8 - 2.0		●	●		●	●													
		110204 MT	0.10 - 0.25	0.6 - 3.0	340	● 310	●	●	●	●			● 50	● 40	●		● 60	● 150					
		110208 MT	0.13 - 0.30	0.8 - 3.0	280	● 250	● 385	● 250	● 310	● 280	195		● 160	● 120	● 215		235	110			170	150	
		16T304 MT	0.10 - 0.25	0.8 - 5.0		●	●	●	●	●			●	●	●		●						
		16T308 MT	0.10 - 0.30	1.0 - 5.0		●	●	●	●	●			●	●	●		●	●					
		16T312 MT	0.10 - 0.30	1.5 - 5.0						●													
New For Semi Finishing	TCMT	090204 PC	0.06 - 0.18	0.3 - 2.0		●			●	●			●							●			
		090208 PC	0.08 - 0.25	0.4 - 2.0		●			●	●			●							●			
		110204 PC	0.06 - 0.2	0.3 - 2.5		● 320			●	●			● 50							● 30			
		110208 PC	0.09 - 0.26	0.42 - 2.5		● 250			● 340	● 310			● 170							● 140			
		16T304 PC	0.08 - 0.25	0.35 - 3.0		●			●	●			●							●			
		16T308 PC	0.10 - 0.28	0.5 - 3.0		●			●	●			●							●			
		16T312 PC	0.12 - 0.36	0.6 - 3.0		●			●	●			●							●			

- For toolholders, see page A95, A96, A131, A138, A143, A164
- For dimensions, see page A23

● Marked: Standard Items

Positive 11° Clearance Triangular Inserts

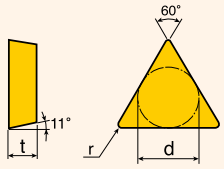


Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated			Uncoated			
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	P20	P30	K10	K20
For Finishing	TPGN	110304	0.07 - 0.20	0.7 - 3.0					●	●										●	●	●	
		110308	0.10 - 0.25	1.0 - 3.0					●													●	
		160302	0.05 - 0.18	1.0 - 5.0																			
		160304	0.07 - 0.20	1.0 - 5.0					●	●										●	●	●	
		160308	0.10 - 0.25	1.0 - 5.0					●	●										●		●	●
		160312	0.15 - 0.30	1.0 - 5.0																			
		220404	0.07 - 0.20	1.5 - 7.0		250	300		250	220										● 170	140	● 150	120
		220408	0.10 - 0.25	1.5 - 7.0		200				●												●	●
		220412	0.15 - 0.30	1.5 - 7.0																●			
		220416	0.20 - 0.35	1.5 - 7.0																			
		220425	0.25 - 0.40	1.5 - 7.0																			
		220430	0.30 - 0.45	1.5 - 7.0																	●		
		270608	0.15 - 0.25	3.0 - 8.0					●														
Right hand shown For Finishing	TPGT	090204 L-C	0.05 - 0.20	0.3 - 1.5		●																	
		110304 L-C	0.05 - 0.20	0.5 - 2.0		● 270																●	
		110304 R-C	0.05 - 0.20	0.5 - 2.0		● 200																	
		110308 L-C	0.07 - 0.25	0.5 - 2.0		● 240																	
		160404 L-C	0.05 - 0.20	0.7 - 3.0		●																	
		160404 R-C	0.05 - 0.20	0.7 - 3.0		●																	
Left hand shown For Finishing	TPGX	090202 L	0.05 - 0.15	0.4 - 1.5		●																	
		090204 L	0.08 - 0.20	0.6 - 1.5		● 270																	
		110302 L	0.08 - 0.20	0.5 - 1.5		● 200																	
		110302 R	0.08 - 0.20	0.5 - 1.5		● 240																	
		110304 L	0.08 - 0.20	0.6 - 2.0		●																●	
		110304 R	0.08 - 0.20	0.6 - 2.0		●																	
For Medium	TPMR	090204	0.10 - 0.25	0.5 - 2.0					●	●													
		090208	0.13 - 0.30	0.7 - 2.0				●	●	●													
		110304	0.10 - 0.25	0.7 - 3.0		●	●		●	●					●			●					
		110308	0.13 - 0.30	1.0 - 3.0		●			●	●					●								
		160304	0.10 - 0.25	1.0 - 5.0	310	● 280	●	●	●	●	●				●		● 60	● 150					
		160308	0.13 - 0.30	1.0 - 5.0	250	● 230	● 340	230	● 280	● 310	260				● 280	170	● 235	● 130		140			
		160312	0.15 - 0.35	1.0 - 5.0						●													
		220404	0.10 - 0.25	1.0 - 7.0						●					●								
		220408	0.13 - 0.30	1.5 - 7.0			●			●					●								
		220412	0.15 - 0.35	1.5 - 7.0						●													
For Finishing	TPMT	110304 FG	0.07 - 0.20	0.4 - 1.5		● 340 270			340	● 310					● 240			● 190 130					
For Semi Finishing	TPMT	090204 PC	0.06 - 0.18	0.3 - 2.0		●							●		●		●						
		110204 PC	0.06 - 0.2	0.4 - 2.5		●							●		●		●						
		110208 PC	0.1 - 0.26	0.5 - 2.5		● 340							● 50		●		● 60						
		110304 PC	0.06 - 0.2	0.4 - 2.5		● 270				310			● 170		● 230		● 245						
		110308 PC	0.1 - 0.26	0.5 - 2.5		●				●			●		●		●						
		16T304 PC	0.08 - 0.25	0.45 - 3.0		●				●			●		●		●						
		16T308 PC	0.1 - 0.3	0.5 - 3.0		●				●			●		●		●						

- For toolholders, see page A80, A81, A135, A138, A143, A144, A161
- For dimensions, see page A23

● Marked: Standard Items

Positive 11° Clearance Triangluar Inserts



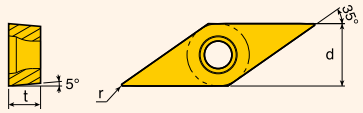
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated			Uncoated			
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	P20	P30	K10	K20
For Medium	TPUN	110304	0.10 - 0.30	1.0 - 3.0						●										●			
		110308	0.15 - 0.40	1.0 - 3.0						●													
		160304	0.10 - 0.30	1.0 - 5.0						●										●	●	●	
		160308	0.15 - 0.40	1.0 - 5.0						●								●			●		
		160312	0.20 - 0.50	1.5 - 5.0		250				●								120			●		
		160316	0.25 - 0.55	1.5 - 5.0		200	330		250	220								120		170	140	150	
		220404	0.10 - 0.30	1.5 - 7.0																	●		
		220408	0.15 - 0.40	1.5 - 7.0						●										●	●		
		220412	0.20 - 0.50	1.5 - 7.0																	●		
		220416	0.25 - 0.55	1.5 - 7.0																			

- For toolholders, see page A80, A81, A135, A138, A143, A144, A161
- For dimensions, see page A23

● Marked: Standard Items

Positive 5° Clearance 35° Rhombic Inserts



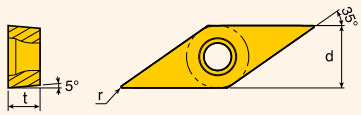
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
Right hand shown For Finishing	VBET	110301 L-GF	0.02 - 0.15	0.2 - 1.5															●				
		110301 R-GF	0.02 - 0.15	0.2 - 1.5															●				
		110302 L-GF	0.03 - 0.17	0.3 - 1.5															150				
		110302 R-GF	0.03 - 0.17	0.3 - 1.5															● 150				
		110304 L-GF	0.05 - 0.20	0.3 - 1.5																			
		110304 R-GF	0.05 - 0.20	0.3 - 1.5															●				
Wiper Right hand shown For Finishing Can be applied only to toolhoders with 95° approach angle	VBET	1103003 L-GW	0.02 - 0.15	0.1 - 1.5															150				
		1103003 R-GW	0.02 - 0.15	0.1 - 1.5															150 ●				
New For Finishing	VBGT	110301 SA	0.01 - 0.20	0.1 - 1.5													● 140		●				
		110302 SA	0.02 - 0.20	0.2 - 1.5													● 130		● 110 100				
		110304 SA	0.05 - 0.20	0.2 - 1.5													● 60		●				
For Finishing	VBMT	160408 FA	0.05 - 0.25	0.3 - 2.0	● 360 290	● 340 270			● 340	● 310					240		60 260	190 130					
For Finishing	VBMT	160404 FG	0.07 - 0.20	0.5 - 1.5	● 360	● 340			● 340	● 310		● 60 200	● 50 170		● 240		● 60 260	● 190 130					
		160408 FG	0.10 - 0.25	0.7 - 2.0	290 ●	270 ●			●	●		●	●		●		●						

- For toolholders, see page A79, A96, A97, A98, A131, A132, A146, A154
- For dimensions, see page A23

● Marked: Standard Items

Positive 5° Clearance 35° Rhombic Inserts



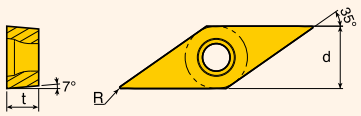
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
For Medium	VBMT	160404 MT	0.10 - 0.25	0.6 - 3.0	●	●	●	●	●	●			●		●		●	●					
		160408 MT	0.13 - 0.30	0.9 - 3.0	● 340 280	● 310 250	● 385	● 250	● 310	● 280	195		● 50 150		● 215		● 60 235	● 150 110					120
		160412 MT	0.15 - 0.30	1.2 - 3.0					●	●					●								
New For Semi Finishing	VBMT	160404 PC	0.07 - 0.22	0.5 - 2.8		●			●	●			●							●			
		160408 PC	0.10 - 0.27	0.5 - 2.8	360 290	● 340 270			● 330	●			● 50 160							● 30 140			
		160412 PC	0.10 - 0.28	0.5 - 2.8		●			●	●			●							●			

- For toolholders, see page A79, A96, A97, A98, A131, A132, A146, A154
- For dimensions, see page A23

● Marked: Standard Items

Positive 7° Clearance 35° Rhombic Inserts



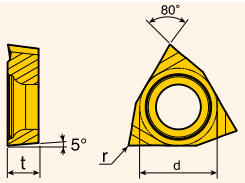
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
New For Finishing	VCGT	110301 SA	0.01 - 0.20	0.1 - 1.5													● 140		●				
		110302 SA	0.02 - 0.20	0.2 - 1.5													● 130		● 110 100				
		110304 SA	0.05 - 0.20	0.2 - 1.5													● 60		●				
New VCMT 08,11 VCMT 16 For Semi Finishing	VCMT	080202 PC	0.02 - 0.15	0.2 - 1.5		●			●	●			●		●								
		080204 PC	0.05 - 0.20	0.2 - 1.5	● 340 280	● 310 250			● 310	● 280			● 50 150		215								
		110304 PC	0.05 - 0.20	0.1 - 1.7					●	●													
		160408 PC	0.05 - 0.20	0.3 - 2.0		●			●	●			●										

- For toolholders, see page A79, A97, A98, A146, A147
- For dimensions, see page A23

● Marked: Standard Items

Positive 5° Clearance 80° Trigon Inserts



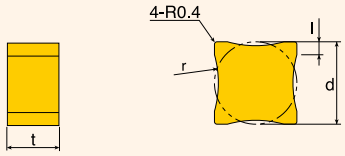
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
New For Finishing	WBMT	060102 R-C	0.03 - 0.15	0.1 - 0.4		● 150																	
		060102 L-C	0.03 - 0.15	0.1 - 0.4		●																	
	WBGT	0601003 R-FF	0.03 - 0.1	0.05 - 0.3																			
		0601003 L-FF	0.03 - 0.1	0.05 - 0.3																			
		060101 R-FF	0.03 - 0.12	0.08 - 0.4		●																	
		060101 L-FF	0.03 - 0.12	0.08 - 0.4		● 150																	
		060102 R-FF	0.03 - 0.15	0.1 - 0.4		●																	
		060102 L-FF	0.03 - 0.15	0.1 - 0.4		●																	
		060104 R-FF	0.05 - 0.20	0.1 - 0.4		●																	
		060104 L-FF	0.05 - 0.20	0.1 - 0.4		●																	

• For toolholders, see page A148
• For dimensions, see page A23

● Marked: Standard Items

Negative Square Insert for Pipe Skiving

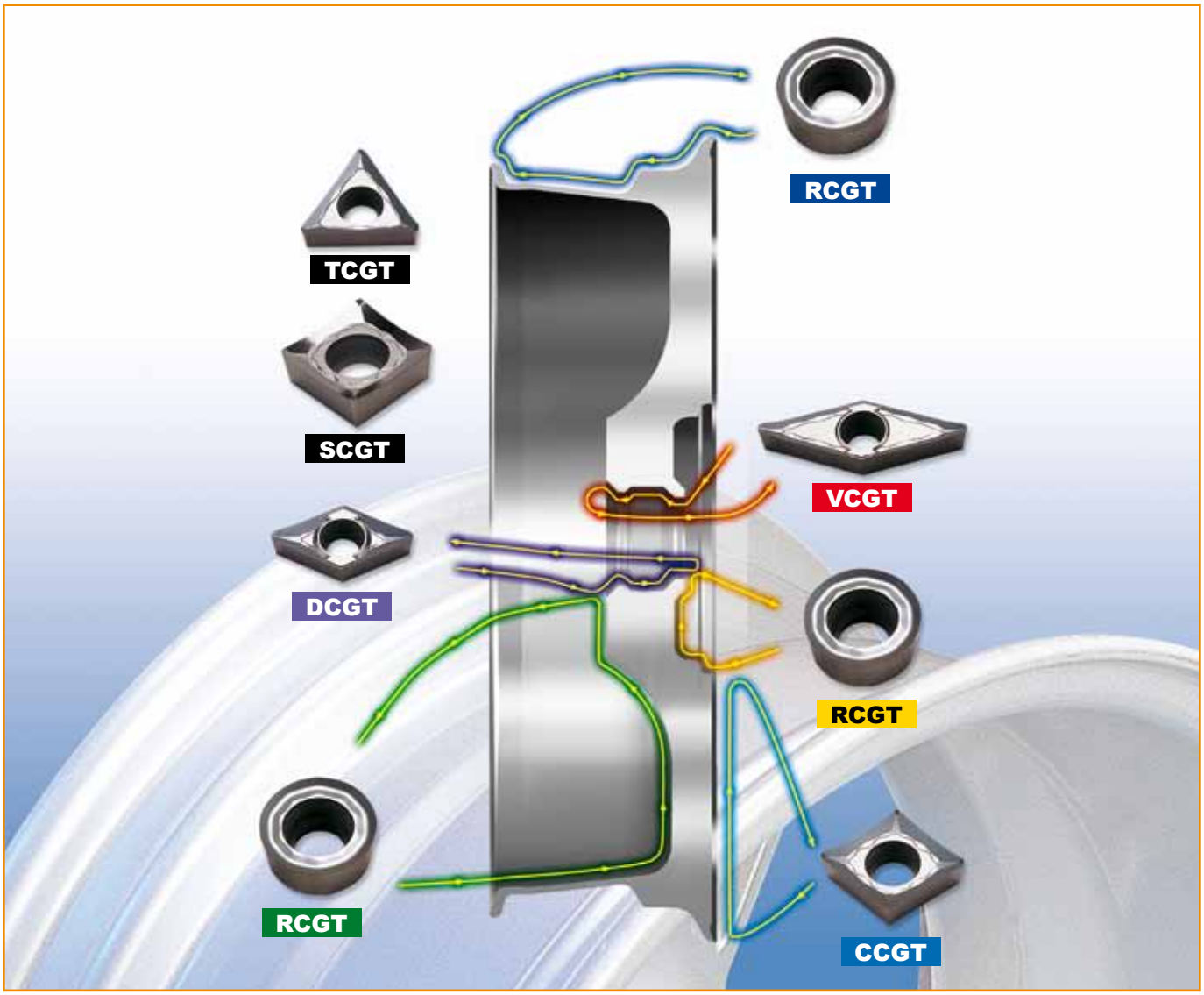


- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Dimension(mm)				Grade
							Coated
			l	d	t	r	TT5100
For Pipe Skiving	SNG 452	10R	2	12.70	7.94	10	●
		16R	2	12.70	7.94	16	●
		20R	2	12.70	7.94	20	●
		25R	2	12.70	7.94	25	●
		30R	2	12.70	7.94	30	●
		40R	2	12.70	7.94	40	●
		50R	2	12.70	7.94	50	●
		60R	2	12.70	7.94	60	●
		70R	2	12.70	7.94	70	●

• Toolholders will be produced upon request.

● Marked: Standard Items



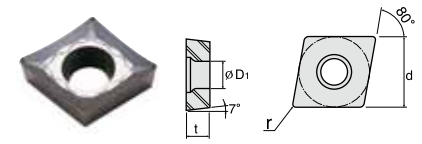
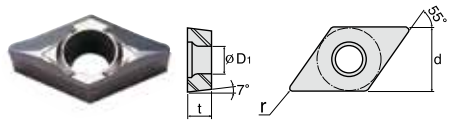
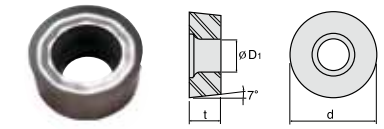
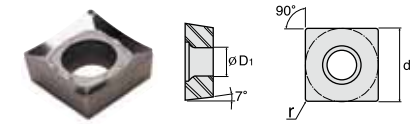
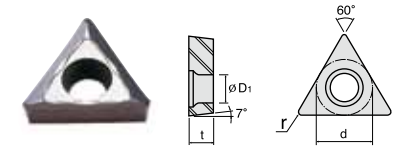
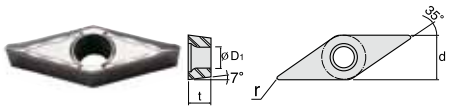
Features

- Wide range of applications for aluminum and other non-ferrous materials
- Very high positive rake geometry to minimize cutting forces and built-up edges

Machining Conditions with K10 Grade

Materials		Hardness Brinell (HB)	Kc (N/mm^2)	Vc (m/min)	f (mm/rev)
Aluminum Alloys (Forged)	Unhardened	50 - 70	500 - 600	2500 - 1000	0.1 - 0.6
	Hardened	90 - 110	700 - 900	1000 - 300	0.1 - 0.5
Aluminum Alloys (Cast)	Unhardened	70 - 80	700 - 800	1000 - 300	0.1 - 0.5
	Hardened	80 - 100	800 - 950	600 - 200	0.1 - 0.4
Copper Alloys		90 - 110	700	600 - 250	0.1 - 0.5
Bronze		100	1700	300 - 150	0.1 - 0.6

Positive 7° Clearance Inserts for Aluminum Machining

Insert	Designation		Dimension(mm)				Grade
			d	t	r	ØD1	K10
	CCGT	060202 FL	6.35	2.38	0.2	2.8	●
		060204 FL	6.35	2.38	0.4	2.8	●
		09T302 FL	9.525	3.97	0.2	4.4	●
		09T304 FL	9.525	3.97	0.4	4.4	●
		09T308 FL	9.525	3.97	0.8	4.4	●
		120402 FL	12.70	4.76	0.2	5.5	●
		120404 FL	12.70	4.76	0.4	5.5	●
		120408 FL	12.70	4.76	0.8	5.5	●
	DCGT	070202 FL	6.35	2.38	0.2	2.8	●
		070204 FL	6.35	2.38	0.4	2.8	●
		11T302 FL	9.525	3.97	0.2	4.4	●
		11T304 FL	9.525	3.97	0.4	4.4	●
		11T308 FL	9.525	3.97	0.8	4.4	●
	RCGT	0803MO FL	8.0	3.18	-	3.4	●
		1003MO FL	10.0	3.18	-	4.4	●
		10T3MO FL	10.0	3.97	-	4.4	●
	SCGT	09T308 FL	9.525	3.97	0.8	4.4	●
		120402 FL	12.70	4.76	0.2	5.5	●
		120404 FL	12.70	4.76	0.4	5.5	●
		120408 FL	12.70	4.76	0.8	5.5	●
	TCGT	090204 FL	5.56	2.38	0.4	2.5	●
		110204 FL	6.35	2.38	0.4	2.8	●
		16T304 FL	9.525	3.97	0.4	4.4	●
		16T308 FL	9.525	3.97	0.8	4.4	●
	VCGT	110302 FL	6.35	3.18	0.2	2.8	●
		110304 FL	6.35	3.18	0.4	2.8	●
		160402 FL	9.525	4.76	0.2	4.4	●
		160404 FL	9.525	4.76	0.4	4.4	●
		160408 FL	9.525	4.76	0.8	4.4	●
		160412 FL	9.525	4.76	1.2	5.5	●
		220530 FL	12.70	5.56	3.0	5.5	●

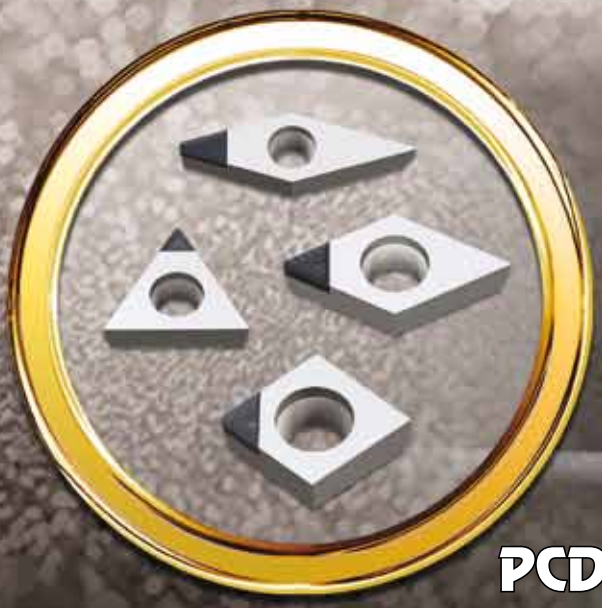
● Marked: Standard Items

Special Inserts

• Special inserts will be produced upon request

CERAMIC INSERTS

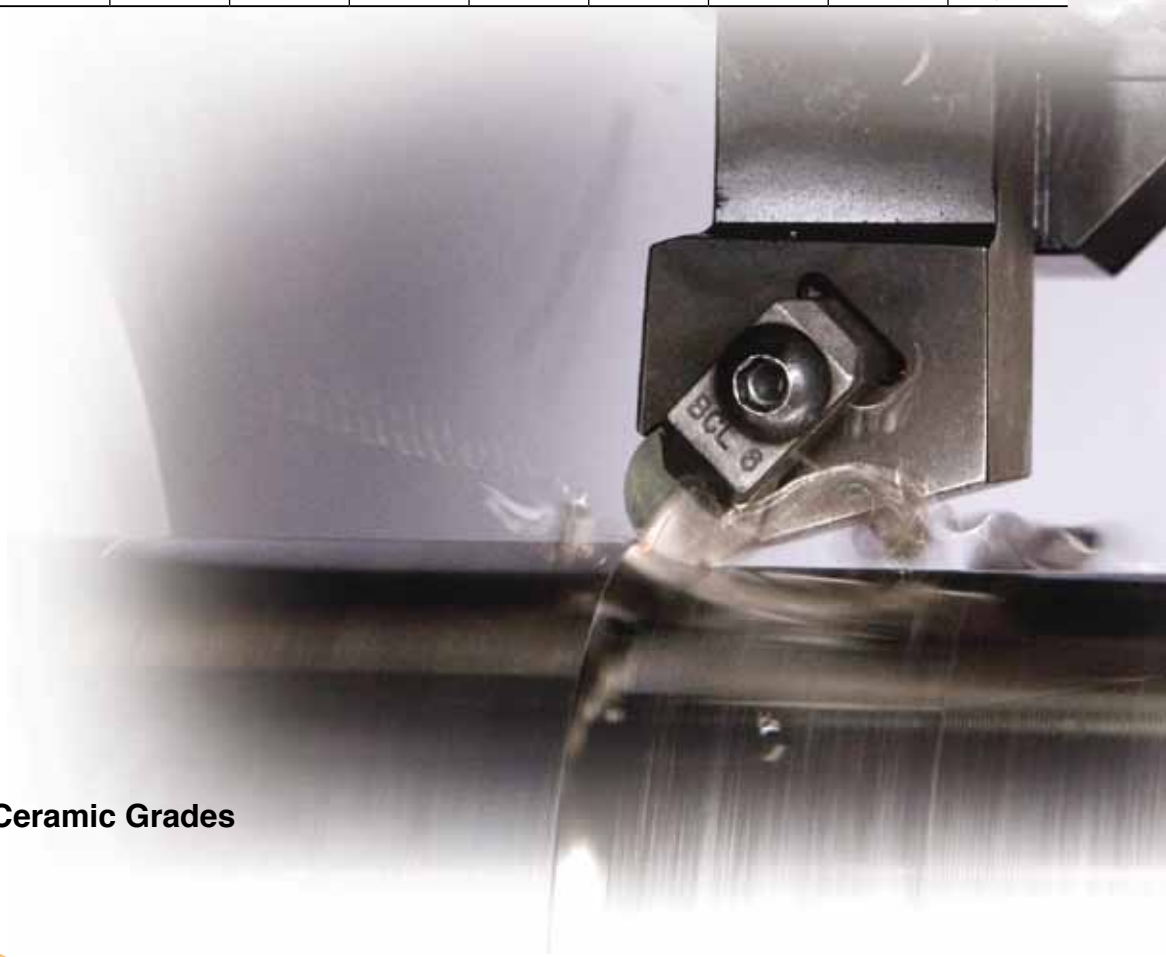
CBN INSERTS



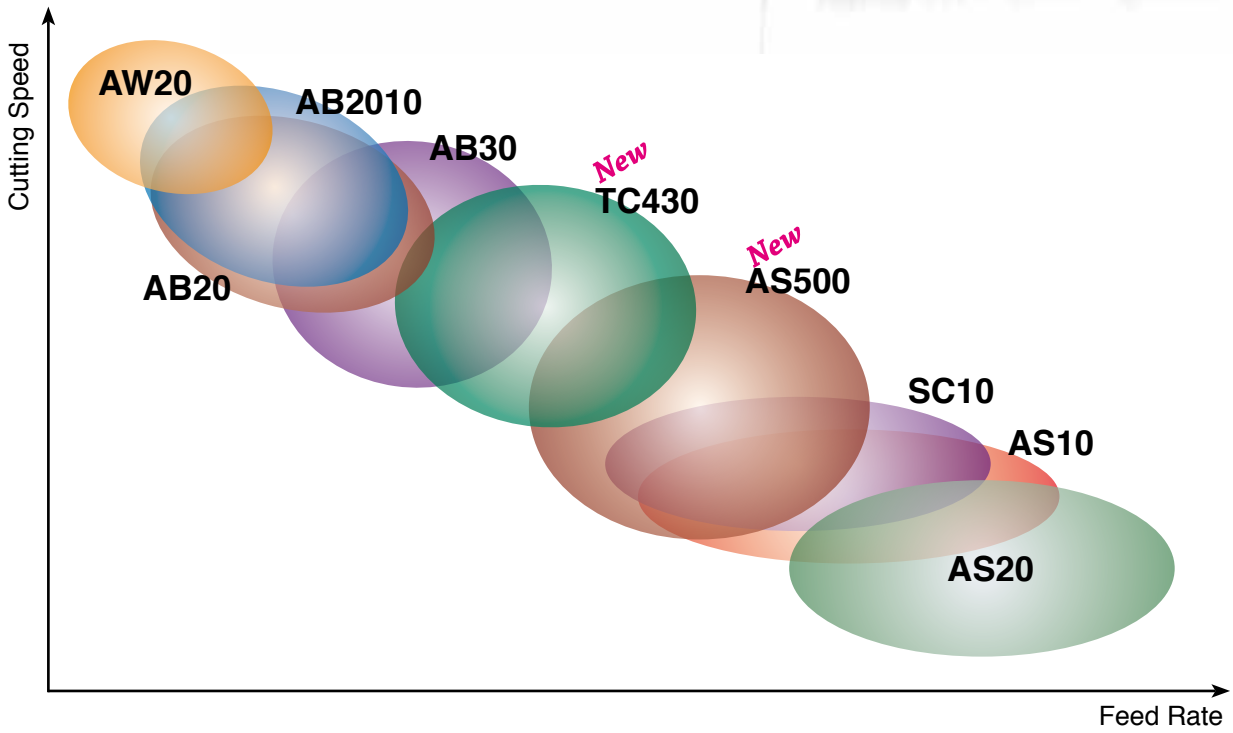
PCD INSERTS

Physical Properties

Grade		AW20	AB2010	AB20	AB30	New TC430	New AS500	SC10	AS10	AS20
Composition		Al_2O_3 ZrO_2	Al_2O_3- Ti(C,N)	Al_2O_3- Ti(C,N)	Al_2O_3- TiC	SiC Whisker	SiAlON	CVD- Si_3N_4	Si_3N_4	Si_3N_4- TiN
Density (g/cm3)		4.05	4.30	4.30	4.25	3.74	3.21	3.22	3.22	3.50
Hardness	HRA	94.0	94.5	94.5	94.5	95.1	94.3	93.6	93.6	93.0
	Vickers	1,800	2,050	2,050	2,050	2,100	1,800	1,700	1,700	1,500
Bending Strength (MPa)		600	650	650	700	700	850	900	900	1,000



Application Map of Ceramic Grades



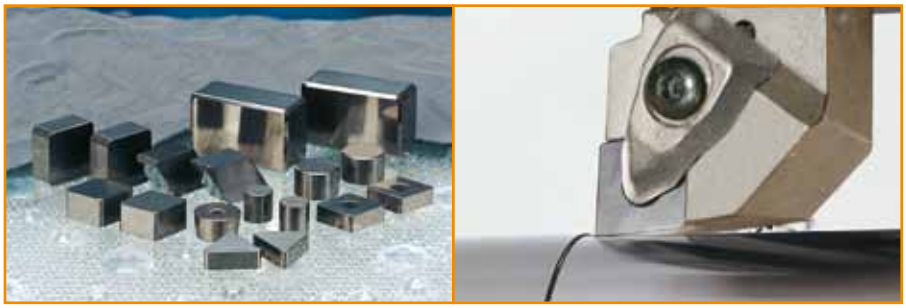
AW20 (Al_2O_3+ZrO_2)

- Excellent wear resistant grade with high chemical stability and temperature resistance
- Toughened by ZrO_2
- For high speed continuous turning of cast iron
- For finishing applications on hardened steels and other hard materials

AB2010 (AB20+TiN)

- Excellent wear resistance with extended tool life when compared to uncoated ceramic grades being applied on high speed applications
- TiN coating makes it easy to identify used corners
- Successful application of ceramic inserts on hard materials can provide significant cost advantage compared to CBN
- The combination of this ceramic grade with TiN PVD coating provides improved wear resistance and fracture toughness
- Application area is in the finish machining of hardened steels and cast iron

AB20 (Al_2O_3+TiCN)



- High wear resistant grade with excellent cutting edge stability
- For high speed continuous turning of hardened steels and other hard materials
- For cast iron finishing applications

AB30 (Al2O3+TiC)

- Mixed ceramic with good toughness and wear resistance
- For hard steels, hard materials and cast iron finishing and roughing applications
- Can be applied for interrupted cutting

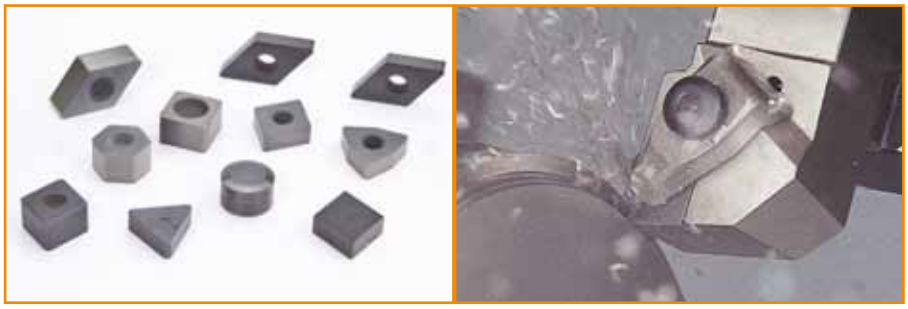
New

TC430 (Whisker)

- SiC whisker reinforced ceramic grade
- High hardness with excellent fracture toughness
- General turning and milling
- High cutting speed for Ni-base superalloy. Inconel, Waspaloy and Rene

New

AS500 (SiAlON)

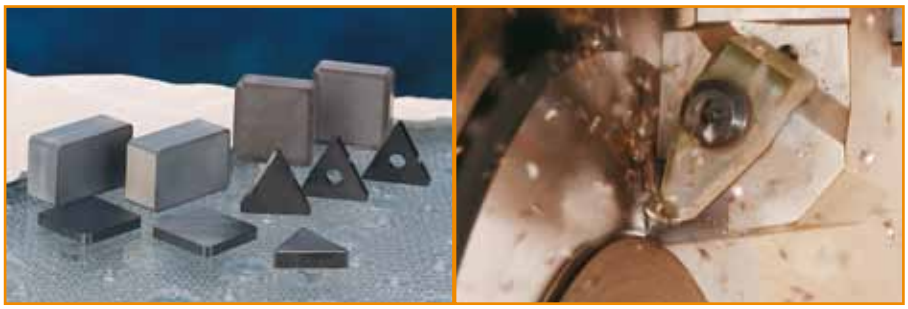


- High hardness and high fracture toughness
- For Gray cast iron, Nodular cast iron and Compacted graphite iron (CGI)
- Suitable for High Speed Dry Machining of Brake Discs

SC10 (AS10+CVD)

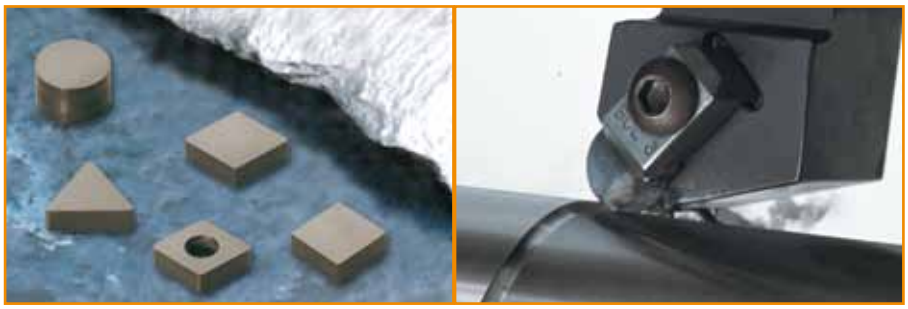
- Excellent wear resistant grade with very good toughness and thermal shock resistance
- For roughing to finishing of cast iron
- Wet and dry cutting

AS10 (Si_3N_4)



- High wear resistant grade with very good toughness and thermal shock resistance
- For roughing to finishing cast iron
- Wet and dry cutting

AS20 (Si_3N_4)



- Very tough Si_3N_4 ceramic grade with high cutting edge stability
- For roughing to finishing applications on nickel based high temperature alloys
- Wet and dry cutting

Cutting Examples

Work Material & Description	Insert		Cutting Conditions	Tool Life (pcs/edge)
	Designation	Grade		
Inconel 718, Body (350HB)	RNGN 120700	AS20	V=200m/min f=0.12mm/rev ap=3.0mm Wet, Continuous cut	1pc
GG25, Cylinder Liner (200 - 250HB)	CNGA 120408	AW20	V=350m/min f=0.25mm/rev ap=0.5mm Dry, Continuous cut	100pcs
100CrMo6, Ring (58 - 60HRC)	TPGN 110304	AB20	V=80m/min f=0.05mm/rev ap=0.2mm Dry, Continuous cut	2000pcs
Case Hardened Steel, Bush(58 - 62HRC)	CNMG 120408 CE	AB30	V=100m/min f=0.1mm/rev ap=0.2mm Dry, Continuous cut	50pcs
GG25, Pump Body (180 - 230HB)	CNMG 120404 CE	AB30	V=600m/min f=0.1mm/rev ap=0.5mm Wet, Continuous cut	100pcs
GG25, Cylinder Jam (180 - 230HB)	TNGN 160408	AB30	V=800m/min f=0.35mm/rev ap=0.5mm Dry, Continuous cut	90pcs
GG25, Brake Disc (180 - 230HB)	SNGN 120712	SC10	V=800m/min f=0.4mm/rev ap=1.5mm Wet, Continuous cut	290pcs
GG25, Brake Disc (180 - 230HB)	SNGN 120412	AS10	V=400m/min f=0.25 - 0.3mm/rev ap=2.0mm Wet, Continuous cut	120pcs
GG25, Brake Disc (180 - 230HB)	CNGA 120412	AS10	V=500m/min f=0.3mm/rev ap=2.0 - 3.0mm Wet, Continuous cut	30pcs
GG25, Brake Disc (180 - 230HB)	SNGX 120716 CH	AS10	V=900m/min f=0.6mm/rev ap=2.5 - 3.0mm Wet, Continuous cut	190pcs
GG25, Brake Disc (180 - 230HB)	CNGX 120716 CH	AS10	V=900m/min f=0.73mm/rev ap=2.5mm Wet, Continuous cut	130pcs
GG20, Brake Disc (170 - 190HB)	SNGX 120716 T7-CH	AS500	V=800m/min f=0.55mm/rev ap=2.5mm Dry, Continuous cut	100pcs
Chilled Cast, Roll (52 - 55HRC)	RCGX 120700 U2	TC430	V=42m/min f=0.2mm/rev ap=2mm Dry, Continuous cut	2000mm
Inconell 718, Shaft (280 - 330HB)	SNGN 120408 T6	TC430	V=150m/min f=0.2mm/rev ap=0.5mm Wet, Continuous cut	4min 30sec

Recommended Cutting Conditions

Materials	Grade	AW20	AB2010	AB20	AB30	TC430 (New)	AS500 (New)	SC10	AS10	AS20
	V.f	Cutting speed: V (m/min), Feed: f (mm/rev)								
Gray cast iron (HB 180-230)	V f	400-1,000 0.1-0.5	-	-	300-800 0.1-0.5	-	400-1,000 0.2-0.6	400-1,000 0.2-0.6	400-800 0.2-0.8	-
Ductile Cast Iron (HB 200-240)	V f	300-600 0.1-0.2	-	-	250-500 0.1-0.3	-	200-600 0.1-0.5	200-600 0.1-0.5	200-500 0.2-0.6	-
Chilled Cast Iron (> HB 400)	V f	-	50-200 0.05-0.2	50-200 0.05-0.2	50-150 0.05-0.2	-	-	-	-	-
Hardened Steel (HRc 40-50)	V f	-	100-400 0.1-0.2	100-400 0.1-0.2	100-300 0.1-0.2	-	-	-	-	
Hardened Steel (> HRc 50)	V f	-	50-250 0.05-0.2	50-250 0.05-0.2	-	-	-	-	-	-
ADI or HSS Roll	V f	-	-	50-100 0.2-0.5	50-80 0.2-0.5	50-100 0.2-0.7	20-60 0.2-0.7		-	-
Super Alloy (Ni-base)	V f	-	-	-	-	150-400 0.1-0.3	-	-	-	100-300 0.1-0.3

Edge Preparation for Ceramic Inserts

1. Common style (no designation)

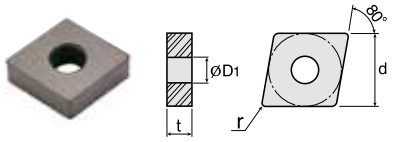
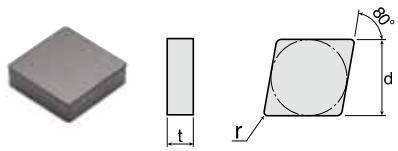
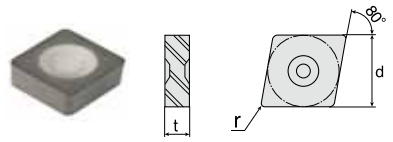
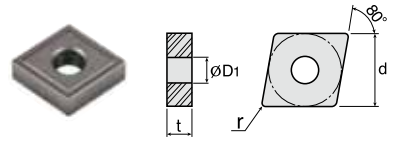
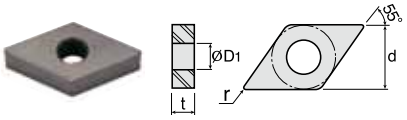
Grade	Land specification	
	Width (mm)	Angle (°)
AB2010, AB20, AB30, TC430, AS500, SC10, AS10, AS20	0.2	25
AW20	0.2	20

2. Others (single T-land)

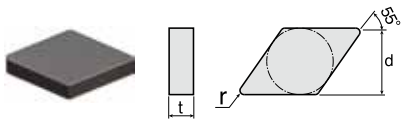
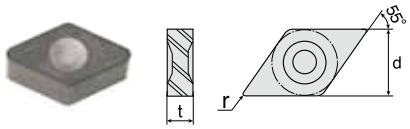
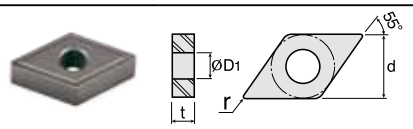
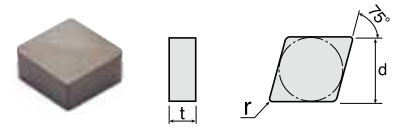
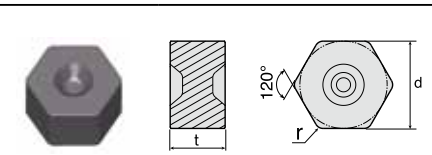
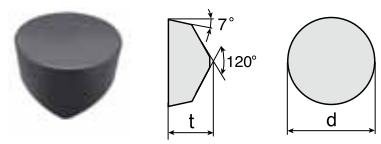
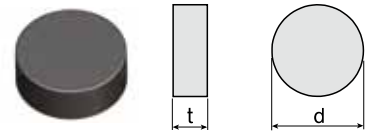
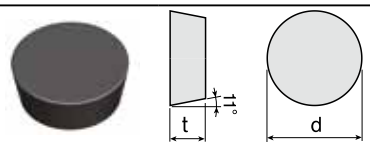
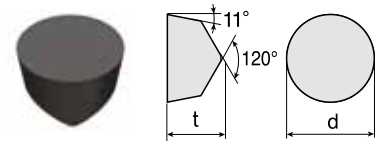
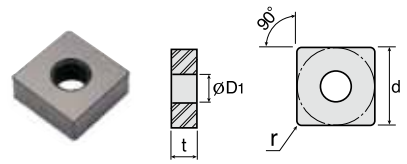
Designation	Land specification	
	Width (mm)	Angle (°)
T2	0.10	30
T3	0.15	30
T4	0.20	30
T5	0.30	30
T6	0.10	20
T7	0.20	20

3. Edge preparation "E" is only horing without T-land.

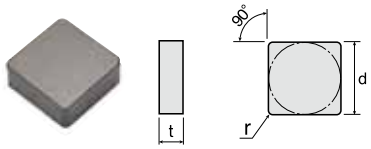
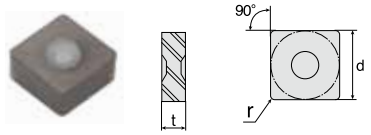
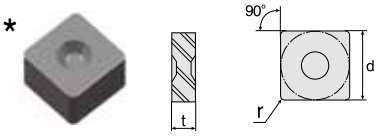
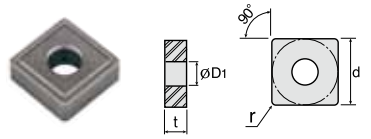
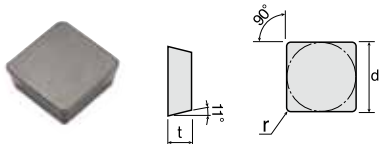
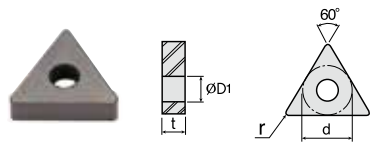
4. Various special edge preparations such as "Double Land" or "S" can be made upon request.

Insert	Designation		Dimension(mm)				Grade								
			d	t	r	ØD1	AW20	AB2010	AB20	AB30	TC430 New	AS500 New	SC10	AS10	AS20
	CNGA	120404	12.70	4.76	0.4	5.16		●	●	●					
		120408			0.8			●	●	●			●	●	
		120408 E													●
		120408 T7										●			
		120412			1.2			●	●	●			●	●	
		120412 E													●
		120412 T7										●			
		120416			1.6				●	●			●	●	
		160608	15.88	6.35	0.8	6.35			●						
		160612			1.2				●	●				●	
		160616			1.6				●	●					
		160624			2.4					●					
		190608	19.05		0.8	7.92			●	●					
		190612			1.2				●	●					
		190616			1.6					●					
		190624			2.4					●				●	
	CNGN	120404	12.70	4.76	0.4	-				●					
		120408			0.8			●	●	●				●	
		120408 T6									●				
		120408 E													●
		120412			1.2		●		●	●			●	●	
		120412 E													●
		120412 T6									●				
		120416			1.6				●					●	
		120708		7.94	0.8			●	●	●					
		120708 E													●
		120708 T6									●				
		120712			1.2		●			●				●	
		120712 E													●
		120712 T6									●				
		120716			1.6		●			●			●	●	
		120716 E													●
	CNGX	120712 CH	12.70	7.94	1.2	-								●	
		120712 T7-CH										●			
		120716 CH			1.6								●	●	
		120716 T7-CH										●			
	CNMG	120404 CE	12.70	4.76	0.4	5.16				●					
		120408 CE			0.8				●	●					
	DNGA	150404	12.70	4.76	0.4	5.16			●	●					
		150408			0.8			●	●	●					
		150412			1.2			●	●						
		150416			1.6				●						
		150604		6.35	0.4			●	●	●					
		150606			0.6					●					
		150608			0.8		●	●	●	●					
		150612			1.2			●	●	●				●	
		150616			1.6				●	●					

● Marked: Standard Items

Insert	Designation		Dimension(mm) d	t	r	ØD1	Grade AW20	AB2010	AB20	AB30	TC430 New	AS500 New	SC10	AS10	AS20
	DNGN	150408	12.70	4.76	0.8	-			●	●					
		150704		7.94	0.4					●					
		150708			0.8		●			●					
		150712			1.2		●								
		150716			1.6		●		●						
	DNGX	150712 CH	12.70	7.94	1.2	-							●	●	
		150712 T7-CH										●			
		150716 CH			1.6								●	●	
	DNMG	150608 CE	12.70	6.35	0.8	5.16				●					
	ENGN	130708	12.70	7.94	0.8	-	●	●	●	●					
		130712			1.2				●						
		130716			1.6				●	●					
	HNGX	050712 CH	12.70	7.94	1.2	-								●	
		050712 T7-CH										●			
		050716 CH			1.6									●	
		050716 T7-CH										●			
	RCGX	060600 U1	6.35	6.35	-	-				●					
		090700 T6	9.52	8.0							●				
		090700 U1							●	●					
		120700	12.70							●					
		120700 T6									●				
		120700 U2		10.0					●	●					
		151000 U2	15.88	10.29					●	●					
		191000 U2	19.05						●	●					
		251200 U3	25.0	12.29					●	●					
	RNGN	090300	9.52	3.18	-	-			●	●					
		090300 T6									●				
		120400	12.70	4.76				●	●	●					
		120400 E													●
		120400 T6									●				
		120700		7.94			●	●	●	●					
		120700 E													●
		120700 T6									●				
		150700	15.88						●	●					
		190700	19.05				●		●	●					
		190700 T6									●				
	RPGN	120400 T6	12.70	4.76	-	-					●				
	RPGX	090700 T6	9.52	7.94	-	-					●				
		120700 T6	12.67								●				
	SNGA	120404	12.70	4.76	0.4	5.16	●	●	●	●					
		120408			0.8			●	●	●				●	
		120408 E													●
		120412			1.2			●	●	●			●	●	
		120416			1.6		●		●				●	●	

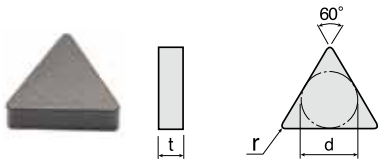
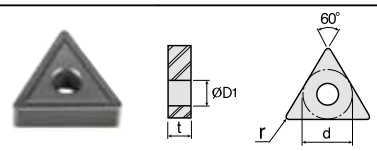
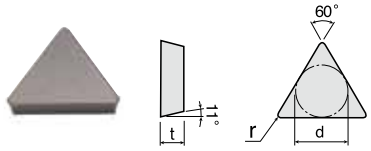
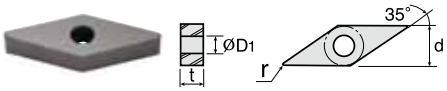
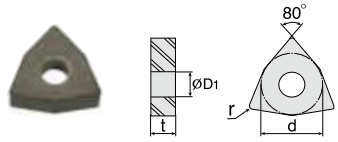
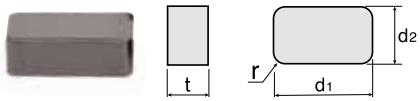
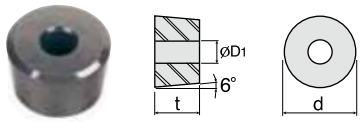
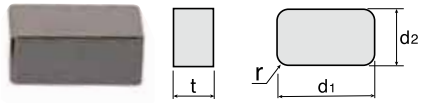
● Marked: Standard Items

Insert	Designation		Dimension(mm) d	t	r	ØD1	Grade AW20	AB2010	AB20	AB30	TC430 New	AS500 New	SC10	AS10	AS20
	SNGN	120404	12.70	4.76	0.4	-	●	●	●	●					
		120408			0.8			●	●	●				●	
		120408 E													●
		120408 T6									●				
		120412			1.2		●	●	●	●		●	●	●	
		120412 T6									●				
		120412 T7										●			
		120416			1.6		●	●	●	●			●	●	
		120424			2.4		●								
		120704		7.94	0.4				●	●					
		120708			0.8		●	●	●	●			●	●	
		120708 T6									●				
		120712			1.2		●	●	●	●			●	●	
		120712 T6									●				
		120716			1.6		●	●	●	●			●	●	
		120720			2.0		●								
		150612	15.88	6.35	1.2				●						
		150712		7.94			●								
		150716			1.6		●			●				●	
		190716	19.05				●			●					
		190720			2.0		●								
	SNGX	120712 CH	12.70	7.94	1.2	-							●	●	
		120712 T7-CH										●			
		120716 CH			1.6								●	●	
		120716 T7-CH										●			
* 	SNGX	120712 T7-CHX	12.70	7.94	1.2	-						●			
		120716 T7-CHX			1.6							●			
	SNMG	120408 CE	12.70	4.76	0.8	5.16				●					
	SPGN	090308	9.52	4.76	0.8	-	●								
		120308	12.70	3.18						●				●	
		120312								●					
		120412		4.76	1.2					●			●	●	
	TNGA	160304	9.52	3.18	0.4	3.81				●					
		160308			0.8					●					
		160404		4.76	0.4			●	●	●					
		160408			0.8		●	●	●	●			●	●	
		160408 E													●
		160412			1.2		●	●	●	●			●	●	
		160416			1.6				●						
		220404	12.70		0.4				●	●					
		220408			0.8			●	●	●					
		220412			1.2				●	●					
		220416			1.6				●	●					

* Marked: DCL S-4D clamp is applied only to marked insert.

● Marked: Standard Items

T-TURN Ceramic Inserts

Insert	Designation		Dimension(mm) d	Dimension(mm) t	Dimension(mm) r	Dimension(mm) ØD1	Grade AW20	AB2010	AB20	AB30	TC430 (New)	AS500 (New)	SC10	AS10	AS20
	TNGN	110308	6.35	3.18	0.8	-				●					
		110312			1.2									●	
		160404	9.52	4.76	0.4		●		●	●					
		160408			0.8		●	●	●	●			●	●	
		160408 E													●
		160412			1.2		●		●	●		●	●	●	
		160416			1.6		●			●					
		160420			2.0		●								
		160704		7.94	0.4					●					
		160708			0.8					●					
		160712			1.2		●			●				●	
		220408	12.70	4.76	0.8				●						
		220412			1.2					●					
		270616	15.88	6.35	1.6					●					
	TNMG	160408 CE	9.52	4.76	0.8	3.81				●					
	TPGN	110302	6.35	3.18	0.2	-			●	●					
		110304			0.4			●	●	●					
		110308			0.8			●	●	●					
		160304	9.52		0.4		●	●	●	●					
		160308			0.8		●	●	●	●				●	
		160312			1.2				●	●					
		220404	12.70	4.76	0.4				●						
		220408			0.8					●					
		220412			1.2				●	●					
	VNGA	160404	9.52	4.76	0.4	3.81		●	●	●			●		
		160408			0.8			●	●	●				●	
		160412			1.2				●	●					
		220412	12.70			5.16				●					
	WNGA	080408	12.70	4.76	0.8	5.16		●	●	●			●	●	
		080412			1.2			●	●	●			●	●	
		080412 T7										●			
		080416			1.6				●	●			●		
	LNU	6688 T	d_1: 38.1 d_2: 19.05	12.77	3.2	-			●	●					
	T11 - 3219		31.9	19.05	-	10			●						
	T32 - 32 - R2		d_1: 31.75 d_2: 19.05	12.7	-	-			●					●	

● Marked: Standard Items

TB610, TB650, TB670, TB730, KB90A

Physical Properties

Grade	TB610 (New)	TB650	TB670 (New)	TB730 (New)	KB90A
TRS(Gpa)	0.8 - 0.9	1.0 - 1.1	1.0 - 1.1	0.9 - 2.0	1.1 - 1.2
Hardness(Gpa)	27 - 28	30 - 32	31 - 33	39 - 42	35 - 38

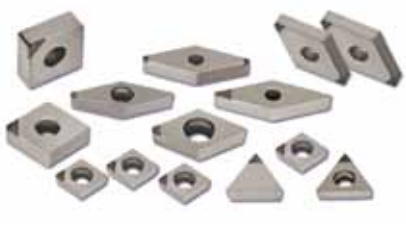
New

TB610

- High wear resistant cubic boron nitride with low CBN content
- For precision machining of hardened steels (harder than 45HRC) such as hot and cold working tool steels, die steels, case hardened steels, carburized iron and high speed steel
- For continuous cutting
- For turning

TB650

- High wear resistant cubic boron nitride with low CBN content
- Designed for finishing to roughing applications on hardened steels (harder than 45HRC)
- Can be applied to light interrupted cutting applications
- For turning



New

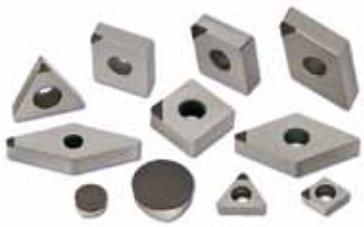
TB670

- High hardness and impact resistance
- Machining for continuous to severe interrupted turning of hardened material (Harder than 40HRC)
- For Alloy steel, tool steel, case hardened steel and chilled cast iron

New

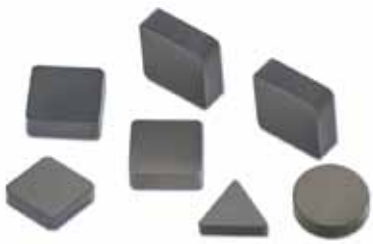
TB730

- Tough cubic boron nitride with high CBN content
- For high speed machining of cast iron
- Suitable for machining cemented tungsten carbide, sintered metal and heavy alloys
- Excellent for interrupted cutting of hardened steel



KB90A

- Solid CBN with excellent impact resistance
- For high speed machining of cast iron
- Can be applied to rough to medium machining of hardened steel



Recommended Cutting Conditions

Materials	Grade	TB610 (New)	TB650	TB670 (New)	TB730 (New)	KB90A
	V, f	Cutting speed: V (m/min), Feed: f (mm/rev)				
Gray Cast Iron (180 - 230HB)	V f				500-1,000 0.1-0.3	500-1,000 0.1-0.3
Chilled Cast Iron (> HB 400)	V f		80-150 0.1-0.2	80-150 0.1-0.25	80-150 0.1-0.3	80-150 0.1-0.3
Hardened Steel (46 - 68HRC)	V f	100-250 0.05-0.2	80-200 0.05-0.2	80-180 0.1-0.3	60-150 0.1-0.3	
Sintered Metal (Hv 200-600)	V f		100-300 0.05-0.2	100-300 0.1-0.3	80-250 0.1-0.25	
DCI Roll, HSS Roll	V f		50-100 0.2-0.6	30-80 0.2-0.6		
Super Alloy (Ni-base)	V f				100-300 0.05-0.2	100-300 0.05-0.2

Cutting Examples

Work Material & Description	Insert		Cutting Conditions	Tool Life (pcs/edge)
	Designation	Grade		
Hardened Steel, Sleeve (65 - 68HRC)	VNMA 160404	TB610	V = 140m/min f = 0.09mm/rev ap = 0.1mm Dry, Continuous Cut	980pcs
Carburized Shaft (60 - 62HRC)	TNMA 160408	TB610	V = 200m/min f = 0.1mm/rev ap = 0.15mm Dry, Continuous Cut	1300pcs
Hardened Steel, Ring (60 - 62HRC)	TPGX 110304	TB610	V = 150m/min f = 0.07mm/rev ap = 0.1mm Dry, Continuous Cut	400pcs
Hardened Steel, Ring Gear (82HRA)	CNMA 120408	TB730	V = 110m/min f = 0.08mm/rev ap = 0.1mm Dry, Interrupted Cut	60pcs
GG25, Engine Block (285 - 305HB)	TCGW 110204	TB730	V = 550m/min f = 0.12mm/rev ap = 0.5mm Wet, Continuous Cut	100pcs
Hardened Steel, Shaft with hole (60 - 62HRC)	CNMA 120408	TB730	V = 100m/min f = 0.1mm/rev ap = 0.2mm Dry, Continuous Cut	20pcs
Hardened Steel, Nozzle (58 - 60HRC)	TNMA 160404 LN	TB650	V = 80m/min f = 0.1mm/rev ap = 0.13mm Dry, Continuous Cut	1400pcs
Sintered Metal, Sleeve	TPGH 110304	TB730	V = 170m/min f = 0.13mm/rev ap = 0.5mm Dry, Interrupted Cut	1000pcs
Carburized Steel, Flange Body (50 - 62HRC)	CNMA 120408	TB650	V = 75m/min f = 0.15mm/rev ap = 0.08mm Wet, Interrupted Cut	33pcs
Nitrified Hardened Steel, Sleeve (40 - 50HRC)	CCGW 09T304 LS	TB650	V = 138m/min f = 0.1mm/rev ap = 0.1mm Wet, Continuous Cut	1000pcs
Carburized Steel, Middle Sun Gear (58 - 62HRC)	CNMA 120408 LN	TB650	V = 100 - 120m/min f = 0.15mm/rev ap = 0.3 - 0.4mm Dry, Continuous Cut	100pcs
Carburized Steel, Annulus Gear (58 - 62HRC)	CNMA 120408 LS	TB670	V = 120m/min f = 0.15mm/rev ap = 0.1mm Wet, Continuous Cut	160pcs

Edge Preparation for CBN Inserts

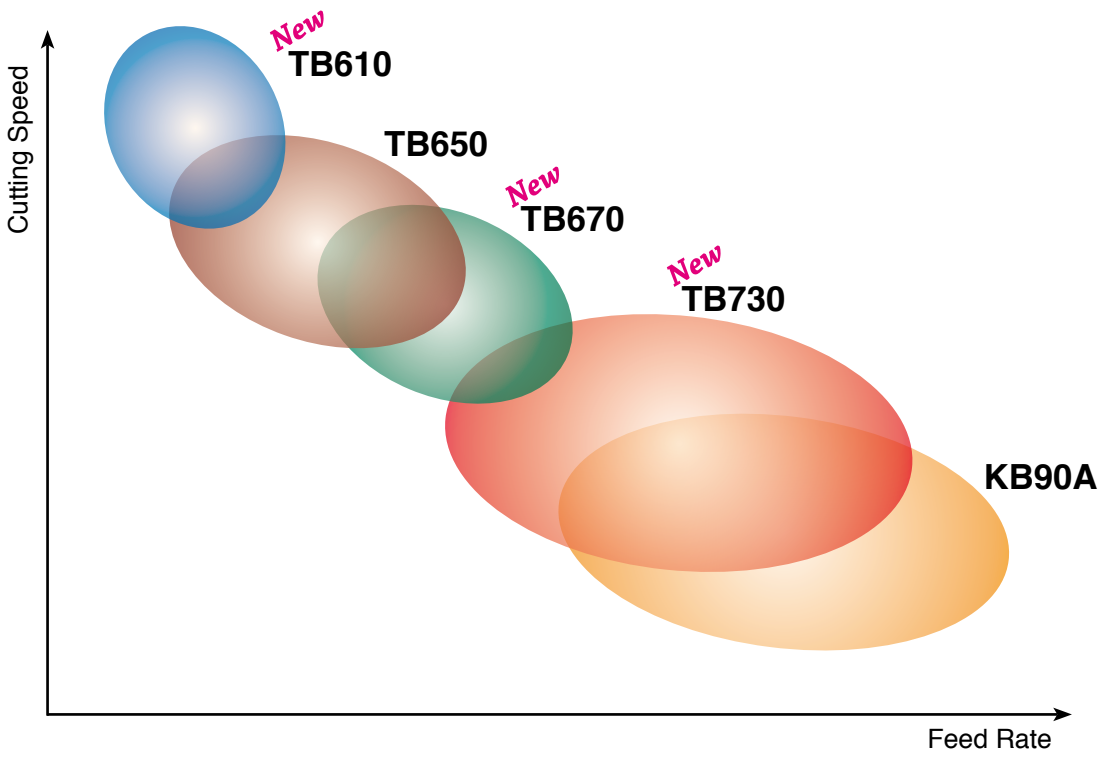
Common Style (no designation)

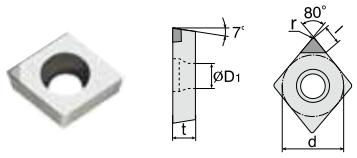
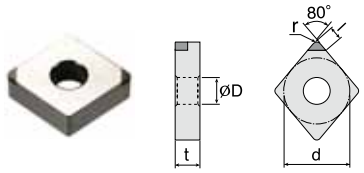
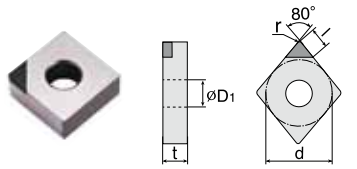
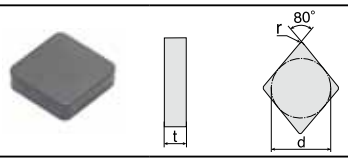
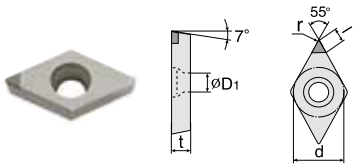
Grade	Land specification		
	Width (mm)	Angle (°)	Honing(mm)
TB610, TB650, TB670	0.13	20	0.015
TB730	0.13	20	-
KB90A	0.2	20	0.015

Technical information for CBN Inserts

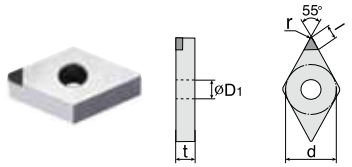
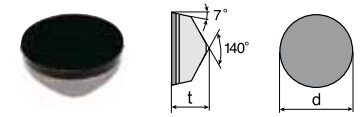
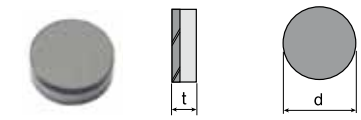
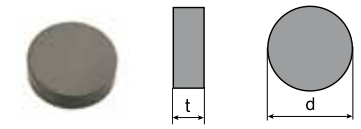
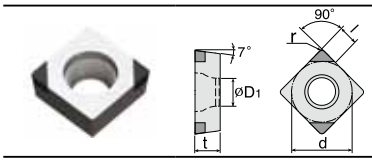
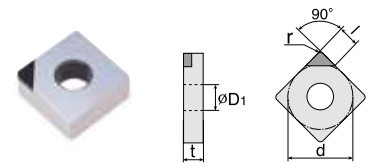
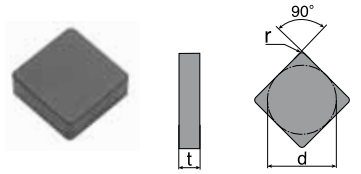
CNMA 120408 **LN** : Regular Size CBN Tip
CNMA 120408 **LS** : Small Size CBN Tip
CNMA 120408 **LS2** : Small Size CBN Tip with two corners
RCGX 090300 **FT** : Full Top CBN
CNMN 090308 **SD** : Solid CBN
CNGA 120408 **WZ-LS2**: Wiper geometry

Application Map of CBN Grades

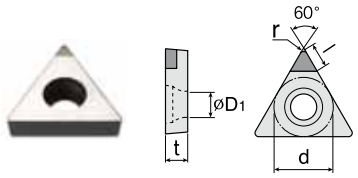
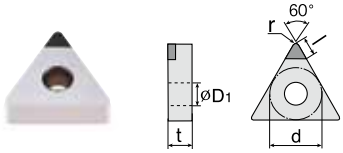
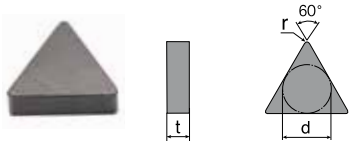
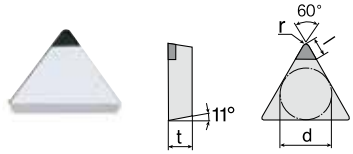
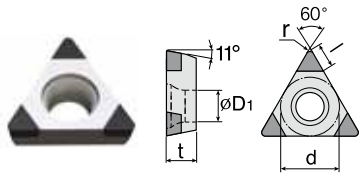
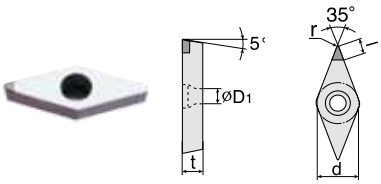


Insert	Designation		Dimension(mm)					Grade				
			l	d	t	r	ØD1	TB610 New	TB650	TB670 New	TB730 New	KB90A
	CCGW	060202 LS2	2.2	6.35	2.38	0.2	2.8			●	●	
		060204 LS2	2.1			0.4		●		●	●	
		060208 LS2	2.1			0.8		●		●	●	
		09T304 LS2	2.4	9.52	3.97	0.4	4.4	●		●	●	
		09T304 WZ-LS2	2.4					●	●	●	●	
		09T308 LS2	2.3			0.8		●		●	●	
		09T308 WZ-LS	2.3						●			
		09T308 WZ-LS2	2.3							●	●	
		120404 LS2	2.1	12.70	4.76	0.4	5.5				●	
		120408 LS2	2.1			0.8					●	
	CNGA	120404 WZ-LS	2.1	12.70	4.76	0.4	5.16		●			
		120404 WZ-LS2	2.1					●	●	●		
		120404 WZ-LS4	2.1							●		
		120408 WZ-LN	3.9			0.8			●			
		120408 WZ-LS	2.1						●			
		120408 WZ-LS2	2.1					●	●	●	●	
		120408 WZ-LS4	2.1					●		●		
		120412 WZ-LN	3.8			1.2			●			
		120412 WZ-LS	2.5						●			
		120412 WZ-LS2	2.5						●	●	●	
		120412 WZ-LS4	2.5							●		
	CNMA	120404 LN	4.2	12.70	4.76	0.4	5.16	●	●	●		
		120404 LN2	4.2								●	
		120404 LS	2.2						●			
		120404 LS2	2.2					●	●	●	●	
		120404 LS4	2.2						●	●		
		120408 LN	4			0.8		●	●	●	●	
		120408 LS	2.1						●			
		120408 LS2	2.1					●	●	●	●	
		120408 LS4	2.1					●	●	●	●	
		120412 LN	3.9			1.2		●	●	●		
		120412 LS	2.5						●			
		120412 LS2	2.5						●	●	●	
		120412 LS4	2.5							●	●	
	CNMN	090308 SD	-	9.52	3.18	0.8	-					●
		090312 SD				1.2						●
		090316 SD				1.6						●
		120416 SD		12.70	4.76							●
	DCGW	070202 LS	2.6	6.35	2.38	0.2	2.8		●			
		070202 LS2	2.6					●		●	●	
		070204 LS	2.4			0.4			●			
		070204 LS2	2.4					●		●	●	
		070208 LS2	2.1			0.8					●	
		11T304 LN	3.8	9.52	3.97	0.4	4.4		●			
		11T304 LS	2.6						●			
		11T304 LS2	2.6					●		●	●	
		11T308 LN	3.4			0.8			●			
		11T308 LS	2.2						●			
		11T308 LS2	2.2		3.97			●		●	●	

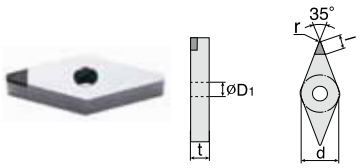
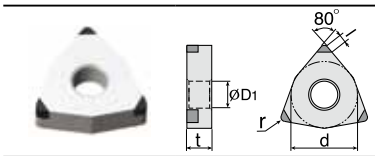
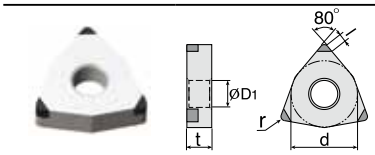
● Marked: Standard Items

Insert	Designation		Dimension(mm)					Grade				
			l	d	t	r	ØD1	TB610 New	TB650	TB670 New	TB730 New	KB90A
	DNMA	150404 LN	4.2	12.70	4.76	0.4	5.16	●	●	●		
		150404 LS	2.6						●			
		150404 LS2	2.6					●	●	●	●	
		150404 LS4	2.6					●	●	●		
		150408 LN	3.9			0.8		●	●	●		
		150408 LS	2.3						●			
		150408 LS2	2.3					●	●	●	●	
		150408 LS4	2.3							●		
		150412 LN	3.5			1.2			●	●		
		150412 LS2	2.2							●		
		150412 LS4	2.2							●		
		150604 LN	4.2		6.35	0.4		●	●	●	●	
		150604 LS	2.6						●			
		150604 LS2	2.6					●	●	●	●	
		150608 LN	3.9			0.8		●	●	●	●	
		150608 LS2	2.3					●	●	●	●	
		150608 LS4	2.3							●		
		150612 LS2	2.2			1.2				●		
	RCGX	060300 FT	-	6.35	3.18	-	-				●	
		090300 FT		9.52							●	
		120400 FT		12.70	4.76						●	
	RNMN	090300 FT	-	9.52	3.18	-	-		●	●	●	
		120300 FT		12.70							●	
	RNMN	090300 SD	-	9.52	3.18	-	-					●
		120300 SD		12.70								●
		120400 SD			4.76							●
	SCGW	09T304 LS2	2.7	9.52	3.97	0.4	4.4				●	
		09T308 LS2	2.7			0.8					●	
	SNMA	120404 LN	4.2	12.70	4.76	0.4	5.16		●	●		
		120404 LS	2.5						●			
		120404 LS2	2.5							●	●	
		120404 LS4	2.5							●		
		120408 LN	4.2			0.8		●	●	●	●	
		120408 LS	2.5						●			
		120408 LS2	2.5					●		●	●	
		120408 LS4	2.5							●		
		120408 LS8	2.5							●		
		120412 LS	2.7			1.2			●			
	SNMN	090308 SD	-	9.52	3.18	0.8	-					●
		090312 SD				1.2						●
		090316 SD				1.6						●
		120312 SD		12.70		1.2						●
		120316 SD				1.6						●

● Marked: Standard Items

Insert	Designation		Dimension(mm)					Grade				
			l	d	t	r	ØD1	TB610 New	TB650	TB670 New	TB730 New	KB90A
	TCGW	090204 LS3	2.3	5.56	2.38	0.4	2.5	●			●	
		090208 LS3	2.1			0.8				●		
		110204 LS	2.3	6.35		0.4	2.8		●			
		110204 LS3	2.3					●		●	●	
		110208 LS	2.1			0.8			●			
		110208 LS3	2.1							●	●	
		16T304 LS	2.8	9.52	3.97	0.4	4.4		●			
		16T304 LS3	2.8					●		●	●	
		16T308 LS	2.5			0.8			●			
		16T308 LS3	2.5					●		●	●	
	TNMA	160404 LN	4.3	9.52	4.76	0.4	3.81		●	●		
		160404 LS	2.2						●			
		160404 LS3	2.2					●		●	●	
		160404 LS6	2.2						●	●		
		160408 LN	4			0.8			●	●		
		160408 LS	2.1						●			
		160408 LS3	2.1					●	●	●	●	
		160408 LS6	2.1							●		
		160412 LS	2.5			1.2			●			
		160412 LS3	2.5							●	●	
		160416 LN	3.1			1.6			●			
		160416 LS	2.4						●			
		220404 LN	4.1	12.70		0.4	5.16		●			
		220408 LS	2.6			0.8			●			
	TNMN	110308 SD	-	6.35	3.18	0.8	-					●
	TPGN	090204 LS3	2.3	5.56	2.38	0.4	-	●				
		110302 LS3	2.8	6.35	3.18	0.2					●	
		110304 LS	2.6			0.4			●			
		110304 LS3	2.6					●		●	●	
		110308 LS	2.3			0.8			●			
		110308 LS3	2.3					●		●	●	
		160304 LS	2.8	9.52		0.4			●			
		160304 LS3	2.8					●		●	●	
		160308 LS	2.5			0.8			●			
		160308 LS3	2.5					●		●	●	
		220408 LS	2.6	12.70	4.76				●			
	TPGW	080204 LS3	2.1	4.76	2.38	0.4	2.5			●		
		090204 LS3	2.3	5.56						●	●	
		090208 LS3	2			0.8				●		
		110302 LS3	2.8	6.35	3.18	0.2	3.4	●			●	
		110304 LS	2.6			0.4			●	●		
		110304 LS3	2.6					●			●	
		110308 LS3	2.3			0.8		●		●	●	
		160404 LS3	2.8		4.76	0.4	4.4			●		
		160408 LS3	2.5			0.8				●		
	VBGW	110304 LS2	3.2	6.35	3.18	0.4	2.8			●		
		110308 LS2	2.4			0.8				●		
		160402 LS2	3.6	9.52	4.76	0.2	4.4			●		
		160404 LN	4.8			0.4			●	●		
		160404 LS	3.2						●			
		160404 LS2	3.2					●		●	●	
		160408 LS	2.3			0.8			●			
		160408 LS2	2.3					●		●	●	

● Marked: Standard Items

Insert	Designation		Dimension(mm)					Grade				
			l	d	t	r	ØD1	TB610 New	TB650	TB670 New	TB730 New	KB90A
	VNGA	160404 LN	5	9.52	4.76	0.4	3.81		●	●		
		160404 LS	3.2						●			
		160404 LS2	3.2					●		●	●	
		160408 LN	4.1			0.8			●	●		
		160408 LS	2.4						●			
		160408 LS2	2.4					●	●	●	●	
		160408 LS4	2.4							●		
	WNGA	060408 WZ-LS6	2.1	9.52	4.76	0.8	3.81			●		
		080408 WZ-LS3	2.1	12.70			5.16	●	●	●		
		080408 WZ-LS6	2.1							●		
		080412 WZ-LS3	2.1			1.2				●		
	WNMA	080408 LS3	2.1	12.70	4.76	0.8	5.16			●		
		080408 LS6	2.1							●		

● Marked: Standard Items

KP500, KP300, KP100

Physical Properties

Grade	Feature	PCD (㎛)	TRS (GPa)	Hardness (GPa)
KP100	Toughness (High Co) / Hardness (High PCD)	4	2.0 - 2.2	80 - 100
KP300		10	1.8 - 2.0	90 - 110
KP500		25	1.0 - 1.2	100 - 120

KP500

- Super abrasion resistant grade
- Designed for fine finishing cuts with little or no interruptions
- For high Si aluminum alloy(Si >12.2%), metal matrix composite and sintered tungsten carbide

KP300

- This KP300 is for general machining
- Well combined wear resistance and toughness
- For low to medium Si aluminum alloy (Si ≤ 12.2%), copper alloy and non-ferrous metal

KP100

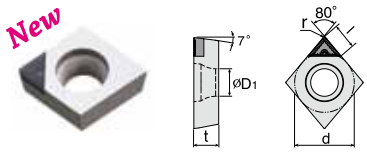
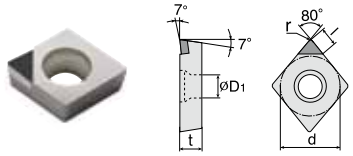
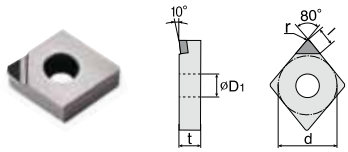
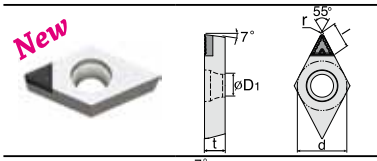
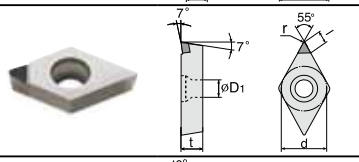
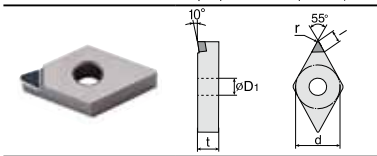
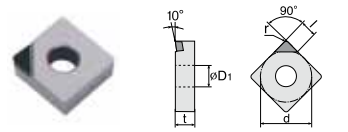
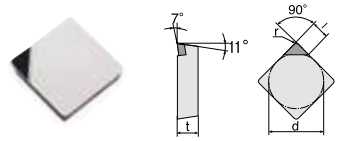
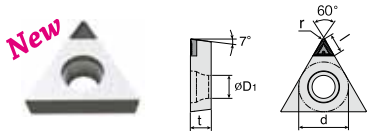
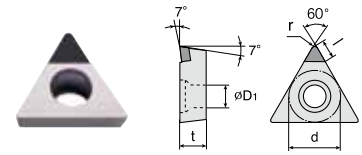
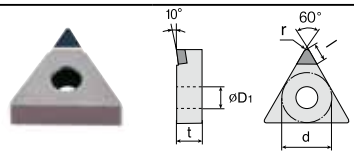
- Low content poly-crystalline diamond with fine grain
- High edge strength and good surface finish
- For plastic, wood and pure aluminum

Recommended Cutting Conditions

Materials	Grade	KP500	KP300	KP100
	V, f, ap	Cutting speed: V (m/min), Feed: f (mm/rev), Depth of cut: ap (mm)		
Al Alloy (12.2% ≤ Si)	V f ap		600 - 3000 0.05 - 0.3 0.1 - 3.0	
Al Alloy (12.2% > Si)	V f ap	300 - 800 0.05 - 0.3 0.1 - 3.0	300 - 600 0.05 - 0.3 0.1 - 3.0	
Sintered Tungsten Carbide	V f ap	10 - 30 0.05 - 0.15 0.02 - 0.5		
Wood	V f ap			1000 - 3000 0.1 - 0.5 0.2 - 5.0
Cu Alloy	V f ap		600 - 1500 0.05 - 0.3 0.1 - 3.0	
Plastic	V f ap			300 - 1000 0.05 - 0.25 0.05 - 2.0
Carbon (Graphite)	V f ap		100 - 600 0.1 - 1.0 0.2 - 2.0	
MMC	V f ap	10 - 30 0.05 - 0.3 0.1 - 1.0		

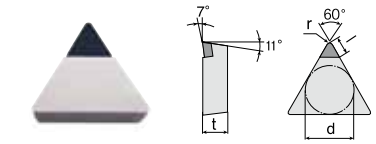
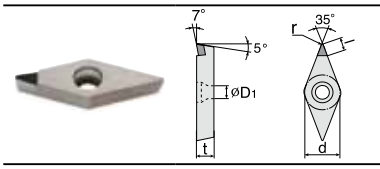
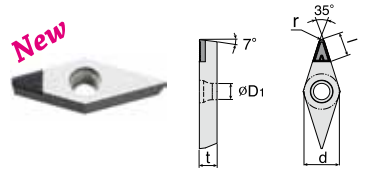
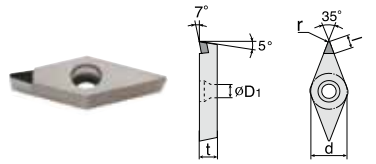
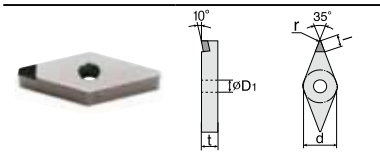
Cutting Examples

Work Material & Description	Insert		Cutting Conditions	Tool Life (pcs/edge)
	Designation	Grade		
9% Si Aluminum Alloy, Cylinder Bore	TPGX 110304	KP300	V=410m/min f=0.1mm/rev ap=0.5mm Wet, Continuous cut	6000pcs
20% Si Aluminum Alloy, Brake Disc	RNMN 090300	KP500	V=980m/min f=0.13mm/rev ap=0.5mm Wet, Continuous cut	1300pcs
10% Si Aluminum Alloy, Housing	DCGT 11T304 CB	KP300	V=600m/min f=0.45mm/rev ap=1mm Wet, Interrupted cut	16500pcs

Insert	Designation		Dimension(mm)					Grade		
			l	d	t	r	ØD1	KP100	KP300	KP500
New 	CCGT	060204 CB	3.1	6.35	2.38	0.4	2.8		●	
		09T302 CB	4.15	9.52	3.97	0.2	4.4		●	
		09T304 CB	4.1			0.4			●	
		09T308 CB	4.0			0.8			●	
		120404 CB	4.1	12.70	4.76	0.4	5.5		●	
		120408 CB	4.0			0.8			●	
	CCGW	060202 LN-7	3.1	6.35	2.38	0.2	2.8		●	
		060204 LN-7				0.4			●	
		060208 LN-7	3.0			0.8			●	
		09T304 LN-7	4.0	9.52	3.97	0.4	4.4		●	
		09T308 LN-7	3.9			0.8			●	
		120404 LN-7	4.0	12.70	4.76	0.4	5.5		●	
		120408 LN-7	3.9			0.8			●	
	CNMA	120404 LN-10	4.0	12.70	4.76	0.4	5.16		●	
		120408 LN-10	3.9			0.8			●	●
		120412 LN-10	3.8			1.2			●	
New 	DCGT	070202 CB	3.4	6.35	2.38	0.2	2.8		●	
		070204 CB	3.3			0.4			●	
		11T302 CB	4.9	9.52	3.97	0.2	4.4		●	
		11T304 CB	4.7			0.4			●	
		11T308 CB	4.4			0.8			●	
	DCGW	070202 LN-7	3.4	6.35	2.38	0.2	2.8		●	
		070204 LN-7	3.3			0.4			●	
		11T302 LN-7	3.9	9.52	3.97	0.2	4.4		●	
		11T304 LN-7	3.7			0.4			●	
		11T308 LN-7	3.3			0.8			●	
	DNMA	150404 LN-10	4.0	12.70	4.76	0.4	5.16		●	
		150408 LN-10	3.7			0.8			●	
		150412 LN-10	3.47			1.2			●	
		150604 LN-10	4.0		6.35	0.4			●	
		150608 LN-10	3.7			0.8			●	
	SNMA	120408 LN-10	4.0	12.70	4.76	0.8	5.16		●	●
		120412 LN-10				1.2			●	
	SPGN	090308 LN-7	3.9	9.52	3.18	0.8	-		●	
		120308 LN-7		12.70					●	
New 	TCGT	090204 CB	2.8	5.56	2.38	0.4	2.5		●	
		110204 CB	3.8	6.35	3.97		4.4		●	
		16T304 CB	3.9	9.52					●	
		16T308 CB	3.6			0.8			●	
	TCGW	090204 LN-7	3.3	5.56	2.38	0.4	2.5		●	
		090208 LN-7	3.0			0.8			●	
		110204 LN-7	3.8	6.35		0.4	2.8		●	
		110208 LN-7	3.5			0.8			●	
		16T304 LN-7	3.8	9.52	3.97	0.4	4.4		●	
		16T308 LN-7	3.5			0.8			●	
	TNMA	160404 LN-10	4.3	9.52	4.76	0.4	3.81		●	
		160408 LN-10	4.0			0.8			●	

• CB: PCD chipbreaker type insert.

● Marked: Standard Items

Insert	Designation		Dimension(mm)					Grade		
			l	d	t	r	ØD1	KP100	KP300	KP500
	TPGN	110302 LN-7	3.9	6.35	3.18	0.2	-		●	
		110304 LN-7	3.8			0.4			●	
		110308 LN-7	3.5			0.8			●	
		160302 LN-7	4.4	9.52		0.2			●	
		160304 LN-7	4.3			0.4			●	
		160308 LN-7	4.0			0.8			●	
	VBGW	160402 LN-7	5.2	9.52	4.76	0.2	4.4		●	
		160404 LN-7	5.0			0.4			●	
		160408 LN-7	4.2			0.8			●	
New 	VCGT	110302 CB	4.7	6.35	3.18	0.2	2.8		●	
		110304 CB	5.0			0.4			●	
		160404 CB	7.3	9.52	4.76		3.81		●	
		160408 CB	6.4			0.8			●	
		160412 CB	6.2			1.2			●	
		220530 CB	6.4	12.70	5.56	3.0	5.5		●	
	VCGW	160404 LN-7	5.0	9.52	4.76	0.4	4.4		●	
		160408 LN-7	4.1			0.8			●	
	VNGA	160404 LN-10	5.0	9.52	4.76	0.4	3.81		●	
		160408 LN-10	4.1			0.8			●	

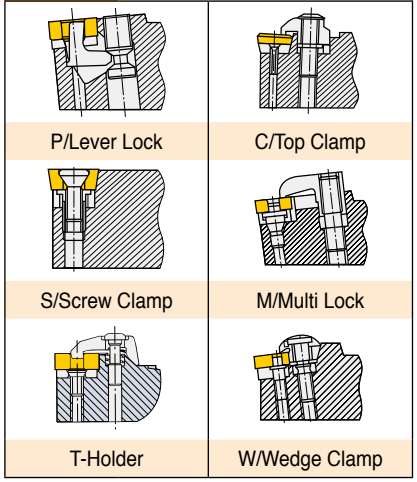
• CB: PCD chipbreaker type insert.

● Marked: Standard Items

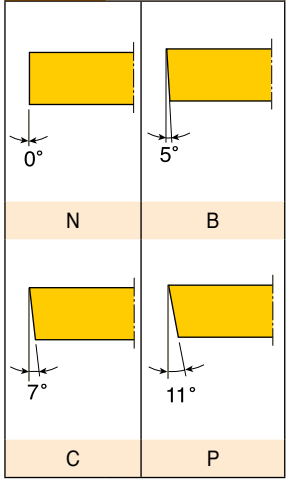
TaeguTec
SCLCR 2020 K12
TaeguTec
TaeguTec
TCLNR
TaeguTec
TaeguTec
TaeguTec

T-TURN Toolholder Designation System

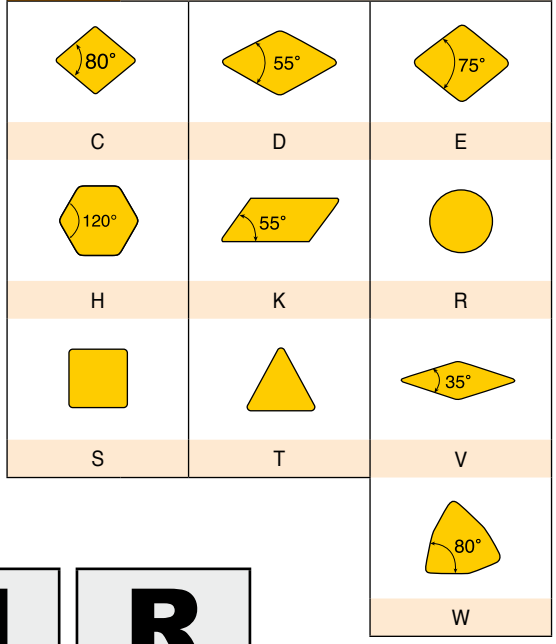
1 Clamping System



4 Insert Clearance Angle



2 Insert Shape



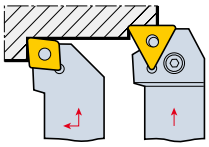
P	C	L	N	R
1	2	3	4	5

3 Approach Angle

Symbol	Shape	Offset	Symbol	Shape	Offset	Symbol	Shape	Offset
A	90°	×	J	93°	○	V	72.5°	×
	90°		K	75°	○	W	60°	○
B	75°	×	L	95°	○	X		
			M	50°	×	C*	90°	×
D	45°	×	N	63°	×	H*	107.5°	○
E	60°	×	R	75°	○	Q*	45°	○
F	90°	○	R	45°	○			
G	90°	○	T	60°	○			
	90°		U	93°	○			

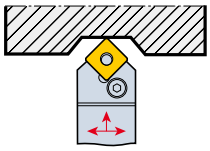
* TaeguTec standard

5 Hand of Tool



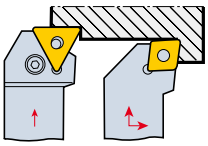
Right hand

R



Neutral

N

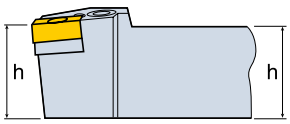


Left hand

L

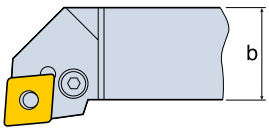
T-TURN Toolholder Designation System

6 Shank Height



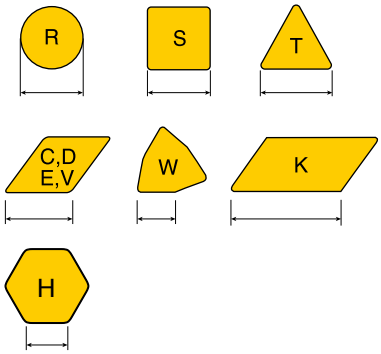
Integers to be preceded by 0
e.g.: h=8mm indicated by 08

7 Shank Width



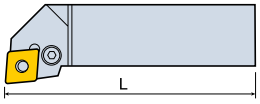
Integers to be preceded by 0
e.g.: h=8mm indicated by 08

9 Cutting Edge Length



25	25	M	12	–		
6	7	8	9		10	11

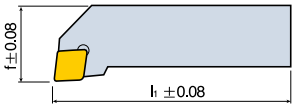
8 Tool Length



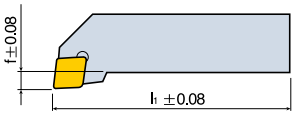
L (mm)	Symbol	L (mm)	Symbol
32	A	160	N
40	B	170	P
50	C	180	Q
60	D	200	R
70	E	250	S
80	F	300	T
90	G	350	U
100	H	400	V
110	J	450	W
125	K	500	Y
140	L	Special	X
150	M		

10 Qualified Tool

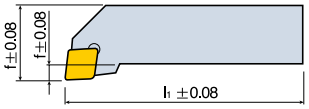
Q



F



B

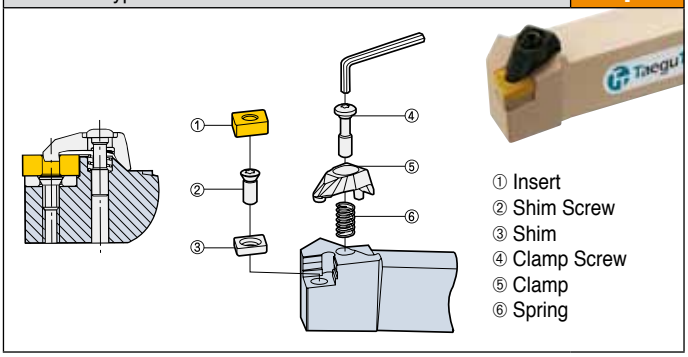


11 Manufacturer's Type Designation

Unique to manufacturer

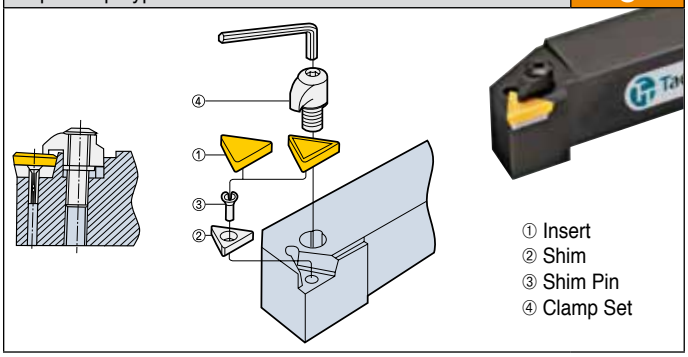
T-TURN Toolholder Clamping System

T-Holder Type — T



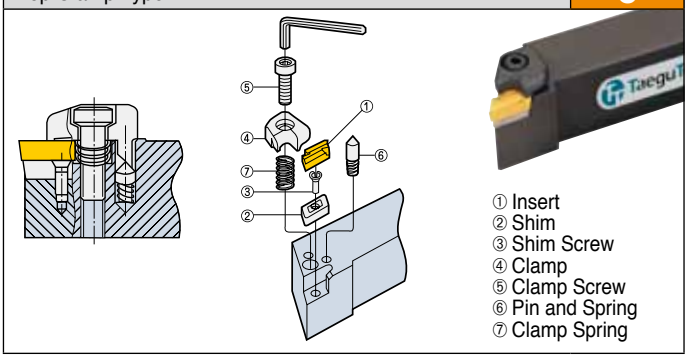
① Insert
② Shim Screw
③ Shim
④ Clamp Screw
⑤ Clamp
⑥ Spring

Top Clamp Type — C



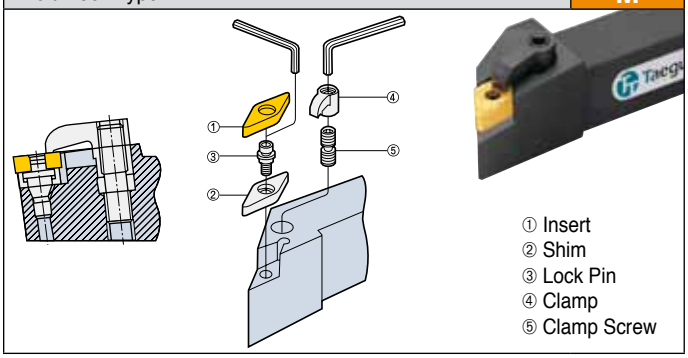
① Insert
② Shim
③ Shim Pin
④ Clamp Set

Top Clamp Type — C



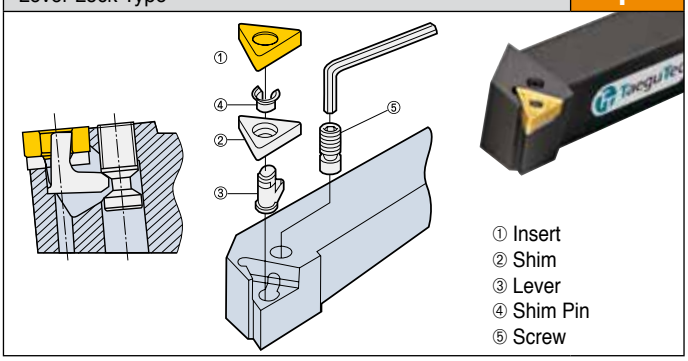
① Insert
② Shim
③ Shim Screw
④ Clamp
⑤ Clamp Screw
⑥ Pin and Spring
⑦ Clamp Spring

Multi Lock Type — M



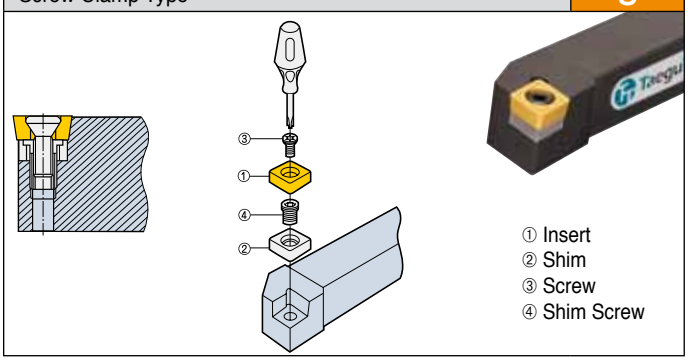
① Insert
② Shim
③ Lock Pin
④ Clamp
⑤ Clamp Screw

Lever Lock Type — P



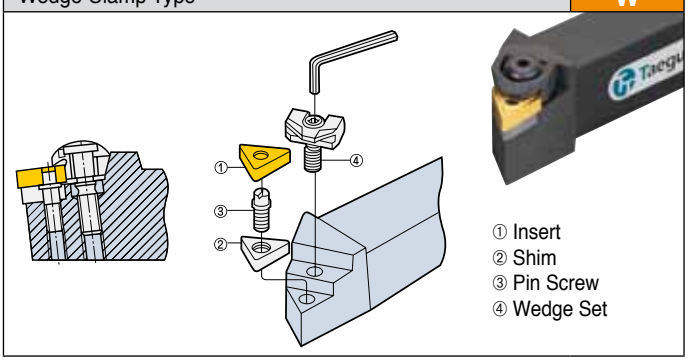
① Insert
② Shim
③ Lever
④ Shim Pin
⑤ Screw

Screw Clamp Type — S



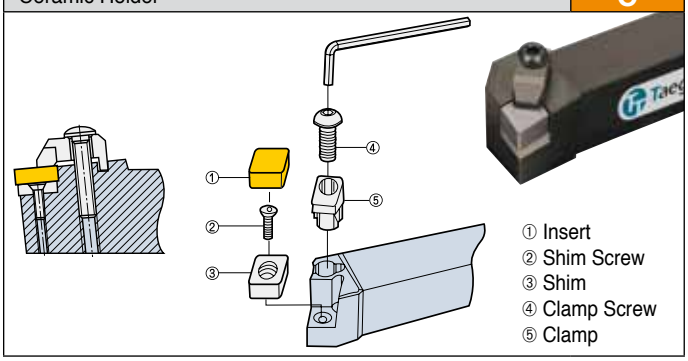
① Insert
② Shim
③ Screw
④ Shim Screw

Wedge Clamp Type — W



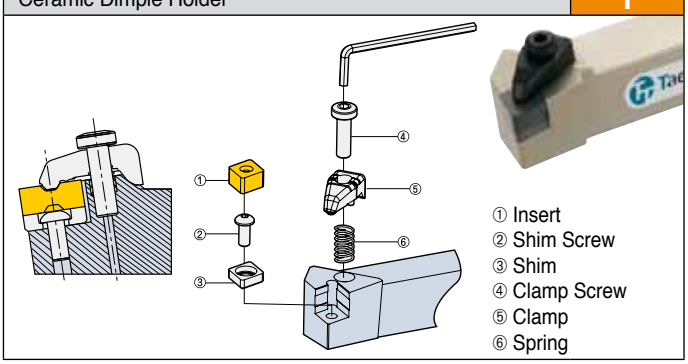
① Insert
② Shim
③ Pin Screw
④ Wedge Set

Ceramic Holder — C



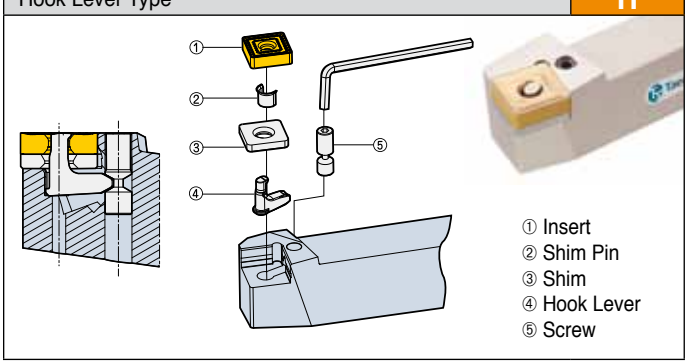
① Insert
② Shim Screw
③ Shim
④ Clamp Screw
⑤ Clamp

Ceramic Dimple Holder — T



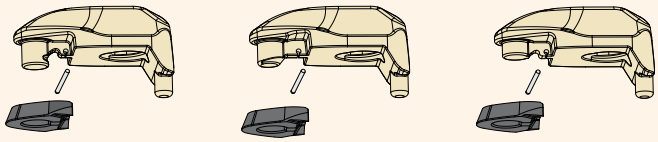
① Insert
② Shim Screw
③ Shim
④ Clamp Screw
⑤ Clamp
⑥ Spring

Hook Lever Type — H

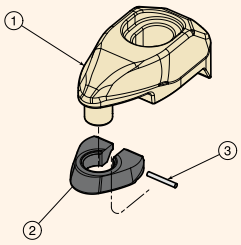


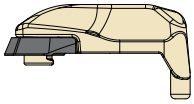
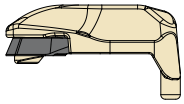
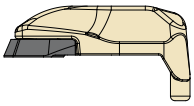
① Insert
② Shim Pin
③ Shim
④ Hook Lever
⑤ Screw

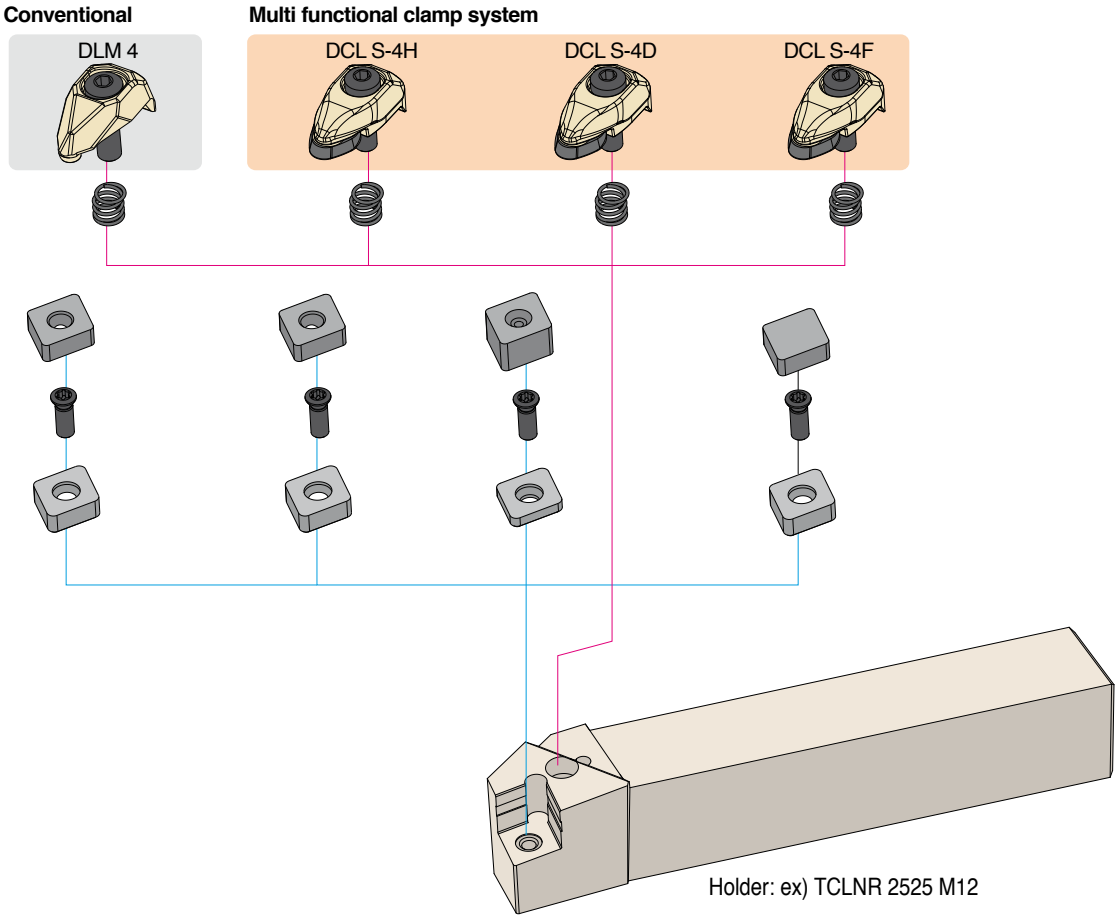
New clamp for multi-function



DCL S-4H DCL S-4D DCL S-4F

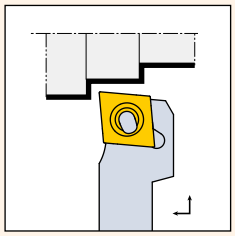


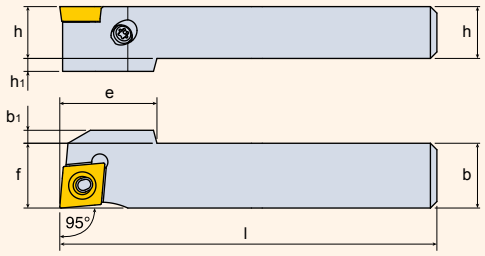
Clamp	Designation	Components			Insert	Shim
		① Clamp	② CTC Plate	③ PIN		
	DCL S-4H	DCL 4H	DCL 4-PL	PIN 0683	CN□A 1204	TSC 44
					DN□A 1504	TSD 44
					DN□A 1506	TSD 43
					SN□A 1204	TSS 44
	DCL S-4D	DCL 4D	DCL 4-PL	PIN 0683	CN□X 1207 CH	TSC 42
					DN□X 1507 CH	TSD 42
					SN□X 1207 CHX	TSS 42
	DCL S-4F	DCL 4F	DCL 4-PL	PIN 0683	CN□N 1204	TSC 44
					CN□N 1207	TSC 42
					DN□N 1504	TSD 44
					DN□N 1507	TSD 42
					SN□N 1204	TSS 44
					SN□N 1207	TSS 42



- Existing T-Holder is available only if changing each clamp type
- 3 types of Insert can be mounted in same Tool-holder

BCLCR/L-SH



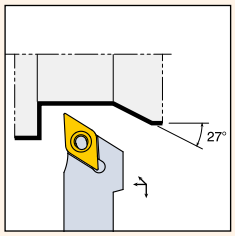


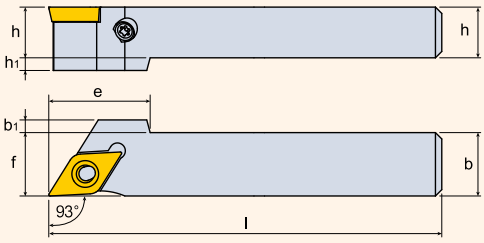
Designation		R	L	h	h1	b	b1	l	f	e	Insert 80°	Lever	Lever Screw	Snap Ring	Wrench
BCLCR/L	1010 K06-SH	●	●	10		10		125	10		CC□T 0602□□	BLCL 2	BLCS 2	BLSR 2	T 6
	1212 K06-SH	●	●	12		12		125	12						
	1010 K09-SH	●	●	10	3	10	4	125	10	17	CC□T 09T3□□	BLCL 3	BLCS 3	BLSR 3	L-W 2F
	1212 K09-SH	●	●	12	1	12	2	125	12	17					

- For inserts, see page A39 - A40
- For spare part, see page A167 - A177

● Marked: Standard Items

BDJCR/L-SH



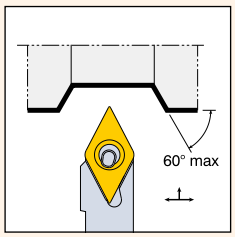


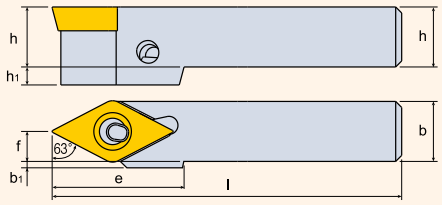
Designation		R	L	h	h1	b	b1	l	f	e	Insert 55°	Lever	Lever Screw	Snap Ring	Wrench
BDJCR/L	1010 K07-SH	●	●	10		10		125	10		DC□T 0702□□	BLCL 2	BLCS 2	BLSR 2	T 6
	1212 K07-SH	●	●	12		12		125	12						
	1010 K11-SH	●	●	10	3	10	4	125	10	20	DC□T 11T3□□	BLCL 3	BLCS 3	BLSR 3	L-W 2F
	1212 K11-SH	●	●	12	1	12	2	125	12	20					

- For inserts, see page A41 - A42
- For spare part, see page A167 - A177

● Marked: Standard Items

BDNCN-SH



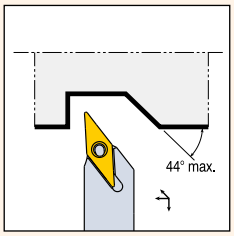


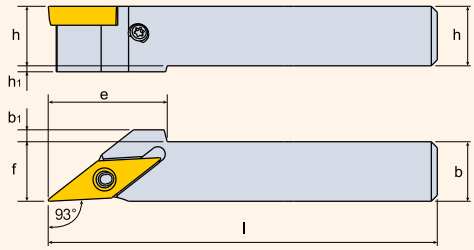
Designation			h	h1	b	b1	l	f	e	Insert 55°	Lever	Lever Screw	Snap Ring	Wrench
BDNCN	1010 K07-SH	●	10		10		125	5		DC□T 0702□□	BLCL 2	BLCS 2	BLSR 2	T 6
	1212 K07-SH	●	12		12		125	6						
	1010 K11-SH	●	10	3	10	1	125	5	22	DC□T 11T3□□	BLCL 3	BLCS 3	BLSR 3	L-W 2F
	1212 K11-SH	●	12	1	12		125	6	22					

- For inserts, see page A41 - A42
- For spare part, see page A167 - A177

● Marked: Standard Items

BVJBR/L-SH



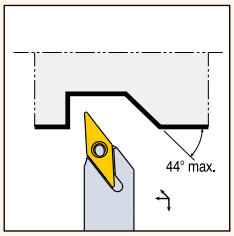


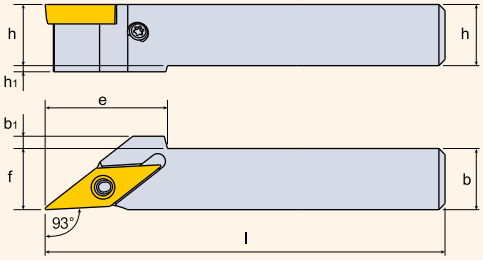
Designation		R	L	h	h1	b	b1	l	f	e	Insert 35°	Components: Lever	Lever Screw	Snap Ring	Wrench
BVJBR/L	1010 K11-SH	●	●	10	1	10		125	10	20	VB□T 1103□□	BLCL 2	BLCS 2	BLSR 2	T 6
	1212 K11-SH	●	●	12		12		125	12						

- For inserts, see page A46 - A47
- For spare part, see page A167 - A177

● Marked: Standard Items

BVJCR/L-SH



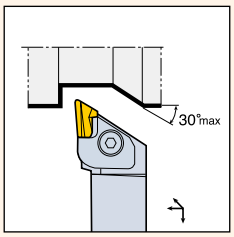


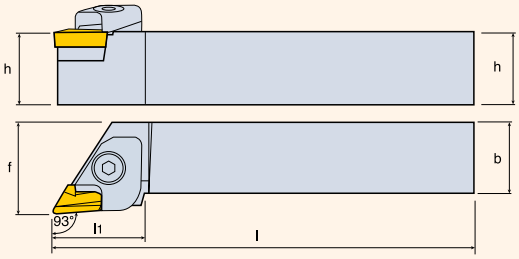
Designation		R	L	h	h1	b	l	f	e	Insert 35°	Components: Lever	Lever Screw	Snap Ring	Wrench
BVJCR/L	1010 K11-SH	●	●	10	1	10	125	10	20	VC□T 1103□□	BLCL 2	BLCS 2	BLSR 2	T 6
	1212 K11-SH	●	●	12		12	125	12						

- For inserts, see page A47
- For spare part, see page A167 - A177

● Marked: Standard Items

CKJNR/L



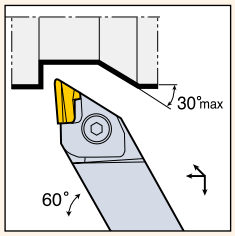


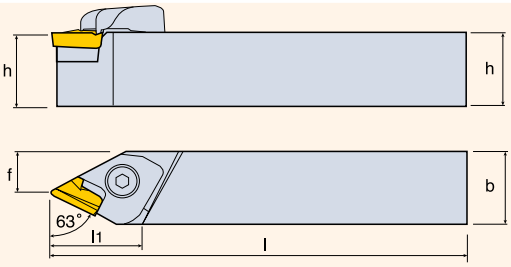
Designation		R	L	h	b	l	l1	f	Insert 55°	Components: Clamp	Screw	Clamp Spring	Pin & Spring	Shim	Shim Screw	Wrench
CKJNR/L	2020 K16		●	20	20	125	35	25	KNUX 1604 □□ R/L11 1604 □□ R/L12	CL 16KR/L	CLS 16K	KSP 90	KSP 48 KP 48S	CSK 1604R/L	FH M3x0.5x10	L-W 4
	2020 M16	●		20	20	150	35	25								
	2525 M16	●	●	25	25	150	32	32								
	3225 P16	●		32	25	170	33.3	32								
	3232 M16	●		32	32	150	33.3	40								
	3232 P16	●	●	32	32	170	33.3	40								
	4040 R16	●		40	40	200	33.3	50								

- For inserts, see page A30
- For spare part, see page A167 - A177

● Marked: Standard Items

CKNNR/L



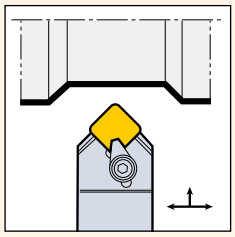


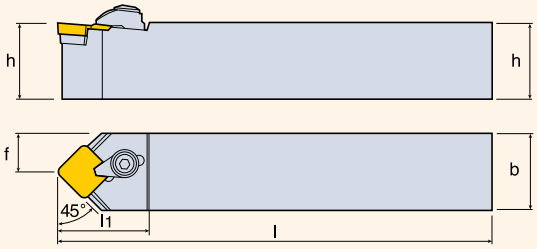
Designation		R	L	h	b	l	l1	f	Insert	Clamp	Screw	Clamp Spring	Pin & Spring	Shim	Shim Screw	Wrench
				Dimension (mm)						Components						
CKNNR/L	2525 M16	●		25	25	150	44.7	14.4	KNUX 1604 □□ R/L11	CL 16KR/L	CLS 16K	KSP 90	KSP 48 KP 48S	CSK 1604R/L	FH M3×0.5×10	L-W 4
	3225 M16			32	25	150	44.7	14.4	KNUX 1604 □□ R/L12							

- For inserts, see page A30
- For spare part, see page A167 - A177

● Marked: Standard Items

CSDPN



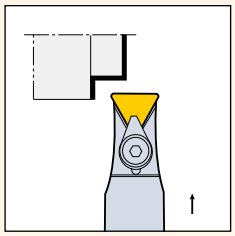


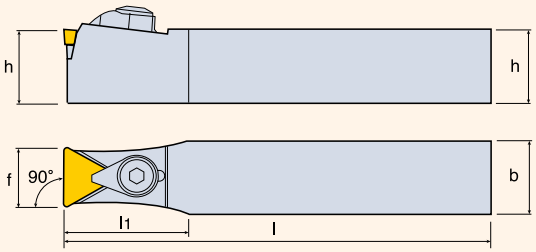
Designation			h	b	l	l1	f	Insert	Clamp	Screw	Shim	Shim Pin	Snap Ring	Wrench
			Dimension (mm)						Components					
CSDPN	1616 H09		16	16	100	24	8.0	SPMR, SP□N 0903□□	CL 2	CLS 2	CSS 32	CSP 3	CSR 2	L-W 2.5
	2020 K12		20	20	125	29	10	SPMR, SP□N 1203□□	CL 3	CLS 3	CSS 42	CSP 3	WSR 4	L-W 3
	2525 M12	●	25	25	150	29	12.5							

- For inserts, see page A43
- For spare part, see page A167 - A177

● Marked: Standard Items

CTCPN



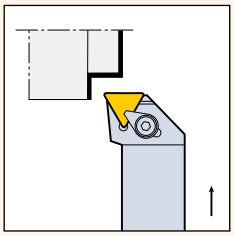


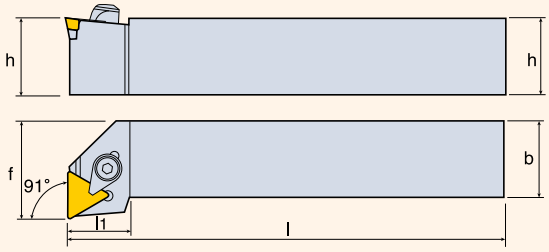
Designation			h	b	l	l1	f	Insert	Clamp	Screw	Shim	Shim Pin	Snap Ring	Wrench
			Dimension (mm)						Components					
CTCPN	2009 K11	●	20	9	125	20	9.4	TPMR, TP□N 1103 □□	CL 2C	CLS 2C	-	-	CSR 2C	L-W 2.5
	2020 K22		20	20	125	50	19.4	TPMR, TP□N 2204 □□	CLM 12	XNSM 0825	CST 43	CSP 16K	CSR 4	L-W 4
	2513 Q16	●	25	13	180	30	14.1	TPMR, TP□N 1603 □□	CL 3C	CLS 3C	CST 32	CSP 3	CSR 2	L-W 3
	2525 M22	●	25	25	150	50	19.4	TPMR, TP□N 2204 □□	CLM 12	XNSM 0825	CST 43	CSP 16K	CSR 4	L-W 4

- For inserts, see page A45 - A46
- For spare part, see page A167 - A177

● Marked: Standard Items

CTFPR/L



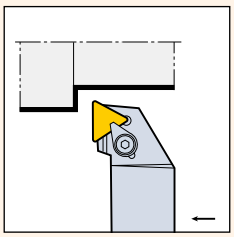


Designation		R	L	h	b	l	l1	f	Insert	Clamp	Screw	Shim	Shim Pin	Snap Ring	Wrench
				Dimension (mm)						Components					
CTFPR/L	1616 H11			16	16	100	14.4	20	TPMR, TP□N 1103 □□	CL 2	CLS 2	-	-	CSR 2	L-W 2.5
	2020 K11			20	20	125	16	25							
	2020 K16			20	20	125	20	25	TPMR, TP□N 1603 □□	CL 3	CLS 3	CST 32	CSP 3	WSR 4	L-W 3
	2525 M16	●		25	25	150	20	32							

- For inserts, see page A45 - A46
- For spare part, see page A167 - A177

● Marked: Standard Items

CTGPR/L

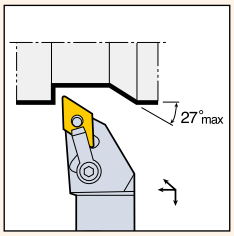


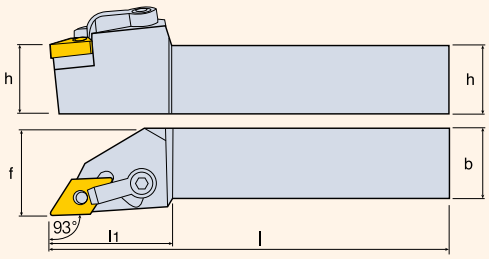
Designation		R	L	h	b	l	l1	f	Insert	Clamp	Screw	Shim	Shim Pin	Snap Ring	Wrench
				Dimension (mm)						Components					
CTGPR/L	1212 F11			12	12	80	19	16	TPMR, TP□N 1103 □□	CL 2	CLS 2	-	-	CSR 2	L-W 2.5
	1616 H11			16	16	100	19	20							
	2020 K11			20	20	125	19	25							
	2020 K16	●		20	20	125	25	25	TPMR, TP□N 1603 □□	CL 3	CLS 3	CST 32	CSP 3	WSR 4	L-W 3
	2525 M16	●		25	25	150	25	32							
	2525 M22			25	25	150	30	32	TPMR, TP□N 2204 □□	CL 4	CLS 4	CST 43	CSP 16K	CSR 4	L-W 4
	3232 P22			32	32	170	30	40							

- For inserts, see page A45 - A46
- For spare part, see page A167 - A177

● Marked: Standard Items

MDJNR/L



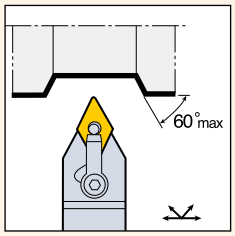


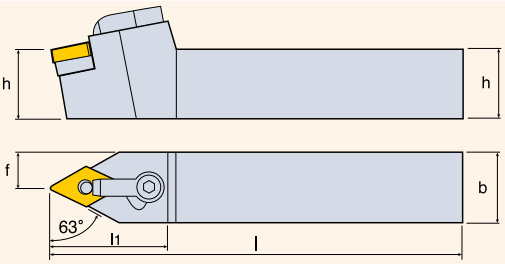
Designation		R	L	h	b	l	l1	f	Insert	Clamp	Screw	Shim	Lock Pin	Wrench
				Dimension (mm)						Components				
MDJNR/L	2020 K15	●		20	20	125	45	25	DN□□ 1504 □□	CLM 30	XNSM 0825	S 45	MLP 4	L-W 2.5
	2525 M15			25	25	150	45	32						L-W 4
MDJNR/L	2020 K15A			20	20	125	45	25	DN□□ 1506 □□	CLM 30	XNSM 0825	MSD 43	MLP 4-06	L-W 2.5
	2525 M15A	●	●	25	25	150	45	32						L-W 4
	3232 P15A			32	32	170	45	40						

- For inserts, see page A28 - A29
- For spare part, see page A167 - A177

● Marked: Standard Items

MDNNN



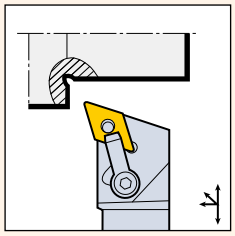


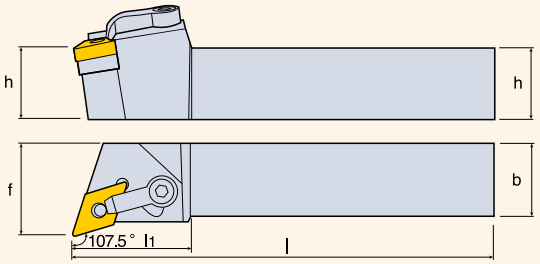
Designation		Dimension (mm)					Insert	Components				
								Clamp	Screw	Shim	Lock Pin	Wrench
		h	b	l	l1	f	55°					
MDNNN 2525 M15	●	25	25	150	45	12.5	DN□□ 1504 □□	CLM 30	XNSM 0825	S 45	MLP 4	L-W 2.5
3225 P15		32	25	170	45	12.5						L-W 4
MDNNN 2525 M15A	●	25	25	150	45	12.5	DN□□ 1506 □□	CLM 30	XNSM 0825	MSD 43	MLP 4-06	L-W 2.5 L-W 4

- For inserts, see page A28 - A29
- For spare part, see page A167 - A177

● Marked: Standard Items

MDQNR/L



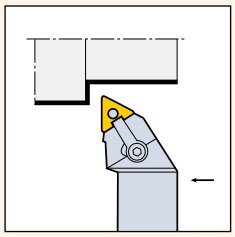


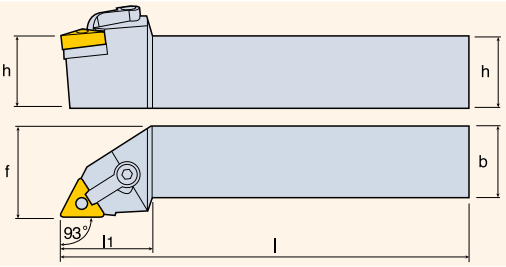
Designation			Dimension (mm)					Insert	Components				
									Clamp	Screw	Shim	Lock Pin	Wrench
	R	L	h	b	l	l1	f	55°					
MDQNR/L 2020 K15	●		20	20	125	40	25	DN□□ 1504 □□	CLM 30	XNSM 0825	S 45	MLP 4	L-W 2.5
2525 M15	●	●	25	25	150	40	32						L-W 4
MDQNR/L 2525 M15A	●	●	25	25	150	40	32	DN□□ 1506 □□	CLM 30	XNSM 0825	MSD 43	MLP 4-06	L-W 2.5 L-W 4

- For inserts, see page A28 - A29
- For spare part, see page A167 - A177

● Marked: Standard Items

MTJNR/L



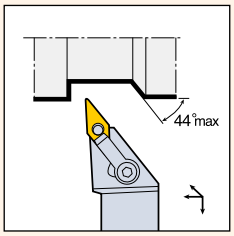


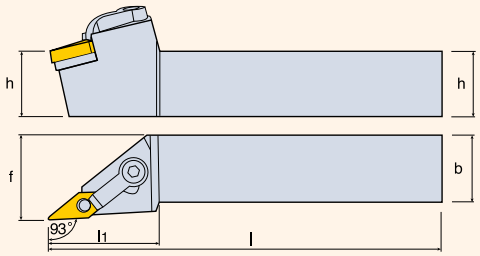
Designation			Dimension (mm)					Insert	Components				
									Clamp	Screw	Shim	Lock Pin	Wrench
	R	L	h	b	l	l1	f						
MTJNR/L 2020 K16	●		20	20	125	28	25	TN□□ 1603 □□	CLM 6	XNSM 0520	S 3	MLP 3	L-W 2
2525 M16	●		25	25	150	28	32						L-W 2.5
2525 M1604			25	25	150	28	32	TN□□ 1604 □□			S 31		

- For inserts, see page A33 - A35
- For spare part, see page A167 - A177

● Marked: Standard Items

MVJNR/L



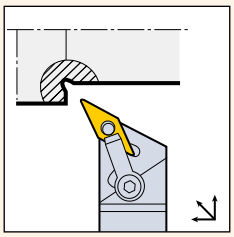


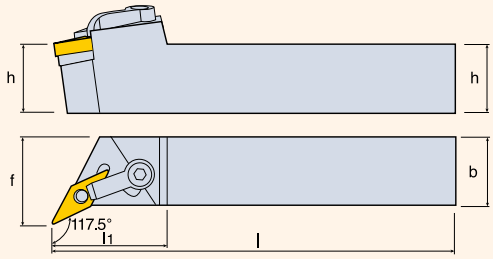
Designation		R	L	h	b	l	l1	f	Insert 35°	Clamp	Screw	Shim	Lock Pin	Wrench
MVJNR/L	2020 K16			20	20	125	42	25	VN□□ 1604 □□	CLM 30	XNSM 0825	IVSN 324	MLP 3	L-W 2 L-W 4
	2525 M16	●	●	25	25	150	42	32						
	3225 P16	●	●	32	25	170	42	32						
	3232 P16			32	32	170	42	40						

- For inserts, see page A36
- For spare part, see page A167 - A177

● Marked: Standard Items

MVQNR/L



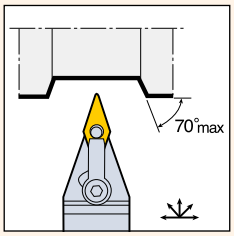


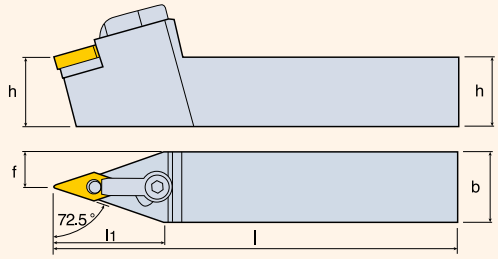
Designation		R	L	h	b	l	l1	f	Insert 35°	Clamp	Screw	Shim	Lock Pin	Wrench
MVQNR/L	2020 K16	●	●	20	20	125	42	25	VN□□ 1604 □□	CLM 30	XNSM 0825	IVSN 324	MLP 3	L-W 2 L-W 4
	2525 M16	●	●	25	25	150	42	32						
	3232 P16	●		32	32	170	42	40						

- For inserts, see page A36
- For spare part, see page A167 - A177

● Marked: Standard Items

MVVNN



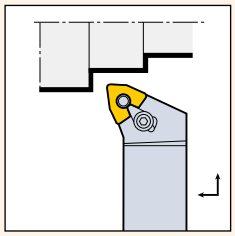


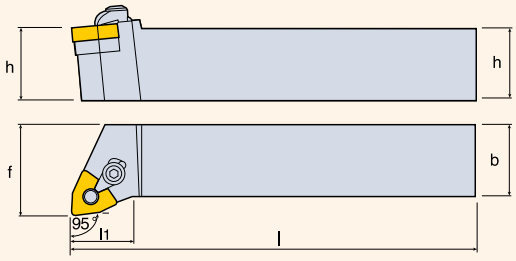
Designation		h	b	l	l1	f	Insert 35°	Clamp	Screw	Shim	Lock Pin	Wrench
MVVNN	2020 K16	●	20	20	125	46	10.0	VN□□ 1604 □□	CLM 30	XNSM 0825	IVSN 324	MLP 3	L-W 2 L-W 4
	2525 M16	●	25	25	150	46	12.5						

- For inserts, see page A36
- For spare part, see page A167 - A177

● Marked: Standard Items

MWLNR/L



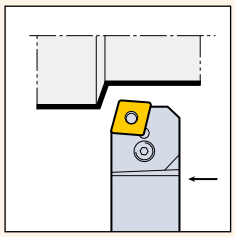


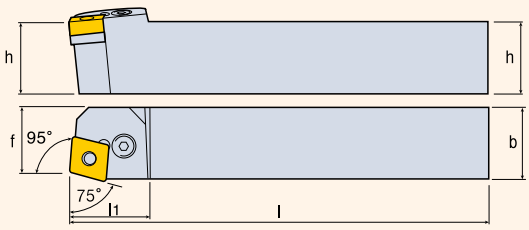
Designation		R	L	h	b	l	l1	f	Insert	Clamp	Screw	Shim	Lock Pin	Snap Ring	Wrench
				Dimension (mm)						Components					
MWLNR/L	1616 H06			16	16	100	19.4	16	WN□□0604 □□	CL 2	CLS 2	MSW 32	MLP 3	CSR 2	L-W 2 L-W 2.5
	2020 K08			20	20	125	25	25	WN□□ 0804 □□	CL 2	CLS 2	MSW 43	MLP 4	CSR 2	L-W 2.5
	2525 M08			25	25	150	25	32							

- For inserts, see page A37 - A38
- For spare part, see page A167 - A177

● Marked: Standard Items

PCBNR/L



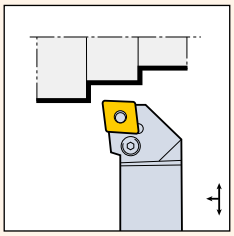


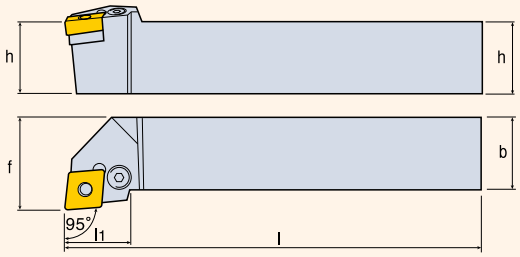
Designation		R	L	h	b	l	l1	f	Insert	Lever	Screw	Shim	Shim Pin	Wrench
				Dimension (mm)						Components				
PCBNR/L	2020 K12	●	●	20	20	125	28	17.5	CN□□ 1204 □□	LCL 4	LCS 4	LSC 42	LSP 4	L-W 3
	2525 M12	●	●	25	25	150	28	22.5						
	3225 P12	●	●	32	25	170	28	22.5						
	2525 M16	●	●	25	25	150	32	22	CN□□ 1606 □□	LCL 5	LCS 5	LSC 53	LSP 5	L-W 3
	3232 P16	●		32	32	170	32	27						
	3232 P19	●	●	32	32	170	37	27	CN□□ 1906 □□	LCL 6	LCS 6	LSC 63	LSP 6	L-W 4
	4040 S19	●	●	40	40	250	37	37						
	4040 S25	●	●	40	40	250	50	37	CN□□ 2509 □□	LCL 8	LCS 8	LSC 83	LSP 8	L-W 5
	5050 T25	●		50	50	300	50	47						

- For inserts, see page A24 - A27
- For spare part, see page A167 - A177

● Marked: Standard Items

PCLNR/L



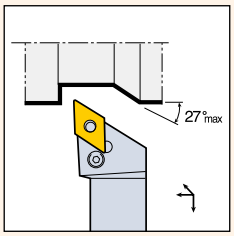


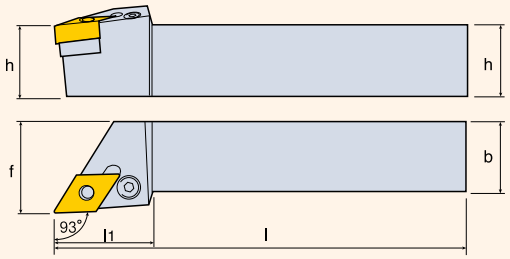
Designation		R	L	h	b	l	l1	f	Insert 80°	Lever	Screw	Shim	Shim Pin	Wrench
				Dimension (mm)						Components				
PCLNR/L	1616 H09	●		16	16	100	22	20	CN□□ 0903 □□	LCL 3	LCS 3	LSC 32	LSP 3	L-W 2.5
	2020 K09	●		20	20	125	22	25						
	2525 M09			25	25	150	22	32						
	1616 H12	●	●	16	16	100	27	20	CN□□ 1204 □□	LCL 4	LCS 4	LSC 42	LSP 4	L-W 3
	2020 K12	●	●	20	20	125	27	25			LCS 4			
	2525 M12	●	●	25	25	150	27	32						
	3225 P12	●	●	32	25	170	27	32						
	3232 P12	●	●	32	32	170	27	40						
	2525 M16	●	●	25	25	150	33	32	CN□□ 1606 □□	LCL 5	LCS 5	LSC 53	LSP 5	L-W 3
	3225 P16			32	25	170	33	32						
	3232 P16	●	●	32	32	170	33	40						
	2525 M19	●	●	25	25	150	38	32	CN□□ 1906 □□	LCL 6	LCS 6	LSC 63	LSP 6	L-W 4
	3225 P19			32	25	170	38	32						
	3232 P19	●	●	32	32	170	38	40						
	4040 S19	●	●	40	40	250	38	50						
	4040 S25	●	●	40	40	250	47	50	CN□□ 2509 □□	LCL 8	LCS 8	LSC 83	LSP 8	L-W 5
	5050 T25	●	●	50	50	300	47	60						

- For inserts, see page A24 - A27
- For spare part, see page A167 - A177

● Marked: Standard Items

PDJNR/L



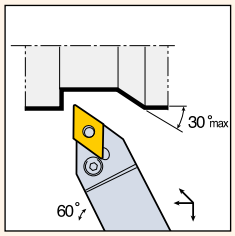


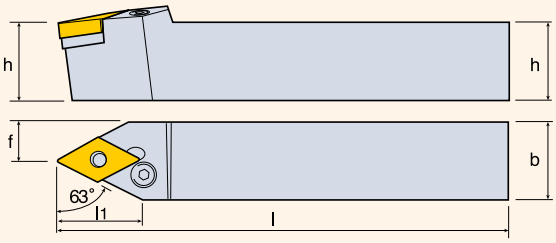
Designation		R	L	h	b	l	l1	f	Insert 55°	Lever	Screw	Shim	Shim Pin	Wrench
				Dimension (mm)						Components				
PDJNR/L	1616 H11			16	16	100	30	20	DN□□ 1104 □□	LCL 12C	LCS 3	LSD 32	LSP 3A	L-W 2.5
	2020 K11			20	20	125	30	25						
	2525 M11	●	●	25	25	150	30	32						
	2020 K15	●	●	20	20	125	34	25	DN□□ 1506 □□	LCL 4A	LCS 4	LSD 42	LSP 4	L-W 3
	2525 M15	●	●	25	25	150	34	32						
	3225 P15	●	●	32	25	170	34	32						
	3232 P15	●	●	32	32	170	34	40						
	2020 K15A	●		20	20	125	34	25	DN□□ 1504 □□	LCL 4A	LCS 4	LSD 42	LSP 4	L-W 3
	2525 M15A	●	●	25	25	150	34	32						

- For inserts, see page A28 - A29
- For spare part, see page A167 - A177

● Marked: Standard Items

PDNNR/L



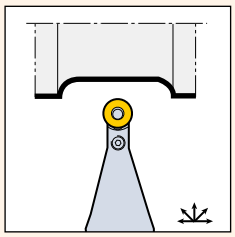


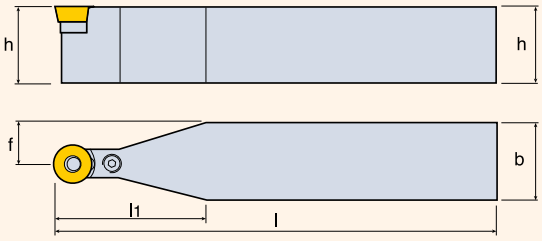
Designation		R	L	h	b	l	l1	f	Insert	Lever	Screw	Shim	Shim Pin	Wrench
				Dimension (mm)						Components				
PDNNR/L	2020 K15	●		20	20	125	36.5	10	DN□□ 1506 □□	LCL 4A	LCS 4	LSD 42	LSP 4	L-W 3
	2525 M15	●	●	25	25	150	36.5	12						
	3232 P15	●	●	32	32	170	36.5	16.8						

- For inserts, see page A28 - A29
- For spare part, see page A167 - A177

● Marked: Standard Items

PRDCN



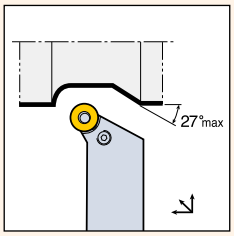


Designation			h	b	l	l1	f	Insert	Lever	Screw	Shim	Shim Pin	Wrench
			Dimension (mm)						Components				
PRDCN	2020 M10	●	20	20	150	50	10.0	RC□X 100300	LCL 10C	LCS 2	LSR 32	LSP 3A	L-W 2
	2525 M10	●	25	25	150	50	12.5						
	2020 K12	●	20	20	125	50	10.0	RC□X 120400	LCL 12C	LCS 3	LSR 1203	LSP 3A	L-W 2.5
	2525 M12	●	25	25	150	50	12.5						
	3225 Q12	●	32	25	180	50	12.5						
	2525 Q16	●	25	25	180	50	12.5	RC□X 160600	LCL 16C	LCS 16C	LSR 1604	LSP 16C	L-W 2.5
	3225 Q16	●	32	25	180	50	12.5						
	3232 Q16	●	32	32	180	50	16.0						
	3232 S20	●	32	32	250	60	16.0	RC□X 200600	LCL 20C	LCS 5	LSR 2004	LSP 5	L-W 3
	4040 S20		40	40	250	70	20.0						
	4040 S25	●	40	40	250	80	20.0	RC□X 250700	LCL 25C	LCS 25C	LSR 2506	LSP 6	L-W 4
	4040 T25	●	40	40	300	80	20.0						
	5050 U32	●	50	50	350	90	25.0	RC□X 320900	LCL 32C	LCS 8	LSR 3206	LSP 8	L-W 5

- For inserts, see page A42
- For spare part, see page A167 - A177

● Marked: Standard Items

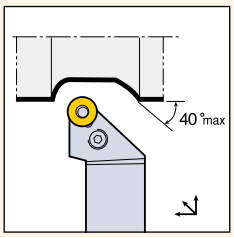
PRGCR/L

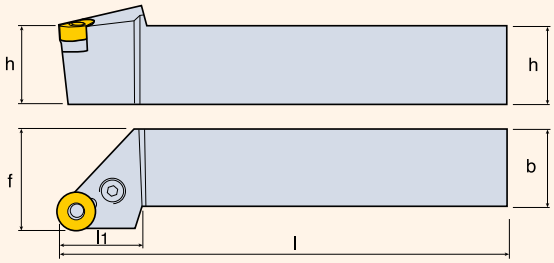


Designation		R	L	h	b	l	l1	f	Insert	Lever	Screw	Shim	Shim Pin	Wrench
				Dimension (mm)						Components				
PRGCR/L	2020 K10	●		20	20	125	14.5	25	RC□X 100300	LCL 10C	LCS 2	LSR 32	LSP 3A	L-W 2
	2525 M10	●	●	25	25	150	17.5	32						
	3225 P10			32	25	170	17	32						
	2020 K12	●		20	20	125	18	25	RC□X 120400	LCL 12C	LCS 3	LSR 1203	LSP 3A	L-W 2.5
	2525 M12	●	●	25	25	150	18	32						
	3225 P12	●	●	32	25	170	18	32						
	2525 M16	●		25	25	150	23	32	RC□X 160600	LCL 16C	LCS 16C	LSR 1604	LSP 16C	L-W 2.5
	3225 P16	●		32	25	170	23	32						
	3232 P16	●		32	32	170	23	40						
	4040 P16			40	40	170	23	50						
	3232 P20	●	●	32	32	170	27.5	40	RC□X 200600	LCL 20C	LCS 5	LSR 2004	LSP 5	L-W 3
	4040 S25	●	●	40	40	250	33.5	50	RC□X 250700	LCL 25C	LCS 25C	LSR 2506	LSP 6	L-W 4
	4040 S32	●		40	40	250	41	50	RC□X 320900	LCL 32C	LCS 8	LSR 3206	LSP 8	L-W 5

• For inserts, see page A42
• For spare part, see page A167 - A177
● Marked: Standard Items

PRGNR/L

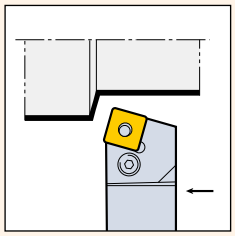


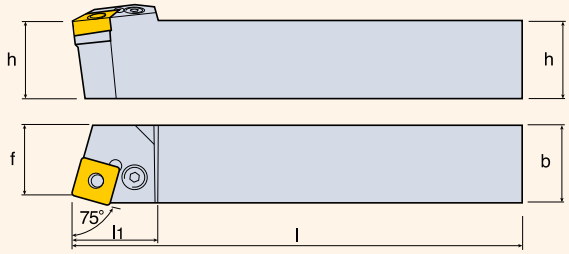


Designation		R	L	h	b	l	l1	f	Insert	Lever	Screw	Shim	Shim Pin	Wrench
				Dimension (mm)						Components				
PRGNR/L	2020 K09			20	20	125	22	25	RNMG 090300	LCL 3	LCS 3	LSR 32	LSP 3A	L-W 2.5
	2525 M12	●		25	25	150	28	32	RNMG 120400	LCL 4	LCS 4	LSR 42	LSP 4	L-W 3
	3225 P15			32	25	170	35	32	RNMG 150600	LCL 5	LCS 5	LSR 53	LSP 5	L-W 3
	3232 P19			32	32	170	38	40	RNMG 190600	LCL 6	LCS 6	LSR 63	LSP 6	L-W 4

• For inserts, see page A30
• For spare part, see page A167 - A177
● Marked: Standard Items

PSBNR/L



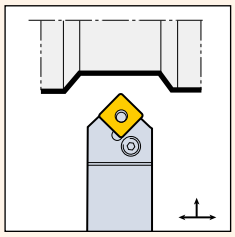


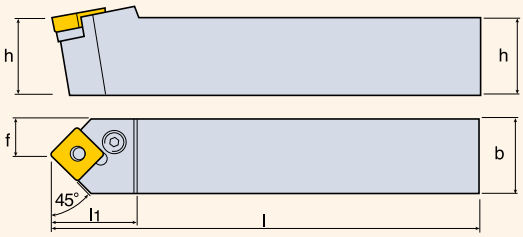
Designation		R	L	h	b	l	l1	f	Insert	Lever	Screw	Shim	Shim Pin	Wrench
				Dimension (mm)						Components				
PSBNR/L	1616 H09	●	●	16	16	100	21	13	SN□□ 0903 □□	LCL 3	LCS 3	LSS 32	LSP 3	L-W 2.5
	2020 K09			20	20	125	21	17						
	2020 K12	●	●	20	20	125	28	17	SN□□ 1204 □□	LCL 4	LCS 4	LSS 42	LSP 4	L-W 3
	2525 M12	●	●	25	25	150	28	22						
	3225 P12	●	●	32	25	170	28	22						
	2525 M15	●	●	25	25	150	34	22	SN□□ 1506 □□	LCL 5	LCS 5	LSS 53	LSP 5	L-W 3
	3232 P19	●	●	32	32	170	39	27	SN□□ 1906 □□	LCL 6	LCS 6	LSS 63	LSP 6	L-W 4
	4040 S19	●	●	40	40	250	39	35						
	4040 S25	●	●	40	40	250	48	35	SN□□ 2507 □□	LCL 8	LCS 8	LSS 84	LSP 8	L-W 5
	5050 T25	●	●	50	50	300	48	43						

- For inserts, see page A31 - A33
- For spare part, see page A167 - A177

● Marked: Standard Items

PSDNN



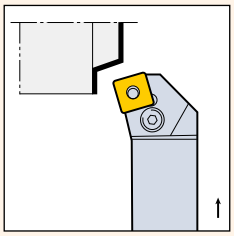


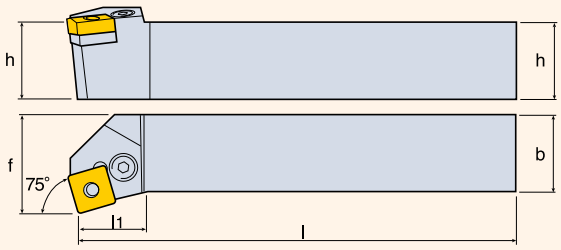
Designation			h	b	l	l1	f	Insert	Lever	Screw	Shim	Shim Pin	Wrench
			Dimension (mm)						Components				
PSDNN	1616 H09	●	16	16	100	21	8.0	SN□□ 0903 □□	LCL 3	LCS 3	LSS 32	LSP 3	L-W 2.5
	2020 K12	●	20	20	125	28	10.0	SN□□ 1204 □□	LCL 4	LCS 4	LSS 42	LSP 4	L-W 3
	2525 M12	●	25	25	150	28	12.5						
	3225 P12	●	32	25	170	28	12.5						
	2020 K15		20	20	125	34	10.0	SN□□ 1506 □□	LCL 5	LCS 5	LSS 53	LSP 5	L-W 3
	2525 M15	●	25	25	150	34	12.5						
	3225 P19		32	25	170	40.5	12.5	SN□□ 1906 □□	LCL 6	LCS 6	LSS 63	LSP 6	L-W 4
	3232 P19	●	32	32	170	40.5	16.0						
	4040 S19	●	40	40	250	40.5	20.0						
	5050 S19		50	50	250	40.5	25.0						
	4040 S25	●	40	40	250	49	20.0	SN□□ 2507 □□	LCL 8	LCS 8	LSS 84	LSP 8	L-W 5
	5050 T25	●	50	50	300	49	25.0						

- For inserts, see page A31 - A33
- For spare part, see page A167 - A177

● Marked: Standard Items

PSKNR/L



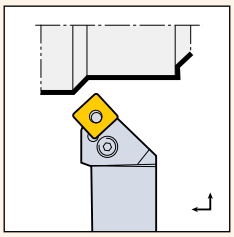


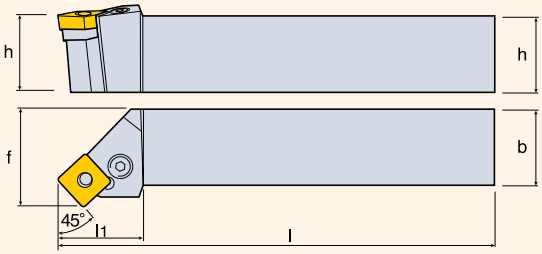
Designation		R	L	h	b	l	l1	f	Insert	Lever	Screw	Shim	Shim Pin	Wrench
				Dimension (mm)						Components				
PSKNR/L	2020 K09			20	20	125	19	25	SN□□ 0903 □□	LCL 3	LCS 3	LSS 32	LSP 3	L-W 2.5
	2020 K12	●	●	20	20	125	25	25	SN□□ 1204 □□	LCL 4	LCS 4	LSS 42	LSP 4	L-W 3
	2525 M12	●	●	25	25	150	25	32						
	2525 M15			25	25	150	32	32	SN□□ 1506 □□	LCL 5	LCS 5	LSS 53	LSP 5	L-W 3
	3232 P15			32	32	170	32	40						
	3232 P19	●	●	32	32	170	38	40	SN□□ 1906 □□	LCL 6	LCS 6	LSS 63	LSP 6	L-W 4
	4040 S19	●	●	40	40	250	38	50						
	4040 S25	●		40	40	250	42	50	SN□□ 2507 □□	LCL 8	LCS 8	LSS 84	LSP 8	L-W 5
	5050 T25			50	50	300	42	60						

- For inserts, see page A31 - A33
- For spare part, see page A167 - A177

● Marked: Standard Items

PSSNR/L



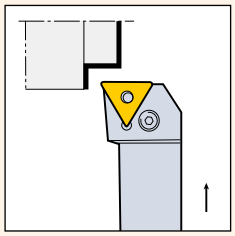


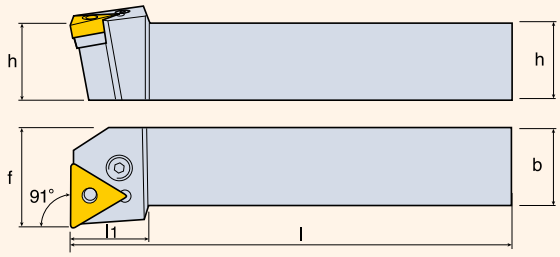
Designation		R	L	h	b	l	l1	f	Insert	Lever	Screw	Shim	Shim Pin	Wrench
				Dimension (mm)						Components				
PSSNR/L	1616 H09	●		16	16	100	21.5	20	SN□□ 0903 □□	LCL 3	LCS 3	LSS 32	LSP 3	L-W 2.5
	2020 K09			20	20	125	21.5	25						
	2020 K12	●	●	20	20	125	30	25	SN□□ 1204 □□	LCL 4	LCS 4	LSS 42	LSP 4	L-W 3
	2525 K12			25	25	125	30	32						
	2525 M12	●	●	25	25	150	30	32						
	3225 P12	●		32	25	170	30	32						
	3232 P12	●		32	32	170	32	40						
	3232 P15			32	32	170	37	40	SN□□ 1506 □□	LCL 5	LCS 5	LSS 53	LSP 5	L-W 3
	3232 P19	●	●	32	32	170	42	40	SN□□ 1906 □□	LCL 6	LCS 6	LSS 63	LSP 6	L-W 4
	4040 S19			40	40	250	42	50						
	4040 S25			40	40	250	53	50	SN□□ 2507 □□	LCL 8	LCS 8	LSS 84	LSP 8	L-W 5

- For inserts, see page A31 - A33
- For spare part, see page A167 - A177

● Marked: Standard Items

PTFNR/L

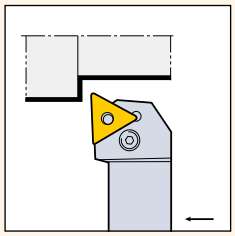


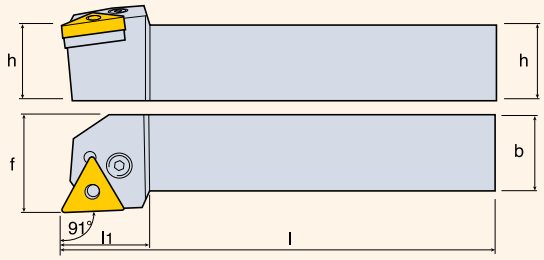


Designation		R	L	h	b	l	l1	f	Insert	Lever	Screw	Shim	Shim Pin	Wrench
PTFNR/L	1616 H16	●		16	16	100	20	20	TN□□ 1604 □□	LCL 3	LCS 3	LST 31.8	LSP 3A	L-W 2.5
	2020 K16	●	●	20	20	125	20	25						
	2525 M16	●	●	25	25	150	20	32						
	2525 M22	●	●	25	25	150	25	32	TN□□ 2204 □□	LCL 4	LCS 4	LST 42	LSP 4	L-W 3
	3232 P22	●		32	32	170	25	40						
	4040 S27			40	40	250	33	50	TN□□ 2706 □□	LCL 5	LCS 5	LST 53	LSP 5	L-W 3

• For inserts, see page A33 - A35 • For spare part, see page A167 - A177 ● Marked: Standard Items

PTGNR/L

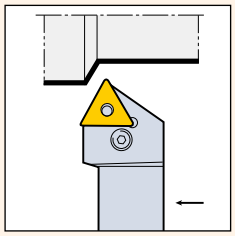


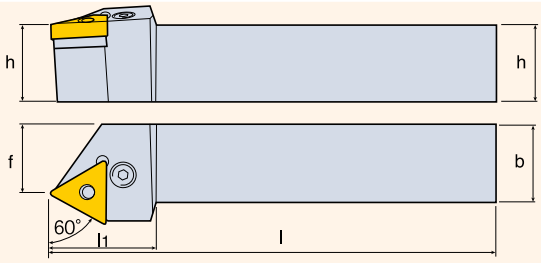


Designation		R	L	h	b	l	l1	f	Insert	Lever	Screw	Shim	Shim Pin	Wrench
PTGNR/L	1010 E11			10	10	70	15	12	TN□□ 1103 □□	LCL 2B	LCS 2B	-	*LSR 2B	L-W 2
	1212 F11		●	12	12	80	15	16						
	2525 M11			25	25	150	30	32						
	1616 H16	●	●	16	16	100	22	20	TN□□ 1604 □□	LCL 3	LCS 3	LST 31.8	LSP 3A	L-W 2.5
	2020 K16	●	●	20	20	125	22	25						
	2525 M16	●	●	25	25	150	22	32						
	3225 P16			32	25	170	22	32						
	3232 P16	●		32	32	170	22	40						
	2525 M22	●	●	25	25	150	29	32	TN□□ 2204 □□	LCL 4	LCS 4	LST 42	LSP 4	L-W 3
	3225 P22			32	25	170	29	32						
	3232 P22	●	●	32	32	170	29	40						
	4040 S27			40	40	250	35	50	TN□□ 2706 □□	LCL 5	LCS 5	LST 53	LSP 5	L-W 4

• For inserts, see page A33 - A35 • For spare part, see page A167 - A177 ● Marked: Standard Items
• *LSR 2B is Snap Ring

PTTNR/L

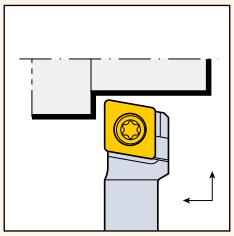


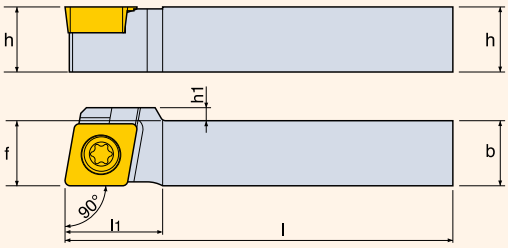


Designation		R	L	h	b	l	l1	f	Insert	Lever	Screw	Shim	Shim Pin	Wrench
PTTNR/L	1616 H16			16	16	100	24	13	TN□□ 1604 □□	LCL 3	LCS 3	LST 31.8	LSP 3A	L-W 2.5
	2020 K16	●		20	20	125	24	17						
	2525 M16	●		25	25	150	24	22						
	2525 M22	●		25	25	150	34	22	TN□□ 2204 □□	LCL 4	LCS 4	LST 42	LSP 4	L-W 3

• For inserts, see page A33 - A35 • For spare part, see page A167 - A177 ● Marked: Standard Items

SCACR/L-SH



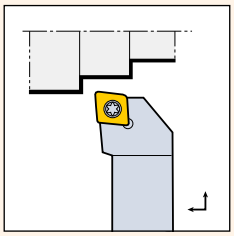


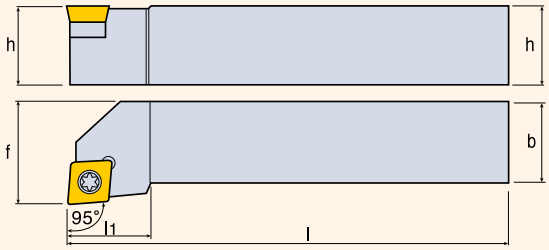
Designation		R	L	h	b	l	l1	f	h1	Insert 80°	Components: Screw	Components: Wrench
SCACR/L	0808 K06-SH			8	8	125	8	8	0	CC□T 0602 □□	SO 25065I	T 7
	1010 K06-SH			10	10	125	10	10	0			
	1010 K09-SH			10	10	125	15	10	2	CC□T 09T3 □□	SO 35080I	T 15
	1212 K09-SH			12	12	125	15	12	0			
	1616 K09-SH	●		16	16	125	16	16	0			

• For inserts, see page A39 - A40
• For spare part, see page A167 - A177

● Marked: Standard Items

SCLCR/L



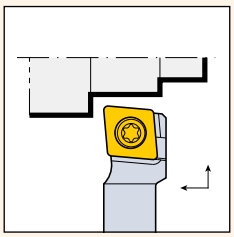


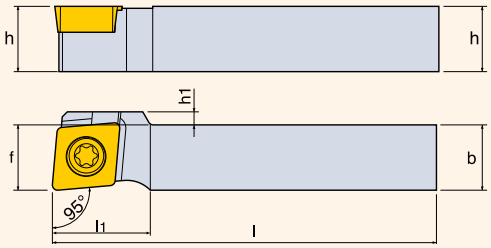
Designation		R	L	h	b	l	l1	f	Insert 80°	Components: Screw	Components: Shim	Components: Shim Screw	Components: Wrench
SCLCR/L	0808 F06	●		8	8	80	10	10	CC□T 0602 □□	SO 25065I	-	-	T 7
	1010 F06	●	●	10	10	80	10	12					
	1212 F09	●	●	12	12	80	16	16	CC□T 09T3 □□	SO 35080I	-	-	T 15
	1616 H09	●	●	16	16	100	16	20		SO 35124I	SSC 32	SO 50090S	
	2020 K09	●	●	20	20	125	20	25					
	2525 M09	●		25	25	150	20	32					
	2020 K12	●	●	20	20	125	25	25	CC□T 1204 □□	SO 45130I	SSC 43N	SO 60105S	T 20
	2525 M12	●	●	25	25	150	26	32					

• For inserts, see page A39 - A40
• For spare part, see page A167 - A177

● Marked: Standard Items

SCLCR/L-SH



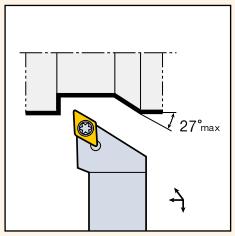


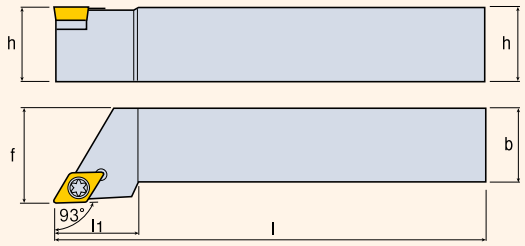
Designation		R	L	h	b	l	l1	f	h1	Insert 80°	Components: Screw	Components: Wrench
SCLCR/L	0808 K06-SH			8	8	125	8	8	0	CC□T 0602 □□	SO 25065I	T 7
	1010 K06-SH			10	10	125	10	10	0			
	1010 K09-SH			10	10	125	15	10	2	CC□T 09T3 □□	SO 35080I	T 15
	1212 K09-SH	●		12	12	125	15	12	0			
	1616 K09-SH	●		16	16	125	16	16	0			

• For inserts, see page A39 - A40
• For spare part, see page A167 - A177

● Marked: Standard Items

SDJCR/L



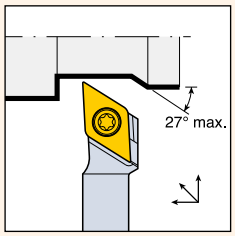


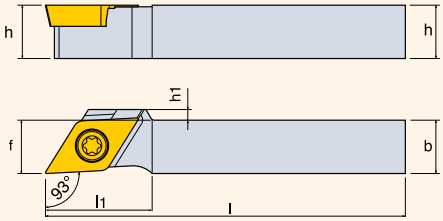
Designation		R	L	h	b	l	l1	f	Insert (55°)	Screw	Shim	Shim Screw	Wrench
SDJCR/L	0808 E07			8	8	70	13	10	DC□T 0702 □□	SO 25065I	-	-	T 7
	1212 F07	●	●	12	12	80	15	16					
	1616 H07	●		16	16	100	15	20					
	2020 K07	●		20	20	125	20	25					
	1616 H11	●	●	16	16	100	24	20	DC□T 11T3 □□	SO 35124I	SSD 32	SO 50090S	T 15
	2020 K11	●	●	20	20	125	24	25					
	2525 M11	●	●	25	25	150	28	32					

- For inserts, see page A41 - A42
- For spare part, see page A167 - A177

● Marked: Standard Items

SDJCR/L-SH



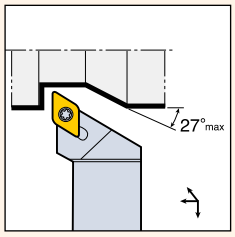


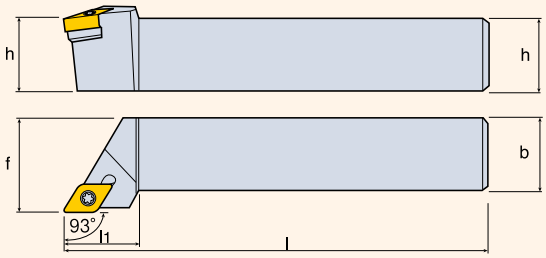
Designation		R	L	h	b	l	l1	f	h1	Insert (80°)	Screw	Wrench
SDJCR/L	0808 K07-SH			8	8	125	12.7	8	0	DC□T 0702 □□	SO 25065I	T 7
	1010 K07-SH	●		10	10	125	15	10	0			
	1010 K11-SH	●		10	10	125	20	10	2	DC□T 11T3 □□	SO 35080I	T 15
	1212 K11-SH	●	●	12	12	125	20	12	0			
	1616 K11-SH	●	●	16	16	125	20	16	0			

- For inserts, see page A41 - A42
- For spare part, see page A167 - A177

● Marked: Standard Items

SDJNR/L



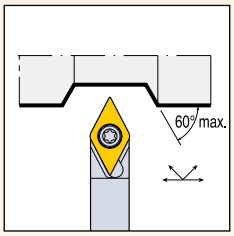


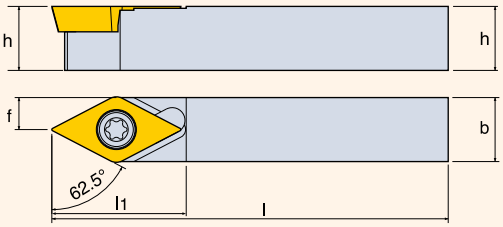
Designation		R	L	h	b	l	l1	f	Insert (55°)	Screw	Shim	Shim Screw	Wrench
SDJNR/L	1616 H11			16	16	100	25	20	DNMG 1104 □□	SO 35120I	SSD 32	SO 50090S	T 10
	2020 K11			20	20	125	25	25					
	2525 M11	●		25	25	150	25	32					

- For inserts, see page A28 - A29
- For spare part, see page A167 - A177

● Marked: Standard Items

SDNCN-SH



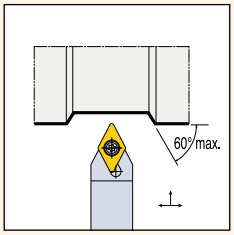


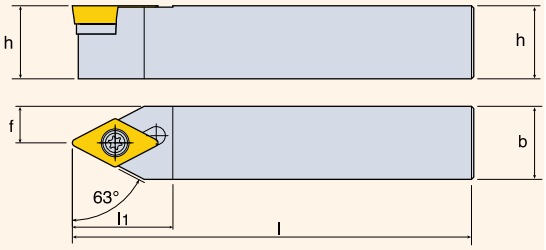
Designation			Dimension (mm)					Insert	Components	
									Screw	Wrench
			h	b	l	l1	f	55°		
SDNCN	0808 K07-SH		8	8	125	15	4	DC□T 0702 □□	SO 25065I	T 7
	1010 K07-SH		10	10	125	15	5			
	1010 K11-SH		10	10	125	22	5	DC□T 11T3 □□	SO 35080I	T 15
	1212 K11-SH	●	12	12	125	22	6			
	1616 K11-SH		16	16	125	22	8			

- For inserts, see page A41 - A42
- For spare part, see page A167 - A177

● Marked: Standard Items

SDNCN



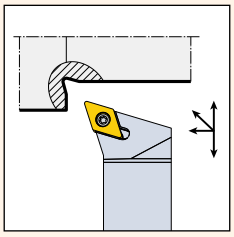


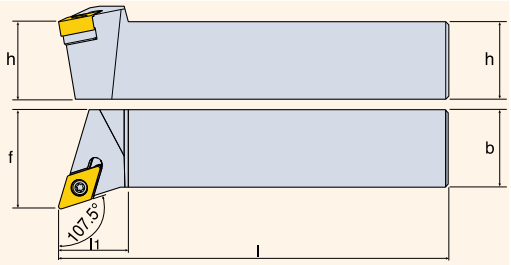
Designation			Dimension (mm)					Insert	Components			
									Screw	Shim	Shim Screw	Wrench
			h	b	l	l1	f	55°				
SDNCN	0808 F07		8	8	80	15	4	DCMT 0702 □□	SO 25065I	-	-	T 7
	1010 F07	●	10	10	80	15	5					
	1616 H11	●	16	16	100	22	8	DCMT 11T3 □□	SO 35080I	SSD 32	SO 50090S	T 15
	2525 M11	●	25	25	150	22	12.5					

- For inserts, see page A41 - A42
- For spare part, see page A167 - A177

● Marked: Standard Items

SDQNR/L



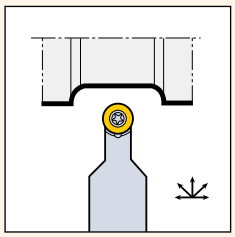


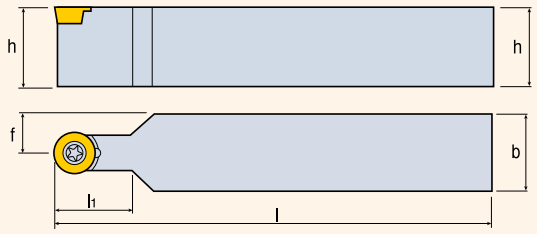
Designation				Dimension (mm)					Insert	Components			
										Screw	Shim	Shim Screw	Wrench
		R	L	h	b	l	l1	f	55°				
SDQNR/L	1616 H11			16	16	100	22	20	DNMG 1104 □□	SO 35120I	SSD 32	SO 50090S	T 10
	2020 K11	●		20	20	125	22	25					
	2525 M11	●		25	25	150	22	32					

- For inserts, see page A28 - A29
- For spare part, see page A167 - A177

● Marked: Standard Items

SRDCN



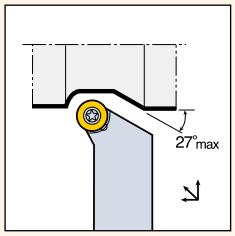


Designation			Dimension (mm)					Insert	Components	
									Screw	Wrench
			h	b	l	l1	f			
SRDCN	1616 H10	●	16	16	100	17.2	8	RC□T 10T3 □□	TS 40097I	T 15
	2020 K10	●	20	20	125	22.5	10			
	2525 M10	●	25	25	150	27.5	12.5			
	2525 M12	●	25	25	150	27.5	12.5	RC□T 1204 □□	SO 40050I	T 15

- For inserts, see page A42
- For spare part, see page A167 - A177

● Marked: Standard Items

SRGCR/L

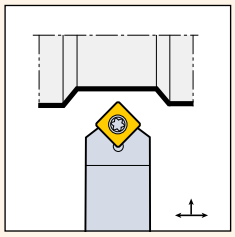


Designation				Dimension (mm)					Insert	Components	
										Screw	Wrench
		R	L	h	b	l	l1	f			
SRGCR	1616 H10			16	16	100	16.7	20	RC□T 10T3 □□	TS 40097I	T 15
	2020 K10			20	20	125	15	25			
	2525 M10	●	●	25	25	150	15	32			

- For inserts, see page A42
- For spare part, see page A167 - A177

● Marked: Standard Items

SSDCN

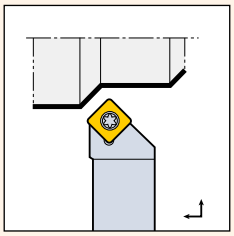


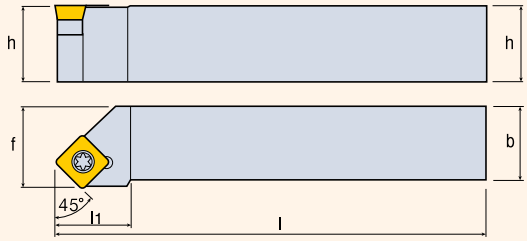
Designation			Dimension (mm)					Insert	Components			
									Screw	Shim	Shim Screw	Wrench
			h	b	l	l1	f					
SSDCN	1212 F09	●	12	12	80	15.5	6	SC□T 09T3 □□	SO 35080I	-	-	T 15
	1616 H09	●	16	16	100	15.5	8		SO 35124I	SSS 32	SO 50090S	T 15

- For inserts, see page A43
- For spare part, see page A167 - A177

● Marked: Standard Items

SSSCR/L



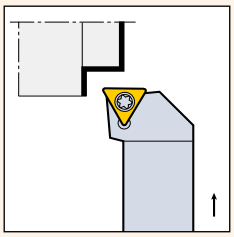


Designation		R	L	h	b	l	l1	f	Insert	Screw	Shim	Shim Screw	Wrench
				Dimension (mm)						Components			
SSSCR/L	1212 F09			12	12	80	15.5	14	SC□T 09T3 □□	SO 35080I	-	-	T 15
	1616 H09	●	●	16	16	100	15.5	17		SO 35124I	SSS 32	SO 50090S	
	2020 K12	●	●	20	20	125	24	22	SC□T 1204 □□	SO 45130I	SSS 43N	SO 60105S	T 20
	2525 M12	●	●	25	25	150	24	27					

- For inserts, see page A43
- For spare part, see page A167 - A177

● Marked: Standard Items

STFCR/L

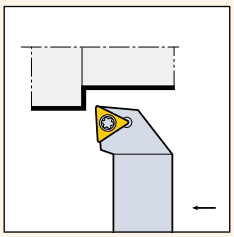


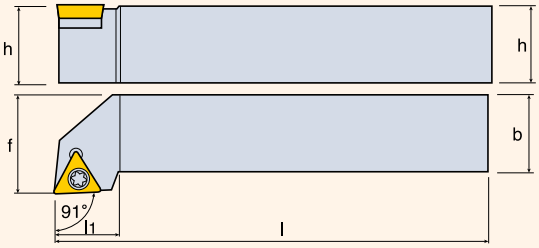
Designation		R	L	h	b	l	l1	f	Insert	Screw	Shim	Shim Screw	Wrench
				Dimension (mm)						Components			
STFCR/L	1212 F11		●	12	12	80	14	16	TC□T 1102 □□	SO 25065I	-	-	T 7
	1616 H11			16	16	100	14	20					
	1616 H16			16	16	100	19	20	TC□T 16T3 □□	SO 35124I	SST 32	SO 50090S	T 15
	2020 K16	●	●	20	20	125	19	25					
	2525 M16	●	●	25	25	150	20	32					

- For inserts, see page A44
- For spare part, see page A167 - A177

● Marked: Standard Items

STGCR/L



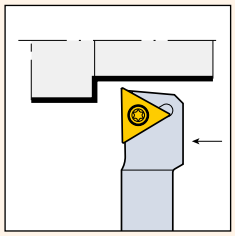


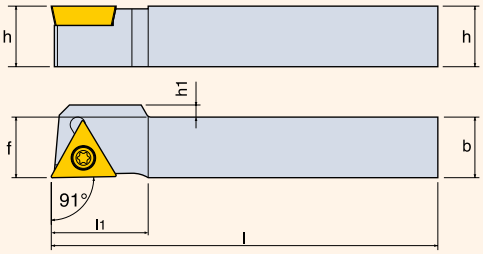
Designation		R	L	h	b	l	l1	f	Insert	Screw	Shim	Shim Screw	Wrench
				Dimension (mm)						Components			
STGCR/L	1010 E09			10	10	70	11	12	TC□T 0902 □□	SO 22050I	-	-	T 7
	1212 F11	●	●	12	12	80	14.3	16	TC□T 1102 □□	SO 25065I			
	1616 H11		●	16	16	100	14.3	20					
	1616 H16		●	16	16	100	21	20	TC□T 16T3 □□	SO 35124I	SST 32	SO 50090S	T 15
	2020 K16	●	●	20	20	125	21	25					
	2525 M16	●	●	25	25	150	21	32					

- For inserts, see page A44
- For spare part, see page A167 - A177

● Marked: Standard Items

STGCR/L-SH



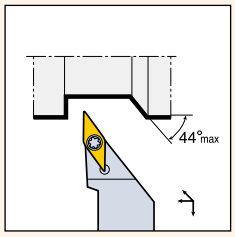


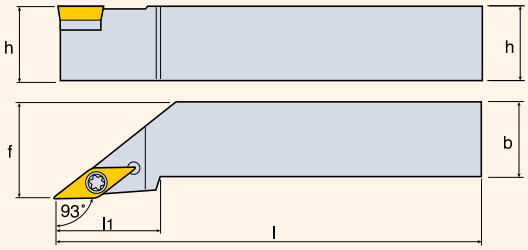
Designation		R	L	h	b	l	l1	f	h1	Insert	Screw	Wrench
STGCR/L	1010 K11-SH			10	10	125	16	10	2	TC□T 1103 □□	SO 25065I	T 7
	1212 K11-SH			12	12	125	16	12	0			
	1616 K11-SH			16	16	125	16	16	0			

- For inserts, see page A44
- For spare part, see page A167 - A177

● Marked: Standard Items

SVJBR/L



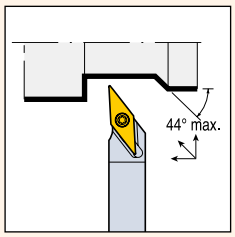


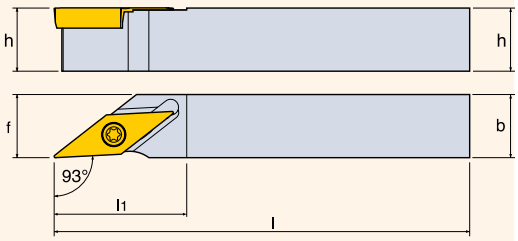
Designation		R	L	h	b	l	l1	f	Insert	Screw	Shim	Shim Screw	Wrench
SVJBR/L	2020 K16	●	●	20	20	125	35	25	VB□□ 1604 □□	SO 35124I	SSV 32	TS 5035062S	T 15
	2525 M16	●	●	25	25	150	35	32					
	3225 P16	●	●	32	25	170	35	32					
	3232 P16	●	●	32	32	170	35	40					

- For inserts, see page A46 - A47
- For spare part, see page A167 - A177

● Marked: Standard Items

SVJBR/L-SH



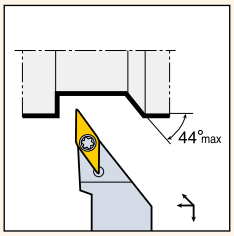


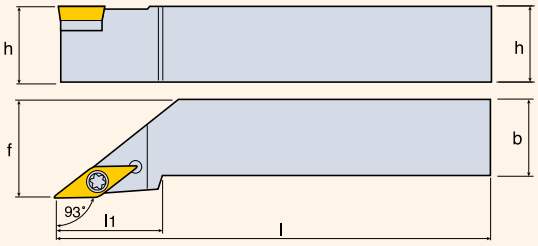
Designation		R	L	h	b	l	l1	f	Insert	Screw	Wrench
SVJBR/L	1010 K11-SH	●		10	10	125	21	10	VB□T 1103 □□	SO 25065I	T 7
	1212 K11-SH	●	●	12	12	125	21	12			
	1616 K11-SH	●	●	16	16	125	21	16			

- For inserts, see page A46 - A47
- For spare part, see page A167 - A177

● Marked: Standard Items

SVJCR/L



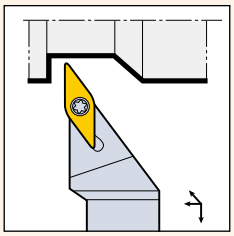


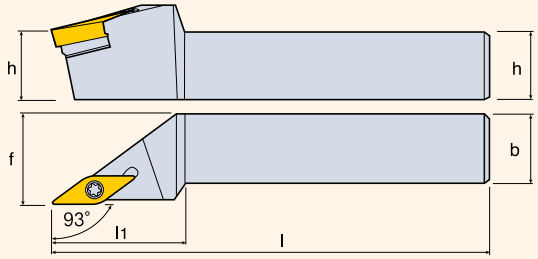
Designation		R	L	h	b	l	l1	f	Insert 35°	Screw	Shim	Shim Screw	Wrench
				Dimension (mm)						Components			
SVJCR/L	2020 K16	●	●	20	20	125	35	25	VC□T 1604 □□	SO 35124I	SSV 32	SO 50090S	T 15
	2525 M16	●	●	25	25	150	35	32					
	3225 P16			32	25	170	35	32					
	3232 P16			32	32	170	47	40					

- For inserts, see page A47
- For spare part, see page A167 - A177

● Marked: Standard Items

SVJNR/L



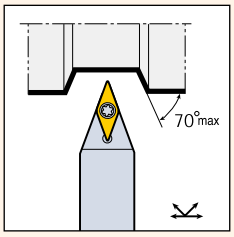


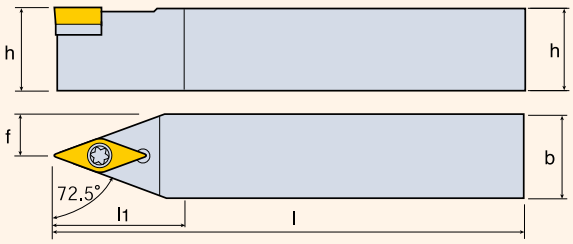
Designation		R	L	h	b	l	l1	f	Insert 35°	Screw	Shim	Shim Screw	Wrench
				Dimension (mm)						Components			
SVJNR/L	1616 H13			16	16	100	30	20	VN□□ 1304 □□	SO 35120I	SSVN 2.522	TS 5035062S	T 10
	2020 K13			20	20	125	35	25					
	2525 M13	●	●	25	25	150	43	32					

- For inserts, see page A36
- For spare part, see page A167 - A177

● Marked: Standard Items

SVVBN



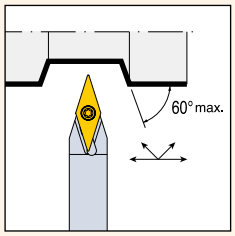


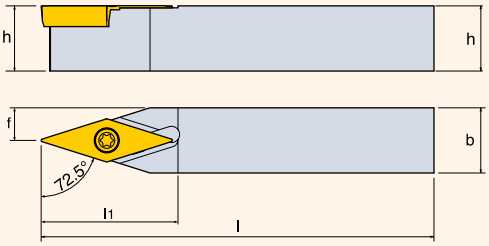
Designation			h	b	l	l1	f	Insert 35°	Screw	Shim	Shim Screw	Wrench
			Dimension (mm)						Components			
SVVBN	2020 K16	●	20	20	125	31.5	10.0	VB□□ 1604 □□	SO 35124I	SSV 32	SO 50090S	T 15
	2525 M16	●	25	25	150	31.5	12.5					
	3225 P16	●	32	25	170	31.5	12.5					

- For inserts, see page A46 - A47
- For spare part, see page A167 - A177

● Marked: Standard Items

SVVBN-SH



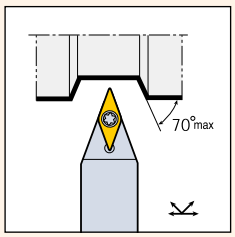


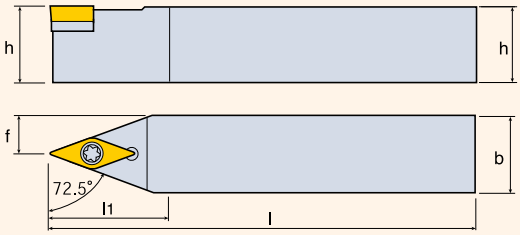
Designation			Dimension (mm)					Insert	Components	
									Screw	Wrench
			h	b	l	l1	f	35°		
SVVBN	1010 K11-SH		10	10	125	22	5	VB□T 1103 □□	SO 25065I	T 7
	1212 K11-SH	●	12	12	125	22	6			
	1616 K11-SH	●	16	16	125	22	8			

- For inserts, see page A46 - A47
- For spare part, see page A167 - A177

● Marked: Standard Items

SVVCN



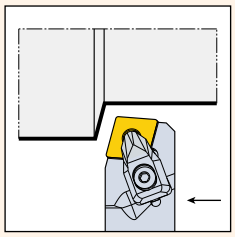


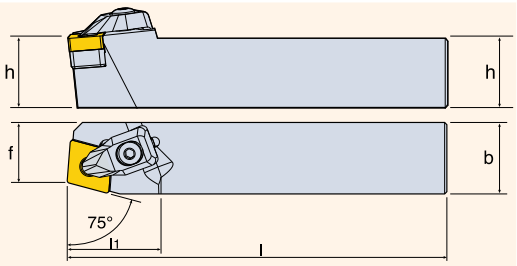
Designation			Dimension (mm)					Insert	Components			
									Screw	Shim	Shim Screw	Wrench
			h	b	l	l1	f	35°				
SVVCN	2020 K16		20	20	125	31.5	10.0	VC□T 1604 □□	SO 35124I	SSV 32	SO 50090S	T 15
	2525 M16	●	25	25	150	31.5	12.5					
	3225 P16		32	25	170	31.5	12.5					
	3232 P16		32	32	170	32	16.0					

- For inserts, see page A47
- For spare part, see page A167 - A177

● Marked: Standard Items

TCBNR/L



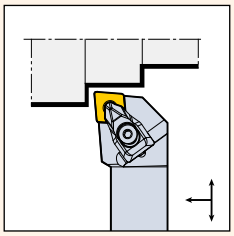


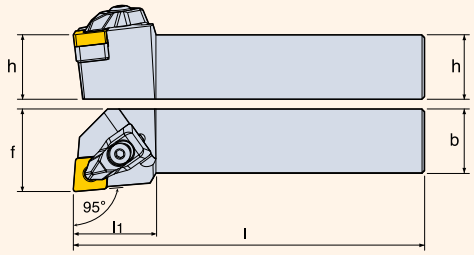
Designation				Dimension (mm)					Insert	Components					
										Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
		R	L	h	b	l	l1	f	80°						
TCBNR/L	2525 M12	●	●	25	25	150	32	22.5	CN□□ 1204 □□	DLM 4	DLS 4	TSC 44	SO 40050I	DSP 4	L-W 3
	3232 P19	●	●	32	32	170	42	27	CN□□ 1906 □□	DLM 6	DLS 5	LSC 63	SO 80180I	DSP 5	L-W 4

- For inserts, see page A24 - A27
- For spare part, see page A167 - A177

● Marked: Standard Items

TCLNR/L



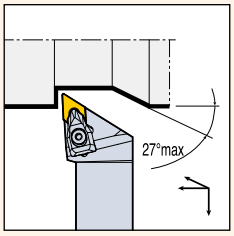


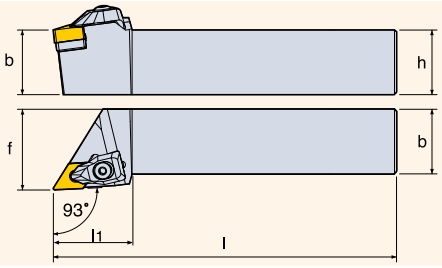
Designation		R	L	h	b	l	l1	f	Insert 80°	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
TCLNR/L	2020 K09	●	●	20	20	125	25	25	CN□□ 0903 □□	DLM 3	DLS 3	LSC 32	SO 40085I	DSP 3	L-W 2.5
	2525 M09	●		25	25	150	25	32							
	2020 K12			20	20	125	32	25	CN□□ 1204 □□	DLM 4	DLS 4	TSC 44	SO 40050I	DSP 4	L-W 3
	2525 M12	●	●	25	25	150	32	32							
	3225 P12	●	●	32	25	170	32	32							
	3232 P12		●	32	32	170	32	40							
	2525 M16	●		25	25	150	36	32	CN□□ 1606 □□	DLM 5	DLS 5	TSC 54	SO 50090I	DSP 5	L-W 4
	3232 P19	●	●	32	32	170	42	40	CN□□ 1906 □□	DLM 6	DLS 5	LSC 63	SO 80180I	DSP 5	L-W 4
	4040 S19	●		40	40	250	42	50							

- For inserts, see page A24 - A27
- For spare part, see page A167 - A177

● Marked: Standard Items

TDJNR/L



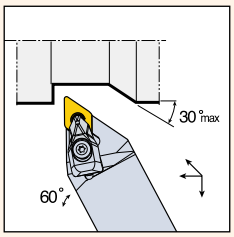


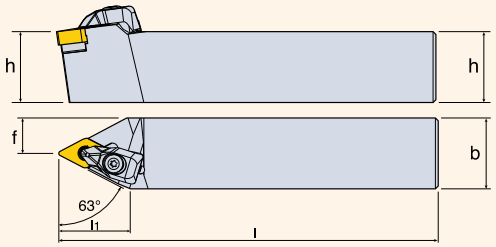
Designation		R	L	h	b	l	l1	f	Insert 55°	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
TDJNR/L	2020 K11	●	●	20	20	125	30	25	DN□□ 1104 □□	DLM 3	DLS 3	LSD 32	SO 40085I	DSP 3	L-W 2.5
	2525 M11	●	●	25	25	150	30	32							
	2020 K15		●	20	20	125	39	25	DN□□ 1506 □□	DLM 4	DLS 4	TSD 43	SO 40050I	DSP 4	L-W 3
	2525 M15	●	●	25	25	150	39	32							
	2525 M1504	●	●	25	25	150	39	32	DN□□ 1504 □□	DLM 4	DLS 4	TSD 44	SO 40050I	DSP 4	L-W 3

- For inserts, see page A28 - A29
- For spare part, see page A167 - A177

● Marked: Standard Items

TDNNR/L



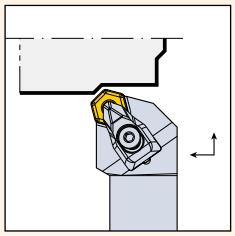


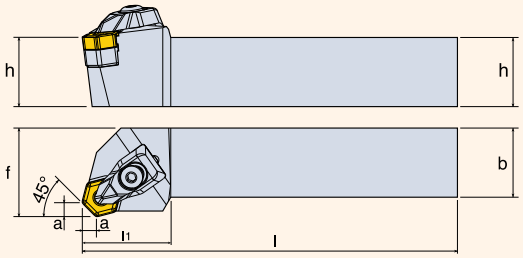
Designation		R	L	h	b	l	l1	f	Insert 55°	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
TDNNR/L	2525 M11			25	25	150	30	12.5	DNM□ 1104 □□	DLM 3	DLS 3	LSD 32	SO 40085I	DSP 3	L-W 2.5

- For inserts, see page A28 - A29
- For spare part, see page A167 - A177

● Marked: Standard Items

THSNR/L



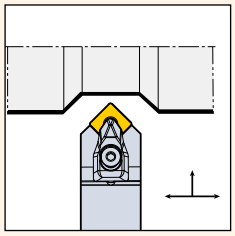


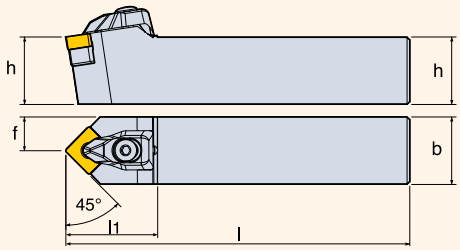
Designation		R	L	h	b	l	l1	f	a	Insert 120°	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
				Dimension (mm)							Components					
THSNR/L	2525 M05	●		25	25	150	32	32	4.2	HN□□ 0504 □□	DLM 4	DLS 4	TSH 44	SO 40050I	DSP 4	L-W 3
	2525 M10			25	25	150	42	32	6.5	HN□□ 1006 □□	DLM 6	DLS 5	TSH 64	SO 50090I	DSP 5	L-W 4
	3232 P05	●	●	32	32	170	32	40	4.2	HN□□ 0504 □□	DLM 4	DLS 4	TSH 44	SO 40050I	DSP 4	L-W 3
	3232 P10			32	32	170	42	40	6.5	HN□□ 1006 □□	DLM 6	DLS 5	TSH 64	SO 50090I	DSP 5	L-W 4

- For inserts, see page A30
- For spare part, see page A167 - A177

● Marked: Standard Items

TSDNN



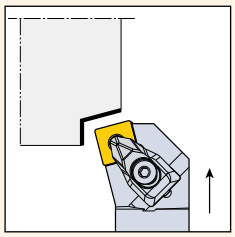


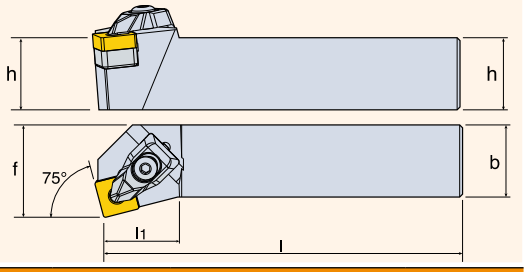
Designation			h	b	l	l1	f	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
			Dimension (mm)						Components					
TSDNN	2525 M12	●	25	25	150	34	12.5	SN□□ 1204 □□	DLM 4	DLS 4	TSS 44	SO 40050I	DSP 4	L-W 3
	3232 P19	●	32	32	170	44	16	SN□□ 1906 □□	DLM 6	DLS 5	LSS 63	SO 80180I	DSP 5	L-W 4

- For inserts, see page A31 - A33
- For spare part, see page A167 - A177

● Marked: Standard Items

TSKNR/L



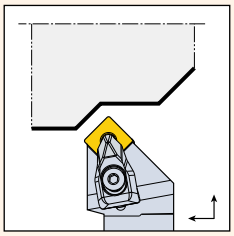


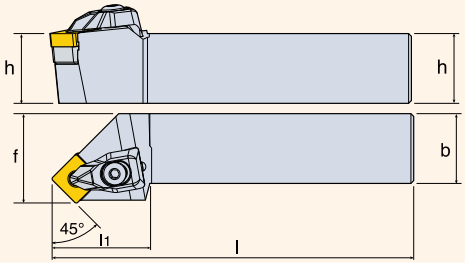
Designation		R	L	h	b	l	l1	f	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
				Dimension (mm)						Components					
TSKNR/L	2525 M12	●		25	25	150	27	32	SN□□ 1204 □□	DLM 4	DLS 4	TSS 44	SO 40050I	DSP 4	L-W 3

- For inserts, see page A31 - A33
- For spare part, see page A167 - A177

● Marked: Standard Items

TSSNR/L



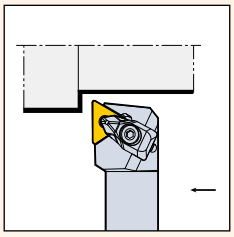


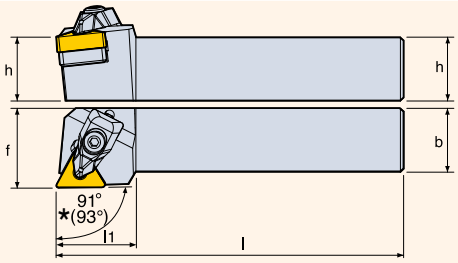
Designation			Dimension (mm)					Insert	Components					
									Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
	R	L	h	b	l	l_1	f							
TSSNR/L 2525 M12	●	●	25	25	150	35	32	SN□□1204□□	DLM 4	DLS 4	TSS 44	SO 40050I	DSP 4	L-W 3

- For inserts, see page A31 - A33
- For spare part, see page A167 - A177

● Marked: Standard Items

TTGNR/L TTJNR/L



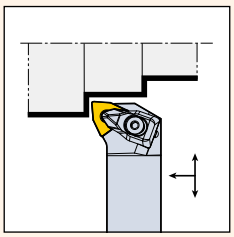


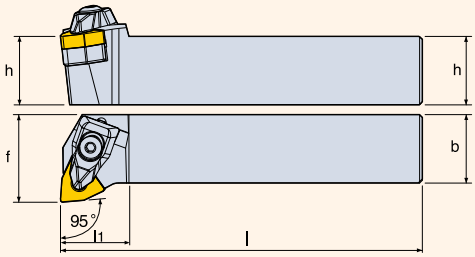
Designation			Dimension (mm)						Insert	Components					
										Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
	R	L	h	b	l	l_1	f	A							
TTGNR/L 2525 M16	●	●	25	25	150	25	32	91	TN□□1604□□	DLM3	DLS 3	TST 33	SO 35080I	DSP 3	L-W 2.5
TTJNR/L 2020 K16	●		20	20	125	25	25	93	TN□□1604□□						
2525 M16	●		25	25	150	25	32	93							

- For inserts, see page A33 - A35
- For spare part, see page A167 - A177
- *Entering angle of TTJNR/L is 93 degrees.

● Marked: Standard Items

TWLNR/L



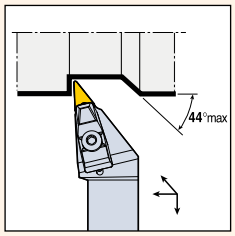


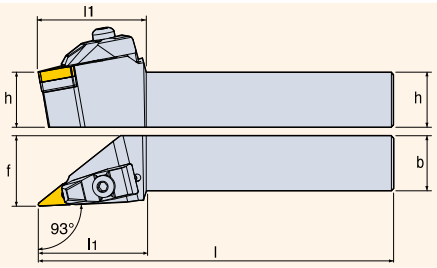
Designation			Dimension (mm)					Insert	Components					
									Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
	R	L	h	b	l	l_1	f	80°						
TWLNR/L 2020 K06	●		20	20	125	20	25	WN□□0604□□	DLM 3	DLS 3	PSW 32	SO 40090I	DSP 3	L-W 2.5
2525 M06	●	●	25	25	150	24	32							
2020 K08	●	●	20	20	125	30	25	WN□□0804□□	DLM 4	DLS 4	TSW 44	SO 40050I	DSP 4	L-W 3
2525 M08	●	●	25	25	150	25	32							

- For inserts, see page A37 - A38
- For spare part, see page A167 - A177

● Marked: Standard Items

TVJNR/L



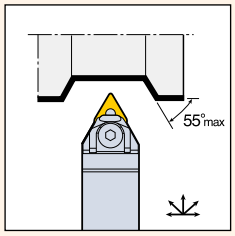


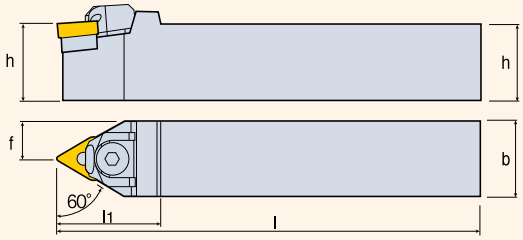
Designation		R	L	h	b	l	l1	f	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
				Dimension (mm)						Components					
TVJNR/L	2020 K13			20	20	125	49	25	VN□□ 1304 □□	DLM 3V	DLS 5	MSV 2.522	SC 4-SH	DSP 5	L-W 4
	2525 M13			25	25	150	49	32							
	2020 K16	●	●	20	20	125	49	25	VN□□ 1604 □□	DLM 3V	DLS 5	TSV 33	SO 35080I	DSP 5	L-W 4
	2525 M16	●	●	25	25	150	49	32							

- For inserts, see page A36
- For spare part, see page A167 - A177

● Marked: Standard Items

WTENN



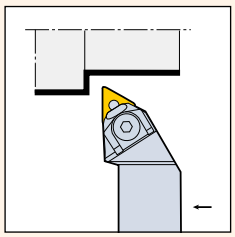


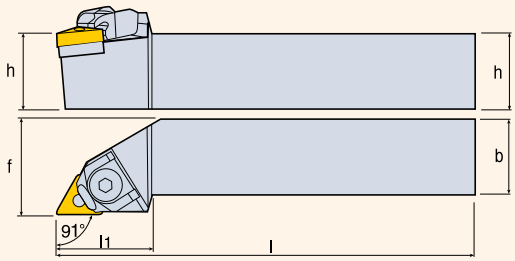
Designation			h	b	l	l1	f	Insert	Wedge Clamp	Screw	Snap Ring	Shim	Pin Screw	Wrench
			Dimension (mm)						Components					
WTENN	2020 K16	●	20	20	125	35	10.0	TN□□ 1604 □□	WC 33	WCS 4	WSR 4	WST 33	WSS 33	L-W 3
	2525 M16	●	25	25	150	35	12.5							
	2525 M22	●	25	25	150	38	12.5	TN□□ 2204 □□	WC 43	WCS 4	WSR 4	WST 43	WSS 43	L-W 3
	3225 P22		32	25	170	38	12.5							
	3232 P22	●	32	32	170	38	16.0							

- For inserts, see page A33 - A35
- For spare part, see page A167 - A177

● Marked: Standard Items

WTGNR/L



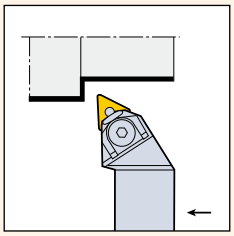


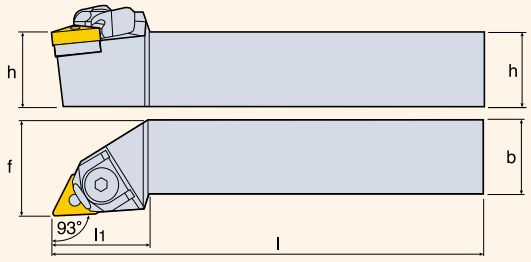
Designation		R	L	h	b	l	l1	f	Insert	Wedge Clamp	Screw	Snap Ring	Shim	Pin Screw	Wrench
				Dimension (mm)						Components					
WTGNR/L	2020 K16	●	●	20	20	125	32	25	TN□□ 1604 □□	WC 33	WCS 4	WSR 4	WST 33	WSS 33	L-W 3
	2525 M16	●	●	25	25	150	32	32							
	2525 M22			25	25	150	38	32	TN□□ 2204 □□	WC 43	WCS 4	WSR 4	WST 43	WSS 43	L-W 3
	3232 P22	●		32	32	170	38	40							

- For inserts, see page A33 - A35
- For spare part, see page A167 - A177

● Marked: Standard Items

WTJNR/L



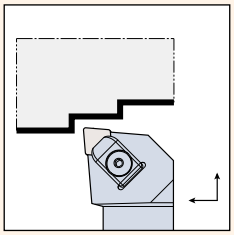


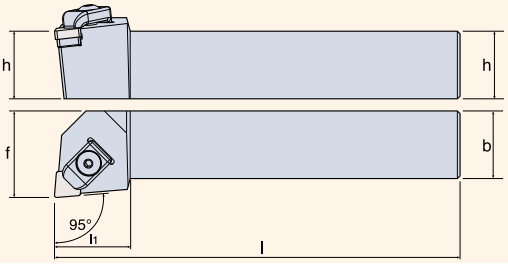
Designation			Dimension (mm)					Insert	Components					
									Wedge Clamp	Screw	Snap Ring	Shim	Pin Screw	Wrench
	R	L	h	b	l	l1	f							
WTJNR/L 2020 K16	●	●	20	20	125	32	25	TN□□ 1604 □□	WC 33	WCS 4	WSR 4	WST 33	WSS 33	L-W 3
2525 M16	●	●	25	25	150	32	32							
3225 P16	●		32	25	170	32	32							
3232 P16	●		32	32	170	38	40							
2525 M22	●	●	25	25	150	38	32	TN□□ 2204 □□	WC 43	WCS 4	WSR 4	WST 43	WSS 43	L-W 3
3232 P22	●	●	32	32	170	38	40							

- For inserts, see page A33 - A35
- For spare part, see page A167 - A177

● Marked: Standard Items

CCLNR/L



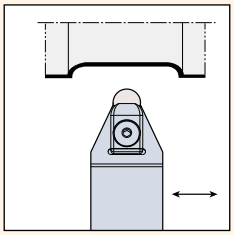


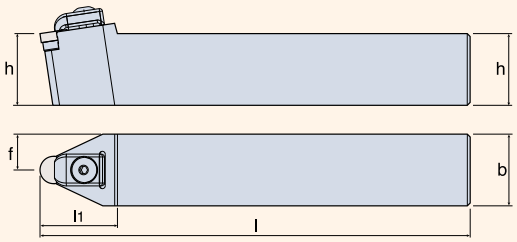
Designation			Dimension (mm)					Insert	Components				
									Clamp	Clamp Screw	Shim	Shim Screw	Wrench
	R	L	h	b	l	l1	f	80°					
CCLNR/L 2525 M09			25	25	150	28	32	CN□N 0903 □□	3127 C	SH M5 X 0.8 X 16	LSC 32	SO 40085I	L-W 4

- For inserts, see page A58
- For spare part, see page A167 - A177

● Marked: Standard Items

CRDNN



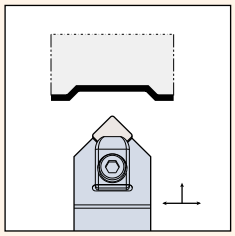


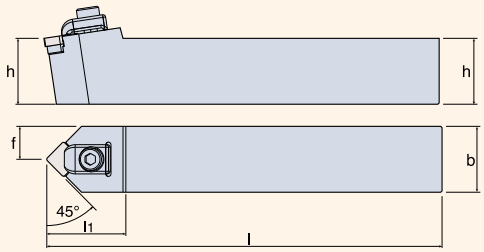
Designation		Dimension (mm)					Insert	Components				
								Clamp	Clamp Screw	Shim	Shim Screw	Wrench
		h	b	l	l1	f						
CRDNN 2525 M09	●	25	25	150	27	12.5	RN□N 090300	3127 C	SH M5 X 0.8 X 16	LSR 32	SO 40085I	L-W 4

- For inserts, see page A59
- For spare part, see page A167 - A177

● Marked: Standard Items

CSDNN



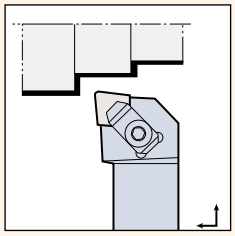


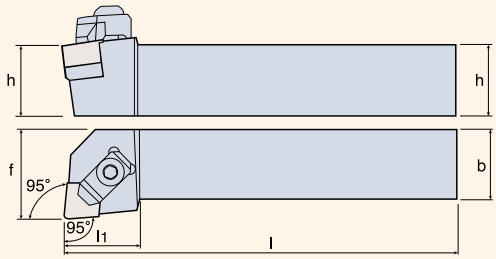
Designation		Dimension (mm)					Insert	Components				
								Clamp	Clamp Screw	Shim	Shim Screw	Wrench
		h	b	l	l1	f						
CSDNN 2525 M09		25	25	125	30	12.5	SN□N 0903 □□	3127 C	SH M5 X 0.8 X 16	LSS 32	SO 40085I	L-W 4

- For inserts, see page A66
- For spare part, see page A167 - A177

● Marked: Standard Items

CCLNR/L-CE



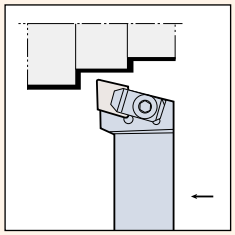


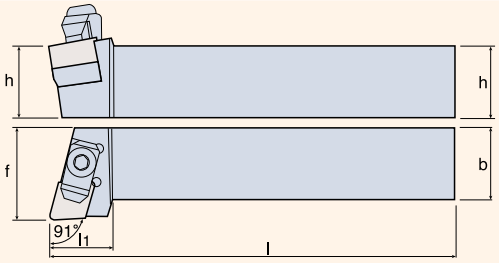
Designation			Dimension (mm)					Insert	Components				
									Clamp	Clamp Screw	Shim	Shim Screw	Wrench
	R	L	h	b	l	l1	f	80°					
CCLNR/L 2020 K12-CE			20	20	125	27	25	CNGN 1207 □□	BCL 6	BH M6 X 1 X 20	S 48	BH M5 X 0.8 X 8	L-W 4
2525 M12-CE	●		25	25	150	27	32					BH M5 X 0.8 X 10	
2020 K12-CEA	●		20	20	125	27	25	CNGN 1204 □□	BCL 6	BH M6 X 1 X 20	S 48	BH M5 X 0.8 X 8	L-W 4
2525 M12-CEA	●		25	25	150	27	32					BH M5 X 0.8 X 10	

- For inserts, see page A58
- For spare part, see page A167 - A177

● Marked: Standard Items

CEGNR/L-CE



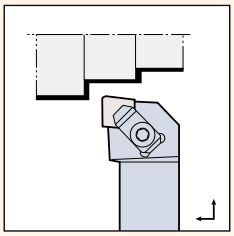


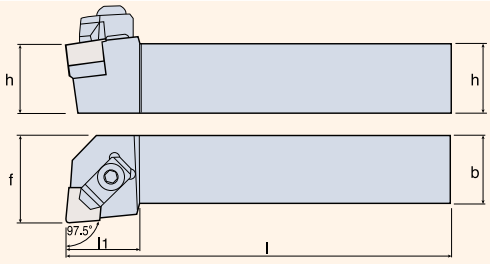
Designation			Dimension (mm)					Insert	Components				
									Clamp	Clamp Screw	Shim	Shim Screw	Wrench
	R	L	h	b	l	l1	f	75°					
CEGNR/L 2525 M13-CE			25	25	150	22	32	ENGN 1307 □□	BCL 6	BH M6 X 1 X 20	E 43	BH M5 X 0.8 X 10	L-W 4

- For inserts, see page A59
- For spare part, see page A167 - A177

● Marked: Standard Items

CEQNR/L-CE



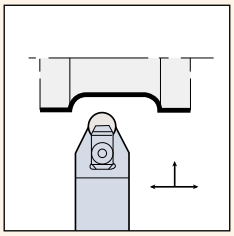


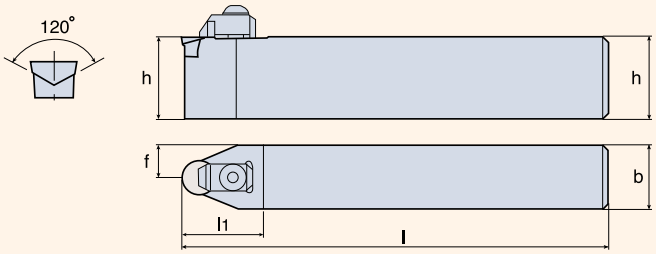
Designation		R	L	h	b	l	l1	f	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
				Dimension (mm)						Components				
CEQNR/L	2020 K13-CE			20	20	125	32	25	ENGN 1307 □□	BCL 6	BH M6 X 1 X 20	E 43	BH M5 X 0.8 X 10	L-W 4
	2525 M13-CE	●		25	25	150	32	32						

- For inserts, see page A59
- For spare part, see page A167 - A177

● Marked: Standard Items

CRDCN - 120



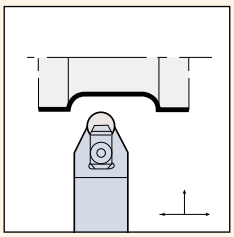


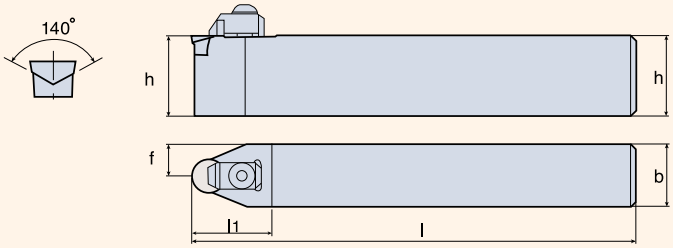
Designation			h	b	l	l1	f	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
			Dimension (mm)						Components				
CRDCN	2525 M06-120		25	25	150	28	12.5	RCGX 060600	BCL 6-20A	BH M6 X 1 X 25	CERS 06	SO 22050I	L-W 4
	3225 P06-120	●	32	25	170	28	12.5						
	3225 P09-120	●	32	25	170	30	12.5	RCGX 090700			CERS 09	BH M2.5 X 0.45 X 10	
	3225 P12-120	●	32	25	170	32	12.5	RCGX 120700	BCL 6		CERS 12		

- For inserts, see page A59
- For spare part, see page A167 - A177

● Marked: Standard Items

CRDCN - 140



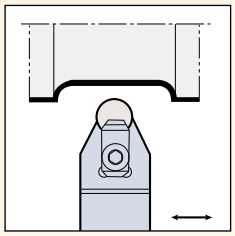


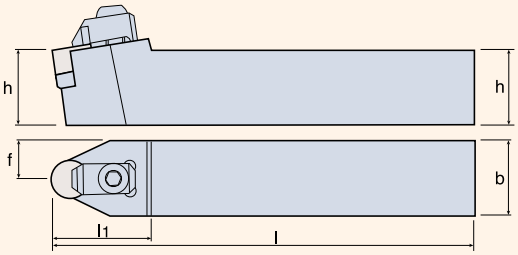
Designation			h	b	l	l1	f	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
			Dimension (mm)						Components				
CRDCN	2525 M06-140		25	25	150	28	12.5	RCGX 060300	BCL 6-20A	BH M6 X 1 X 25	CBRS 06	SO 22050I	L-W 4
	3225 P06-140	●	32	25	170	28	12.5						
	3225 P09-140	●	32	25	170	30	12.5	RCGX 090300	BCL 6-20A		CBRS 09	BH M2.5 X 0.45 X 10	
	3225 P12-140	●	32	25	170	32	12.5	RCGX 120400	BCL 6		CBRS 12		

- For inserts, see page A66
- For spare part, see page A167 - A177

● Marked: Standard Items

CRDNN-CE



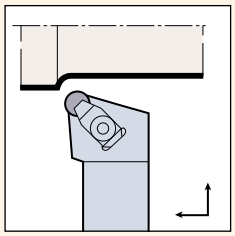


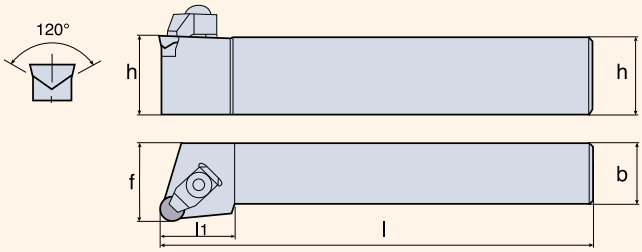
Designation		Dimension (mm)					Insert	Components				
								Clamp	Clamp Screw	Shim	Shim Screw	Wrench
		h	b	l	l_1	f						
CRDNN 2020 K12-CE		20	20	125	32	10.0	RNGN 120700	BCL 6	BH M6 X 1 X 25	S 43	BH M5 X 0.8 X 8	L-W 4
2525 M12-CE	●	25	25	150	32	12.5					BH M5 X 0.8 X 10	
3225 P12-CE	●	32	25	170	32	12.5						
2020 K12-CEA		20	20	125	32	10.0	RNGN 120400				BH M5 X 0.8 X 8	
2525 M12-CEA	●	25	25	150	32	12.5					BH M5 X 0.8 X 10	
2525 M12-CEB	●	25	25	150	32	12.5	RNGN 120300					
2525 M15-CE		25	25	150	32	12.5	RNGN 150700			S 53		

- For inserts, see page A59
- For spare part, see page A167 - A177

● Marked: Standard Items

CRGCR/L - 120



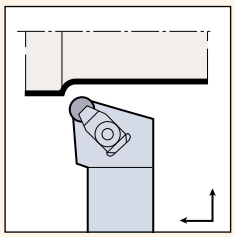


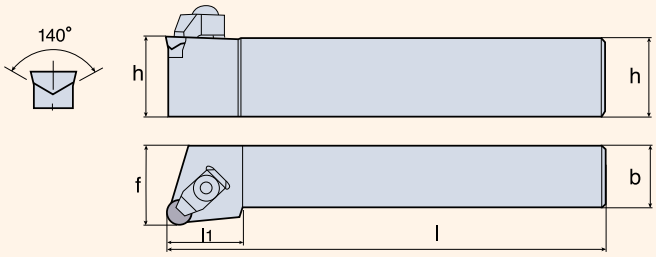
Designation			Dimension (mm)					Insert	Components				
									Clamp	Clamp Screw	Shim	Shim Screw	Wrench
	R	L	h	b	l	l_1	f						
CRGCR/L 2525 M06-120			25	25	150	28	32	RCGX 060600	BCL 6-20A	BH M6 X 1 X 25	CERS 06	SO 22050I	L-W 4
3225 P06-120	●		32	25	170	28	32						
3225 P09-120	●		32	25	170	30	32	RCGX 090700			CERS 09	BH M2.5 X 0.45 X 10	
3225 P12-120	●		32	25	170	32	32	RCGX 120700	BCL 6		CERS 12		

- For inserts, see page A59
- For spare part, see page A167 - A177

● Marked: Standard Items

CRGCR/L - 140



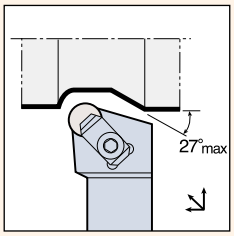


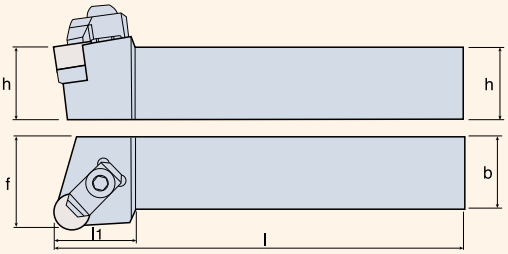
Designation			Dimension (mm)					Insert	Components				
									Clamp	Clamp Screw	Shim	Shim Screw	Wrench
	R	L	h	b	l	l_1	f						
CRGCR/L 2525 M06-140			25	25	150	28	32	RCGX 060300-FT	BCL 6-20A	BH M6 X 1 X 25	CBRS 06	SO 22050I	L-W 4
3225 P06-140	●		32	25	170	28	32						
3225 P09-140	●		32	25	170	30	32	RCGX 090300-FT			CBRS 09	BH M2.5 X 0.45 X 10	
3225 P12-140	●		32	25	170	32	32	RCGX 120400-FT	BCL 6		CBRS 12		

- For inserts, see page A66
- For spare part, see page A167 - A177

● Marked: Standard Items

CRGNR/L-CE



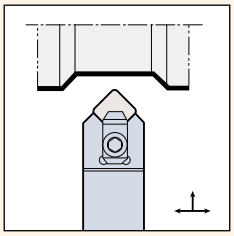


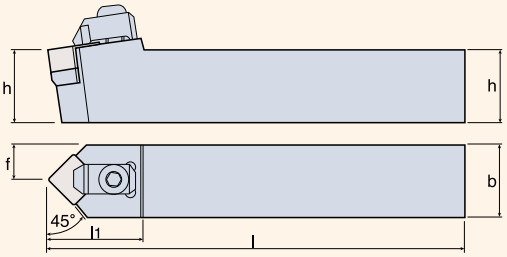
Designation		R	L	h	b	l	l1	f	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
				Dimension (mm)						Components				
CRGNR/L	2020 K12-CE			20	20	125	28	25	RNGN 120700	BCL 6	BH M6 X 1 X 20	S 43	BH M5 X 0.8 X 10	L-W 4
	2525 M12-CE	●		25	25	150	28	32						
	3225 P12-CE			32	25	170	28	32						
	2020 K12-CEA			20	20	125	28	25	RNGN 120400		BH M6 X 1 X 25			
	2525 M12-CEA	●		25	25	150	28	32						

- For inserts, see page A59
- For spare part, see page A167 - A177

● Marked: Standard Items

CSDNN-CE



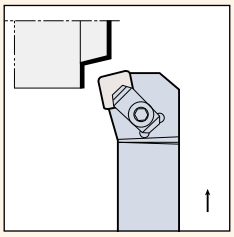


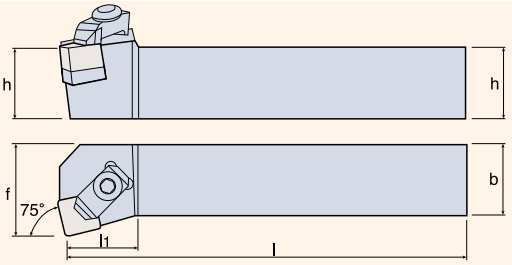
Designation			h	b	l	l1	f	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
			Dimension (mm)						Components				
CSDNN	2525 M12-CE	●	25	25	150	34	12.5	SNGN 1207□□	BCL 6	BH M6 X 1 X 20	S 40	BH M5 X 0.8 X 10	L-W 4
	3225 P12-CE	●	32	25	170	34	12.5						
	2020 K12-CEA		20	20	125	34	10	SNGN 1204□□		BH M6 X 1 X 25			
	2525 M12-CEA	●	25	25	150	34	12.5						

- For inserts, see page A60
- For spare part, see page A167 - A177

● Marked: Standard Items

CSKNR/L-CE



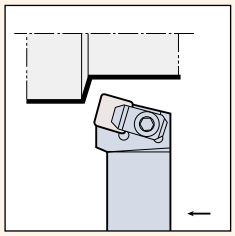


Designation		R	L	h	b	l	l1	f	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
				Dimension (mm)						Components				
CSKNR/L	2525 M12-CE			25	25	150	28	32	SNGN 1207□□	BCL 6	BH M6 X 1 X 25	S 40	BH M5 X 0.8 X 10	L-W 4
	2525 M12-CEA			25	25	150	28	32	SNGN 1204□□					

- For inserts, see page A60
- For spare part, see page A167 - A177

● Marked: Standard Items

CSRNR/L-CE

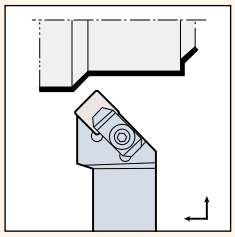


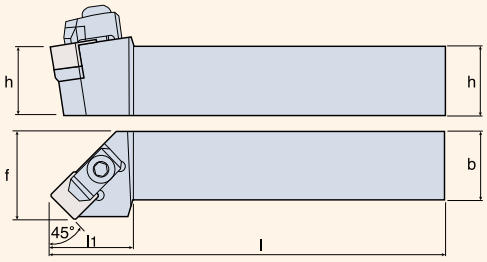
Designation		R	L	h	b	l	l1	f	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
CSRNR/L	2525 M12-CE	●		25	25	150	22	27	SNGN 1207□□	BCL 6	BH M6 X 1 X 20	S 40	BH M5 X 0.8 X 10	L-W 4
	3225 P12-CE			32	25	170	22	27						
	2525 M12-CEA			25	25	150	22	27	SNGN 1204□□					

- For inserts, see page A60
- For spare part, see page A167 - A177

● Marked: Standard Items

CSSNR/L-CE



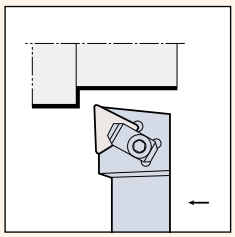


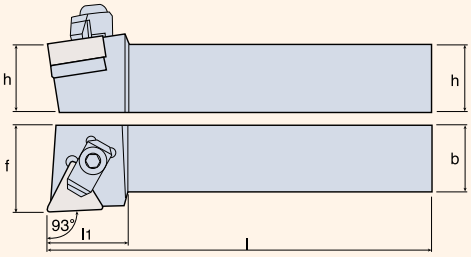
Designation		R	L	h	b	l	l1	f	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
CSSNR/L	2525 M12-CE	●		25	25	150	30	32	SNGN 1207□□	BCL 6	BH M6 X 1 X 25	S 40	BH M5 X 0.8 X 10	L-W 4
	2525 M12-CEA	●		25	25	150	30	32	SNGN 1204□□		BH M6 X 1 X 20			

- For inserts, see page A60
- For spare part, see page A167 - A177

● Marked: Standard Items

CTJNR/L-CE



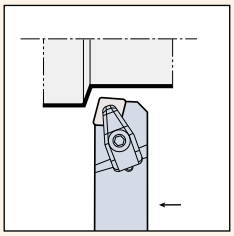


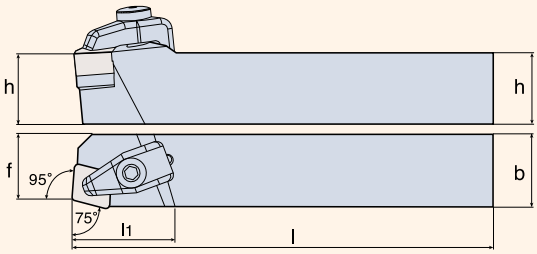
Designation		R	L	h	b	l	l1	f	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
CTJNR/L	2020 K16-CE			20	20	125	26	25	TNGN 1607□□	BCL 6	BH M6 X 1 X 25	S 3	BH M4 X 0.7 X 8	L-W 4
	2525 M16-CE	●		25	25	150	21	32			BH M6 X 1 X 20			
	2020 K16-CEA			20	20	125	26	25	TNGN 1604□□		BH M6 X 1 X 25			
	2525 M16-CEA	●		25	25	150	21	32			BH M6 X 1 X 20			

- For inserts, see page A61
- For spare part, see page A167 - A177

● Marked: Standard Items

TCBNR/L-CH



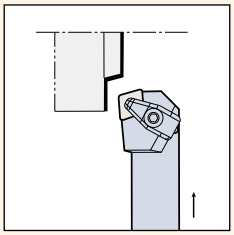


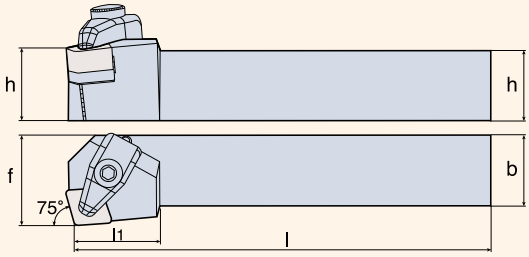
Designation		R	L	h	b	l	l1	f	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
				Dimension (mm)						Components					
TCBNR/L	2525 M12-CH			25	25	150	34.4	22	CNGX 1207□□ CH	CCL 4	CSC 4	S 48	BH M5 X 0.8 X 10	DSP 5	L-W 4
	3225 P12-CH			32	25	170	34	22							

- For inserts, see page A58
- For spare part, see page A167 - A177

● Marked: Standard Items

TCKNR/L-CH



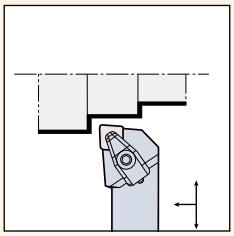


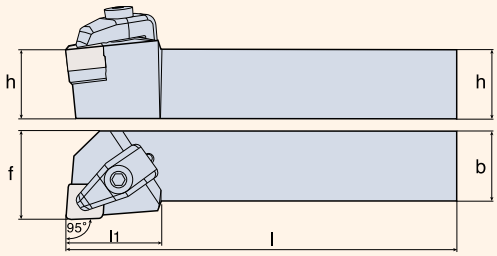
Designation		R	L	h	b	l	l1	f	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
				Dimension (mm)						Components					
TCKNR/L	2525 M12-CH			25	25	150	28	32	CNGX 1207□□ CH	CCL 4	CSC 4	S 48	BH M5 X 0.8 X 10	DSP 5	L-W 4
	3225 P12-CH			32	25	170	28	32							

- For inserts, see page A58
- For spare part, see page A167 - A177

● Marked: Standard Items

TCLNR/L-CH



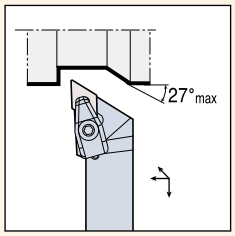


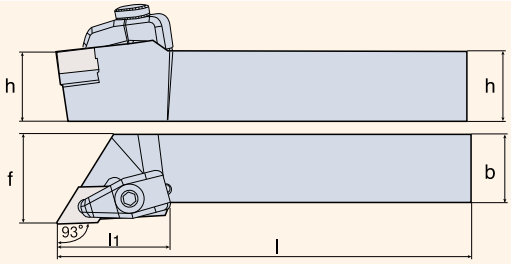
Designation		R	L	h	b	l	l1	f	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
				Dimension (mm)						Components					
TCLNR/L	2525 M12-CH	●	●	25	25	150	33	32	CNGX 1207□□ CH	CCL 4	CSC 4	S 48	BH M5 X 0.8 X 10	DSP 5	L-W 4
	3225 P12-CH			32	25	170	33	32							

- For inserts, see page A58
- For spare part, see page A167 - A177

● Marked: Standard Items

TDJNR/L-CH



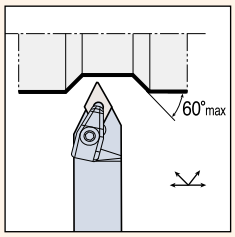


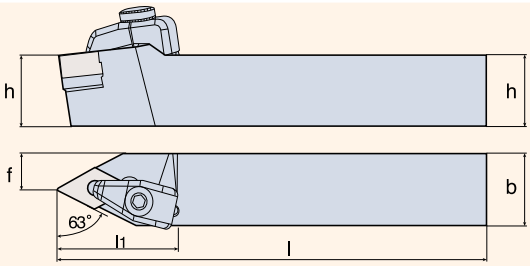
Designation		R	L	h	b	l	l1	f	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
				Dimension (mm)						Components					
TDJNR/L	2525 M15-CH			25	25	150	38	32	DNGX 1507□□ CH	CCL 4	CSC 4	S 45	BH M5 X 0.8 X 10	DSP 5	L-W 4
	3225 P15-CH			32	25	170	38	32							

- For inserts, see page A59
- For spare part, see page A167 - A177

● Marked: Standard Items

TDNNN-CH



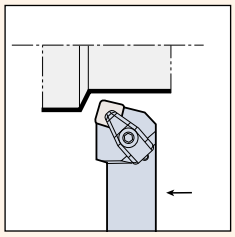


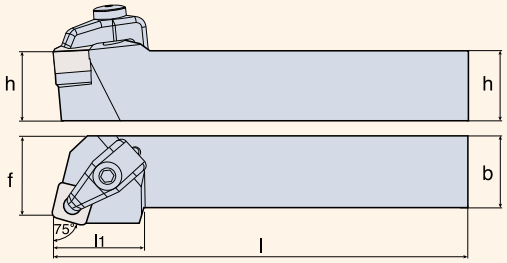
Designation			h	b	l	l1	f	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
			Dimension (mm)						Components					
TDNNN	2525 M15-CH		25	25	150	40	12.5	DNGX 1507□□ CH	CCL 4	CSC 4	S 45	BH M5 X 0.8 X 10	DSP 5	L-W 4
	3225 P15-CH		32	25	170	40	12.5							

- For inserts, see page A59
- For spare part, see page A167 - A177

● Marked: Standard Items

TSRNR/L-CH



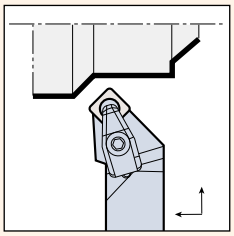


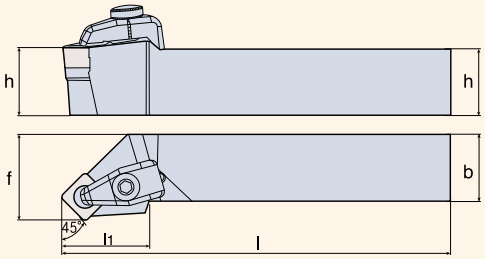
Designation		R	L	h	b	l	l1	f	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
				Dimension (mm)						Components					
TSRNR/L	2525 M12-CH			25	25	150	32	27	SNGX 1207□□ CH	CCL 4	CSC 4	S 40	BH M5 X 0.8 X 10	DSP 5	L-W 4
	3225 P12-CH			32	25	170	32	27							

- For inserts, see page A60
- For spare part, see page A167 - A177

● Marked: Standard Items

TSSNR/L-CH





Designation			Dimension (mm)					Insert	Components					
									Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
	R	L	h	b	l	l_1	f							
TSSNR/L 2525 M12-CH			25	25	150	35	32	SNGX 1207□□ CH	CCL 4	CSC 4	S 40	BH M5 X 0.8 X 10	DSP 5	L-W 4
3232 P12-CH			32	32	170	35	40							
3225 P15-CH			32	25	170	35	32	SNGX 1507□□ CH			S 50			

- For inserts, see page A60
- For spare part, see page A167 - A177

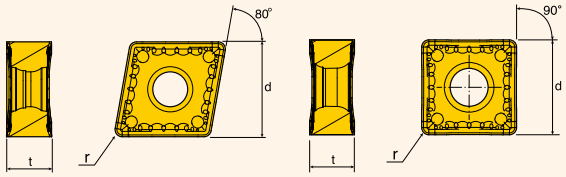
● Marked: Standard Items

TOPDUTY
TOPFEED
TOPRAIL
TURN•RUSH

CNMX HB SNMX HB

(mm)

Designation	d	t	r
CNMX 160712 HB	15.88	6.92	1.2
CNMX 160716 HB	15.88	6.92	1.6
SNMX 150712 HB	15.88	6.92	1.2
SNMX 150716 HB	15.88	6.92	1.6

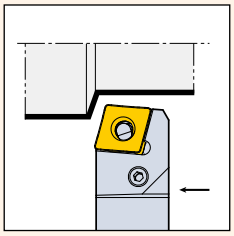


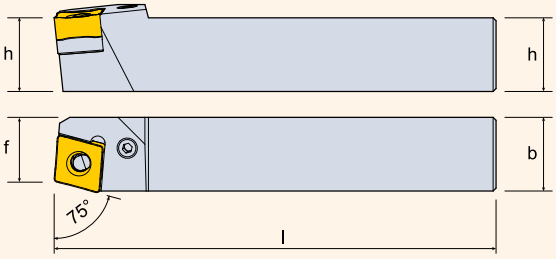
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation		Recommended Machining Conditions		Grade & Vc (m/min)																		
					Cermet		CVD Coated										PVD Coated				Uncoated		
			feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
	CNMX	160712 HB	0.30 - 0.80	1.5 - 8.0					● 250	● 230													
		160716 HB	0.30 - 0.80	1.5 - 8.0					●	●													
	SNMX	150712 HB	0.30 - 0.80	1.5 - 8.0					● 250	● 230													
		150716 HB	0.30 - 0.80	1.5 - 8.0					●	●													

● Marked: Standard Items

HCBNR/L



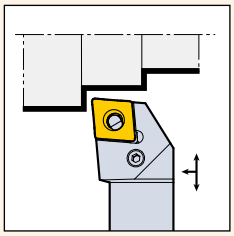


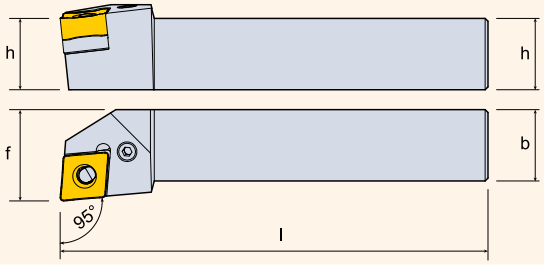
Designation			Dimension (mm)				Insert	Components					
								Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench
	R	L	h	b	l	f	80°						
HCBNR/L 2525 M1607	●	●	25	25	150	22	CNMX 1607 □□ HB	LCL 16-NX	LCS 5-L25.5	LSC 54-NX	LSP 5	SPP 5-6	L-W 3
3232 P1607	●	●	32	32	170	27							

• For spare part, see page A167 - A177

● Marked: Standard Items

HCLNR/L



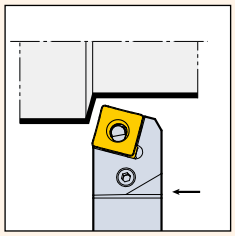


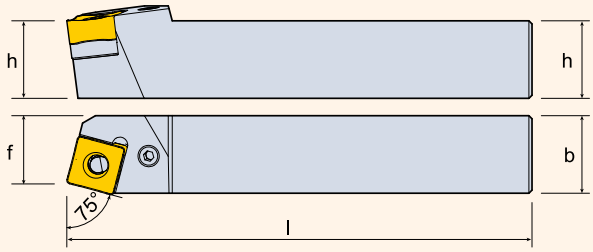
Designation			Dimension (mm)				Insert	Components					
								Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench
	R	L	h	b	l	f	80°						
HCLNR/L 2525 M1607	●	●	25	25	150	32	CNMX 1607□□ HB	LCL 16-NX	LCS 5-L25.5	LSC 54-NX	LSP 5	SPP 5-6	L-W 3
3232 P1607	●	●	32	32	170	40							

• For spare part, see page A167 - A177

● Marked: Standard Items

HSBNR/L



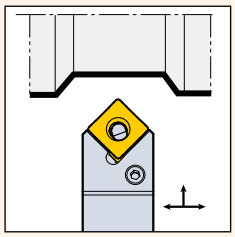


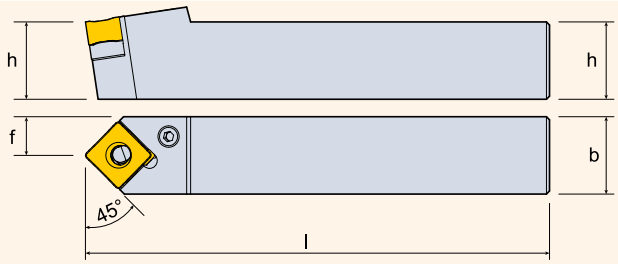
Designation			Dimension (mm)				Insert	Components					
								Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench
	R	L	h	b	l	f							
HSBNR/L 2525 M1507	●	●	25	25	150	22	SNMX 1507□□ HB	LCL 16-NX	LCS 5-L25.5	LSS 54-NX	LSP 5	SPP 5-6	L-W 3
3232 P1507	●	●	32	32	170	27							

• For spare part, see page A167 - A177

● Marked: Standard Items

HSDNN



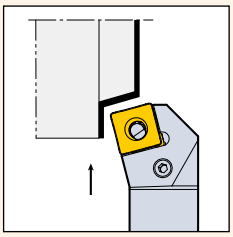


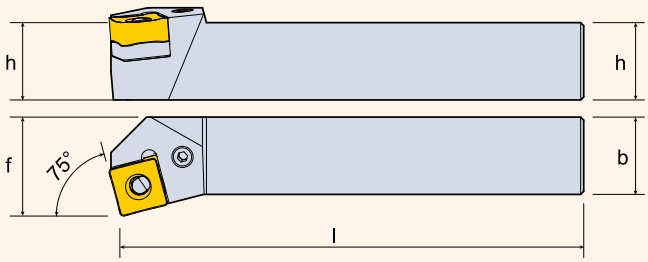
Designation		Dimension (mm)				Insert	Components					
							Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench
		h	b	l	f							
HSDNN 2525 M1507	●	25	25	150	12.5	SNMX 1507□□ HB	LCL 16-NX	LCS 5-L25.5	LSS 54-NX	LSP 5	SPP 5-6	L-W 3
3232 P1507	●	32	32	170	16							

• For spare part, see page A167 - A177

● Marked: Standard Items

HSKNR/L

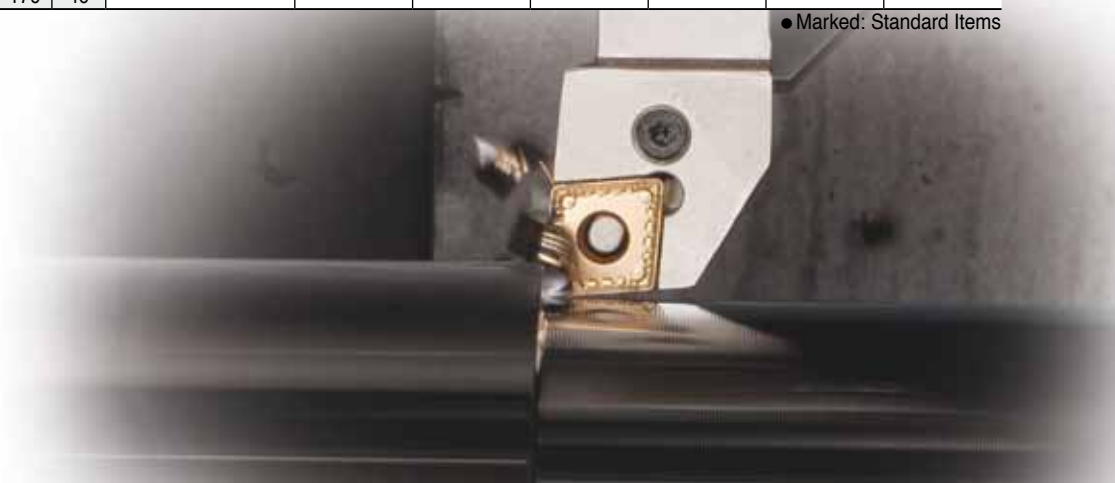




Designation			Dimension (mm)				Insert	Components					
								Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench
	R	L	h	b	l	f							
HSKNR/L 2525 M1507	●	●	25	25	150	32	SNMX 1507□□ HB	LCL 16-NX	LCS 5-L25.5	LSS 54-NX	LSP 5	SPP 5-6	L-W 3
3232 P1507	●	●	32	32	170	40							

• For spare part, see page A167 - A177

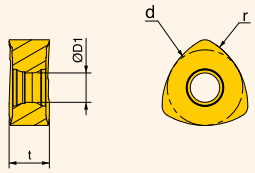
● Marked: Standard Items



BNMX HF

(mm)

Designation	d	t	r	ØD1
BNMX 150720R/L HF	15	8	15	6.2

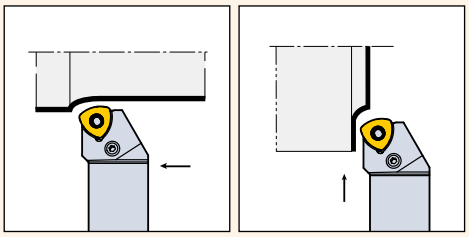


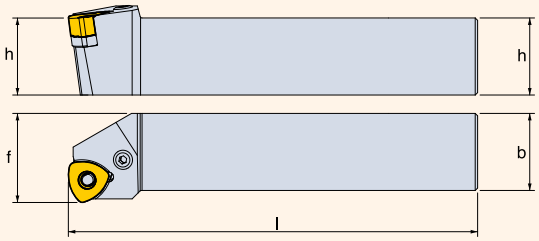
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation	Recommended Machining Conditions		Grade & Vc (m/min)																		
				Cermet		CVD Coated										PVD Coated				Uncoated		
		feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
	BNMX 150720R/L HF	0.5 - 2.5	0.5 - 2.5					● 200	● 170													

● Marked: Standard Items

HBXNR/L

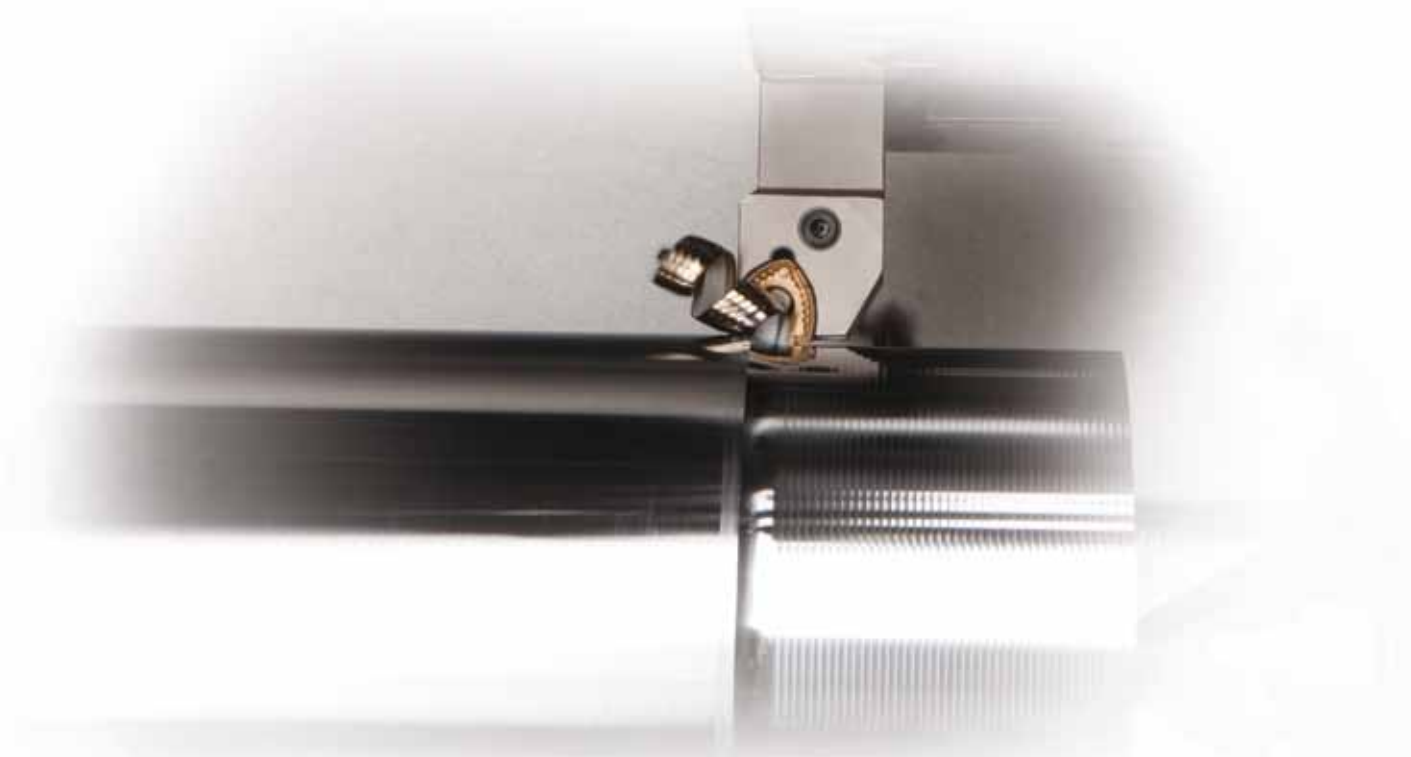




Designation			Dimension (mm)				Insert	Components					
								Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench
	R	L	h	b	l	f							
HBXNR/L 2525 M1507	●	●	25	25	150	30	BNMX 150720R/L-HF	LCL 16-NX	LCS 5-L25.5	LSB 53 R/L	LSP 5	SPP 5-6	L-W 3
HBXNR/L 3232 P1507	●	●	32	32	170	37							

• For spare part, see page A167 - A177

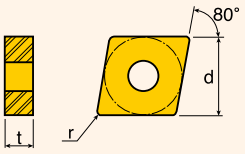
● Marked: Standard Items



CNMD HD HT HY HZ

(mm)

Designation	d	t	r
CNMD 190624	19.05	6.35	2.4
CNMD 250924	25.40	9.52	2.4



- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

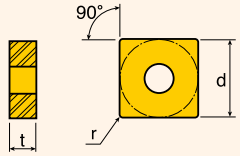
Insert	Designation	Recommended Machining Conditions		Grade & Vc (m/min)																		
				Cermet		CVD Coated											PVD Coated				Uncoated		
		feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
For Roughing For Finishing	CNMD 250924 HD	0.55 - 1.50	4.0 - 15.0					● 270	● 245													
For Roughing For Finishing	CNMD 190624 HT	0.35 - 0.90	4.0 - 9.0					● 270	● 245													
	250924 HT	0.55 - 1.30	5.0 - 12.0					●	●													
For Roughing For Finishing	CNMD 190624 HY	0.50 - 1.10	4.0 - 12.0					● 260	● 235													
	250924 HY	0.55 - 1.50	4.0 - 15.0					●	●													
For Roughing For Finishing	CNMD 250924 HZ	0.55 - 1.50	4.0 - 15.0					● 260	● 235													

● Marked: Standard Items

SNMD HD HT HY HZ

(mm)

Designation	d	t	r
SNMD 190624	19.05	6.35	2.4
SNMD 250924	25.40	9.52	2.4
SNMD 310924	31.75	9.525	2.4



- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation	Recommended Machining Conditions		Grade & Vc (m/min)																		
				Cermet		CVD Coated										PVD Coated				Uncoated		
		feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
For Roughing For Finishing	SNMD 250924 HD	0.55 - 1.50	4.0 - 15.0					● 270	● 245													
For Roughing For Finishing	SNMD 190624 HT	0.55 - 1.20	4.0 - 9.0					● 270	● 245													
	250924 HT	0.55 - 1.30	5.0 - 12.0					●	●													
For Roughing For Finishing	SNMD 190624 HY	0.50 - 1.10	4.0 - 12.0					● 260	● 235													
	250924 HY	0.55 - 1.50	4.0 - 15.0					●	●													
For Roughing For Finishing	SNMD 250924 HZ	0.55 - 1.50	4.0 - 15.0					● 260	● 235													

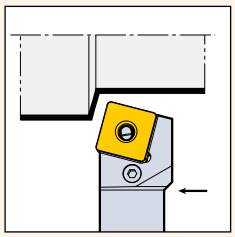
● Marked: Standard Items

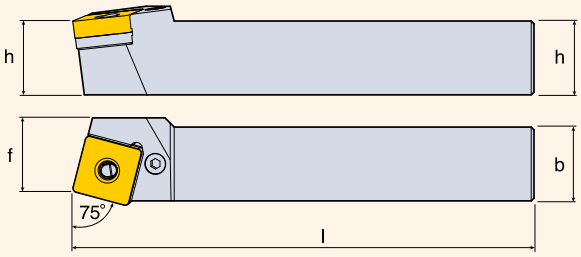
SNMD 31 HD HT

Insert	Designation	Recommended Machining Conditions		Grade & Vc (m/min)																		
				Cermet		CVD Coated											PVD Coated				Uncoated		
		feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
For Heavy For Finishing	SNMD 310924 HD	0.60 - 1.50	7.0 - 25.0					● 210	● 180						● 100							
For Heavy For Finishing	SNMD 310924 HT	0.50 - 1.40	6.0 - 22.0					● 210	● 180						● 100							

● Marked: Standard Items

HSBNR/L



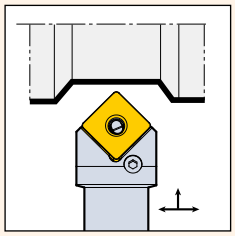


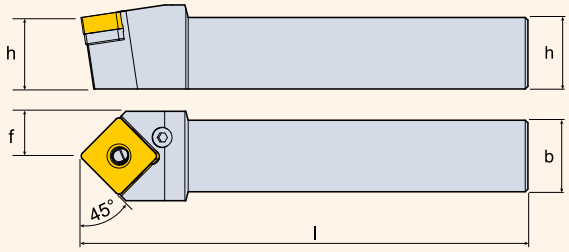
Designation			Dimension (mm)				Insert	Components				
								Lever	Screw	Shim	Shim Pin	Wrench
	R	L	h	b	l	f						
HSBNR/L 4040 S3109	●	●	40	40	250	35	SNM□3109□□	LCL 32-NX	LCS 8	LSS 104	LSP 8	L-W 5
5050 T3109	●	●	50	50	300	43						

• For spare part, see page A167 - A177

● Marked: Standard Items

HSDNN



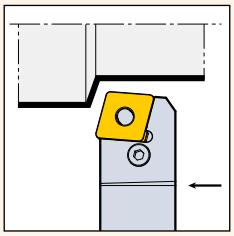


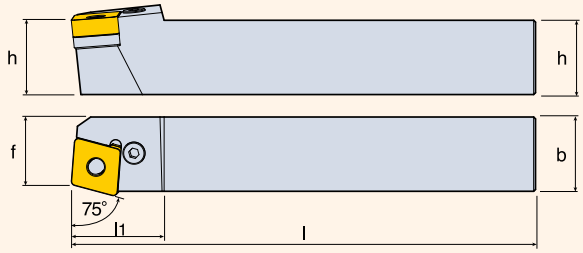
Designation		Dimension (mm)				Insert	Components				
							Lever	Screw	Shim	Shim Pin	Wrench
		h	b	l	f						
HSDNN 4040 S3109	●	40	40	250	20	SNM□3109□□	LCL 32-NX	LCS 8	LSS 104	LSP 8	L-W 5
5050 T3109	●	50	50	300	25						

• For spare part, see page A167 - A177

● Marked: Standard Items

PCBNR/L-D



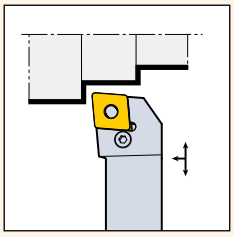


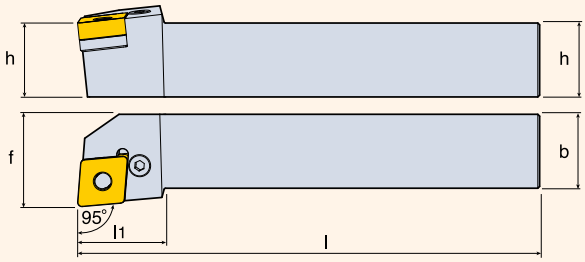
Designation			Dimension (mm)					Insert	Components				
									Lever	Screw	Shim	Shim Pin	Wrench
	R	L	h	b	l	l1	f	80°					
PCBNR/L 3232 P1906D	●	●	32	32	170	37	27	CN□□ 1906□□	LCL 6	LCS 25C	LSC 64D	LSP 6	L-W 4
4040 S1906D	●	●	40	40	250	37	37						
4040 S2509D	●	●	40	40	250	50	37	CN□□ 2509□□	LCL 8	LCS 8	LSC 84D	LSP 8	L-W 5
5050 T2509D	●	●	50	50	300	50	47						

- For spare part, see page A167 - A177
- LSC 85D Shim can be used for CN□□ 2507□□ Insert.

● Marked: Standard Items

PCLNR/L-D



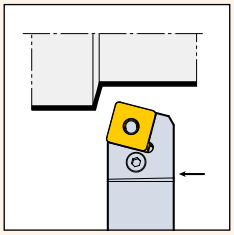


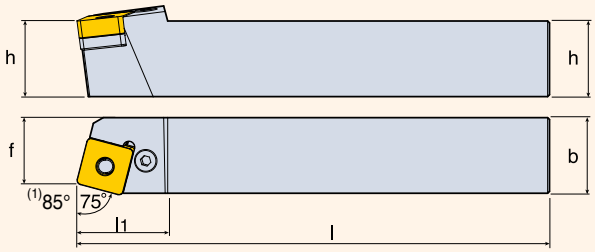
Designation			Dimension (mm)					Insert	Components				
									Lever	Screw	Shim	Shim Pin	Wrench
	R	L	h	b	l	l1	f	80°					
PCLNR/L 3225 P1906D	●	●	32	25	170	38	32	CN□□ 1906□□	LCL 6	LCS 25C	LSC 64D	LSP 6	L-W 4
3232 P1906D	●	●	32	32	170	38	40						
4040 S1906D	●	●	40	40	250	38	50						
4040 S2509D	●	●	40	40	250	47	50	CN□□ 2509□□	LCL 8	LCS 8	LSC 84D	LSP 8	L-W 5
5050 T2509D	●	●	50	50	300	47	60						

- For spare part, see page A167 - A177
- LSC 85D Shim can be used for CN□□ 2507□□ Insert.

● Marked: Standard Items

PSBNR/L-D



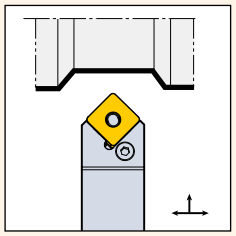


Designation			Dimension (mm)					Insert	Components				
									Lever	Screw	Shim	Shim Pin	Wrench
	R	L	h	b	l	l1	f						
PSBNR/L 3232 P1906D	●	●	32	32	170	39	27	SN□□ 1906□□	LCL 6	LCS 25C	LSS 64D	LSP 6	L-W 4
4040 S1906D	●	●	40	40	250	39	35						
4040 S2509D	●	●	40	40	250	48	35	SN□□ 2509□□	LCL 8	LCS 8	LSS 84D	LSP 8	L-W 5
4040 S2509D-A85(1)	●	●	40	40	250	48	39.5						
5050 T2509D	●	●	50	50	300	48	43						

- For spare part, see page A167 - A177
- LSS 85D Shim can be used for SN□□ 2507□□ Insert.
- (1) 4040 S2509D-A85 in 85°

● Marked: Standard Items

PSDNN-D

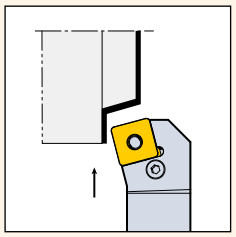


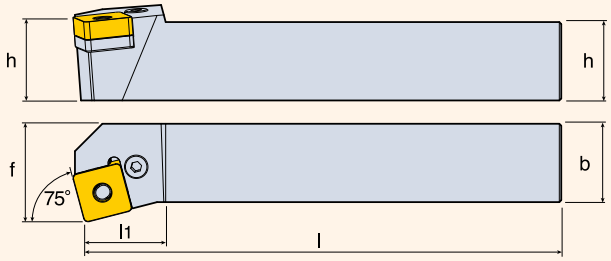
Designation		Dimension (mm)					Insert	Components				
								Lever	Screw	Shim	Shim Pin	Wrench
		h	b	l	l_1	f						
PSDNN 3225 P1906D	●	32	25	170	40.5	12.5	SN□□ 1906□□	LCL 6	LCS 25C	LSS 64D	LSP 6	L-W 4
3232 P1906D	●	32	32	170	40.5	16						
4040 S1906D	●	40	40	250	40.5	20						
4040 S2509D	●	40	40	250	48	20	SN□□ 2509□□	LCL 8	LCS 8	LSS 84D	LSP 8	L-W 5
5050 T2509D	●	50	50	300	48	25						

- For spare part, see page A167 - A177
- LSS 85D Shim can be used for SN□□ 2507□□ Insert.

● Marked: Standard Items

PSKNR/L-D





Designation			Dimension (mm)					Insert	Components				
									Lever	Screw	Shim	Shim Pin	Wrench
	R	L	h	b	l	l_1	f						
PSKNR/L 4040 S2509D	●	●	40	40	250	42	50	SN□□ 2509□□	LCL 8	LCS 8	LSS 84D	LSP 8	L-W 5

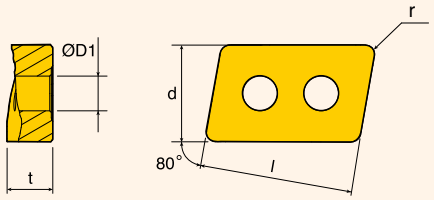
- For spare part, see page A167 - A177
- LSS 85D Shim can be used for SN□□ 2507□□ Insert.

● Marked: Standard Items

LNMM HX

(mm)

Designation	l	d	t	r	ØD1
LNMM 401224R/L-HX	40	25.4	12	2.4	9.15

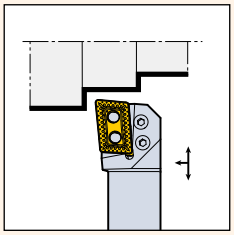


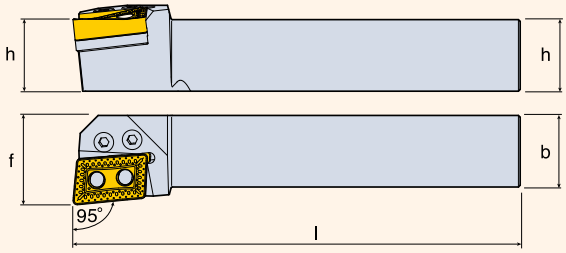
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation	Recommended Machining Conditions		Grade & Vc (m/min)																		
				Cermet		CVD Coated										PVD Coated				Uncoated		
		feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
	LNMM 401224R/L-HX	0.70 - 1.50	6.0 - 32.0						● 150						● 90							

● Marked: Standard Items

2PLLNR/L





Designation			Dimension (mm)				Insert	Components				
								Lever	Screw	Shim	Shim Pin	Wrench
	R	L	h	b	l	f						
2PLLNR/L 4040 S4012	●	●	40	40	250	50	LNMM 401224R/L-HX	LCL 8	LCS 8-L39	LN 4025-T6.35 R/L	LSP 8	L-W 5
5050 T4012	●	●	50	50	300	60						

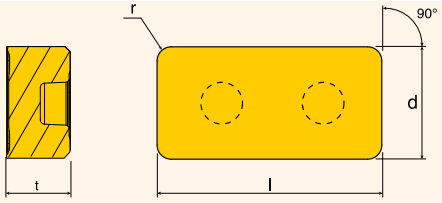
• For spare part, see page A167 - A177

● Marked: Standard Items

LNMX HD LNMX HY

(mm)

Designation	l	d	t	r
LNMX 501432 HD	50.8	25.4	14.2	3.2
LNMX 501432 HY	50.8	25.4	14.2	3.2

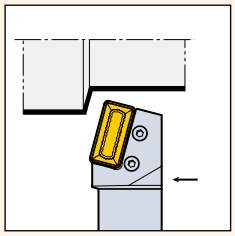


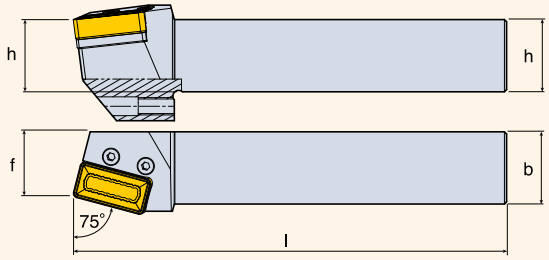
- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation	Recommended Machining Conditions		Grade & Vc (m/min)																		
				Cermet		CVD Coated										PVD Coated				Uncoated		
		feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
	LNMX 501432 HD	0.70 - 1.60	6.0 - 40.0						● 150						● 90							
	LNMX 501432 HY	0.65 - 1.50	5.0 - 40.0						● 150						● 90							

● Marked: Standard Items

2PLBNR/L





Designation			Dimension (mm)				Insert	Components					
								Lever	Screw	Shim	Shim Pin	Set Screw	Wrench
	R	L	h	b	l	f							
2PLBNR/L 5050 T5014	●	●	50	50	300	45	LNMX 501432	LCL 8	LCS 8-L43	LN 5025-T6.35	LSP 8	SS M12X1.75X25	L-W 5

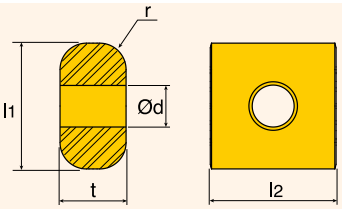
• For spare part, see page A167 - A177

● Marked: Standard Items

LNMX TWF TWM TWR

(mm)

Designation	l1	l2	Ød	t	r
LNMX 191940	19.05	19.05	6.35	10	4.0
LNMX 301940	30	19.05	6.35	12	4.0

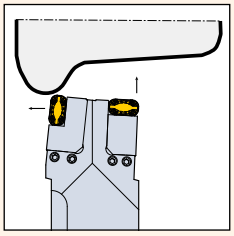


- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation	Recommended Machining Conditions		Grade & Vc (m/min)																		
				Cermet		CVD Coated										PVD Coated				Uncoated		
		feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
	LNMX 191940 TWF	0.30 - 1.0	0.3 - 5.0					● 100	● 70													
	LNMX 191940 TWM	0.45 - 1.5	1.5 - 9.0					●	●													
	301940 TWM	0.50 - 1.5	1.5 - 15.0					● 80	● 60													
	LNMX 301940 TWR	0.70 - 1.8	2.0 - 15.0					● 80	● 50													

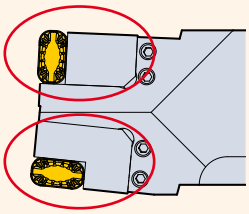
● Marked: Standard Items

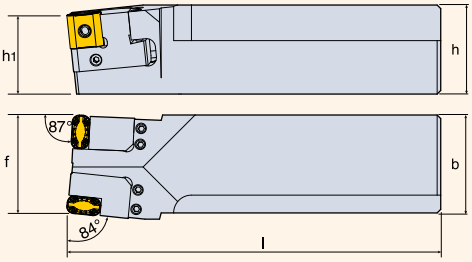
TRWR/L

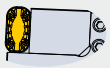
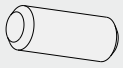


TRWR/L 177-CA-19

TRWR/L 175-CA-19
TRWR/L 175-CA-30





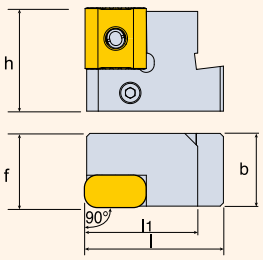
Designation			Dimension (mm)					Cartridge		Components		
								Left	Right	Screw	Pin	Wrench
	R	L	h	h1	b	l	f					
TRWR/L 50-55 TG	●	●	50	44	55	210	55	TRWR/L 175-CA-19 TRWR/L 175-CA-30	TRWR/L 177-CA-19	SS M6 X 1 X 16	PIN D5X13	L-W 3

• For spare part, see page A167 - A177

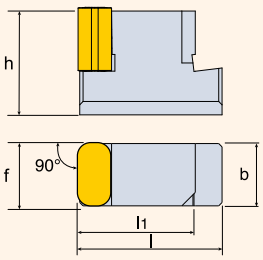
● Marked: Standard Items

TRWR/L - Cartridge

TRWR/L 175-CA-19
TRWR/L 175-CA-30



TRWR/L 177-CA-19



Designation			Dimension (mm)					Insert	Components		
									Lever	Screw	Wrench
	R	L	h	b	l	l1	f				
TRWR/L 175-CA-19	●	●	32	22.6	43	35	23	LNMX 191940 □□□	LCL 5	LCS 5	L-W 3
175-CA-30	●	●	32	22.6	43	35	23	LNMX 301940 □□□			
177-CA-19	●	●	32	18.6	43	35	19	LNMX 191940 □□□			

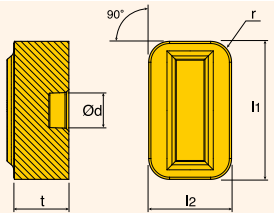
• For spare part, see page A167 - A177

● Marked: Standard Items

SRR TX

(mm)

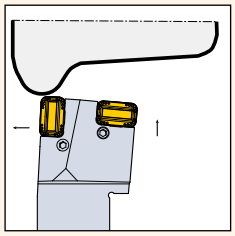
Designation	l_1	l_2	Ød	t	r
SRR-TX	31.75	19.05	7.91	12.7	4.8

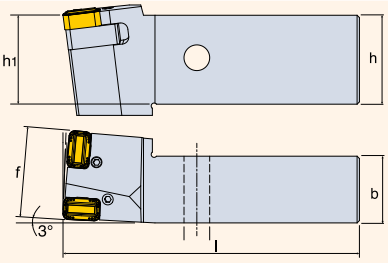


- P Carbon Steel C: 0.45%
- M Austenitic Stainless Steel
- K High Tensile Cast Iron
- N Aluminum
- S Inconel
- H Hardened Steel

Insert	Designation	Recommended Machining Conditions		Grade & Vc (m/min)																		
				Cermet		CVD Coated										PVD Coated				Uncoated		
		feed (mm/rev)	ap (mm)	PV3010	CT3000	TT1300	TT7310	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
	SRR-TX	0.60 - 1.8	1.5 - 20.0																			

TRWR/L...LD





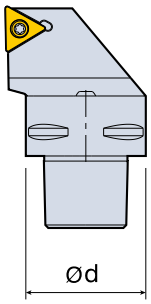
Designation			Dimension (mm)					Insert	Components			
									Shim1	Shim2	Screw	Wrench
	R	L	h	h_1	b	l	f					
TRWR/L 57.2-76.2 LD			76.2	76.2	57.2	254	76.2	SRR-□□□	SRR-SHIM	SRR-SH-R/L	SRR-SCR	L-W 5

- For spare part, see page A167 - A177
- Insert and holder can be supplied by quotation.

● Marked: Standard Items

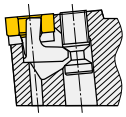
C-ADAPTER Designation System

1 Coupling Size

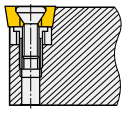


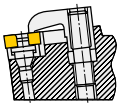
Symbol	Ød(mm)
C4	40
C5	50
C6	63

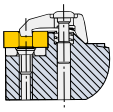
2 Clamping System

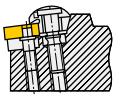

P/Lever Lock

C/Top Clamp


S/Screw Clamp


M/Multi Lock


T-Holder


W/Wedge Clamp

3 Insert Shape

C

D

E

H

K

R

S

T

V

W

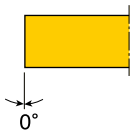
C4	–	T	C	L	N	R
1		2	3	4	5	6

4 Approach Angle

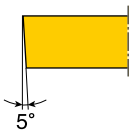
Symbol	Shape	Offset	Symbol	Shape	Offset	Symbol	Shape	Offset
A	90°	×	J	93°	○	V	72.5°	×
	90°		K	75°	○	W	60°	○
B	75°	×	L	95°	○	X		
			M	50°	×	C*	90°	×
D	45°	×	N	63°	×	H*	107.5°	○
E	60°	×	R	75°	○	Q*	45°	○
F	90°	○	S	45°	○			
G	90°	○	T	60°	○			
	90°		U	93°	○			

* TaeguTec standard

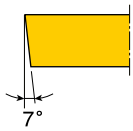
5 Insert Clearance Angle



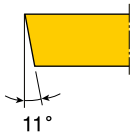
N



B

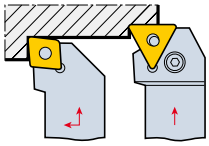


C



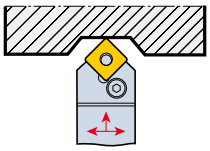
P

6 Hand of Tool



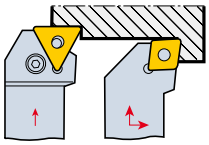
Right hand

R



Neutral

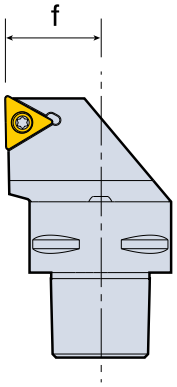
N



Left hand

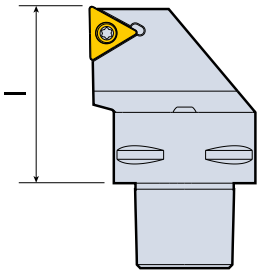
L

7 f dimension (mm)

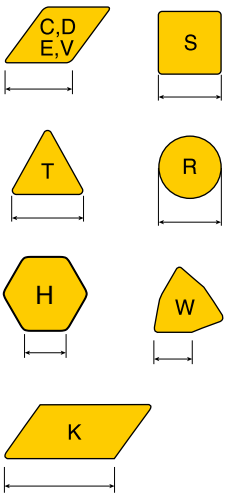


27	055	–	09	
7	8		9	10

8 Tool Length (mm)



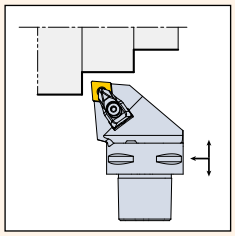
9 Cutting Edge Length

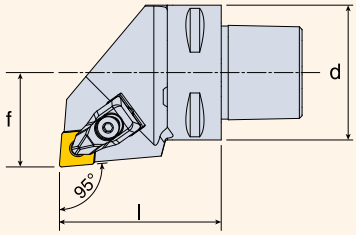


10 Manufacturer's Type Designation

Unique to manufacturer

TCLNR/L



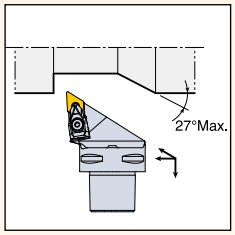


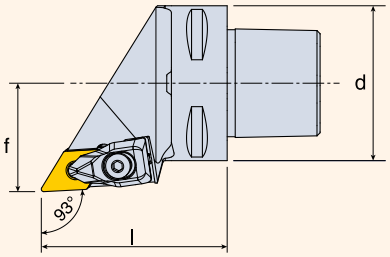
Designation			Dimension (mm)			Insert	Components						
							Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench
	R	L	d	f	l	80°							
C4-TCLNR/L 27050-09	●	●	40	27	50	CN□□ 0903□□	DLM 3	DLS 3	LSC 32	SO 40085I	DSP 3	NZ 83	L-W 2.5
C4-TCLNR/L 27050-12	●	●	40	27	50	CN□□ 1204□□	DLM 4	DLS 4	TSC 44	SO 40050I	DSP 4	NZ 83	L-W 3
C5-TCLNR/L 35060-12	●	●	50	35	60							NZ 104	
C6-TCLNR/L 45065-12	●	●	63	45	65								
C4-TCLNR/L 27055-16	●	●	40	27	55	CN□□ 1606□□	DLM 5	DLS 5	TSC 54	SO 50090I	DSP 5	NZ 83	L-W 4
C5-TCLNR/L 35060-19	●	●	50	35	60	CN□□ 1906□□	DLM 6	DLS 5	LSC 63	SO 80180I	DSP 5	NZ 104	
C6-TCLNR/L 45065-19	●	●	63	45	65								

- For inserts, see page A24 - A27
- For spare part, see page A167 - A177

● Marked: Standard Items

TDJNR/L



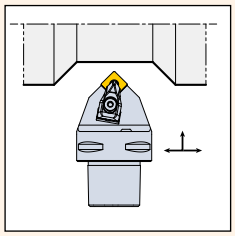


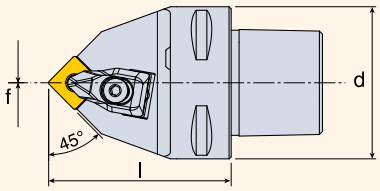
Designation			Dimension (mm)			Insert	Components						
							Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench
	R	L	d	f	l	55°							
C4-TDJNR/L 27055-1504	●	●	40	27	55	DN□□ 1504□□	DLM 4	DLS 4	TSD 44	SO 40050I	DSP 4	NZ 83	L-W 3
C4-TDJNR/L 27055-1506	●	●	40	27	55	DN□□ 1506□□			TSD 43				
C5-TDJNR/L 35060-1504	●	●	50	35	60	DN□□ 1504□□			TSD 44				
C5-TDJNR/L 35060-1506	●	●	50	35	60	DN□□ 1506□□			TSD 43			NZ 104	
C6-TDJNR/L 45065-1504	●	●	63	45	65	DN□□ 1504□□			TSD 44			NZ 83	
C6-TDJNR/L 45065-1506	●	●	63	45	65	DN□□ 1506□□			TSD 43			NZ 104	

- For inserts, see page A28 - A29
- For spare part, see page A167 - A177

● Marked: Standard Items

TSDNN



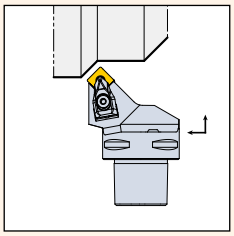


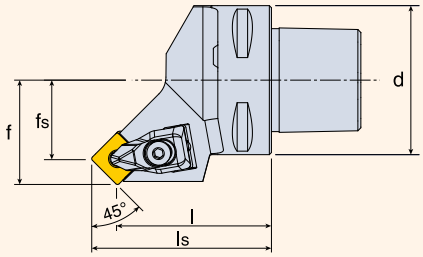
Designation		Dimension (mm)			Insert	Components						
						Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench
		d	f	l								
C4-TSDNN 00050-12	●	40	0	50	SN□□ 1204□□	DLM 4	DLS 4	TSS 44	SO 40050I	DSP 4	NZ 83	L-W 3
C5-TSDNN 00060-12	●	50	0	60							NZ 104	
C6-TSDNN 00065-12	●	63	0	65								

- For inserts, see page A31 - A33
- For spare part, see page A167 - A177

● Marked: Standard Items

TSSNR/L



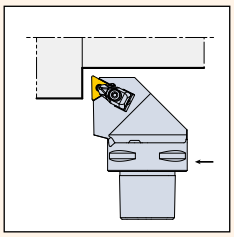


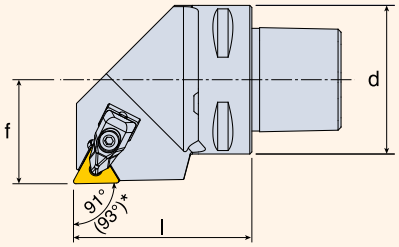
Designation	R	L	d	f	fs	l	ls	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench
C4-TSSNR/L 27042-12	●	●	40	27	18.7	42	50.3	SN□□ 1204□□	DLM 4	DLS 4	TSS 44	SO 40050I	DSP 4	NZ 83	L-W 3
C5-TSSNR/L 35052-12	●	●	50	35	26.7	52	60.3							NZ 104	
C6-TSSNR/L 45056-12	●	●	63	45	36.7	56	64.3								

- For inserts, see page A31 - A33
- For spare part, see page A167 - A177

● Marked: Standard Items

TTGNR/L TTJNR/L



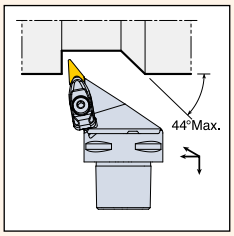


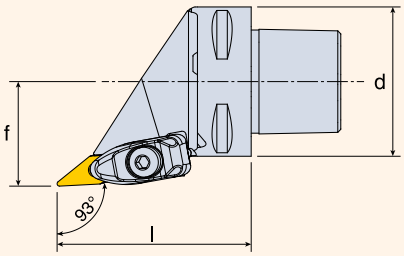
Designation	R	L	d	f	l	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench
C4-TTGNR/L 27050-16	●	●	40	27	50	TN□□ 1604□□	DLM 3	DLS 3	TST 33	SO 35080I	DSP 3	NZ 83	L-W 2.5
C5-TTGNR/L 35060-16	●	●	50	35	60							NZ 104	
C6-TTGNR/L 45065-16	●	●	63	45	65								
C4-TTJNR/L 27050-16	●	●	40	27	50							NZ 83	
C5-TTJNR/L 35060-16	●	●	50	35	60							NZ 104	
C6-TTJNR/L 45065-16	●	●	63	45	65								

- For inserts, see page A33 - A35
- For spare part, see page A167 - A177
- *Approach angle for TTJNR/L is 93 degrees.

● Marked: Standard Items

TVJNR/L



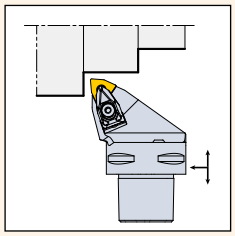


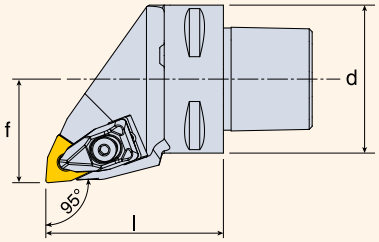
Designation	R	L	d	f	l	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench
C4-TVJNR/L 27062-16	●	●	40	27	62	VN□□ 1604□□	DLM 3V	DLS 5	TSV 33	SO 35080I	DSP 5	NZ 83	L-W 4
C5-TVJNR/L 35065-16	●	●	50	35	65							NZ 104	
C6-TVJNR/L 45068-16	●	●	63	45	68								

- For inserts, see page A36
- For spare part, see page A167 - A177

● Marked: Standard Items

TWLNR/L



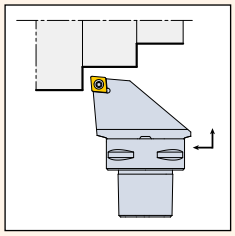


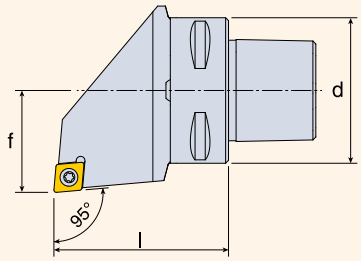
Designation			Dimension (mm)			Insert	Components						
							Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench
	R	L	d	f	l	80°							
C4-TWLNR/L 27050-06	●	●	40	27	50	WN□□ 0604□□	DLM 3	DLS 3	PSW 32	SO 40090I	DSP 3	NZ 83	L-W 2.5
C4-TWLNR/L 27050-08	●	●	40	27	50	WN□□ 0804□□	DLM 4	DLS 4	TSW 44	SO 40050I	DSP 4	NZ 104	L-W 3
C5-TWLNR/L 35060-08	●	●	50	35	60								
C6-TWLNR/L 45065-08	●	●	63	45	65								

- For inserts, see page A37 - A38
- For spare part, see page A167 - A177

● Marked: Standard Items

SCLCR/L



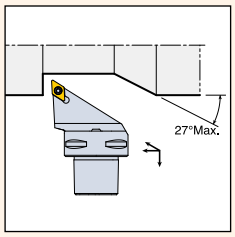


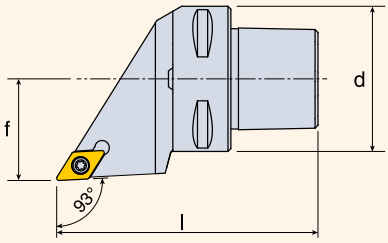
Designation			Dimension (mm)			Insert	Components				
							Screw	Shim	Shim Screw	Nozzle	Wrench
	R	L	d	f	l	80°					
C4-SCLCR/L 27050-09	●	●	40	27	50	CC□T 09T3□□	SO 35124I	SSC 32	SO 50090S	NZ 83	T 15
C5-SCLCR/L 35060-09	●	●	50	35	60					NZ 104	
C6-SCLCR/L 45065-09	●	●	63	45	65						
C4-SCLCR/L 27050-12	●	●	40	27	50	CC□T 1204□□	SO 45130I	SSC 43N	SO 60105S	NZ 83	T 20
C5-SCLCR/L 35060-12	●	●	50	35	60					NZ 104	
C6-SCLCR/L 45065-12	●	●	63	45	65						

- For inserts, see page A39 - A40
- For spare part, see page A167 - A177

● Marked: Standard Items

SDJCR/L



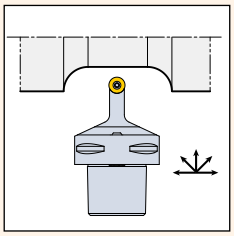


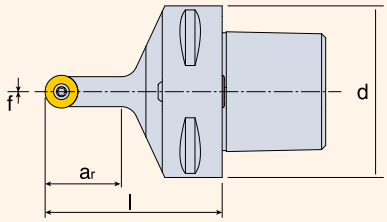
Designation			Dimension (mm)			Insert	Components				
							Screw	Shim	Shim Screw	Nozzle	Wrench
	R	L	d	f	l	55°					
C4-SDJCR/L 27050-11	●	●	40	27	50	DC□T 11T3□□	SO 35124I	SSD 32	SO 50090S	NZ 83	T 15
C5-SDJCR/L 35060-11	●	●	50	35	60					NZ 104	
C6-SDJCR/L 45065-11	●	●	63	45	65						

- For inserts, see page A41 - A42
- For spare part, see page A167 - A177

● Marked: Standard Items

SRDCN



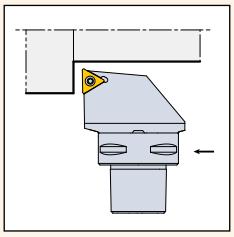


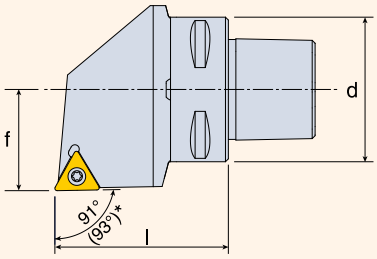
Designation		Dimension (mm)				Insert	Components				
							Screw	Shim	Shim Screw	Nozzle	Wrench
		d	f	l	ar						
C4-SRDCN 00050-10A	●	40	0	50	25	RC□T 10T300	TS 40097I	TRC 3-0	SR TC-3	NZ 83	T 15
C5-SRDCN 00060-10A	●	50	0	60	25					NZ 104	
C6-SRDCN 00065-10A	●	63	0	65	25						
C4-SRDCN 00050-12A	●	40	0	50	28	RC□T 120400	SO 40050I	TRC 4-0	SR TC-4S	NZ 83	
C5-SRDCN 00060-12A	●	50	0	60	28					NZ 104	
C6-SRDCN 00065-12A	●	63	0	65	28						

- For inserts, see page A42
- For spare part, see page A167 - A177

● Marked: Standard Items

STGCR/L STJCR/L



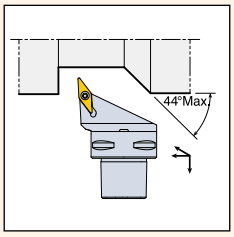


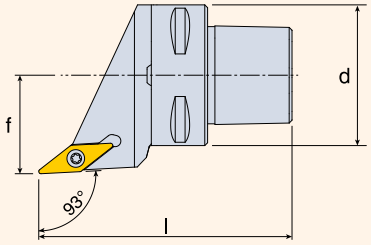
Designation			Dimension (mm)			Insert	Components				
							Screw	Shim	Shim Screw	Nozzle	Wrench
	R	L	d	f	l						
C4-STGCR/L 27050-16	●	●	40	27	50	TC□T 16T3□□	SO 35124I	SST 32	SO 50090S	NZ 83	T 15
C5-STGCR/L 35060-16	●	●	50	35	60					NZ 104	
C4-STJCR/L 27050-16	●	●	40	27	50					NZ 83	
C5-STJCR/L 35060-16	●	●	50	35	60					NZ 104	

- For inserts, see page A44
- For spare part, see page A167 - A177
- *Approach angle for STJCR/L is 93 degrees.

● Marked: Standard Items

SVJBR/L



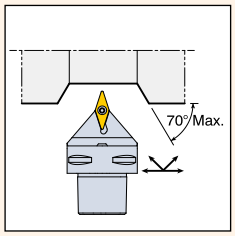


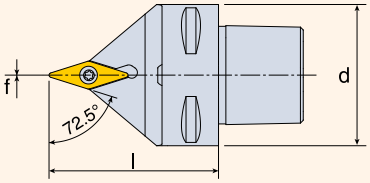
Designation			Dimension (mm)			Insert	Components				
							Screw	Shim	Shim Screw	Nozzle	Wrench
	R	L	d	f	l	35°					
C4-SVJBR/L 27050-16	●	●	40	27	50	VB□T 1604□□	SO 35124I	SSV 32	TS 5035062S	NZ 83	T 15
C5-SVJBR/L 35060-16	●	●	50	35	60					NZ 104	
C6-SVJBR/L 45065-16	●	●	63	35	65						

- For inserts, see page A46 - A47
- For spare part, see page A167 - A177

● Marked: Standard Items

SVVBN





Designation		Dimension (mm)			Insert	Components				
						Screw	Shim	Shim Screw	Nozzle	Wrench
		d	f	l	35°					
C4-SVVBN 00050-16	●	40	0	50	VB□T 1604□□	SO 35124I	SSV 32	TS 5035062S	NZ 83	T 15
C5-SVVBN 00060-16	●	50	0	60					NZ 104	
C6-SVVBN 00065-16	●	63	0	65						

- For inserts, see page A46 - A47
- For spare part, see page A167 - A177

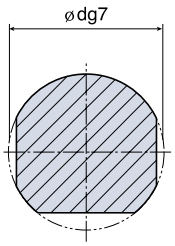
● Marked: Standard Items

T-TURN Boring Bar Designation System

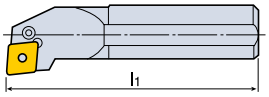
1 Boring Bar

- **S**: Steel Shank
- **A**: Coolant Through Steel Shank
- **C**: Carbide Shank
- **E**: Coolant Through Carbide Shank
- **X**: Special

2 Bar Diameter

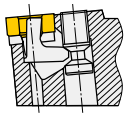


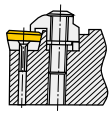
3 Tool Length

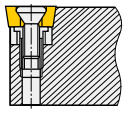


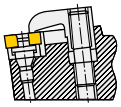
K	125	U	350
M	150	V	400
Q	180	W	450
R	200	Y	500
S	250	X	Special
T	300		

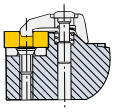
4 Clamping System

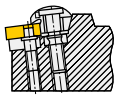

P/Lever Lock


C/Top Clamp


S/Screw Clamp


M/Multi Lock


T-Holder


W/Wedge Clamp

S	32	S	-	C	T	F	P	R	-	16	-	
1	2	3		4	5	6	7	8		9		10

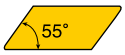
5 Insert Shape

C

D

E

H



K

R

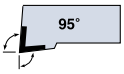
S

T

V

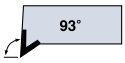
W

6 Approach Angle

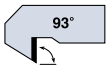


L

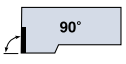
K



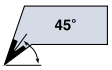
U



Z



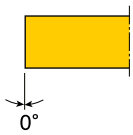
F



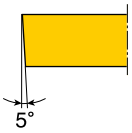
Q

P

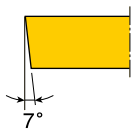
7 Insert Clearance Angle



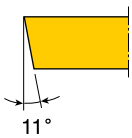
N



B



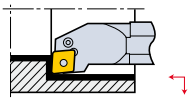
C



P

8 Hand of Tool

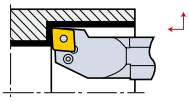
R



Right hand

*Left handed insert used

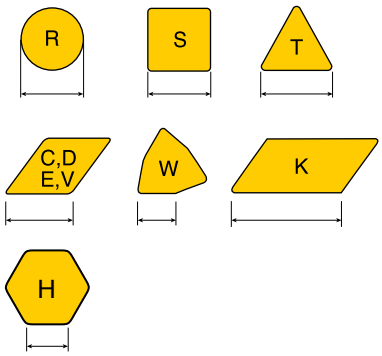
L



Left hand

*Right handed insert used

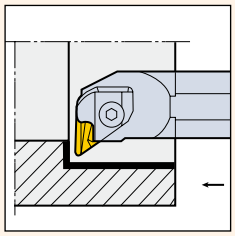
9 Cutting Edge Length

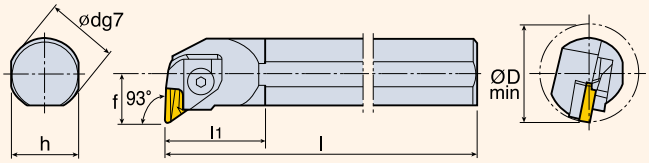


10 Manufacturer's Type Designation

Unique to manufacturer

S-CKUNR/L



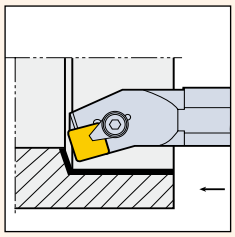


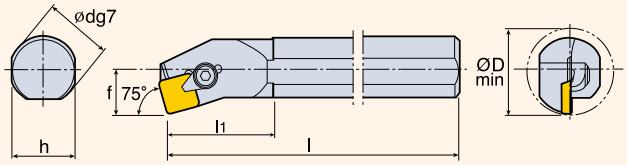
Designation	R	L	d	h	l	l1	f	ØD min	Insert	Clamp	Screw	Clamp Spring	Shim	Shim Screw	Pin & Spring	Wrench
									55°							
S32T CKUNR/L 16	●		32	30	300	45	22	44	KNUX 1604□□ R/L	CL 16KR/L	CLS 16K	KSP 90	CSK 1604R/L	FH M3 X 0.5 X 10	KSP 48 KP 48S	L-W 4
S40T CKUNR/L 16	●		40	38	300	55	27	54								
S40V CKUNR/L 16			40	38	400	55	27	54								
S50U CKUNR/L 16			50	48	350	60	35	67.2								

- For inserts, see page A30
- For spare part, see page A167 - A177

● Marked: Standard Items

S-CSKPR/L



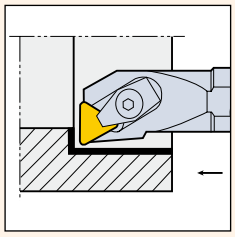


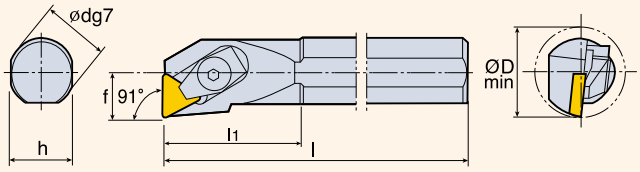
Designation	R	L	d	h	l	l1	f	ØD min	Insert	Clamp	Screw	Snap Ring	Shim	Shim Pin	Wrench
S16R CSKPR/L 09			16	15	200	30	11	20	SPMR, SP□N 0903□□	CL 2C	CLS 2C	CSR 2C	-	-	L-W 2.5
S20S CSKPR/L 09	●		20	18	250	32	13	25							
S20R CSKPR/L 12			20	18	200	34	13	25	SPMR, SP□N 1203□□	CL 3C	CLS 3C	CSR 2	CSS 42	CSP 3	L-W 3
S25T CSKPR/L 12			25	23	300	42	17	32		CL 3	CLS 3S	WSR 4			
S32U CSKPR/L 12			32	30	350	45	22	40		CL 3	CLS 3				

- For inserts, see page A43
- For spare part, see page A167 - A177

● Marked: Standard Items

S-CTFCR/L



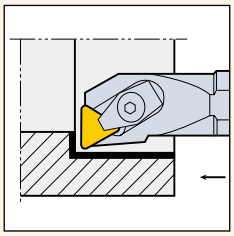


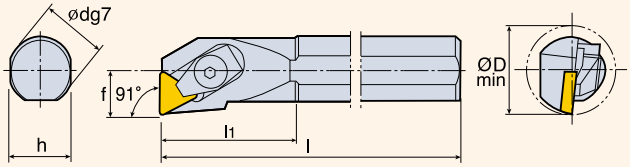
Designation	R	L	d	h	l	l1	f	ØD min	Insert	Clamp	Screw	Snap Ring	Wrench
S10K CTFCR/L 06	●		10	9	125	25	6.5	12	TCGR 0601□□	CL 1.25	CLS 1.25	CSR 1.25	L-W 1.5

- For spare part, see page A167 - A177

● Marked: Standard Items

S-CTFPR/L



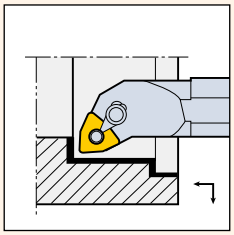


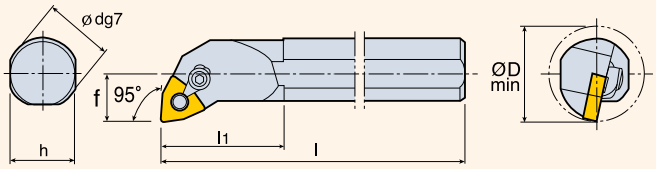
Designation	R	L	d	h	l	l1	f	ØD min	Insert	Clamp	Screw	Snap Ring	Shim	Shim Pin	Wrench
			Dimension (mm)							Components					
S10K CTFPR/L 06	●		10	9	125	25	6.5	12	TCGR 0601□□	CL 1.25	CLS 1.25	CSR 1.25	-	-	L-W 1.5
S12M CTFPR/L 06			12	11	150	30	9	16							
S12M CTFPR/L 09	●		12	11	150	25	9	16	TPGN, TP□R 0902□□						
S16R CTFPR/L 09			16	15	200	25	11	20							
S12M CTFPR/L 11	●		12	11	150	30	9	16	TPMR, TP□N 1103□□	CL 2C	CLS 2C	CSR 2C	-	-	L-W 2.5
S16M CTFPR/L 11			16	15	150	30	11	20							
S16R CTFPR/L 11	●		16	15	200	30	11	20							
S20S CTFPR/L 11	●		20	18	250	35	13	25							
S16R CTFPR/L 16	●		16	15	200	40	11	20	TPMR, TP□N 1603□□	CL 3C	CLS 3C	CSR 2	-	-	L-W 3
S20S CTFPR/L 16	●		20	18	250	50	13	25							
S25T CTFPR/L 16	●	●	25	23	300	40	17	32		CL 3	CLS 3S	WSR 4	CST 32	CSP 3	
S32T CTFPR/L 16	●		32	30	300	45	22	40			CLS 3				
S40T CTFPR/L 16	●	●	40	37	300	70	27	50							
S50U CTFPR/L 16			50	47	350	70	35	63							
S40T CTFPR/L 22			40	37	300	60	27	50	TPMR, TP□N 2204□□	CL 4	CLS 4	CSR 4	CST 43	CSP 16K	L-W 4
S50U CTFPR/L 22			50	47	350	70	35	63							

• For inserts, see page A45 - A46
• For spare part, see page A167 - A177

● Marked: Standard Items

S-MWLNR/L



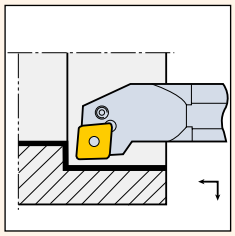


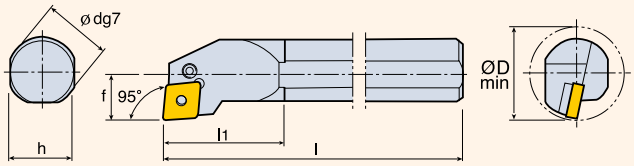
Designation	R	L	d	h	l	l1	f	ØD min	Insert	Clamp	Screw	Snap Ring	Lock Pin	Wrench
			Dimension (mm)							Components				
S25R MWLNR/L 08	●		25	23	200	42	17	32	WN□□ 0804□□	CL 2	CLS 2	CSR 2	MLP 4S	L-W 2.5
S32S MWLNR/L 08	●		32	30	250	45	22	44						

• For inserts, see page A37 - A38
• For spare part, see page A167 - A177

● Marked: Standard Items

S-PCLNR/L



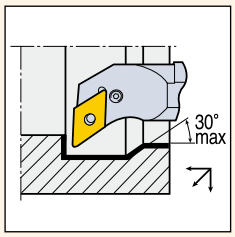


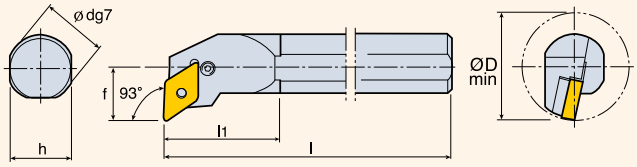
Designation			Dimension (mm)						Insert	Components					
										Lever	Screw	Shim	Shim Pin	Snap Ring	Wrench
	R	L	d	h	l	l1	f	ØD min	80°						
S16R PCLNR/L 09	●		16	15	200	30	11	20	CN□□ 0903□□	LCL 3B	LCS 2B	-	-	LSR 3B	L-W 2
S20S PCLNR/L 09	●	●	20	18	250	32	13	25							
S20T PCLNR/L 09	●		20	18	300	35	13	25							
S25T PCLNR/L 09	●		25	23	300	35	17	32							
S25T PCLNR/L 12	●	●	25	23	300	40	17	32	CN□□ 1204□□	LCL 4B	LCS 4B	-	-	LSR 4B	L-W 2.5
S32S PCLNR/L 12	●		32	30	250	45	22	40		LCL 4	LCS 4S	LSC 42	LSP 4	-	L-W 3
S32T PCLNR/L 12	●	●	32	30	300	45	22	40							
S40T PCLNR/L 12	●	●	40	37	300	55	27	50		LCL 4	LCS 4	LSC 42	LSP 4	-	L-W 3
S50U PCLNR/L 12	●	●	50	47	350	70	35	63							
S50U PCLNR/L 16	●		50	47	350	70	35	63	CN□□ 1606□□	LCL 5	LCS 5	LSC 53	LSP 5	-	L-W 3
S50U PCLNR/L 19	●	●	50	47	350	70	35	63	CN□□ 1906□□	LCL 6	LCS 6	LSC 63	LSP 6	-	L-W 4

- For inserts, see page A24 - A27
- For spare part, see page A167 - A177

● Marked: Standard Items

S-PDUNR/L



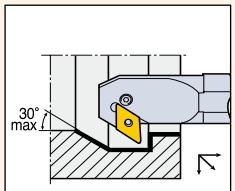


Designation			Dimension (mm)						Insert	Components				
										Lever	Screw	Shim	Shim Pin	Wrench
	R	L	d	h	l	l1	f	ØD min	55°					
S32T PDUNR/L 15	●	●	32	30	300	45	22	40	DN□□ 1506□□	LCL 4A	LCS 4S	LSD 42	LSP 4	L-W 3
S40T PDUNR/L 15	●	●	40	37	300	55	27	50		LCL 4A	LCS 4	LSD 42	LSP 4	L-W 3
S50U PDUNR/L 15	●	●	50	47	350	70	35	63						
S32T PDUNR/L 15-A	●		32	30	300	45	22	40	DN□□ 1504□□	LCL 4A	LCS 4S	LSD 42	LSP 4	L-W 3

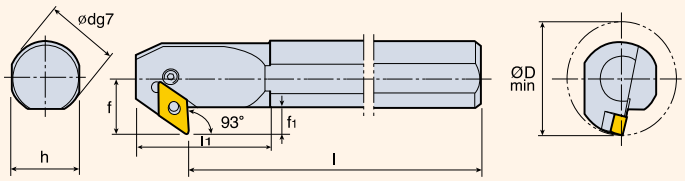
- For inserts, see page A28 - A29
- For spare part, see page A167 - A177

● Marked: Standard Items

S-PDZNR/L



For back boring

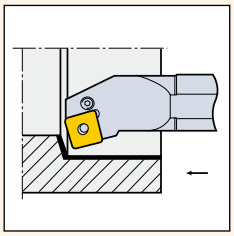


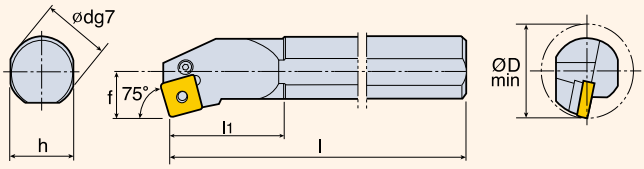
Designation			Dimension (mm)							Insert	Components				
											Lever	Screw	Shim	Shim Pin	Wrench
	R	L	d	h	l	l1	f	f1	ØD min	55°					
S32T PDZNR/L 15	●	●	32	30	300	30	25	9	45	DN□□ 1506□□	LCL 4A	LCS 4S	LSD 42	LSP 4	L-W 3
S40T PDZNR/L 15	●	●	40	37	300	35	29	9	50						
S50U PDZNR/L 15	●		50	47	350	40	35	10	63			LCS 4			

- For inserts, see page A28 - A29
- For spare part, see page A167 - A177

● Marked: Standard Items

S-PSKNR/L



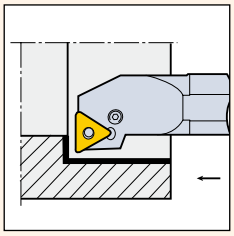


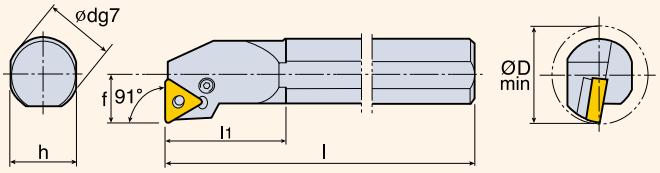
Designation	R	L	d	h	l	l1	f	ØD min	Insert	Lever	Screw	Shim	Shim Pin	Snap Ring	Wrench
S25T PSKNR/L 12	●		25	23	300	39	17	32	SN□□ 1204□□	LCL 4B	LCS 4B	-	-	LSR 4B	L-W 2.5
S32T PSKNR/L 12	●		32	30	300	45	22	40		LCL 4	LCS 4S	LSS 42	LSP 4	-	L-W 3
S40T PSKNR/L 12	●		40	37	300	55	27	50			LCS 4				
S50U PSKNR/L 19			50	47	350	66	35	63	SN□□ 1906□□	LCL 6	LCS 6	LSS 63	LSP 6	-	L-W 4

- For inserts, see page A31 - A33
- For spare part, see page A167 - A177

● Marked: Standard Items
- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

S-PTFNR/L



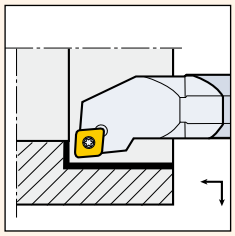


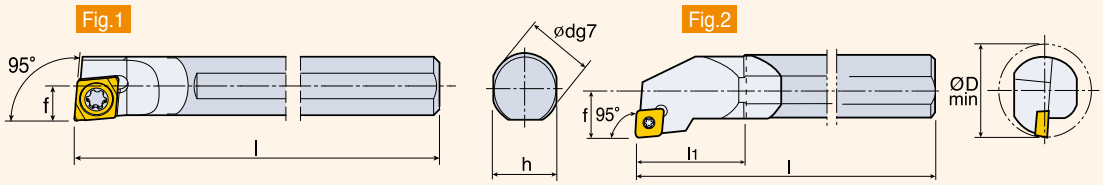
Designation	R	L	d	h	l	l1	f	ØD min	Insert	Lever	Screw	Shim	Shim Pin	Snap Ring	Wrench
S20Q PTFNR/L 11	●		20	18	180	40	13	25	TN□□ 1103□□	LCL 2B	LCS 2B	-	-	LSR 2B	L-W 2
S25T PTFNR/L 16	●	●	25	23	300	40	17	32	TN□□ 1604□□	LCL 3BH	LCS 3B	-	-	LSR 3B	L-W 2
S32T PTFNR/L 16	●	●	32	30	300	45	22	40		LCL 3	LCS 3	LST 31.8	LSP 3A	-	L-W 2.5
S40T PTFNR/L 16	●		40	37	300	60	27	50		LCL 3	LCS 3	LST 31.8	LSP 3A	-	
S50U PTFNR/L 16	●		50	47	350	70	35	63							
S40T PTFNR/L 22			40	37	300	70	27	50	TN□□ 2204□□	LCL 4	LCS 4	LST 42	LSP 4	-	L-W 3
S50U PTFNR/L 22			50	47	350	70	35	63							

- For inserts, see page A33 - A35
- For spare part, see page A167 - A177

● Marked: Standard Items
- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

C-SCLCR/L



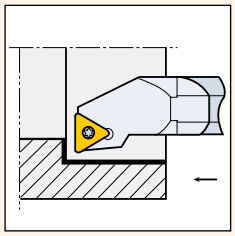


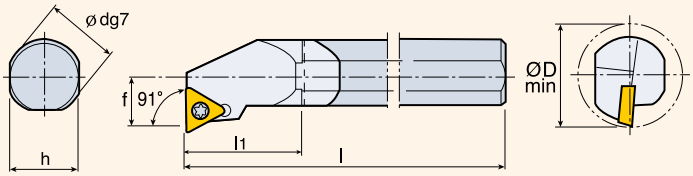
Designation	R	L	d	h	l	l1	f	ØD min	Insert	Screw	Wrench	Shape
C04G SCLCR/L 03-D05	●	●	4	3.75	90		2.5	5	CC□T 0301□□	TS 16031I	T 6	Fig.1
C05H SCLCR/L 03-D06	●	●	5	4.75	100		3	6				
C06J SCLCR/L 04-D07	●	●	6	5.5	110		3.5	7	CC□T 0401□□	TS 20038I/HG-P	T 6P	
C07K SCLCR/L 04-D08	●	●	7	6.5	125		4	8				
C08K SCLCR/L 06	●		8	7	125	15	6	11	CC□T 0602□□	SO 25050I	T 7	Fig.2
C10K SCLCR/L 06	●		10	9	125	15	7	13				
C12K SCLCR/L 06	●		12	11	125	20	9	16				
C12M SCLCR/L 06	●		12	11	150	20	9	16				
C12M SCLCR/L 09	●		12	11	150	20	9	16	CC□T 09T3□□	SO 35080I	T 15	
C16R SCLCR/L 09	●		16	15	200	25	11	20				
C20S SCLCR/L 09	●		20	18	250	25	13	25				

• For inserts, see page A39 - A40 • For spare part, see page A167 - A177 ● Marked: Standard Items

Designates Carbide Shank • L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

C-STFCR/L



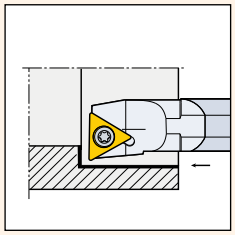


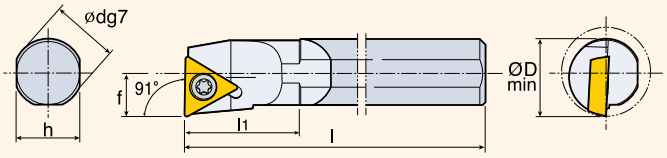
Designation	R	L	d	h	l	l1	f	ØD min	Insert	Screw	Wrench
C10K STFCR/L 09			10	9	125	15	7	13	TC□T 0902□□	SO 22050I	T 7
C10K STFCR/L 11			10	9	125	15	7	13	TC□T 1102□□	SO 25050I	T 7
C12M STFCR/L 11	●		12	11	150	20	9	16		SO 25065I	
C16R STFCR/L 11	●		16	15	200	25	11	20			

• For inserts, see page A44 • For spare part, see page A167 - A177 ● Marked: Standard Items

Designates Carbide Shank • L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

C-STFPR/L





Designation	R	L	d	h	l	l1	f	ØD min	Insert	Screw	Wrench
C10K STFPR/L 11	●		10	9	125	15	6	12	TPGT1103□□	SO 30055I	T 9
C12M STFPR/L 11	●		12	11	150	20	8	16		SO 30100I	

• For inserts, see page A45 • For spare part, see page A167 - A177 ● Marked: Standard Items

Designates Carbide Shank • L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

S-SCLCR/L

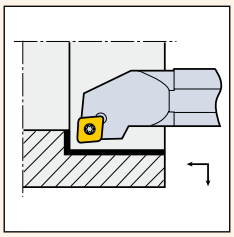


Fig.1

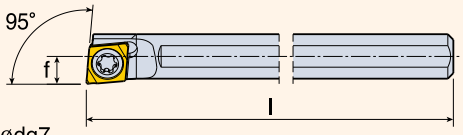


Fig.2

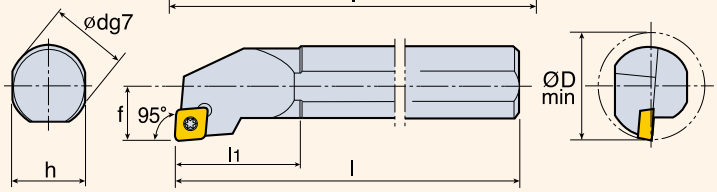
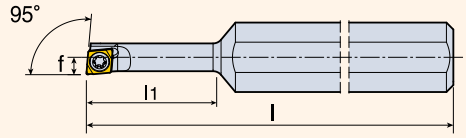


Fig.3

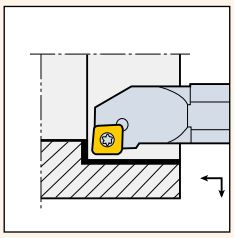


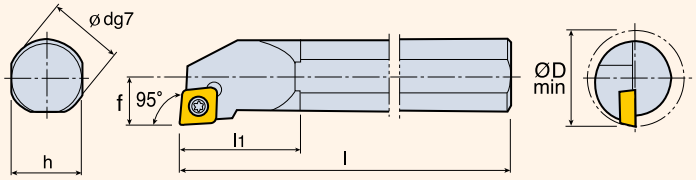
Designation	R	L	d	h	l	l1	f	ØD min	Insert (80°)	Screw	Shim	Shim Screw	Wrench	Shape
S04F SCLCR/L 03-D05	●	●	4	3.75	80		2.5	5	CC□T 0301□□	TS 16031I	-	-	T 6	Fig.1
S05G SCLCR/L 03-D06	●	●	5	4.75	90		3	6						
S06H SCLCR/L 04-D07	●	●	6	5.5	100		3.5	7	CC□T 0401□□	TS 20038I/ HG-P	-	-	T 6P	
S07J SCLCR/L 04-D08	●	●	7	6.5	110		4	8						
S10H SCLCR/L 03-D05	●	●	10	9	100	15	2.5	5	CC□T 0301□□	TS 16031I	-	-	T 6	Fig.3
S08K SCLCR/L 06	●	●	8	7	125	18	6	11	CC□T 0602□□	SO 25050I	-	-	T 7	Fig.2
S10K SCLCR/L 06	●	●	10	9	125	20	7	13						
S12M SCLCR/L 06	●	●	12	11	150	25	9	16		SO 25065I				
S16R SCLCR/L 06	●		16	15	200	30	11	20						
S12M SCLCR/L 09	●	●	12	11	150	23	9	16	CC□T 09T3□□	SO 35080I	-	-	T 15	
S16M SCLCR/L 09	●		16	15	150	30	11	20						
S16R SCLCR/L 09	●	●	16	15	200	30	11	20						
S20R SCLCR/L 09	●		20	18	200	32	13	25						
S20S SCLCR/L 09	●	●	20	18	250	32	13	25						
S25T SCLCR/L 12	●	●	25	23	300	42	17	32	CC□T 1204□□	SO 45100I	-	-	T 20	
S32T SCLCR/L 12	●		32	30	300	45	22	40		SO 45130I	SSC 43N	SO 60105S	T 20	
S40T SCLCR/L 12	●		40	37	300	55	27	50						

- For inserts, see page A39 - A40
- For spare part, see page A167 - A177

● Marked: Standard Items
- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

S-SCLPR/L



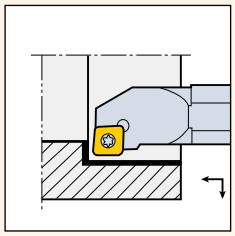


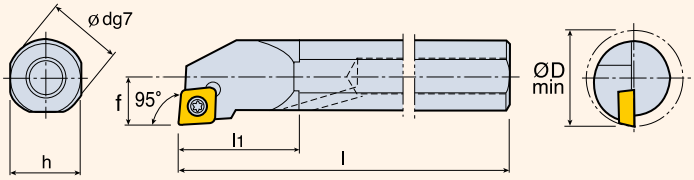
Designation	R	L	d	h	l	l1	f	ØD min	Insert (80°)	Screw	Wrench
S10K SCLPR/L 08	●		10	9	125	20	6	12	CP□T 0802□□	SO 30055I	T 9
S10M SCLPR/L 08	●		10	9	150	20	6	12			
S12M SCLPR/L 08	●		12	11	150	23	8	16			
S16N SCLPR/L 09	●		16	15	160	30	10	20	CP□T 0903□□	SO 35080I	T 15
S16R SCLPR/L 09	●		16	15	200	30	10	20			
S20N SCLPR/L 09	●		20	18	160	32	12.5	25			
S20S SCLPR/L 09	●		20	18	250	32	12.5	25			

- For inserts, see page A41
- For spare part, see page A167 - A177

● Marked: Standard Items
- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

A-SCLPR/L



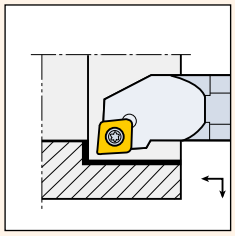


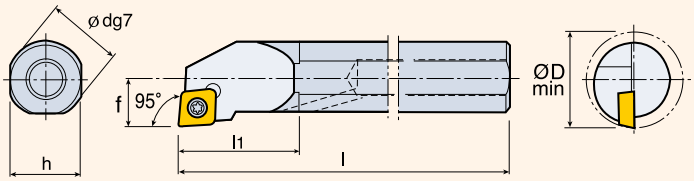
Designation	R	L	d	h	l	l1	f	ØD min	Insert 80°	Components: Screw	Components: Wrench
A08H SCLPR/L 06	●	●	8	7	100	15	6	11	CP□T 0602□□	SO 25050I	T 7
A10K SCLPR/L 06	●	●	10	9	125	15	7	13			
A12M SCLPR/L 0903	●	●	12	11	150	19	9	16	CP□T 0903□□	TS 35070I/HG	T 15
A16Q SCLPR/L 0903	●	●	16	15	180	21.5	11	20			
A20R SCLPR/L 0903	●	●	20	18	200	22	13	25			
A12M SCLPR/L 09T3	●	●	12	11	150	19	9	16	CP□T 09T3□□	TS 35070I/HG	T 15
A16Q SCLPR/L 09T3	●	●	16	15	180	20	11	20			
A20R SCLPR/L 09T3	●	●	20	18	200	22	13	25			

- For inserts, see page A41
- For spare part, see page A167 - A177

● Marked: Standard Items
- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

E-SCLPR/L





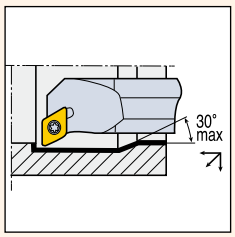
Designation	R	L	d	h	l	l1	f	ØD min	Insert 80°	Components: Screw	Components: Wrench
E08K SCLPR/L 06	●	●	8	7	125	15	6	11	CP□T 0602□□	SO 25050I	T 7
E10K SCLPR/L 06	●	●	10	9	125	15	7	13			
E12M SCLPR/L 0903	●	●	12	11	150	19	9	16	CP□T 0903□□	TS 35070I/HG	T 15
E16R SCLPR/L 0903	●	●	16	15	200	21.73	11	20			
E12M SCLPR/L 09T3	●	●	12	11	150	19	9	16	CP□T 09T3□□	TS 35070I/HG	T 15
E16R SCLPR/L 09T3	●	●	16	15	200	21.5	11	20			

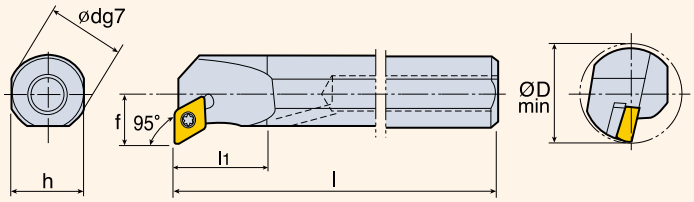
- For inserts, see page A41
- For spare part, see page A167 - A177

Designates Carbide Shank

● Marked: Standard Items
- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

A-SDLNR/L



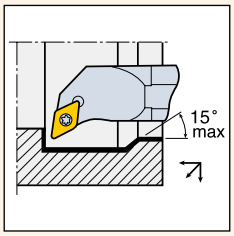


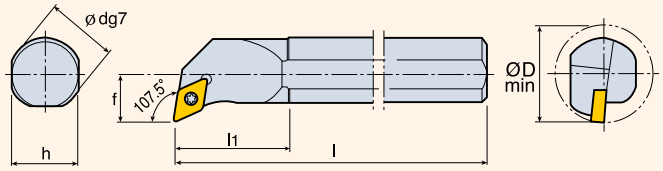
Designation	R	L	d	h	l	l1	f	ØD min	Insert 55°	Components: Screw	Components: Shim	Components: Shim Screw	Components: Wrench	Components: Seal
A20S SDLNR/L 11	●		20	18	250	31	13	24	DNM□ 1104□□	SO 35120I	-	-	T 10	PL 20
A25T SDLNR/L 11	●		25	23	300	30	17	31			SSD 32	SO 50090S		PL 25

- For inserts, see page A28 - A29
- For spare part, see page A167 - A177

● Marked: Standard Items

S-SDQCR/L





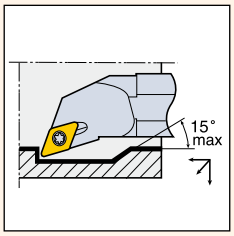
Designation		R	L	d	h	l	l1	f	ØD min	Insert 55°	Components: Screw	Components: Wrench
S10K	SDQCR/L 07	●		10	9	125	20	7	13	DC□T 0702□□	SO 25050I	T 7
S10M	SDQCR/L 07	●		10	9	150	20	7	13			
S12M	SDQCR/L 07	●	●	12	11	150	22	9	16		SO 25065I	
S16R	SDQCR/L 07	●	●	16	15	200	27	11	20			
S20N	SDQCR/L 11	●		20	18	160	40	13	25	DC□T 11T3□□	SO 35080I	T 15
S20S	SDQCR/L 11	●	●	20	18	250	40	13	25			
S25T	SDQCR/L 11	●	●	25	23	300	50	17	32			

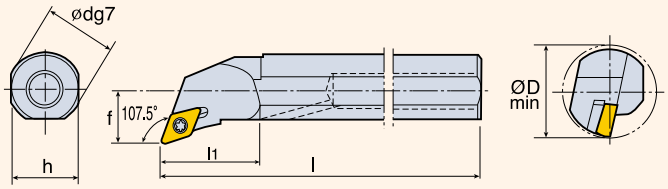
• For inserts, see page A41 - A42 • For spare part, see page A167 - A177

● Marked: Standard Items

• L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

A-SDQNR/L



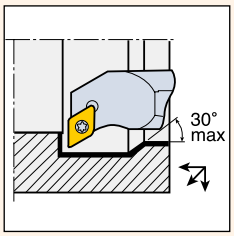


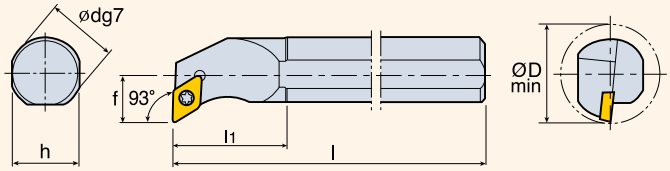
Designation		R	L	d	h	l	l1	f	ØD min	Insert 55°	Components: Screw	Components: Shim	Components: Shim Screw	Components: Wrench	Components: Seal
A16S	SDQNR/L 11	●		16	15	250	30	13	23	DNM□ 1104□□	SO 35120I	-	-	T 10	PL 16
A20S	SDQNR/L 11	●		20	18	250	31	15	27			SSD 32	SO 50090S		PL 20
A25T	SDQNR/L 11	●		25	23	300	35	19	33						PL 25
A32T	SDQNR/L 11	●		32	30	300	44	26	44						PL 32

• For inserts, see page A28 - A29 • For spare part, see page A167 - A177

● Marked: Standard Items

S-SDUCR/L





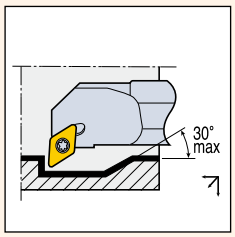
Designation		R	L	d	h	l	l1	f	ØD min	Insert 55°	Components: Screw	Components: Wrench
S10K	SDUCR/L 07	●		10	9	125	20	7	13	DC□T 0702□□	SO 25050I	T 7
S12M	SDUCR/L 07	●	●	12	11	150	23	9	16		SO 25065I	
S16M	SDUCR/L 07	●		16	15	150	30	11	20			
S16R	SDUCR/L 07	●	●	16	15	200	30	11	20			
S16R	SDUCR/L 11	●	●	16	15	200	27	11	20	DC□T 11T3□□	SO 35080I	T 15
S20S	SDUCR/L 11	●	●	20	18	250	32	13	25			
S25T	SDUCR/L 11	●	●	25	23	300	42	17	32			
S32T	SDUCR/L 11	●	●	32	30	300	55	22	40			

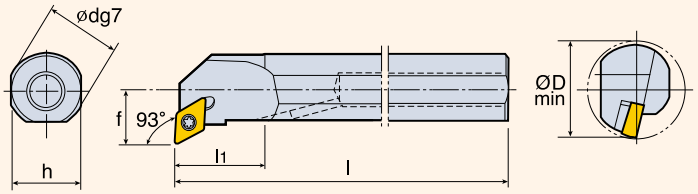
• For inserts, see page A41 - A42 • For spare part, see page A167 - A177

● Marked: Standard Items

• L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

A-SDUNR/L



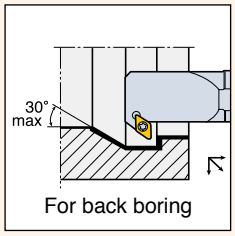


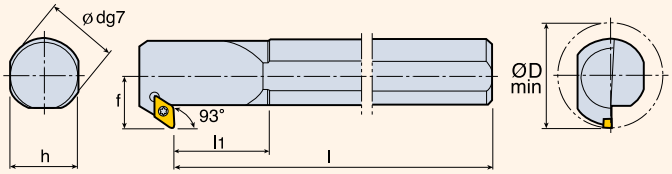
Designation			Dimension (mm)						Insert	Components				
										Screw	Shim	Shim Screw	Wrench	Seal
	R	L	d	h	l	l1	f	ØD min	55°					
A20S SDUNR/L 11			20	18	250	30	15	27	DNM□ 1104□□	SO 35120I	-	-	T 10	PL 20
A25T SDUNR/L 11	●		25	23	300	30	19	33			SSD 32	SO 50090S		PL 25
A32T SDUNR/L 11			32	30	300	44	26	44						PL 32

- For inserts, see page A28 - A29
- For spare part, see page A167 - A177

● Marked: Standard Items

S-SDZCR/L





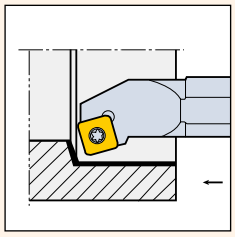
Designation			Dimension (mm)						Insert	Components			
										Screw	Shim	Shim Screw	Wrench
	R	L	d	h	l	l1	f	ØD min	55°				
S16R SDZCR/L 07	●		16	15	200	23	13	22	DC□T 0702□□	SO 25065I	-	-	T 7
S20S SDZCR/L 07	●		20	18	250	28	15	27					
S25T SDZCR/L 07	●		25	23	300	33	18	33					
S20S SDZCR/L 11	●		20	18	250	24	15	27	DC□T 11T3□□	SO 35080I	-	-	T 15
S32T SDZCR/L 11	●		32	30	300	34	22	40		SO 35124I	SSD 32	SO 50090S	

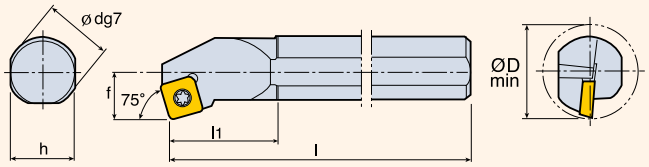
- For inserts, see page A41 - A42
- For spare part, see page A167 - A177

● Marked: Standard Items

- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

S-SSKCR/L



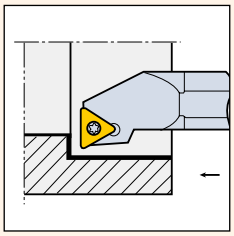


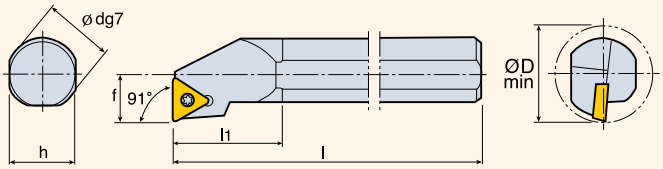
Designation			Dimension (mm)						Insert	Components	
										Screw	Wrench
	R	L	d	h	l	l1	f	ØD min			
S16R SSKCR/L 09	●		16	15	200	28	11	20	SC□T 09T3□□	SO 35080I	T 15
S20S SSKCR/L 09	●		20	18	250	30	13	25			
S25T SSKCR/L 12			25	23	300	39	17	32	SC□T 1204□□	SO 45100I	T 20

- For inserts, see page A43
- For spare part, see page A167 - A177

● Marked: Standard Items

S-STFCR/L



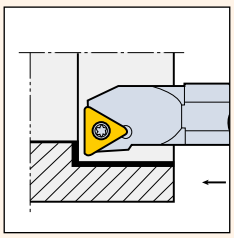


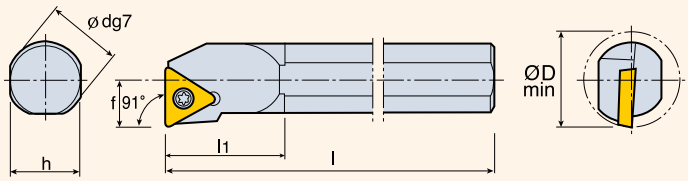
Designation			Dimension (mm)						Insert	Components			
										Screw	Shim	Shim Screw	Wrench
	R	L	d	h	l	l1	f	ØD min					
S08K STFCR/L 09	●		8	7	125	20	6	11	TC□T 0902□□	TS 22046I	-	-	T 7
S10K STFCR/L 09	●	●	10	9	125	22.5	7	13		SO 22050I			
S12M STFCR/L 09	●	●	12	11	150	30	9	16					
S16R STFCR/L 09			16	15	200	35	11	20					
S12M STFCR/L 11	●	●	12	11	150	25	9	16	TC□T 1102□□	SO 25065I	-	-	T 7
S16R STFCR/L 11	●	●	16	15	200	35	11	20					
S20S STFCR/L 11	●	●	20	18	250	36	13	25					
S20S STFCR/L 16	●		20	18	250	36	13	25	TC□T 16T3□□	SO 35080I	-	-	T 15
S25T STFCR/L 16	●		25	23	300	49	17	32					
S32T STFCR/L 16	●		32	30	300	45	22	40		SO 35124I	SST 32	SO 50090S	
S40T STFCR/L 16	●		40	37	300	60	27	50					

- For inserts, see page A44
- For spare part, see page A167 - A177

● Marked: Standard Items
- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

S-STFPR/L



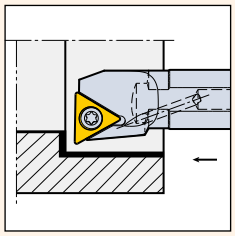


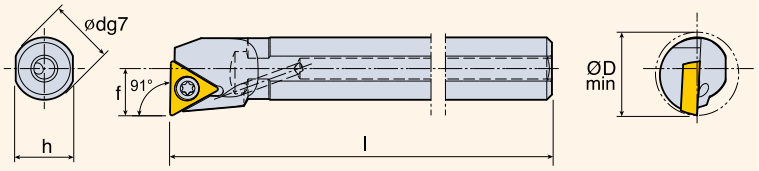
Designation			Dimension (mm)						Insert	Components	
										Screw	Wrench
	R	L	d	h	l	l1	f	ØD min			
S08K STFPR/L 09-X01	●		8	7	125	15	6	11	TPGX 0902□□	SO 25061I	T 8
S08K STFPR/L 09	●		8	7	125	14	6	11	TP□T 0902□□	TS 22046I	T 7
S10K STFPR/L 11	●		10	9	125	25	6	12	TP□T 1103□□	SO 30055I	T 9
S10M STFPR/L 11	●		10	9	150	25	6	12			
S12M STFPR/L 11	●	●	12	11	150	30	8	16		SO 30100I	T 9
S16N STFPR/L 11	●		16	15	160	35	10	20			T 9
S16R STFPR/L 11	●		16	15	200	35	10	20		SO 30040I	
S16N STFPR/L 16	●		16	15	160	30	10	20	TP□T 1604□□	SO 35080I	T 15
S20N STFPR/L 16	●		20	18	160	35	12.5	25		SO 35124I	
S20S STFPR/L 16	●		20	18	250	36	12.5	25			

- For inserts, see page A45
- For spare part, see page A167 - A177
- TPGX type inserts are available with alternate screw. (TPGX 1103 → SO 30081I)

● Marked: Standard Items
- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

A-STFPR/L



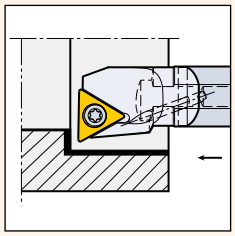


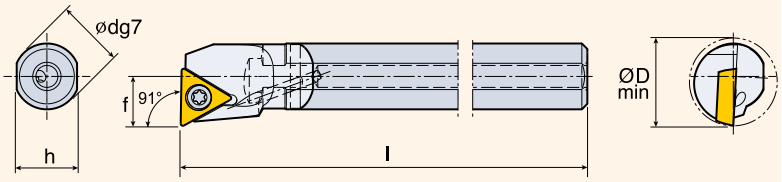
Designation	R	L	d	h	l	f	ØD min	Insert	Components: Screw	Components: Wrench
A08H STFPR/L 09	●	●	8	7	100	6	11	TP□T 0902□□	TS 22046I	T 7
A10K STFPR/L 1102	●	●	10	9	125	7	13	TP□T 1102□□	SO 25050I	T 7
A12M STFPR/L 1102	●	●	12	11	150	9	16			
A16Q STFPR/L 1102	●	●	16	15	180	11	20			
A12M STFPR/L 1103	●	●	12	11	150	9	16	TP□T 1103□□	SO 30055I	T 9
A16Q STFPR/L 1103	●	●	16	15	180	11	20			
A20R STFPR/L 16T3	●	●	20	18	200	13	25	TP□T 16T3□□	TS 35070I/HG	T 15

- For inserts, see page A45
- For spare part, see page A167 - A177

● Marked: Standard Items
- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

E-STFPR/L





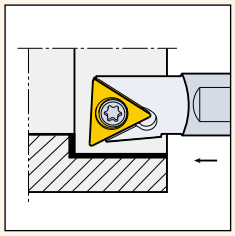
Designation	R	L	d	h	l	f	ØD min	Insert	Components: Screw	Components: Wrench
E08K STFPR/L 09	●	●	8	7	125	6	11	TP□T 0902□□	TS 22046I	T 7
E10K STFPR/L 1102	●	●	10	9	125	7	13	TP□T 1102□□	SO 25050I	T 7
E12M STFPR/L 1102	●	●	12	11	150	9	16			
E16R STFPR/L 1102	●	●	16	15	200	11	20			
E12M STFPR/L 1103	●	●	12	11	150	9	16	TP□T 1103□□	SO 30055I	T 9
E16R STFPR/L 1103	●	●	16	15	200	11	20			

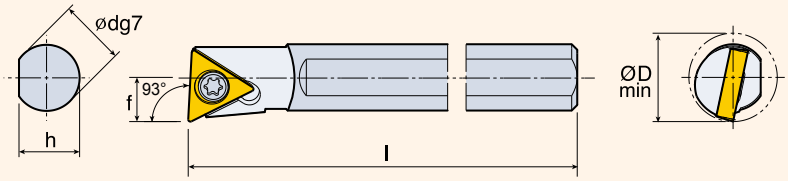
- For inserts, see page A45
- For spare part, see page A167 - A177

Designates Carbide Shank

● Marked: Standard Items
- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

C-STUBR/L





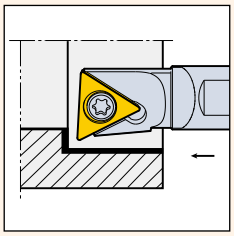
Designation	R	L	d	h	l	f	ØD min	Insert	Components: Screw	Components: Wrench
C06J STUBR/L 06-D08	●	●	6	5.5	110	4	8	TB□T 0601□□	TS 20043I/HG-P	T 6P

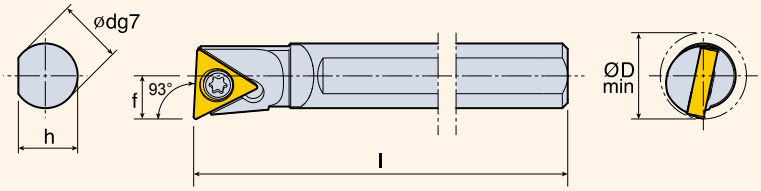
- For inserts, see page A44
- For spare part, see page A167 - A177

Designates Carbide Shank

● Marked: Standard Items
- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

S-STUBR/L



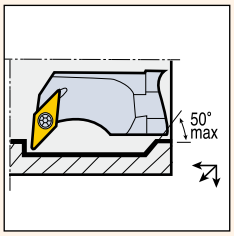


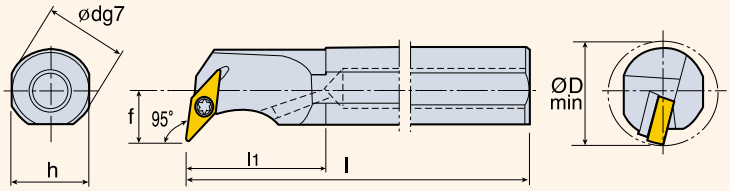
Designation			Dimension (mm)					Insert	Components	
									Screw	Wrench
	R	L	d	h	l	f	ØD min			
S06H STUBR/L 06-D08	●	●	6	5.5	100	4	8	TB□T 0601□□	TS 20043I/HG-P	T 6P

- For inserts, see page A44
- For spare part, see page A167 - A177

● Marked: Standard Items
- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

A-SVLNR/L



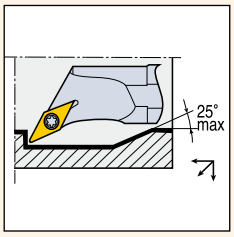


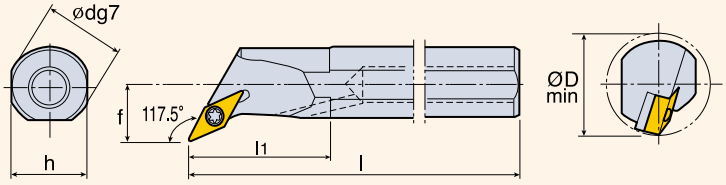
Designation			Dimension (mm)						Insert	Components				
										Screw	Shim	Shim Screw	Wrench	Seal
	R	L	d	h	l	l1	f	ØD min	35°					
A25T SVLNR/L 13	●		25	23	300	40	16	31	VNM□ 1304□□	SO 35120I	SSVN 2.522	TS 5035062S	T 10	PL 25
A32T SVLNR/L 13	●		32	30	300	45	20	38						PL 32

- For inserts, see page A36
- For spare part, see page A167 - A177

● Marked: Standard Items

A-SVPNR/L



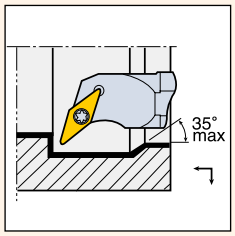


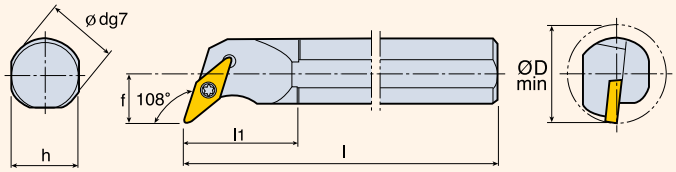
Designation			Dimension (mm)						Insert	Components				
										Screw	Shim	Shim Screw	Wrench	Seal
	R	L	d	h	l	l1	f	ØD min	35°					
A25T SVPNR/L 13	●		25	23	300	45	19	33	VNM□ 1304□□	SO 35120I	SSVN 2.522	TS 5035062S	T 10	PL 25
A32T SVPNR/L 13	●		32	30	300	47	26	44						PL 32

- For inserts, see page A36
- For spare part, see page A167 - A177

● Marked: Standard Items

S-SVQBR/L



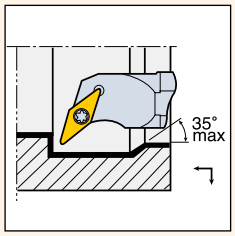


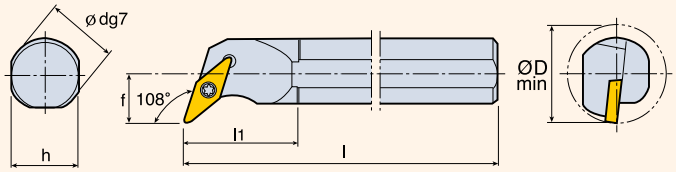
Designation			Dimension (mm)						Insert	Components			
										Screw	Shim	Shim Screw	Wrench
	R	L	d	h	l	l1	f	ØD min	35°				
S25T SVQBR/L 16	●		25	23	300	40	17	32	VB□T 1604□□	SO 35080I	-	-	T 15
S32T SVQBR/L 16	●	●	32	30	300	45	22	40		SO 35124I	SSV 32	SO 50090S	
S40T SVQBR/L 16	●		40	38	300	55	27	50					

- For inserts, see page A46 - A47
- For spare part, see page A167 - A177

● Marked: Standard Items
- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

S-SVQCR/L



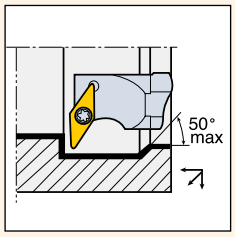


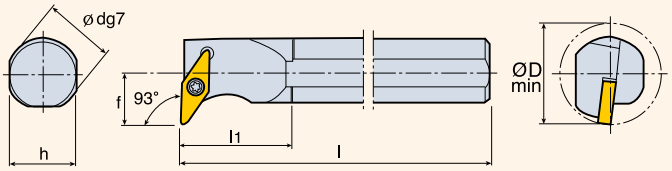
Designation			Dimension (mm)						Insert	Components			
										Screw	Shim	Shim Screw	Wrench
	R	L	d	h	l	l1	f	ØD min	35°				
S32T SVQCR/L 16	●		32	30	300	45	22	40	VC□T 1604□□	SO 35124I	SSV 32	SO 50090S	T 15
S40T SVQCR/L 16	●		40	38	300	55	27	50					

- For inserts, see page A47
- For spare part, see page A167 - A177

● Marked: Standard Items

S-SVUBR/L





Designation			Dimension (mm)						Insert	Components			
										Screw	Shim	Shim Screw	Wrench
	R	L	d	h	l	l1	f	ØD min	35°				
S32T SVUBR/L 16	●	●	32	30	300	45	22	40	VB□T 1604□□	SO 35124I	SSV 32	SO 50090S	T 15
S40T SVUBR/L 16	●		40	38	300	55	27	50					

- For inserts, see page A46 - A47
- For spare part, see page A167 - A177

● Marked: Standard Items
- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

S-SVUCR/L

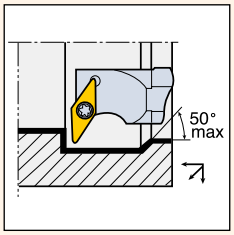


Fig.1

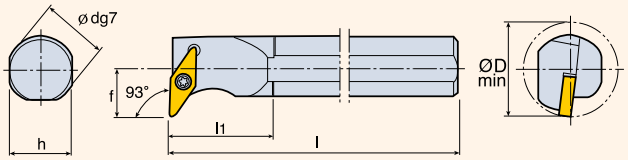
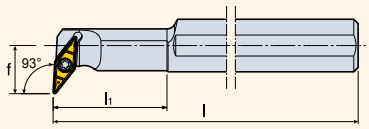


Fig.2

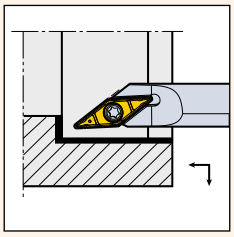


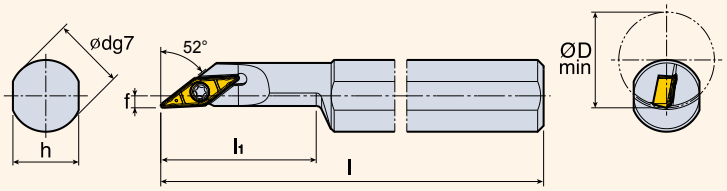
Designation	R	L	d	h	l	l1	f	ØD min	Insert 35°	Screw	Shim	Shim Screw	Wrench	Shape
S12M SVUCR/L 08-D16	●	●	12	11	150	26	11	16	VC□T 0802□□	TS 20038I/HG-P	-	-	T 6P	Fig.2
S16Q SVUCR/L 11-D20	●	●	16	15	180	32	15.5	20	VC□T 1103□□	SO 25065I	-	-	T 7	
S20R SVUCR/L 11-D25	●	●	20	18	200	40	17.5	25						
S32T SVUCR/L 16	●		32	30	300	45	22	40	VC□T 1604□□	SO 35124I	SSV 32	SO 50090S	T 15	Fig.1
S40T SVUCR/L 16			40	38	300	60	27	50						

- For inserts, see page A47
- For spare part, see page A167 - A177

● Marked: Standard Items

S-SVJCR/L





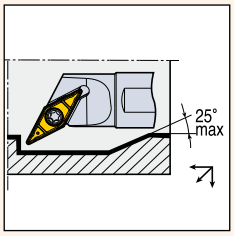
Designation	R	L	d	h	l	l1	f	ØD min	Insert 35°	Screw	Wrench
S12M SVJCR/L 08-D16	●	●	12	11	150	26	2	16	VC□T 0802□□	TS 20038I/HG-P	T 6P
S16Q SVJCR/L 08-D20	●	●	16	15	180	36	2	20			

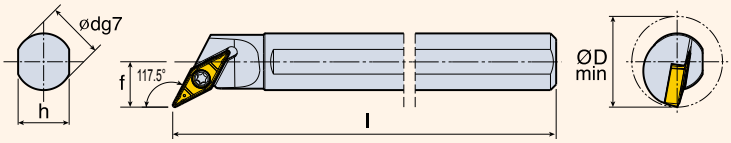
- For inserts, see page A47
- For spare part, see page A167 - A177

● Marked: Standard Items

- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

S-SVPCR/L





Designation	R	L	d	h	l	f	ØD min	Insert 35°	Screw	Wrench
S10K SVPCR/L 08-D16	●	●	10	9	125	8	16	VC□T 0802□□	TS 20038I/HG-P	T 6P
S12M SVPCR/L 11-D20	●	●	12	11	150	10	20	VC□T 1103□□	SO 25065I	T 7

- For inserts, see page A47
- For spare part, see page A167 - A177

● Marked: Standard Items

S-SWUBR/L

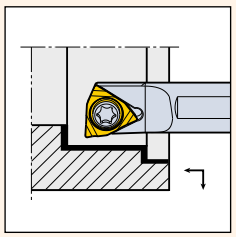


Fig.1

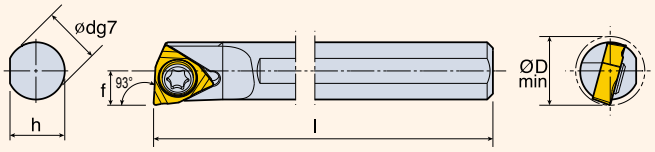
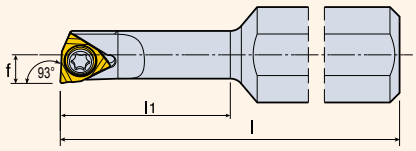


Fig.2

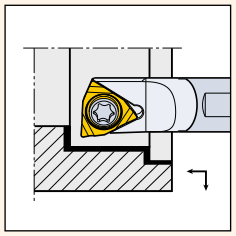


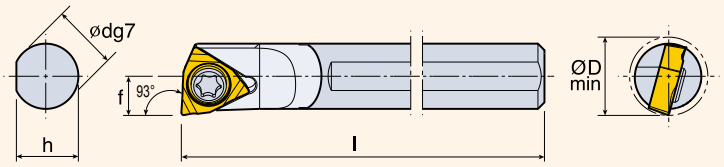
Designation			Dimension (mm)						Insert	Components		Shape
										Screw	Wrench	
	R	L	d	h	l	l1	f	ØD min	80°			
S05G SWUBR/L 06-D06	●	●	5	4.75	90		3	6	WB□T 060102	TS 20038I/HG-P	T 6P	Fig.1
S06H SWUBR/L 06-D07	●	●	6	5.5	100		3.5	7				
S07J SWUBR/L 06-D08	●	●	7	6.5	110		4	8				
S10H SWUBR/L 06-D06	●	●	10	9	100	18	3	6				Fig.2

- For inserts, see page A48
- For spare part, see page A167 - A177

● Marked: Standard Items
- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

C-SWUBR/L





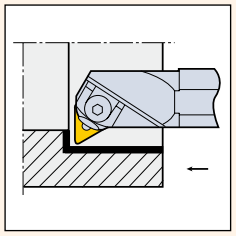
Designation			Dimension (mm)					Insert	Components	
									Screw	Wrench
	R	L	d	h	l	f	ØD min	80°		
C05H SWUBR/L 06-D06	●	●	5	4.75	100	3	6	WB□T 060102	TS 20038I/HG-P	T 6P
C06J SWUBR/L 06-D07	●	●	6	5.5	110	3.5	7			
C07K SWUBR/L 06-D08	●	●	7	6.5	125	4	8			

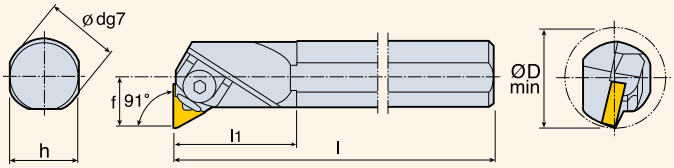
- For inserts, see page A48
- For spare part, see page A167 - A177

Designates Carbide Shank

● Marked: Standard Items
- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

S-WTFNR/L



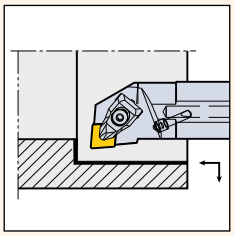


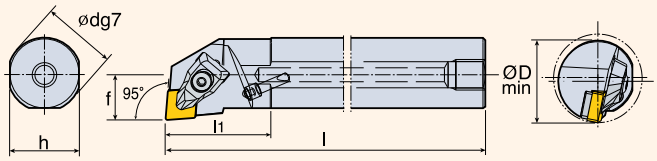
Designation			Dimension (mm)						Insert	Components					
										Wedge Clamp	Screw	Snap Ring	Shim	Pin Screw	Wrench
	R	L	d	h	l	l1	f	ØD min							
S25T WTFNR/L 16	●	●	25	23	300	50	17	32	TN□□ 1604□□	WC 33	WCS 4B	WSR 4B	-	WSS 33-1	L-W 3
S32T WTFNR/L 16	●	●	32	30	300	55	22	40			WCS 4	WSR 4	WST 33	WSS 33	
S40T WTFNR/L 16	●		40	37	300	60	27	50							
S40T WTFNR/L 22			40	37	300	60	27	50	TN□□ 2204□□	WC 43	WCS 4	WSR 4	WST 43	WSS 43	L-W 3
S50U WTFNR/L 22			50	47	350	65	35	63							

- For inserts, see page A33 - A35
- For spare part, see page A167 - A177

● Marked: Standard Items

A-TCLNR/L



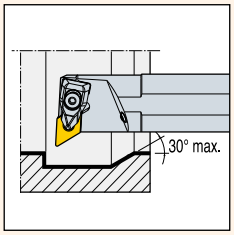


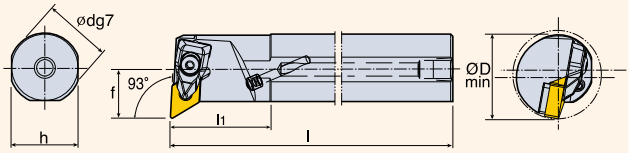
Designation	R	L	d	h	l	l1	f	ØD min	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench
			Dimension (mm)						80°	Components						
A25T TCLNR/L 12	●	●	25	23	300	45	17	32	CNM□ 1204□□	DLM 4	DLS 4	LSC 42	TS 50A105I	DSP 4	NZ 62	L-W 3
A32T TCLNR/L 12	●	●	32	30	300	45	22	40								
A40T TCLNR/L 12	●	●	40	37	300	45	27	50				TSC 44	SO 40050I		NZ 104	
A50U TCLNR/L 12	●	●	50	47	350	45	35	63								

- For inserts, see page A24 - A27
- For spare part, see page A167 - A177

● Marked: Standard Items

A-TDUNR/L



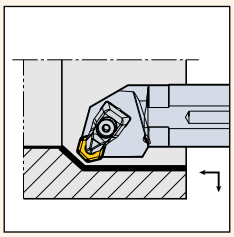


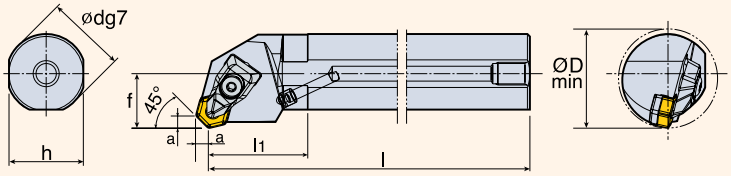
Designation	R	L	d	h	l	l1	f	ØD min	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench
			Dimension (mm)						55°	Components						
A32T TDUNR/L 15	●		32	30	300	45	22	40	DNM□ 1506□□	DLM 4	DLS 4	LSD 42	TS 50A105I	DSP 4	NZ 62	L-W 3
A40T TDUNR/L 15	●		40	37	300	45	27	50				TSD 43	SO 40050I		NZ 104	
A50U TDUNR/L 15	●		50	47	350	45	35	63								

- For inserts, see page A28 - A29
- For spare part, see page A167 - A177

● Marked: Standard Items

A-THSNR/L



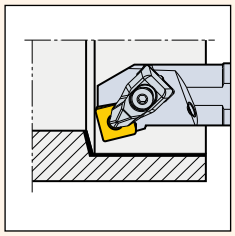


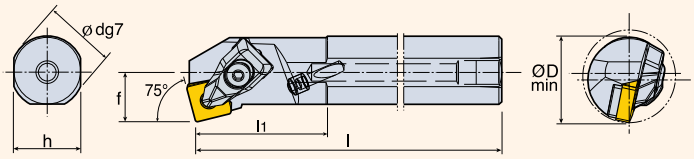
Designation	R	L	d	h	l	l1	f	ØD min	a	Insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench
			Dimension (mm)							120°	Components						
A32T THSNR/L 05			32	30	300	40	22	40	4.2	HN□G 0504□□	DLM 4	DLS 4	TSH 42	SO 40050I	DSP 4	NZ 62	L-W 3
A40T THSNR/L 05			40	37	300	45	27	50	4.2				TSH 44			NZ 104	
A50U THSNR/L 05			50	47	350	45	35	63	4.2								

- For inserts, see page A30
- For spare part, see page A167 - A177

● Marked: Standard Items

A-TSKNR/L



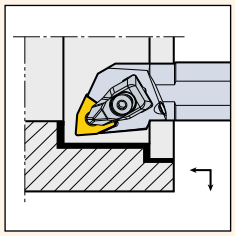


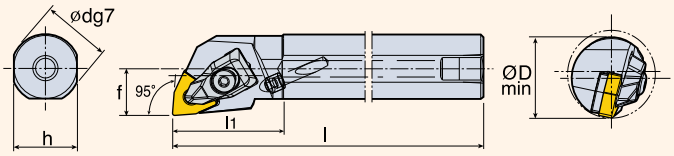
Designation			Dimension (mm)						Insert	Components						
										Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench
	R	L	d	h	l	l1	f	ØD min								
A25T TSKNR/L 12			25	23	300	45	17	32	SNM□ 1204□□	DLM 4	DLS 4	LSS 42	TS 50A105I	DSP 4	NZ 62	L-W 3

- For inserts, see page A31 - A33
- For spare part, see page A167 - A177

● Marked: Standard Items
- L-hand Insert for R-hand Toolholder, R-hand Insert for L-hand Toolholder

A-TWLNR/L



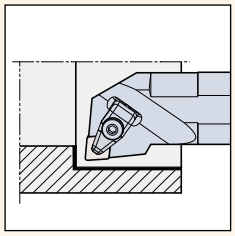


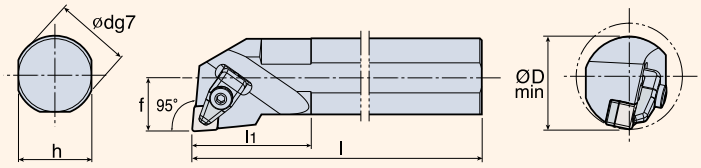
Designation			Dimension (mm)						Insert	Components						
										Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench
	R	L	d	h	l	l1	f	ØD min	80°							
A20S TWLNR/L 06	●		20	18	250	35	13	25	WNM□ 0604□□	DLM 3	DLS 3	-	-	DSP 3	NZ 62	L-W 2.5
A25T TWLNR/L 06	●		25	23	300	40	17	32				PSW 32	SO 40090I			
A32T TWLNR/L 06			32	30	300	45	22	40								
A25T TWLNR/L 08	●	●	25	23	300	40	17	32	WNM□ 0804□□	DLM 4	DLS 4	PSW 42	TS 50A105I	DSP 4		L-W 3
A32T TWLNR/L 08	●	●	32	30	300	45	22	40								
A40T TWLNR/L 08	●	●	40	37	300	45	27	50				TSW 44	SO 40050I		NZ 104	

- For inserts, see page A37 - A38
- For spare part, see page A167 - A177

● Marked: Standard Items

S-TCLNR/L-CH



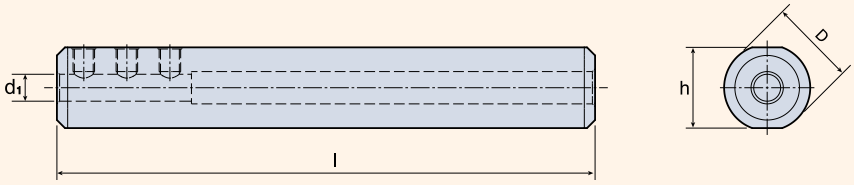


Designation			Dimension (mm)						Insert	Components					
										Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
	R	L	d	h	l	l1	f	ØD min	80°						
S40T TCLNR/L 1207-CH			40	37	300	50	27	70	CNGX 1207□□ CH	CCL 4	CSC 4	S 48	BH M5×0.8×1.0	DSP 5	L-W 4
S50U TCLNR/L 1207-CH	●		50	47	350	50	32	70							

- For inserts, see page A58
- For spare part, see page A167 - A177

● Marked: Standard Items

TSL (SLEEVE)

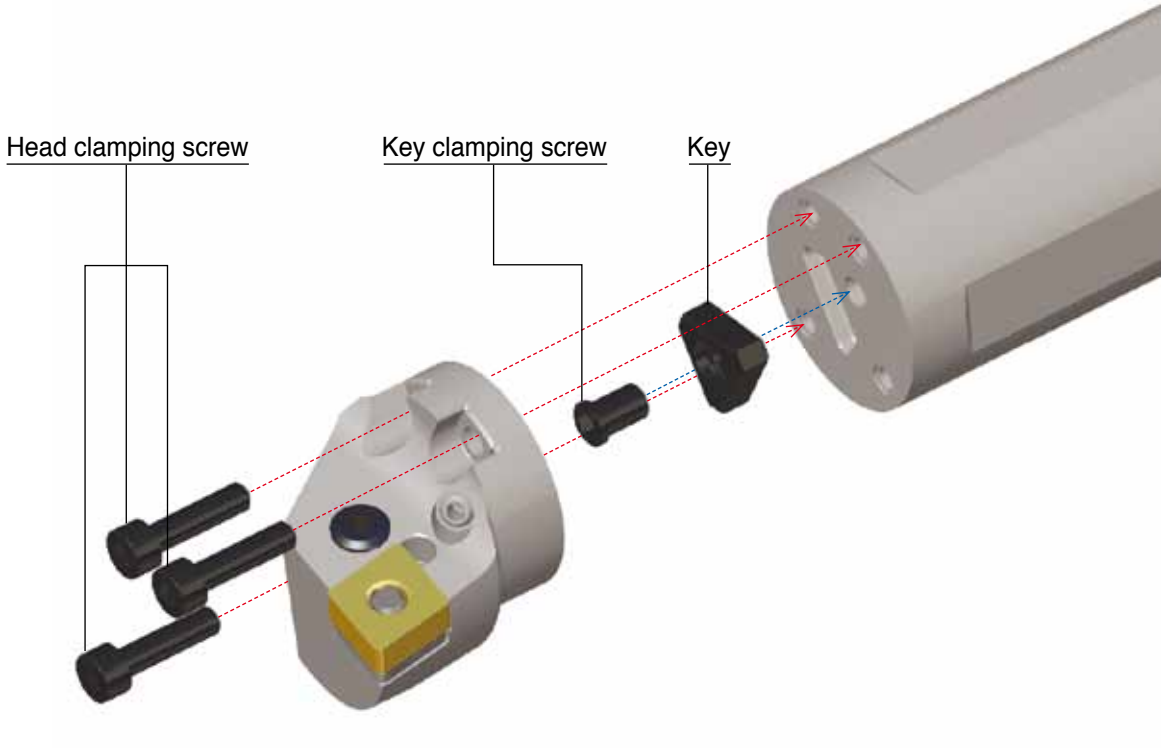


Designation		Dimension (mm)				Components	
						Set Screw	Wrench
		d_1	h	l	D		
TSL 16-04	●	4	15	100	16	SS M4 X 0.7 X 4	L-W 2
TSL 16-05	●	5	15	100	16		
TSL 16-06	●	6	15	100	16		
TSL 16-07	●	7	15	100	16		

• For spare part, see page A167 - A177

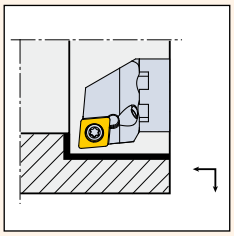
HE	-	D32	-	PCLNR 12
1		2		3

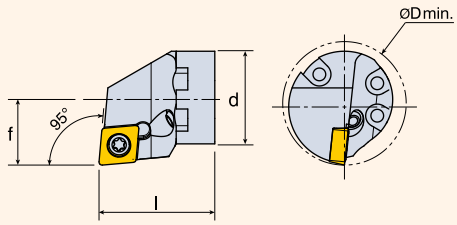
1	Head
2	Shank Diameter
3	Designation follows Boring Bar System, see page A133



- Triangular detachable anti-rotator induces auto-centering and durability
- High repeatability during head change
- Possibility of inner coolant
- Head for ISO Turning

HE-SCLCR/L



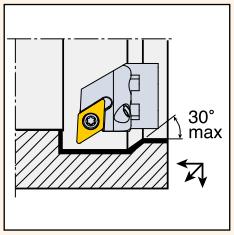


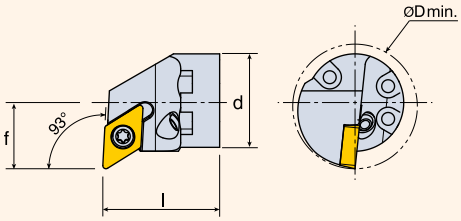
Designation			Dimension (mm)				Insert	Components				
								Screw	Shim	Shim Screw	Nozzle	Wrench
	R	L	d	l	f	ØD min	80°					
HE-D25-SCLCR/L 09	●	●	25	25	17	32	CC□T 09T3□□	SO 35080I	-	-	-	T 15
HE-D32-SCLCR/L 12	●	●	32	35	22	40	CC□T 1204□□	SO 45130I	SSC 43N	SO 60105S	NZ 62	T 20

- For inserts, see page A39 - A40
- For spare part, see page A167 - A177

● Marked: Standard Items

HE-SDUCR/L



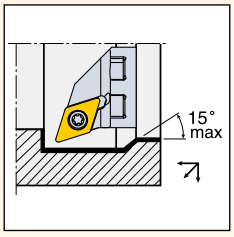


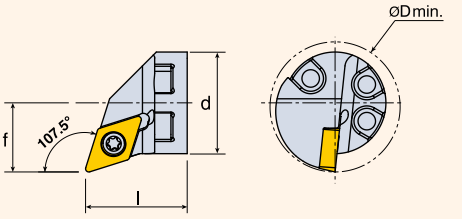
Designation			Dimension (mm)				Insert	Components		
								Screw	Nozzle	Wrench
	R	L	d	l	f	ØD min	55°			
HE-D25-SDUCR/L 11	●	●	25	25	17	32	DC□T 11T3□□	SO 35080I	-	T 15
HE-D32-SDUCR/L 11	●	●	32	35	22	40			NZ 62	

- For inserts, see page A41 - A42
- For spare part, see page A167 - A177

● Marked: Standard Items

HE-SDQCR/L



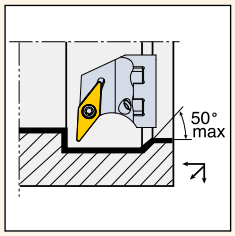


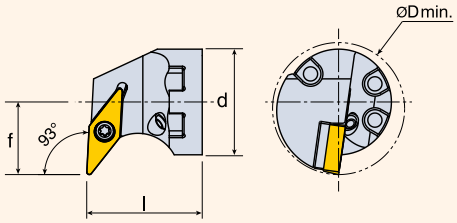
Designation			Dimension (mm)				Insert	Components		
								Screw	Nozzle	Wrench
	R	L	d	l	f	ØD min	55°			
HE-D25-SDQCR/L 11	●	●	25	25	17	32	DC□T 11T3□□	SO 35080I	-	T 15

- For inserts, see page A41 - A42
- For spare part, see page A167 - A177

● Marked: Standard Items

HE-SVUBR/L



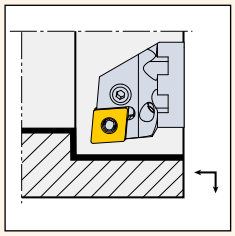


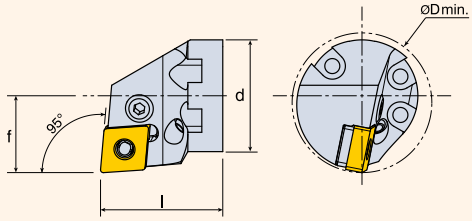
Designation			Dimension (mm)				Insert	Components				
								Screw	Shim	Shim Screw	Nozzle	Wrench
	R	L	d	l	f	ØD min	35°					
HE-D32-SVUBR/L 16	●	●	32	35	22	40	VB□T 1604□□	SO 35124I	SSV 32	SO 50090S	NZ 62	T 15

- For inserts, see page A46 - A47
- For spare part, see page A167 - A177

● Marked: Standard Items

HE-PCLNR/L



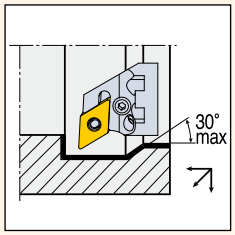


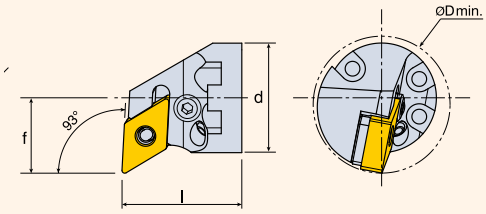
Designation			Dimension (mm)				Insert	Components					
								Lever	Screw	Shim	Shim Pin	Nozzle	Wrench
	R	L	d	l	f	ØD min	80°						
HE-D32-PCLNR/L 12	●	●	32	35	22	40	CN□□ 1204□□	LCL 4	LCS 4S	LSC 42	LSP 4	NZ 62	L-W 3

- For inserts, see page A24 - A27
- For spare part, see page A167 - A177

● Marked: Standard Items

HE-PDUNR/L



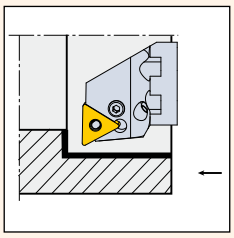


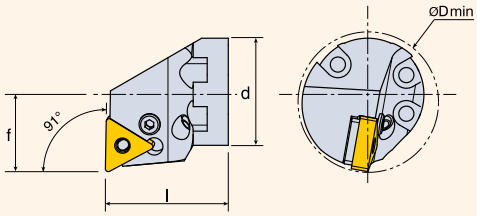
Designation			Dimension (mm)				Insert	Components					
								Lever	Screw	Shim	Shim Pin	Nozzle	Wrench
	R	L	d	l	f	ØD min	55°						
HE-D32-PDUNR/L 15	●	●	32	35	22	40	DN□□ 1506□□	LCL 4A	LCS 4S	LSD 42	LSP 4	NZ 62	L-W 3

- For inserts, see page A28 - A29
- For spare part, see page A167 - A177

● Marked: Standard Items

HE-PTFNR/L



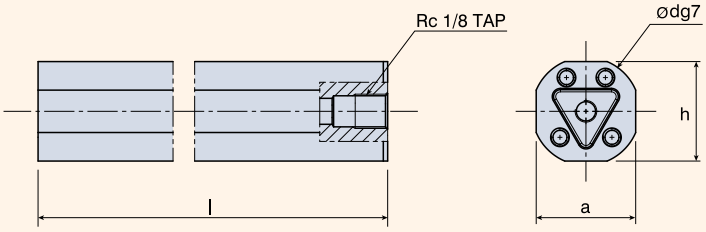


Designation			Dimension (mm)				Insert	Components					
								Lever	Screw	Shim	Shim Pin	Nozzle	Wrench
	R	L	d	l	f	ØD min							
HE-D32-PTFNR/L 16	●	●	32	35	22	40	TN□□ 1604□□	LCL 3	LCS 3	LST 31.8	LSP 3A	NZ 62	L-W 2.5

• For inserts, see page A33 - A35
• For spare part, see page A167 - A177

● Marked: Standard Items

SK-SHANK



Designation		Dimension (mm)				Components			
						Key	Key Screw	Clamp Screw	Wrench
		d	l	h	a				
SK-D25	●	25	170	23	23	SDK T10-5	SO 50090S	SH M4 X 0.7 X 16	L-W 3
SK-D32	●	32	215	30	30				

• For spare part, see page A167 - A177

● Marked: Standard Items

CARTRIDGES

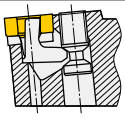
LEVER LOCK

TOP CLAMP

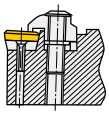
SCREW CLAMP

Cartridge Designation System

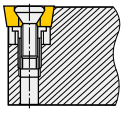
1 Clamping System



P/Lever Lock



C/Top Clamp



S/Screw Clamp

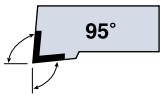
2 Insert Shape

T

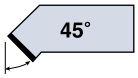
C

S

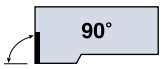
3 Approach Angle



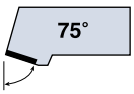
L



S

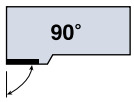


F

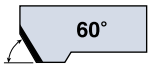


R

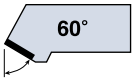
K



G

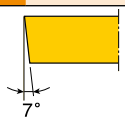


W

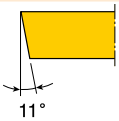


T

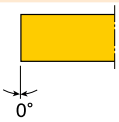
4 Insert Clearance Angle



C



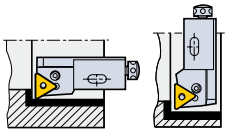
P



N

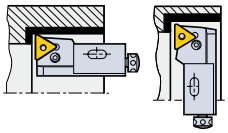
P	C	L	N	R	–	16	C	A	–	12
1	2	3	4	5		6	7	8		9

5 Hand of Tool



Right hand

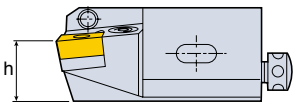
R



Left hand

L

6 Shank Height



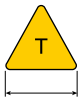
7 Type of Tool

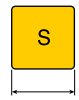
C: Cartridge

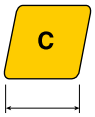
8 Type of Design

A: Letter for alternative designs

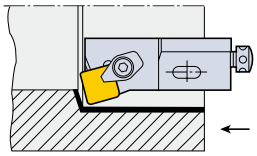
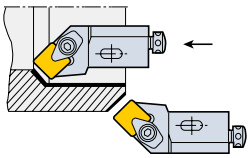
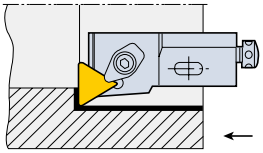
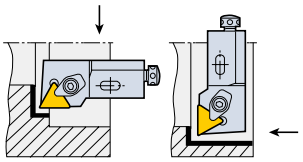
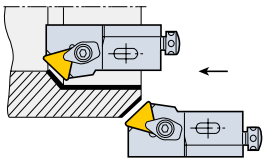
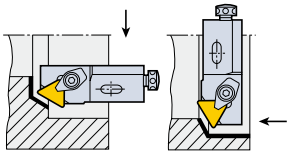
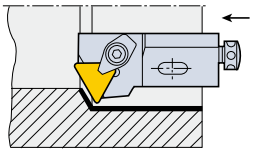
9 Cutting Edge Length



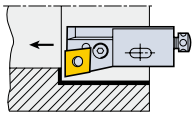
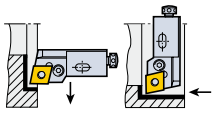
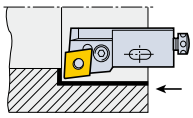
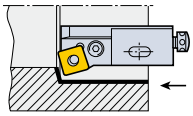
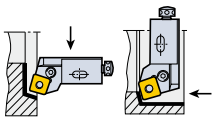
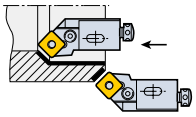
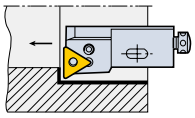
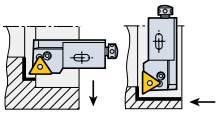
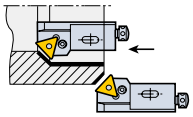
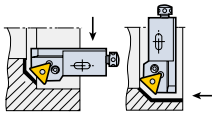
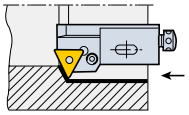




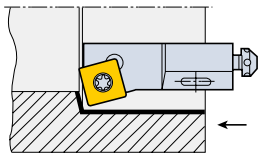
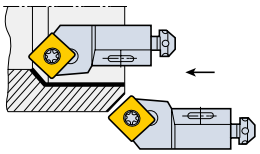
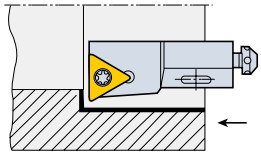
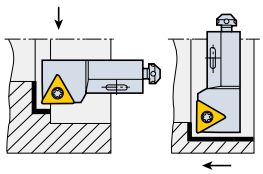
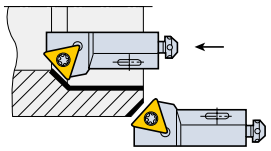
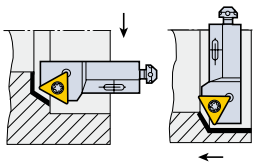
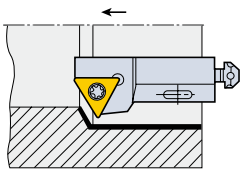
Top Clamp Type

Entering Angle	Style		Cartridge Size		
			10CA	12CA	16CA
75°		CSKPR/L	10CA 09	12CA 12	16CA 12
45°		CSSPR/L		12CA 12	16CA 12
90°		CTFPR/L	10CA 11	12CA 16	16CA 16
90°		CTGPR/L	10CA 11	12CA 16	16CA 16
45°		CTSPR/L	10CA 11	12CA 16	16CA 16
60°		CTTPR/L	10CA 11	12CA 16	16CA 16
60°		CTWPR/L	10CA 11	12CA 16	16CA 16

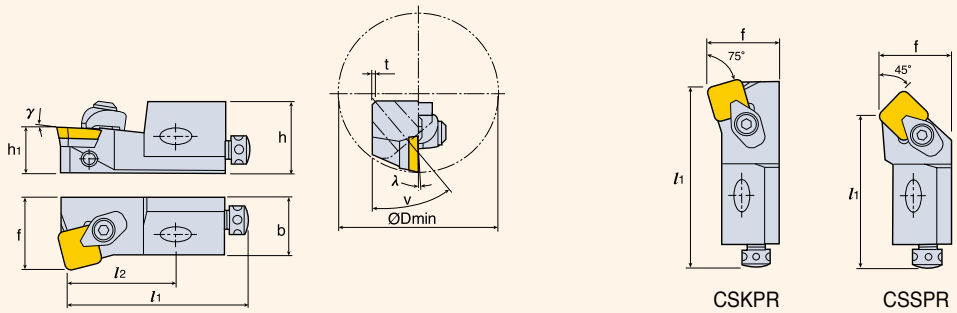
Lever Lock Type

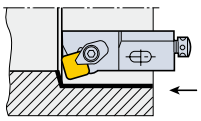
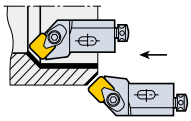
Entering Angle	Style		Cartridge Size				
			10CA	12CA	16CA	20CA	25CA
90°		PCFNR/L			16CA 12		25CA 19
90°		PCGNR/L			16CA 12		25CA 19
95°		PCLNR/L			16CA 12		25CA 19
75°		PSKNR/L	10CA 09	12CA 12	16CA 12	20CA 15	25CA 19
75°		PSRNR/L			16CA 12	20CA 15	
45°		PSSNR/L		12CA 12	16CA 12	20CA 15	
90°		PTFNR/L	10CA 11	12CA 16	16CA 16	20CA 22	25CA 27
90°		PTGNR/L	10CA 11	12CA 16	16CA 16	20CA 22	
45°		PTSNR/L	10CA 11	12CA 16	16CA 16	20CA 22	
60°		PTTNR/L	10CA 11	12CA 16	16CA 16	20CA 22	
60°		PTWNR/L	10CA 11	12CA 16	16CA 16	20CA 22	

Screw Clamp Type

Entering Angle	Style		Cartridge Size		
			10CA	12CA	16CA
75°		SSKCR/L	10CA 09	12CA 09	
45°		SSSCR/L	10CA 09	12CA 12	
90°		STFCR/L	10CA 11	12CA 16	16CA 16
90°		STGCR/L	10CA 11	12CA 16	16CA 16
45°		STSCR/L	10CA 11	12CA 16	16CA 16
60°		STTCR/L	10CA 11	12CA 16	16CA 16
60°		STWCR/L	10CA 11	12CA 16	16CA 16

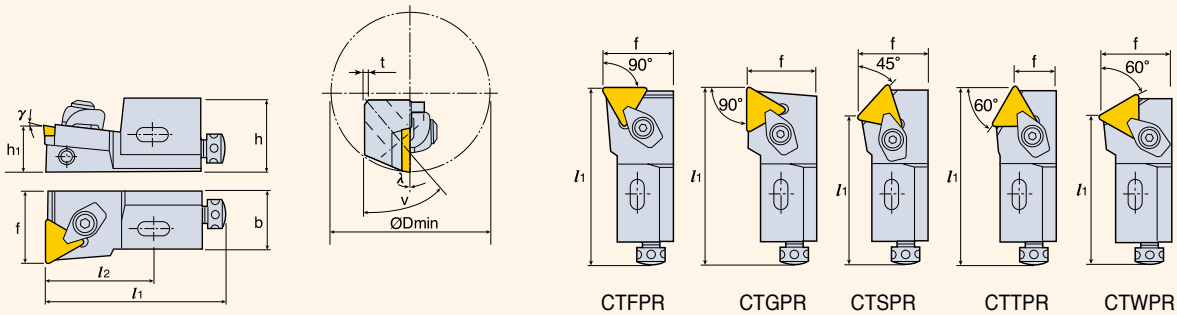
CSKPR/L CSSPR/L

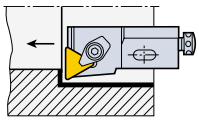
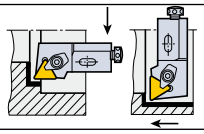
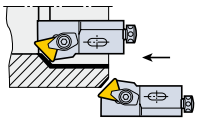
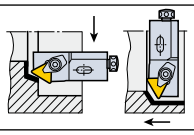
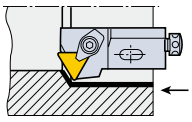


Entering Angle		Designation		Dimension (mm) h	h1	b	l1	l2	f	γ	λ	t	v	ØDmin	Insert Type	
75°		CSKPR/L	10CA 09	15	10	11	50	30	14	6°	2°	5	20°	40	SPMR SP□N	0903□□
			12CA 12	20	12	15	55	35	20	6°	2°	6	20°	50		1203□□
			16CA 12	21	16	20	63	38	25	6°	2°	0	45°	55		
45°		CSSPR/L	12CA 12	20	12	15	47	27	20	4°	4°	6	20°	50		1203□□
			16CA 12	21	16	20	53	28	25	3°	3°	0	45°	55		

- For inserts, see page A43
- For spare part, see page A165
- All cartridges are to be ordered as specials.

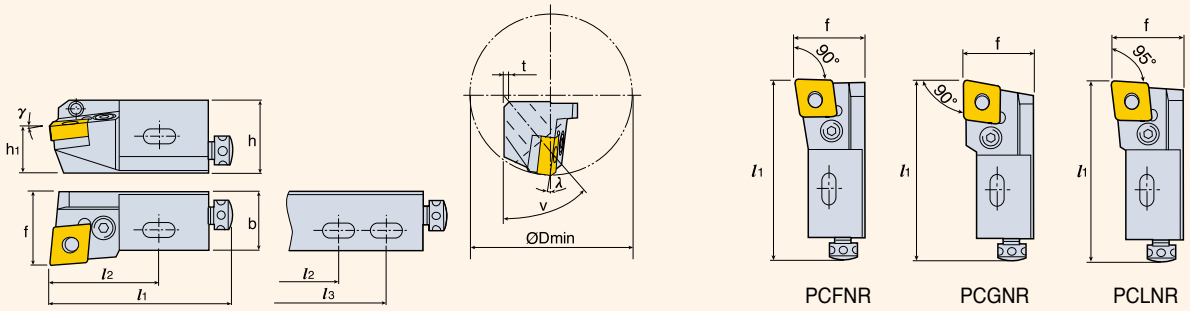
CTFPR/L CTGPR/L CTSPR/L CTTPR/L CTWPR/L

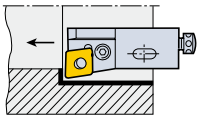
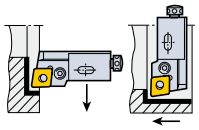
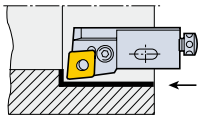


Entering Angle		Designation		Dimension (mm) h	h1	b	l1	l2	f	γ	λ	t	v	ØDmin	Insert Type	
90°		CTFPR/L	10CA 11	15	10	11	50	30	14	6°	0°	5	20°	40	TPMR TP□N	1103□□
			12CA 16	20	12	15	55	35	20	6°	0°	6	20°	50		1603□□
			16CA 16	21	16	20	63	38	25	6°	0°	0	45°	55		
90°		CTGPR/L	10CA 11	15	10	11	50	30	14	0°	4°	5	20°	40		1103□□
			12CA 16	20	12	15	55	35	20	0°	4°	6	20°	50		1603□□
			16CA 16	21	16	20	63	38	25	0°	4°	0	45°	60		
45°		CTSPR/L	10CA 11	15	10	11	44	24	14	3°	3°	5	20°	40		1103□□
			12CA 16	20	12	15	47	27	20	3°	3°	6	20°	50		1603□□
			16CA 16	21	16	20	53	28	25	3°	3°	0	45°	55		
60°		CTTPR/L	10CA 11	15	10	11	50	30	9	3°	4°	5	20°	40		1103□□
			12CA 16	20	12	15	55	35	13	3°	4°	6	20°	50		1603□□
			16CA 16	21	16	20	63	38	15	2°	3°	0	45°	60		
60°		CTWPR/L	10CA 11	15	10	11	44	24	14	5°	3°	5	20°	40		1103□□
			12CA 16	20	12	15	47	27	20	5°	3°	6	20°	50		1603□□
			16CA 16	21	16	20	53	28	25	3°	2°	0	45°	55		

- For inserts, see page A45 - A46
- For spare part, see page A165
- All cartridges are to be ordered as specials.

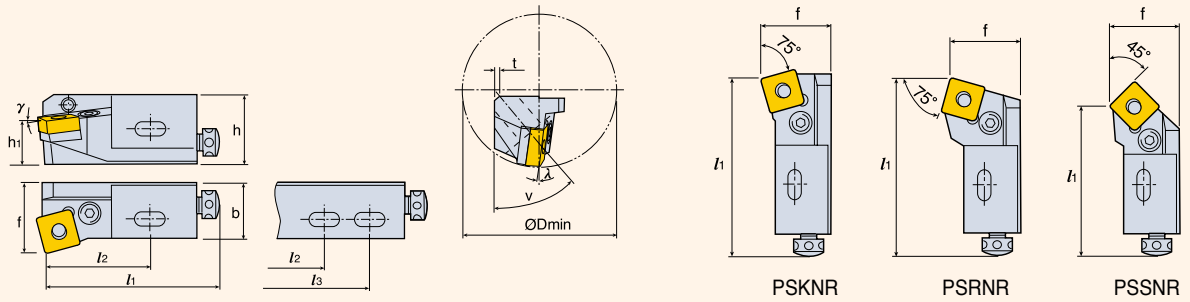
PCFNR/L PCGNR/L PCLNR/L

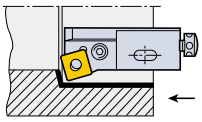
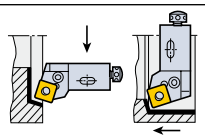
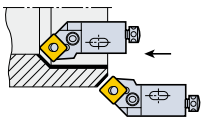


Entering Angle		Designation		Dimension (mm) h	h1	b	l1	l2	l3	f	γ	λ	t	v	ØDmin	Insert Type	
90°		PCFNR/L	16CA 12	25	16	20	63	38	-	25	- 6°	- 8°	0	45°	55	CN□□	1204□□
			25CA 19	38	25	25	100	50	70	32	- 6°	- 8°	0	45°	100		1906□□
90°		PCGNR/L	16CA 12	25	16	20	63	38	-	25	- 10°	- 6°	0	45°	55		1204□□
			25CA 19	38	25	25	100	50	70	32	- 8°	- 6°	0	45°	100		1906□□
95°		PCLNR/L	16CA 12	25	16	20	63	38	-	25	- 8°	- 8°	0	45°	55		1204□□
			25CA 19	38	25	25	100	50	70	32	- 8°	- 8°	0	45°	100		1906□□

- For inserts, see page A24 - A27
- For spare part, see page A165
- All cartridges are to be ordered as specials.

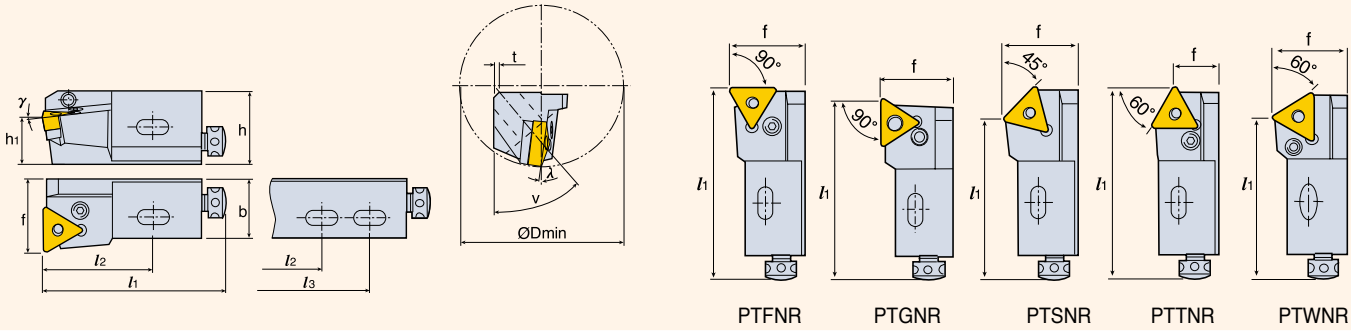
PSKNR/L PSRNR/L PSSNR/L

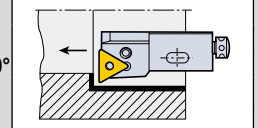
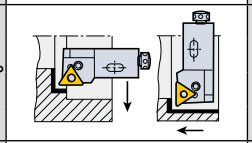
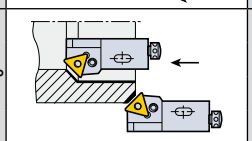
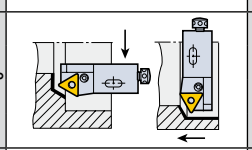
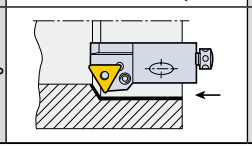


Entering Angle		Designation		Dimension (mm) h	h1	b	l1	l2	l3	f	γ	λ	t	v	ØDmin	Insert Type	
75°		PSKNR/L	10CA 09	17	10	11	50	30	-	14	- 4°	- 8°	5	20°	40	SN□□	0903□□
			12CA 12	20	12	15	55	35	-	20	- 4°	- 9°	6	20°	50		1204□□
			16CA 12	25	16	20	63	38	-	25	- 4°	- 8°	0	45°	55		
			20CA 15	30	20	20	70	40	-	25	- 4°	- 9°	0	45°	70		1506□□
			25CA 19	38	25	25	100	50	70	32	- 4°	- 8°	0	45°	100		1906□□
75°		PSRNR/L	16CA 12	25	16	20	63	38	-	25	- 11°	- 3°	0	45°	60		1204□□
			20CA 15	30	20	20	70	40	-	25	- 11°	- 3°	0	45°	70		1506□□
45°		PSSNR/L	12CA 12	20	12	15	47	27	-	20	- 9°	- 5°	6	20°	50		1204□□
			16CA 12	25	16	20	53	28	-	25	- 9°	- 5°	0	45°	55		
			20CA 15	30	20	20	60	30	-	25	- 9°	- 5°	0	45°	70		1506□□

- For inserts, see page A31 - A33
- For spare part, see page A165
- All cartridges are to be ordered as specials.

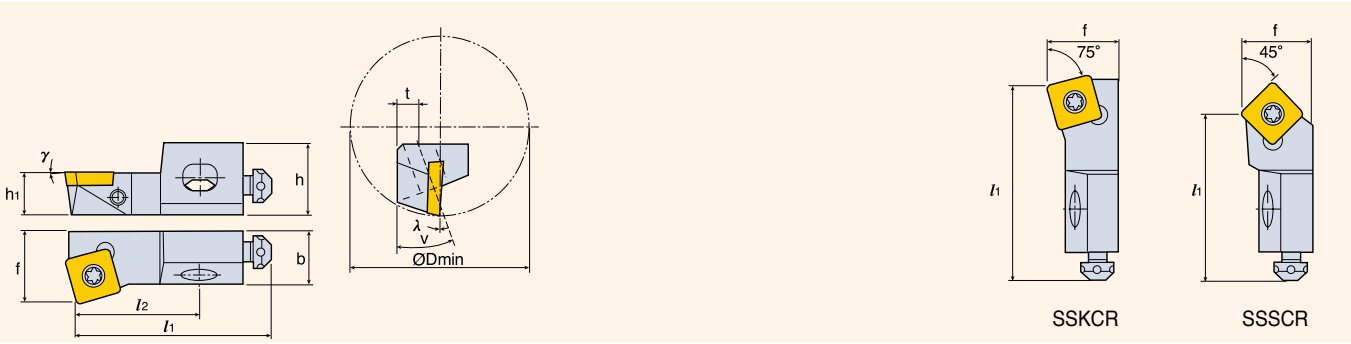
PTFNR/L PTGNR/L PTSNR/L PTTNR/L PTWNR/L

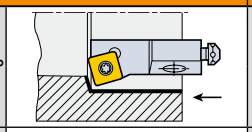
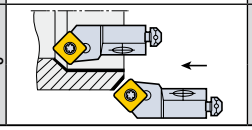


Entering Angle		Designation		Dimension (mm) h	h1	b	l1	l2	l3	f	γ	λ	t	v	ØDmin	Insert Type	
90°		PTFNR/L	10CA 11	17	10	11	50	30	-	14	- 6°	- 8°	5	20°	40	TN□□	1103□□
			12CA 16	20	12	15	55	35	-	20	- 6°	- 9°	6	20°	50		1604□□
			16CA 16	25	16	20	63	38	-	25	- 6°	- 8°	0	45°	55		
			20CA 22	30	20	20	70	40	-	25	- 6°	- 8°	0	45°	70		2204□□
			25CA 27	38	25	25	100	50	70	32	- 6°	- 9°	0	45°	100		2706□□
90°		PTGNR/L	10CA 11	17	10	11	50	30	-	14	- 10°	- 6°	5	20°	40		1103□□
			12CA 16	20	12	15	55	35	-	20	- 10°	- 6°	6	20°	50		1604□□
			16CA 16	25	16	20	63	38	-	25	- 10°	- 6°	0	45°	60		
			20CA 22	30	20	20	70	40	-	25	- 8°	- 6°	0	45°	70		2204□□
45°		PTSNR/L	10CA 11	17	10	11	44	24	-	14	- 5°	- 9°	5	20°	40		1103□□
			12CA 16	20	12	15	47	27	-	20	- 5°	- 9°	6	20°	50		1604□□
			16CA 16	25	16	20	53	28	-	25	- 8°	- 8°	0	45°	55		
			20CA 22	30	20	20	60	30	-	25	- 8°	- 8°	0	45°	70		2204□□
60°		PTTNR/L	10CA 11	17	10	11	50	30	-	9	- 6°	- 7°	5	20°	40		1103□□
			12CA 16	20	12	15	55	35	-	13	- 6°	- 7°	6	20°	50		1604□□
			16CA 16	25	16	20	63	38	-	15	- 7°	- 8°	0	45°	60		
			20CA 22	30	20	20	70	40	-	15	- 7°	- 8°	0	45°	70		2204□□
60°		PTWNR/L	10CA 11	17	10	11	44	24	-	14	- 1°	- 10°	5	20°	40		1103□□
			12CA 16	20	12	15	47	27	-	20	- 3°	- 9°	6	20°	50		1604□□
			16CA 16	25	16	20	53	28	-	25	- 2°	- 8°	0	45°	55		
			20CA 22	30	20	20	60	30	-	25	- 2°	- 8°	0	45°	70		2204□□

- For inserts, see page A33 - A35
- For spare part, see page A165
- All cartridges are to be ordered as specials.

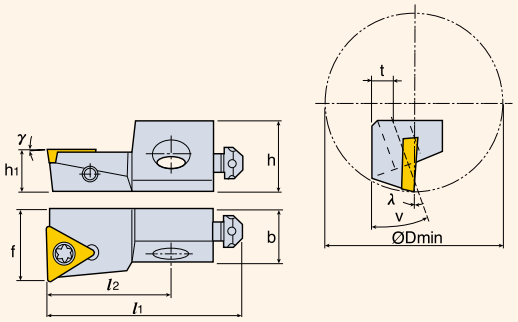
SSKCR/L SSSCR/L

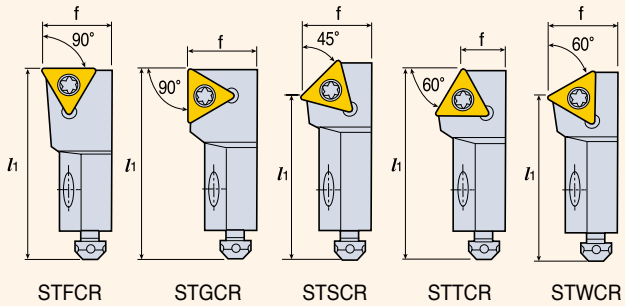


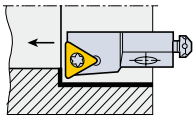
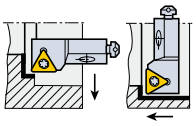
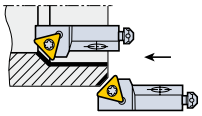
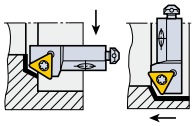
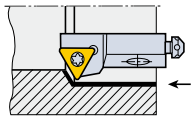
Entering Angle		Designation		Dimension (mm) h	h1	b	l1	l2	l3	f	γ	λ	t	v	ØDmin	Insert Type	
75°		SSKCR/L	10CA 09	15	10	11	50	30	-	14	- 1°	- 4°	5	20°	40	SC□□	09T3□□
			12CA 12	20	12	15	55	35	-	20	- 1°	- 4°	6	20°	50		1204□□
45°		SSSCR/L	10CA 09	15	10	11	44	24	-	14	- 4°	- 4°	5	20°	40		09T3□□
			12CA 12	20	12	15	47	27	-	20	- 4°	- 4°	6	20°	50		1204□□

- For inserts, see page A43
- For spare part, see page A165
- All cartridges are to be ordered as specials.

STFCR/L STGCR/L STSCR/L STTCR/L STWCR/L





Entering Angle		Designation		Dimension (mm) h	h1	b	l1	l2	f	γ	λ	t	v	ØDmin	Insert Type	
90°		STFCR/L	10CA 11	15	10	11	50	30	14	0°	- 3°	5	20°	40	TC□□	1102□□
			12CA 16	20	12	15	55	35	20	0°	- 3°	6	20°	50		16T3□□
			16CA 16	21	16	20	63	38	25	0°	- 6°	0	45°	55		
90°		STGCR/L	10CA 11	15	10	11	50	30	14	0°	- 3°	5	20°	40		1102□□
			12CA 16	20	12	15	55	35	20	0°	- 3°	6	20°	50		16T3□□
			16CA 16	21	16	20	63	38	25	- 3°	- 5°	0	45°	60		
45°		STSCR/L	10CA 11	15	10	11	44	24	14	- 3°	- 3°	5	20°	40		1102□□
			12CA 16	20	12	15	47	27	20	- 4°	- 4°	6	20°	50		16T3□□
			16CA 16	21	16	20	53	28	25	- 2°	- 6°	0	45°	55		
60°		STTCR/L	10CA 11	15	10	11	50	30	9	- 3°	- 4°	5	20°	40		1102□□
			12CA 16	20	12	15	55	35	13	- 3°	- 2°	6	20°	50		16T3□□
			16CA 16	21	16	20	63	38	15	- 4°	- 3°	0	45°	60		
60°		STWCR/L	10CA 11	15	10	11	44	24	14	- 2°	- 3°	5	20°	40		1102□□
			12CA 16	20	12	15	47	27	20	- 4°	- 2°	6	20°	50		16T3□□
			16CA 16	21	16	20	53	28	25	- 5°	- 3°	0	45°	55		

- For inserts, see page A44
- For spare part, see page A165
- All cartridges are to be ordered as specials.

Components for Lever Lock Type

Cartridge Designation		Lever	Screw	Shim	Shim Pin	Snap Ring	Axial Adj.Screw	Radial Adj.Screw	Mounting Screw	Washer	Wrench
PCLNR/L PCFNR/L PCGNR/L	16CA 12	LCL 4	LCS 4S	LSC 42	LSP 4	-	ASM 6	RSS M5	BH M8 X 1.25 X 30	MW 8.4 X 18	L-W 3
	25CA 19	LCL 6	LCS 6	LSC 63	LSP 6	-	ASM 6		BH M10 X 1.5 X 40	MW 10.4 X 21	L-W 4
PSKNR/L PSSNR/L PSRNR/L	10CA 09	LCL 3B	LCS 2B	-	-	LSR 3B	AJM 5F	RSS M4	BH M6 X 1 X 20	-	L-W 2
	12CA 12	LCL 4B	LCS 4B	-	-	LSR 4B	AJM 5F		BH M6 X 1 X 25	MW 6.4 X 12	L-W 2.5
	16CA 12	LCL 4	LCS 4S	LSS 42	LSP 4	-	ASM 6	RSS M5	BH M8 X 1.25 X 30	MW 8.4 X 18	L-W 3
	20CA 15	LCL 5	LCS 5	LSS 53	LSP 5	-	ASM 6		BH M8 X 1.25 X 35		L-W 4
	25CA 19	LCL 5	LCS 5	LSS 53	LSP 5	-	ASM 6		BH M10 X 1.5 X 40	MW 10.4 X 20	L-W 4
PTFNR/L PTWNR/L PTSNR/L PTGNR/L PTTNR/L	10CA 11	LCL 2B	LCS 2B	-	-	LSR 2B	AJM 5F	RSS M4	BH M6 X 1 X 20	-	L-W 2
	12CA 16	LCL 3BH	LCS 3B	-	-	LSR 3B	AJM 5F		BH M6 X 1 X 25	MW 6.4 X 12	L-W 2
	16CA 16	LCL 3	LCS 3	LST 31.8	LSP 3A	-	ASM 6	RSS M5	BH M8 X 1.25 X 30	MW 8.4 X 18	L-W 2.5
	20CA 22	LCL 4	LCS 4	LST 42	LSP 4	-	ASM 6		BH M8 X 1.25 X 35		L-W 3
	25CA 27	LCL 5	LCS 5	LST 53	LSP 5	-	ASM 6		BH M10 X 1.5 X 40	MW 10.4 X 20	L-W 3

Components for Screw Clamp Type

Cartridge Designation		Screw	Shim	Shim Pin	Axial Adj.Screw	Radial Adj.Screw	Mounting Screw	Washer	Wrench
SSKCR/L SSSCR/L	10CA 09	SO 35080I	-	-	AJM 5F	RSS M4	BH M6 X 1 X 16	-	T 15
	12CA 12	SO 45100I	-	-	AJM 5F	RSS M4	BH M6 X 1 X 25	MW 6.4 X 12	T 20
STFCR/L STWCR/L STSCR/L STTCR/L STGCR/L	10CA 11	SO 25065I	-	-	AJM 5F	RSS M4	BH M6 X 1 X 16	-	T 7
	12CA 16	SO 35080I	-	-	AJM 5F	RSS M4	BH M6 X 1 X 25	MW 6.4 X 12	T 15
	16CA 16	SO 35124I	SST 32	SO 50090S	ASM 6	RSS M5	BH M8 X 1.25 X 30	MW 8.4 X 18	T 15

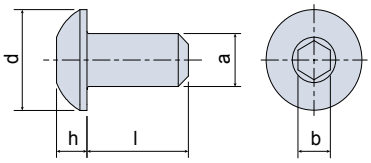
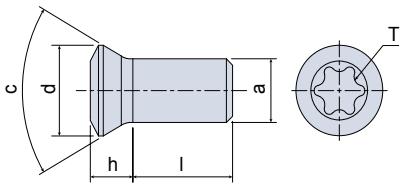
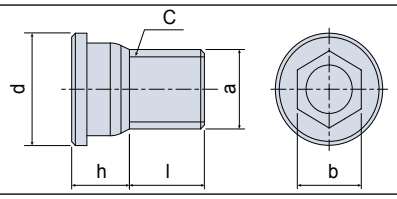
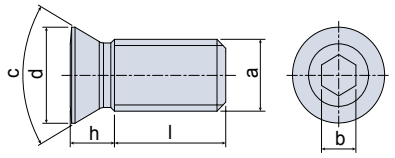
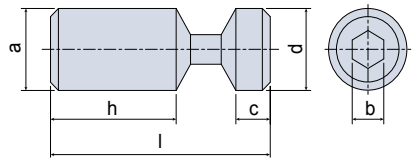
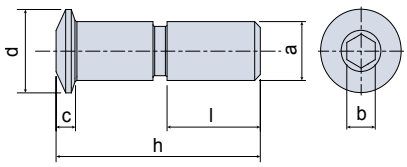
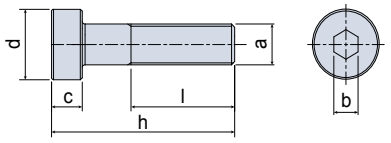
Components for Top Clamp Type

Cartridge Designation		Clamp	Screw	Shim	Shim Pin	Snap Ring	Axial Adj.Screw	Radial Adj.Screw	Mounting Screw	Washer	Wrench
CSKPR/L CSSPR/L	10CA 09	CL 2C	CLS 2C	-	-	CSR 2C	AJM 5F	RSS M4	BH M6 X 1 X 20	-	L-W 2.5
	12CA 12	CL 3C	CLS 3C	-	-	CSR 2	AJM 5F	RSS M4	BH M6 X 1 X 25	MW 6.4 X 12	L-W 3
	16CA 12	CL 3C	CLS 3C	CSS 42	CSP 3	CSR 2	ASM 6	RSS M5	BH M8 X 1.25 X 30	MW 8.4 X 18	L-W 3
CTFPR/L CTWPR/L CTSPR/L CTTPR/L CTGPR/L	10CA 11	CL 2C	CLS 2C	-	-	CSR 2C	AJM 5F	RSS M4	BH M6 X 1 X 20	-	L-W 2.5
	12CA 16	CL 3C	CLS 3C	-	-	CSR 2	AJM 5F	RSS M4	BH M6 X 1 X 25	MW 6.4 X 12	L-W 3
	16CA 16	CL 3C	CLS 3C	CST 32	CSP 3	CSR 2	ASM 6	RSS M5	BH M8 X 1.25 X 30	MW 8.4 X 18	L-W 3

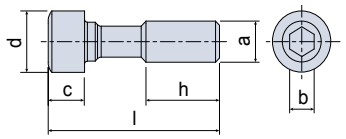
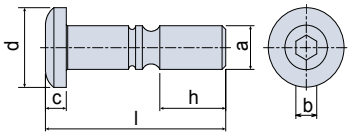
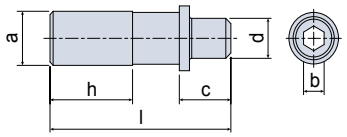
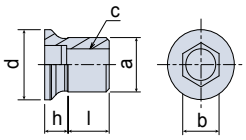
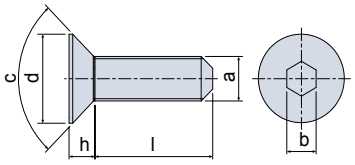
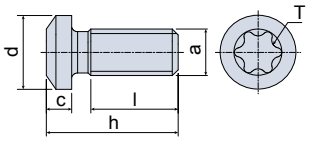
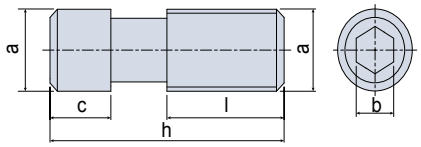
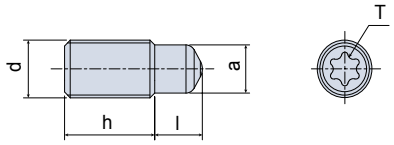
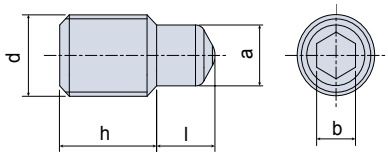
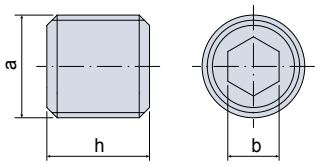
USER GUIDE

Components for Holder and Boring Bar	A167
Trouble Shooting	A178
Insert Selection for Cast Iron Materials	A180
Insert Geometry for Workpiece Shape	A182
Insert Selection & Recommended Cutting Parameters	A183
Comparison of Chipbreaker	A191

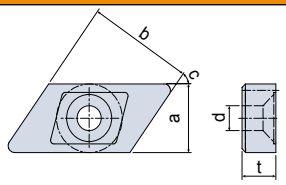
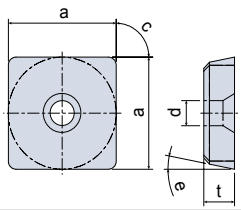
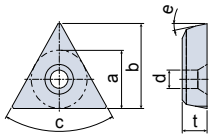
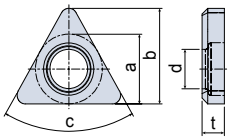
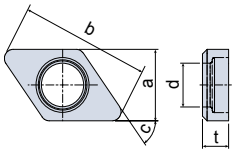
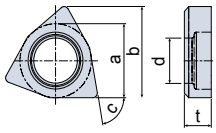
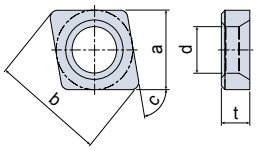
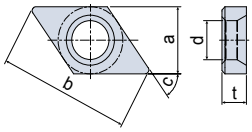
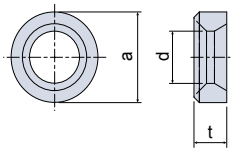
Screw

Shape	Description	Dimensions (mm)						
		a	d	h	l	b	c	T
	BH M2.5X0.45X10	M2.5X0.45	4.75	1.5	10	1.5		
	BH M4X0.7X8	M4X0.7	7.5	2.75	8	2.5		
	BH M5X0.8X8	M5X0.8	9.5	3.55		3.0		
	BH M5X0.8X10				10			
	BH M6X1X20	M6X1.0	10.5	4.2	20	4.0		
	BH M6X1X25				25			
	SO 22050I	M2.2X0.45	3.1	2.6	3.4		60°	T 7
	SO 25050I	M2.5X0.45	3.45	2.2	3			
	SO 25061I		3.7	2	4		90°	T 8
	SO 25065I		3.45	2.9	3.6		60°	T 7
	SO 30040I	M3X0.5	4.3	2.86	5.44			T 9
	SO 30055I			2.1	3.4			
	SO 30100I				4.9			
	SO 35080I	M3.5X0.6	5.3	3.2	5.3			T 15
	SO 35120I		4.7	6.5	5.5			T 10
	SO 35124I		5.3	5	6.7			T 15
	SO 40050I	M4X0.7	5.8	3	8.3			
	SO 40085I		5.45	3.5	5			
	SO 45100I	M4.5X0.75	7	3.7	6.3			T 20
	SO 45130I				10.6			
	SO 50090I	M5X0.8		4.5	7.6			
	TS 40097I	M4X0.7	5.2	2.6	7.1		43°	T 15
	TS 50A105I	M5X0.8	7	4.7	5.8		60°	T 20
	SO 50090S	M5X0.5	6.3	3.1	5.4	3.5	M3.5X0.6	
	SO 60105S	M6X0.5	8.5	4.7	5.8	5	M4.5X0.75	
	SO 80180I	M8X1.25	10.7	4.7	13.3	4	60°	
	LCS 2	M5X0.8	M5X0.8	8	14	2	2.2	
	LCS 2B	M5X0.8	M5X0.8	4.5	10	2	1.5	
	LCS 3	M6X1.0	6	9.7	16.5	2.5	3.5	
	LCS 3B	M5X0.8	M5X0.8	8	12	2	2.5	
	LCS 4	M8X1.0	8	10	21	3	6	
	LCS 4B	M6X1.0	6	8.5	13.5	2.5	1	
	LCS 4S	M8X1.0	8	9.2	18	3	3	
	LCS 5	M8X1.0	8	12	23	3	5.5	
	LCS 5-L25.5	M8X1.0	7.95	14.5	25.5	3	5.4	
	LCS 6	M10X1.0	10	15	27	4	6	
	LCS 8	M12X1.0	12	18	36	5	10	
	LCS 8-L39	M12X1.0	11.95	21	39	5	10	
	LCS 8-L43	M12X1.0	10.85	25	43	5	10	
	LCS 16C	M6X1.0	6	14	21	2.5	4	
	LCS 25C	M10X1.0	10	18	30	4	6	
	CLS 1.25	M3X0.5	4.5	9	4.7	1.5	1.3	
	CLS 2	M5X0.8	6.5	15	6.3	2.5	1.2	
	CLS 2C	M4X0.7	6.5	14.4	7.6	2.5	1.9	
	CLS 3	M6X1.0	8.5	21.5	9.8	3	2.2	
	CLS 3C	M5X0.8	8	19	9.5	3	2.5	
	CLS 3S	M6X1.0	8.5	16.2	4.5	3	2.2	
	CLS 16K	1/4-20 UNC	10	25	12	4	4	
	CSC 4	1/4-20 UNC	11	30	17	4	5	

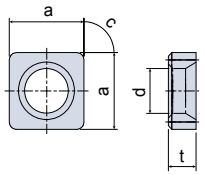
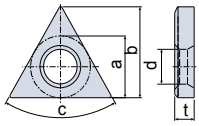
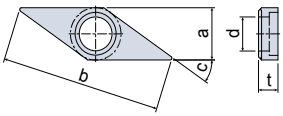
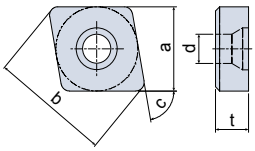
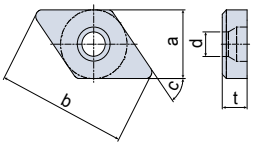
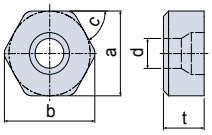
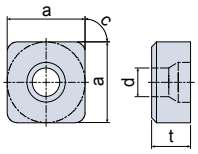
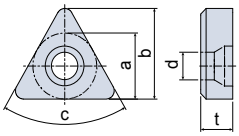
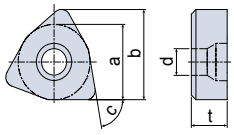
Screw

Shape	Description	Dimensions (mm)						
		a	d	h	l	b	c	T
	DLS 3	M4X0.7	6	8	16.8	2.5	3	
	DLS 4	M5X0.8	8	8.5	21	3	3.5	
	DLS 5	M6X1.0	10	12	26.5	4	4.5	
	WCS 4	M6X1.0	11	12	26	3	3	
	WCS 4B	M6X1.0	11	8	22.5	3	3	
	WSS 33	M5X0.8	3.7	8	16.5	2.5	5	
	WSS 43	M6X1.0	5	8	18	3	5	
	TS 5035062S	M5X0.5	6.44	2.24	3.96	3.5	M3.5X0.6	
	FH M3X0.5X10	M3X0.5	6	2	8	2	90°	
	SC 4	M4X0.7	6.35	11	7.3		2.7	T 15
	SC 4-SH	M4X0.7	6.35	11	7.3		2.1	T 15
	XNSM 0520	M5X0.8		20	7	2.5	6.0	
	XNSM 0620	M6X1.0		20	7	3	7.0	
	XNSM 0825	M8X1.0		25	12.5	4	6.5	
	BLCS 2	2.5	M3X0.35	3.5	1			T 6
	BLCS 3	3	M4X0.5	4.5	1.2	2		
	RSS M4	M4X0.5		5		2		
	RSS M5	M5X0.5		5		2.5		

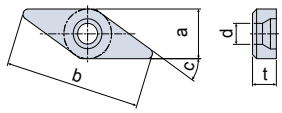
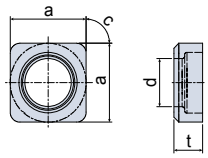
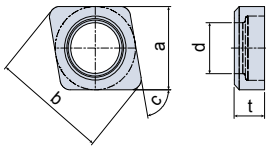
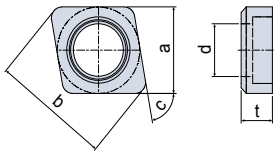
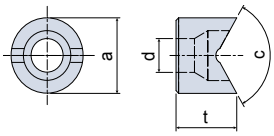
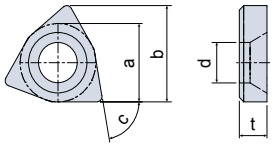
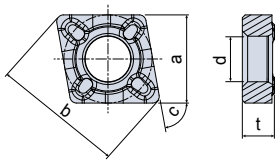
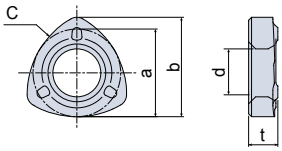
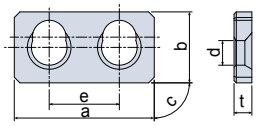
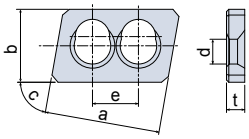
Shim

Shape	Description	Dimensions (mm)					
		a	b	c	d	e	t
	CSK 1604R/L	9.3	14.7	55°	3.4		4.76
	CSS 32	8.15		90°	2.5	11°	3.18
	CSS 42	11.2			2.5		3.18
	CST 32	8.15	11.8	60°	2.5	11°	3.18
	CST 42	10.7	15.6		3.4		3.18
	CST 43	10.7	15.6		3.4		4.76
	S 3	9.525	13.08	60°	5.4		4.76
	S 31						3.18
	WST 33	8.63	11.95		5.2		4.76
	WST 43	11.8	16.7		6.2		4.76
	S 45	12.7	23.5	55°	7.7		4.76
	MSW 32	8.7	10.7	80°	5.4		3.18
	MSW 43	12.7	15.5		7.7		4.76
	LSC 32	8.5	12.33	80°	5		3.18
	LSC 42	11.6	16.93		6.6		
	LSC 53	14.8	21.91		8.2		4.76
	LSC 63	17.9	25.85		9.75		
	LSC 83	24.4	36.63		12.75		
	LSC 84	24.4	36.63		12.75		6.35
	LSC 85	24.4	36.63		12.75		7.94
	LSC 64D	19.05	26.85		9.75		6.35
	LSC 84D	25.4	36.73		12.75		6.35
	LSC 85D	25.4	36.73		12.75		7.94
	LSD 32	8.4	17	55°	4.9		3.18
	LSD 42	11.59	28.06		6.6		
	LSD 43	11.59	28.06		6.6		4.76
	SSD 32	8.4	17		5.4		3.18
	LSR 1203	9.8			4.9		3.18
	LSR 1604	13.5			6.6		4.76
	LSR 2004	17.2			8.2		4.76
	LSR 2506	22			9.7		6.35
	LSR 3206	28			12.7		6.35
	LSR 32	8.5			4.9		3.18
	LSR 42	11.6			6.6		3.18
	LSR 53	14.6			8.2		4.76

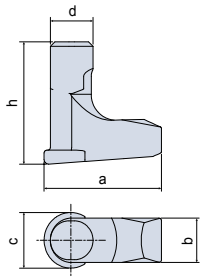
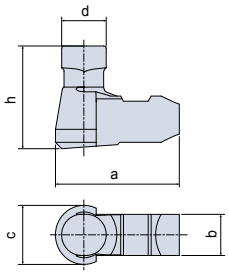
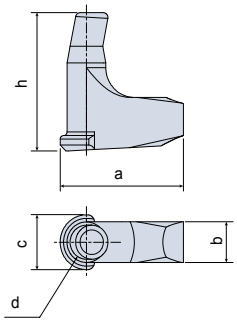
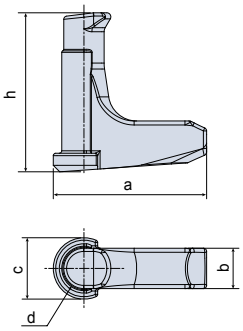
Shim

Shape	Description	Dimensions (mm)					
		a	b	c	d	e	t
	LSS 32	8.5		90°	5		3.18
	LSS 42	11.75			6.6		
	LSS 53	14.8			8.2		4.76
	LSS 63	17.9			9.75		
	LSS 84	24.4			12.75		6.35
	LSS 85	24.4			12.75		7.94
	LSS 64D	19.05			9.75		6.35
	LSS 84D	25.4			12.75		6.35
	LSS 85D	25.4			12.75		7.94
	LSS 104	31.75			12.75		6.35
	SSS 32	8.4			5.4		3.18
	SSS 43N	11.2			7.5		4.76
	LST 31.8	8.49	11.94	60°	5		2.7
	LST 32	8.63	11.95		4.9		3.18
	LST 42	11.7	16.75		6.6		3.18
	LST 53	14.58	21.47		8.2		4.76
	LST 63	17.85	26.18		9.7		
	SST 32	8.4	11.8		5.4		3.18
	SSV 32	8.3	26.2	35°	5.4		3.18
	IVSN 324	9.2	27.8		5.4		3.18
	MSV 2.522	7.9	22.45		5.4		3.18
	SSVN 2.522						
	TSC 42	12.7	17.99	80°	4.5		3.18
	TSC 43		17.99		4.5		4.76
	TSC 44		17.99		4.5		6.35
	TSC 54	15.78	22.76		5.5		6.35
	TSD 42	12.7	24.71	55°	4.5		3.18
	TSD 43				4.5		4.76
	TSD 44				4.5		6.35
	TSH 42	12.7	14.05	60°	4.5		3.18
	TSH 43	12.7	14.05		4.5		4.76
	TSH 44	12.7	14.17		4.5		6.35
	TSH 64	19.05	21.25		5.5		
	TSS 42	12.7		90°	4.5		3.18
	TSS 43	12.7			4.5		4.76
	TSS 44	12.7			4.5		6.35
	TSS 54	15.78			5.5		
	TST 33	9.525	13.09	60°	4		4.76
	TST 43	12.7	17.45		4.5		
	TSW 44	12.7	15.23	80°	4.5		6.35

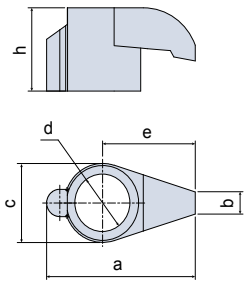
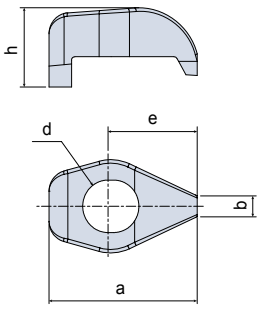
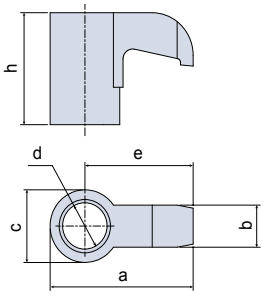
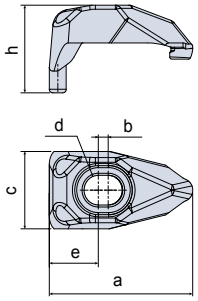
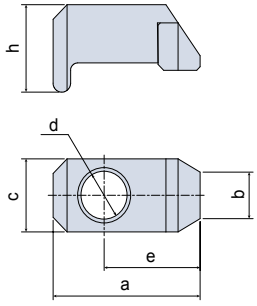
Shim

Shape	Description	Dimensions (mm)					
		a	b	c	d	e	t
	TSV 33	9.525	27	35°	4		4.76
	S 40	12.7		90°	7.7		4.76
	S 50	15.875					
	S 48	12.7	17.82	80°	7.7		4.76
	E 43	12.7	19.33	75°	7.7		4.76
	CBRS 06	5.6		140°	2.5		4.5
	CBRS 09	8.8			3		6
	CBRS 12	11					6.5
	CERS 06	5.6		120°	2.5		4.7
	CERS 09	8			3		6
	CERS 12	11					7
	PSW 32	8.7	10.7	80°	4.5		3.18
	PSW 42	11.7	14.4		5.5		
	LSC 54-NX	15.875	23.25	80°	8.2		5.78
	LSC 53-NX	15.875	23.25	80°	8.2		4.19
	LSC 53-NXS	14.55	21.30	80°	8.2		4.19
	LSS 54-NX	15.875	21.02	90°	8.1		5.78
	LSS 53-NX	15.875	21.02	90°	8.1		4.19
	LSS 53-NXS	14.55	19.58	90°	8.2		4.19
	LSB 53R/L	14.9	17	R15	8.15		5
	LN 5025-T6.35	49.9	25.3	90°	12.7	25	6.35
	LN 4025-T6.35-R/L	40	25.4	80°	12.7	16	6.35

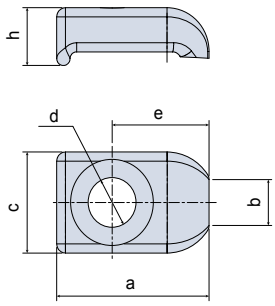
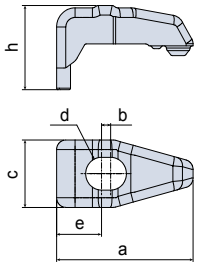
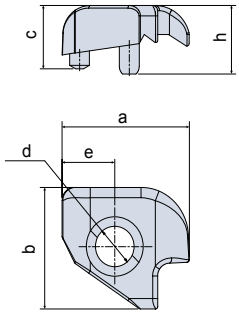
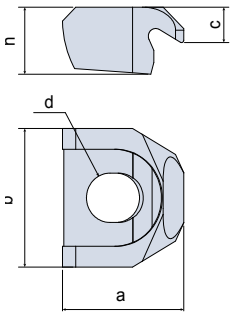
Lever

Shape	Description	Dimensions (mm)				
		a	b	c	d	h
	LCL 3	10.2	3.7	4.4	3.6	12.2
	LCL 4	13.2	4.8	6	4.8	13.2
	LCL 4A	16				14.6
	LCL 5	19	6	7.6	6	17.5
	LCL 6	20.5	7.4	9.2	7.5	21
	LCL 8	25.4	8.6	12.2	8.7	25.4
	BLCL 2	7.5	2.2	3	2.6	7.8
	BLCL 3	9.9	3	3.8	3.7	11
	LCL 2B	7.7	2.7	3.6	2.1	6.5
	LCL 3B	10	3.2	4.6	3.6	8
	LCL 3BH					9.6
	LCL 4B	13.6	4.8	6	4.8	10.4
	LCL 10C	10.8	3.4	4.6	3	11.6
	LCL 12C	13	3.8	4.6	3.5	13.2
	LCL 16C	18.3	4.7	6.2	4.5	18
	LCL 20C	20.4	6	7.6	5.6	18.8
	LCL 25C	24.2	7.5	9.4	7.5	24
	LCL 32C	30	8.6	12.5	8	27
	LCL 25CH	24.2	7.5	9.4	7.5	24
	LCL 32CH	30	8.6	12.5	8	27
	LCL 16-NX	19	5	7.6	5	19.7
	LCL 25-NX	25.4	7.5	12.2	7.5	26.5
	LCL 32-NX	30	8.6	12.5	8	28.2

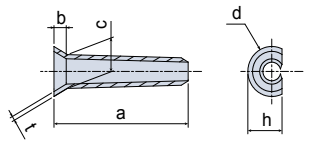
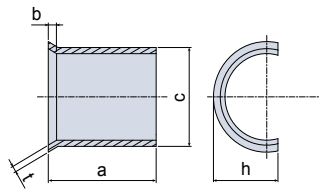
Clamp

Shape	Description	Dimensions (mm)					
		a	b	c	d	e	h
	CL 1.25	9.5	2	5.4	3.4	5.2	4.5
	CL 2	14	2	7.8	5.2	8.7	7
	CL 3	16.5	2	9	6.2	10	9
	CL 4	21.5	3.08	11	8	13.4	11.6
	CL 2C	13.2	1.8		4.5	7.7	6.8
	CL 3C	17	2.2		5.5	9.3	9.3
	CLM 12	22.35	6.3	10.9	M8x1.0	16.9	16.8
	CLM 20	18.5	5.6	9.5	M6X1.0	13.75	9.65
	CLM 30	25.4	6.3	10.9	M8x1.0	19.95	16.8
	DLM 3	21.2	1.5	11	4.2	7.24	12.5
	DLM 3V	33.4	2	14	6.2	11.66	16.1
	DLM 4	25.8	2	14.5	5.4	7.4	13.5
	DLM 5	30	1.9	17	6.2	8.1	17
	DLM 6	33	2	18	6.2	8.5	19
	BCL 6	21	6.36	10	6.6	13.7	12
	BCL 6-20A	21	5	10	6.6	13.7	12

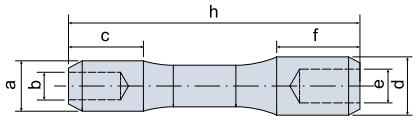
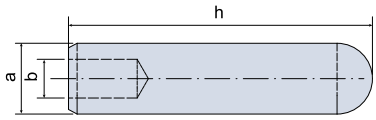
Clamp

Shape	Description	Dimensions (mm)					
		a	b	c	d	e	h
	3127 C	17.45	5.6	11.1	5.5	11.1	6.35
	CCL 4	29.5	2	14	6.8	9.7	18.5
	CL 16KR	25.6	23.4	12.2	7.8	10.6	13.2
	CL 16KL						
	WC 33	16.4	18	4.6	6.4		8.7
	WC 43		24				

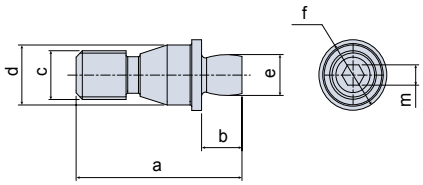
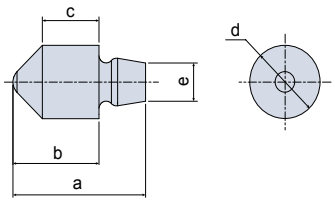
Shim Pin

Shape	Description	Dimensions (mm)					
		a	b	c	d	h	t
	CSP 3	9.8	0.9	2.4	3.5	2.5	0.3
	CSP 16K	11.5	1	3.6	5.6	4	0.5
	LSP 3	6.9	0.9	4.9		3.2	0.3
	LSP 3A	5.3					
	LSP 4	5.8		6.6		4.3	0.4
	LSP 5	8.8	1	8.2		5.4	0.5
	LSP 6	11		9.7		6	0.6
	LSP 8	12	2	13		9	0.7
	LSP 16C	7.7	0.7	6.6		4.3	0.4

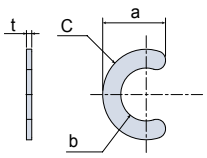
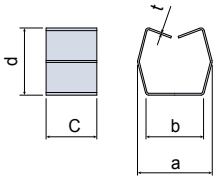
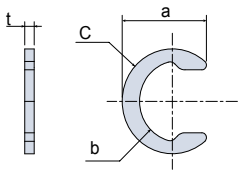
Shim Pin Punch

Shape	Description	Dimensions (mm)						
		a	b	c	d	e	f	h
	SPP 5-6	12.1	6.6	18	14	8.1	20	70
	SPP 8	17	9.3					73

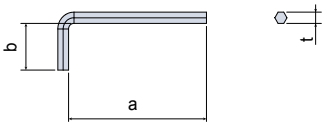
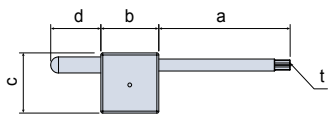
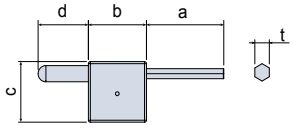
Lock Pin

Shape	Description	Dimensions (mm)						
		a	b	c	d	e	f	m
	MLP 3	14.5	4.7	M4 X 0.7	4.8	3.7	6.3	2
	MLP 4	21.21	5.16	M6 X 1.0	7.37	5.03	8.71	2.5
	MLP 4S	13.7	5		0		7	
	MLP 4-06	18.5	6.7		7.4	5	8.7	
	KP 48S	9.5	6.2	4	5	2.6		

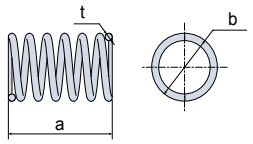
Snap Ring

Shape	Description	Dimensions (mm)				
		a	b	c	d	t
	CSR 1.25	3	2.78	4		0.3
	CSR 2	4.7	7	6.5		0.4
	CSR 2C	4.3	3	5.6		0.3
	LSR 2B	3.8	3.3	2	3	0.1
	LSR 3B	4.3	3.4	3	3.8	
	LSR 4B	5.9	4.9	4.3	4.8	
	BLSR 2	3	2.5	1.5	2	
	BLSR 3	3.9	3.3	1.8	2.2	
	CSR 4	8.4	8	10		0.8
	WSR 4	7.5	5.8	6.3		0.7

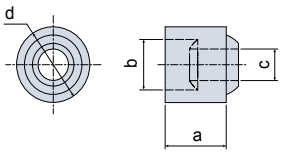
Wrench

Shape	Description	Dimensions (mm)				
		a	b	c	d	t
	L-W 1.5	45	14			1.5
	L-W 2	50	16			2
	L-W 2.5	56	18			2.5
	L-W 3	63	20			3
	L-W 4	70	25			4
	L-W 5	80	28			5
	L-W 6	90	32			6
	L-W 8	100	36			8
	L-W 10	112	40			10
	L-W 12	125	45			12
	L-W 14	140	56			14
	L-W 17	160	63			17
	L-W 19	180	70			19
	T 5	34	15	15	13	T 5
	T 6					T 6
	T 7					T 7
	T 8	39	19	19		T 8
	T 9	42				T 9
	T 10		22	22	14	T 10
	T 15	45		27	15	T 15
	T 20	49		30		T 20
	T 25	53		35	18	T 25
	L-W 1.5F	35	15	15	13	1.5
	L-W 2F	38	15	15	13	2

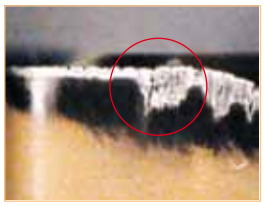
Spring

Shape	Description	Dimensions (mm)		
		a	b	t
	DSP 3	8	5.6	0.6
	DSP 4	13	7	0.65
	DSP 5		9	0.75
	KSP 40	7.5	4	0.45
	KSP 48	13.5		
	KSP 90	12.7	9	0.9

Coolant Nozzle

Shape	Description	Dimensions (mm)			
		a	b	c	d
	NZ 62	4.5	4	2.5	6
	NZ 83	6	5.5	3.5	8
	NZ 104	7		4	10
	NZ 125	8	7.5	5	12
	NZ 146	10	9	6	14

Insert Failure Trouble Shooting

		Cause
Crater Wear		• Excessive cutting speed or feed rate (alloy steel and over 0.3% carbon steel) • Workpiece material contains high hardness chemical elements (tool steel, die steel)
Flank Wear		• Excessive cutting speed (alloy steel and over 0.3% carbon steel) • Workpiece material contains high hardness chemical elements (tool steel, die steel) • Increase cutting speed if abnormal flank wear is caused by a very slow cutting speed
Deformation		• Excessive cutting speed or feed rate
Chipping		• Excessive feed rate • Interrupted cutting
Notching		• Machining scaled part • From machining work hardened materials
Built-Up-Edge		• Slow cutting speed • Sticky materials
Mechanical Fracture		• Excessive feed rates when interrupted cutting
Thermal Cracking		• Repeated thermal shock (interrupted cutting)

Solution
• Reduce cutting speed or feed rate or use more wear resistant grade • Use coolant • Use more positive rake geometry • Reduce cutting speed or feed rate or use more wear resistant grade • Use coolant
• Reduce cutting speed or feed rate or use more wear resistant grade • Use coolant • Use more positive rake geometry • Reduce cutting speed or feed rate or use more wear resistant grade • Use coolant
• Reduce cutting speed or feed rate or use more wear resistant grade • Use coolant • Use stronger insert geometry
• Reduce feed rate • Use tougher grade • Use stronger insert geometry • Remove coolant completely or apply coolant correctly
• Use tougher grade • Use stronger insert geometry • Increase lead angle • Use tougher grade • Use more positive rake geometry • Increase lead angle
• Increase cutting speed • Use more positive rake geometry • Use more positive rake geometry • Use tougher grade
• Use tougher grade • Use stronger insert geometry • Reduce feed rate • Remove coolant completely or apply coolant correctly • Increase cutting speed
• Use tougher grade • Use stronger insert geometry • Reduce feed rate • Remove coolant completely or apply coolant correctly

Change Grade

Harder ←

PV3010 > CT3000

TT1300 > TT7310 > TT8115 > TT9215 > TT8125 > TT5080 > TT5100 > TT9225 > TT8135 > TT7100 > TT9235 > TT9080 > TT8020

Change Chipbreaker

Less B.U.E*
Less Heat ←

	SF												
FA	FG	ML	EM	MP	ET	PC	MT	WT	MC	MG-	RT	RH	HD
	FC	VF									HB	RX	HT
	WS												HY
	EA												HZ

Chip Control

Tight ↔ Open

	FC												HD
	SF												HT
FA	FG	MC	PC	VF	ML	MP	MT	MG-	ET	RT	RH	HY
	WS						WT			HB	RX	HZ
	EA												

*B.U.E: Built-Up-Edge

K
T·CAST
The Best Solution for Cast Iron Machining
Satisfaction guaranteed with TaeguTec's T-CAST turning grades for cast iron machining
Ceramic
AW20, AB30, AS500, SC10, AS10
High Productivity
CBN
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Ultra High Cutting Speed and High Surface Finish, Longer Tool Life
T·CAST Grades
Cermet and PVD Coated
CT3000, PV3010
Improved Surface Finish
General Machining
CVD Carbide Coated
TT1300, TT7310

Grade Selection by Workpiece Material

● Gray cast iron (180 - 220HBN) ● Ductile cast iron (200 - 240HBN)

Workpiece condition	Grades											
	TB650	KB90A	TB730	AW20	AB30	AS500	SC10	AS10	PV3010	CT3000	TT1300	TT7310
Scale and severe interruption	●	●	●			●		● ●			●	● ●
Scale and light interruption	●	●	●		● ●	● ●	● ●	● ●			● ●	● ●
No scale, continuous cut	●	●	●	●	● ●	● ●	●	●	● ●	● ●	● ●	●

Recommended Cutting Parameters

Materials	Grades											
	TB650	KB90A	TB730	AW20	AB30	AS500	SC10	AS10	PV3010	CT3000	TT1300	TT7310
	Cutting speed (m/min), Feed rate (mm/rev)											
Gray cast iron (180 - 220HBN)		800 - 1200 0.1 - 0.5	800 - 1200 0.1 - 0.3	400 - 1000 0.07 - 0.2	300 - 800 0.1 - 0.25	400 - 1000 0.2 - 0.6	300 - 1000 0.2 - 0.6	300 - 800 0.2 - 0.6	100 - 350 0.1 - 0.25	100 - 300 0.1 - 0.25	150 - 450 0.1 - 0.7	100 - 300 0.1 - 0.7
Ductile cast iron (200 - 240HBN)	200 - 500 0.05 - 0.2				250 - 500 0.05 - 0.2	200 - 600 0.1 - 0.5	250 - 600 0.2 - 0.6	250 - 500 0.2 - 0.6	100 - 300 0.1 - 0.25	100 - 250 0.1 - 0.25	120 - 350 0.1 - 0.5	100 - 250 0.1 - 0.5

Chipbreaker and Grade Selection by Workpiece Material

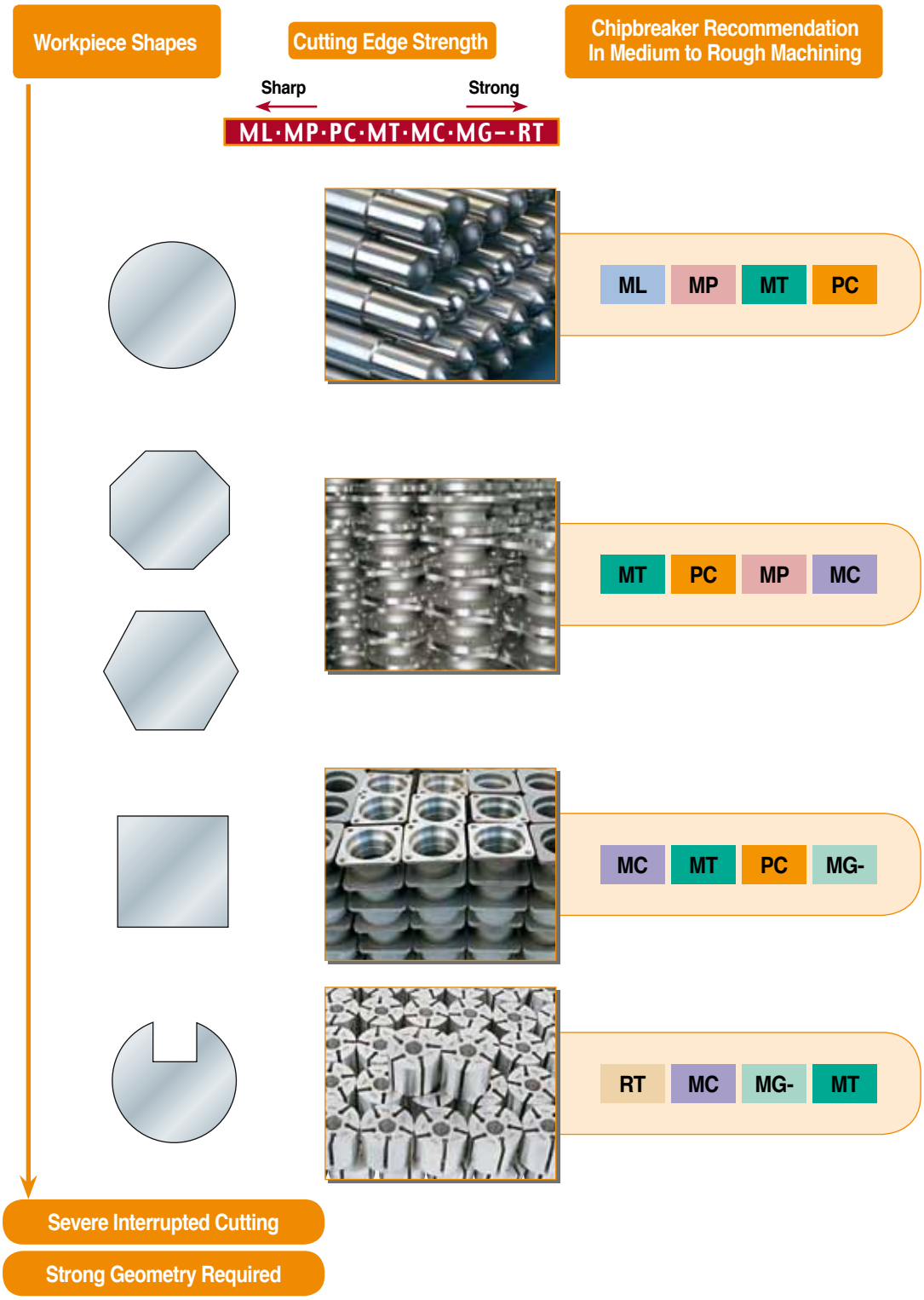
● Gray cast iron (180 - 220HBN)

Workpiece condition	Depth of cut	Chipbreaker/Grade Recommended cutting conditions (V,f)				
Roughing (Scale & severe interruption)	4.0 - 6.0	RT/TT1300 300, 0.4	RT/TT7310 240, 0.4			
	6.0 -	RT/TT1300 270, 0.4	RT/TT7310 220, 0.4			
Medium (Scale & light interruption)	1.0 - 2.5	- NMN/KB90A 760, 0.3	- NMN/KB90A 760, 0.3	- NGA/AS500 540, 0.35	MT/TT1300 360, 0.35	RT/TT1300 320, 0.4
	2.5 - 4.0	- NMN/KB90A 720, 0.35	- NGA/AS10 540, 0.35	RT/TT1300 300, 0.4		
Finishing (No scale & continuous cutting)	- 1.0	- NMN/KB90A 800, 0.2	- NGA/AW20 800, 0.2	NGA/AB30 700, 0.2	NGA/AS500 600, 0.25	MT/TT1300 400, 0.25

● Ductile cast iron (200 - 240HBN)

Workpiece condition	Depth of cut	Chipbreaker/Grade Recommended cutting conditions (V,f)				
Roughing (Scale & severe interruption)	4.0 - 6.0	RT/TT7310 225, 0.4				
	6.0 -	RT/TT7310 210, 0.4				
Medium (Scale & light interruption)	1.0 - 2.5	- NMA/TB650 500, 0.2	- NGA/AB30 470, 0.2	MT/TT1300 305, 0.3	RT/TT1300 270, 0.35	
	2.5 - 4.0	- NGA/AS10 440, 0.3	MT/TT7310 260, 0.35	RT/TT7310 235, 0.35		
Finishing (No scale & continuous cutting)	- 1.0	- NMA/TB650 550, 0.2	- NGA/AB30 520, 0.2	MT/TT1300 320, 0.2	MT/PV3010 320, 0.2	MT/CT3000 290, 0.2

Insert Geometry by Workpiece Shape



Recommended Cutting Parameters

Insert style: **N** : Negative inserts **P** : Positive inserts

Application: **F** : Finishing **M** : Medium **R** : Roughing

Depth of cut (mm)

Workpiece, stability and machine condition
- **-Best:** no scale, no interruption, good rigidity
- **-Normal:** a little scale, a little interruption, good rigidity
- **-Poor:** heavy scale, severe interruptions, poor rigidity

First and second choice grade, chipbreaker, cutting speed & feed rate in mm/rev

					Workpiece Material											
					0.15% Carbon Steel (150 ≒ BHN)				0.45% Carbon Steel (180 - 200BHN)				0.55% Carbon Steel (200 - 220BHN)			
N	F	- 1.0	Best	1	PV3010	FC	475	0.12	PV3010	FG	355	0.15	PV3010	FG	330	0.15
				2	CT3000	FC	430	0.12	TT8115	FG	340	0.15	TT8115	FG	315	0.15
	M	1.0 - 2.5	Best	1	TT5100	ML	330	0.20	TT8115	MP	330	0.30	TT8115	MP	305	0.30
				2	TT8125	ML	420	0.20	TT8125	MP	300	0.30	TT8125	MP	280	0.30
			Normal	1	TT5100	MP	315	0.24	TT8115	PC	310	0.30	TT8115	PC	290	0.30
				2	TT8125	MP	400	0.24	TT8125	PC	280	0.30	TT8125	PC	260	0.30
			Poor	1	TT8020	MT	235	0.24	TT8135	RT	190	0.32	TT8135	RT	180	0.32
				2												
		2.5 - 4.0	Best	1	TT5100	PC	300	0.28	TT8115	PC	310	0.35	TT8115	MP	290	0.35
				2	TT8125	PC	385	0.28	TT8125	PC	280	0.35	TT8125	PC	260	0.35
			Normal	1	TT5100	MT	285	0.28	TT8125	PC	280	0.35	TT8125	MT	260	0.35
				2	TT8125	MT	370	0.28	TT8125	MT	265	0.40	TT8125	MG-	245	0.40
			Poor	1	TT8020	MT	215	0.24	TT8135	RT	180	0.36	TT8135	RT	180	0.36
				2												
	R	4.0 - 7.0	Normal	1	TT5100	RT	230	0.45	TT8125	RT	260	0.56	TT8125	RT	240	0.56
				2	TT8125	RT	320	0.45	TT8115	RT	290	0.56	TT8135	RT	270	0.56
			Poor	1	TT8020	RT	180	0.36	TT8135	RT	180	0.45	TT8135	RT	160	0.45
				2												
		7.0 -	Normal	1	TT5100	RH	210	0.57	TT8125	RH	245	0.71	TT8125	RH	225	0.71
				2												
			Poor	1	TT8020	RH	165	0.46	TT8135	RH	165	0.57	TT8135	RH	150	0.57
				2												
P	F	- 1.0	Best	1	PV3010	FG	475	0.12	PV3010	FG	355	0.15	PV3010	FG	330	0.15
				2	CT3000	FG	420	0.12	CT3000	FG	315	0.15	CT3000	FG	295	0.15
	M	1.0 - 3.5	Best	1	TT5100	MT	285	0.17	TT8115	MT	310	0.20	TT8115	MT	285	0.20
				2	TT8125	MT	370	0.17	TT8125	MT	280	0.20	TT8125	MT	255	0.20
			Normal	1	TT5100	MT	275	0.17	TT8125	MT	280	0.20	TT8125	MT	255	0.20
				2	TT8125	MT	350	0.17	TT5100	MT	215	0.20	TT5100	MT	195	0.20
			Poor	1	TT8020	MT	220	0.17	TT8135	MT	190	0.20	TT8135	MT	180	0.20
				2												

Recommended Cutting Parameters

Insert style: **N** : Negative inserts **P** : Positive inserts

Application: **F** : Finishing **M** : Medium **R** : Roughing

Depth of cut (mm)

Workpiece, stability and machine condition
- **-Best:** no scale, no interruption, good rigidity
- **-Normal:** a little scale, a little interruption, good rigidity
- **-Poor:** heavy scale, severe interruptions, poor rigidity

First and second choice grade, chipbreaker, cutting speed & feed rate in mm/rev

					Workpiece Material											
					Low Carbon (0.13 - 0.18%) Alloy Steel (150 - 180BHN)				Cr-Mo Alloy Steel (200 - 220BHN)				Ni-Cr-Mo Alloy Steel (200 - 220BHN)			
N	F	- 1.0	Best	1	PV3010	FC	420	0.12	PV3010	FG	330	0.15	PV3010	FG	320	0.15
				2	CT3000	FC	380	0.12	TT8115	FG	315	0.15	TT8115	FG	305	0.15
	M	1.0 - 2.5	Best	1	TT5100	ML	295	0.20	TT8115	MP	305	0.30	TT8115	MP	295	0.30
				2	TT8125	ML	375	0.20	TT8125	MP	280	0.30	TT8125	MP	270	0.30
			Normal	1	TT5100	PC	285	0.24	TT8115	PC	290	0.30	TT8115	PC	280	0.30
				2	TT8125	PC	365	0.24	TT8125	MC	260	0.30	TT8125	PC	250	0.30
			Poor	1	TT8020	MT	205	0.24	TT8135	RT	180	0.32	TT8135	RT	170	0.32
				2												
		2.5 - 4.0	Best	1	TT5100	PC	265	0.28	TT8115	PC	290	0.35	TT8115	PC	280	0.35
				2	TT8125	PC	340	0.28	TT8125	PC	260	0.35	TT8125	PC	250	0.35
			Normal	1	TT5100	MT	255	0.28	TT8125	MT	260	0.35	TT8125	MT	250	0.35
				2	TT8125	MT	315	0.28	TT8125	MG-	245	0.40	TT8125	MG-	240	0.40
			Poor	1	TT8020	MT	190	0.24	TT8135	RT	180	0.36	TT8135	RT	170	0.36
				2												
	R	4.0 - 7.0	Normal	1	TT5100	RT	205	0.45	TT8125	RT	240	0.56	TT8125	RT	235	0.56
				2	TT8125	RT	250	0.45	TT8115	RT	270	0.56	TT8115	RT	260	0.56
			Poor	1	TT8020	RT	160	0.36	TT8135	RT	160	0.45	TT8135	RT	160	0.45
				2												
		7.0 -	Normal	1	TT5100	RH	185	0.57	TT8125	RH	225	0.71	TT8125	RH	220	0.71
				2						RT	225	0.64	TT8125	RT	220	0.64
			Poor	1	TT8020	RH	150	0.46	TT7100	RH	140	0.57	TT8135	RH	150	0.57
				2												
P	F	- 1.0	Best	1	PV3010	FG	420	0.12	PV3010	FG	330	0.15	PV3010	FG	320	0.15
				2	CT3000	FG	380	0.12	CT3000	FG	295	0.15	CT3000	FG	285	0.15
	M	1.0 - 3.5	Best	1	TT5100	MT	265	0.17	TT8115	MT	285	0.20	TT8115	MT	275	0.20
				2	TT8125	MT	345	0.17	TT8125	MT	255	0.20	TT8125	MT	250	0.20
			Normal	1	TT5100	MT	255	0.17	TT8125	MT	255	0.20	TT8125	MT	250	0.20
				2	TT8125	MT	330	0.17	TT5100	MT	195	0.20	TT5100	MT	190	0.20
			Poor	1	TT8020	MT	205	0.17	TT8135	MT	180	0.20	TT8135	MT	170	0.20
				2												

Recommended Cutting Parameters

Insert style: **N** : Negative inserts **P** : Positive inserts

Application: **F** : Finishing **M** : Medium **R** : Roughing

Depth of cut (mm)

Workpiece, stability and machine condition
- **-Best:** no scale, no interruption, good rigidity
- **-Normal:** a little scale, a little interruption, good rigidity
- **-Poor:** heavy scale, severe interruptions, poor rigidity

First and second choice grade, chipbreaker, cutting speed & feed rate in mm/rev

					Workpiece Material											
					Bearing Steel (200 - 220BHN)				Carbon Tool Steel (200 - 220BHN)				Alloy Tool Steel (200 - 220BHN)			
N	F	- 1.0	Best	1	PV3010	FG	330	0.15	PV3010	FG	330	0.15	PV3010	FG	320	0.15
				2	TT8115	FG	315	0.15	TT8115	FG	315	0.15	TT8115	FG	305	0.15
	M	1.0 - 2.5	Best	1	TT8115	MP	305	0.30	TT8115	MP	305	0.30	TT8115	MP	295	0.30
				2	TT8125	MP	280	0.30	TT8125	MP	280	0.30	TT8125	MP	250	0.30
			Normal	1	TT8115	PC	290	0.30	TT8115	PC	290	0.30	TT8115	PC	280	0.30
				2	TT8125	PC	260	0.30	TT8125	PC	260	0.30	TT8125	PC	250	0.30
			Poor	1	TT8135	RT	180	0.32	TT8135	RT	180	0.32	TT8135	RT	170	0.32
				2												
		2.5 - 4.0	Best	1	TT8115	PC	290	0.35	TT8115	MT	290	0.35	TT8115	PC	280	0.35
				2	TT8125	PC	260	0.35	TT8125	MT	260	0.35	TT8125	PC	250	0.35
			Normal	1	TT8125	MT	260	0.35	TT8125	MT	260	0.35	TT8125	MT	250	0.35
				2	TT8125	MG-	245	0.40	TT8125	MG-	245	0.40	TT8125	MG-	240	0.40
			Poor	1	TT8135	RT	180	0.36	TT8135	RT	180	0.36	TT8135	RT	170	0.36
				2												
	R	4.0 - 7.0	Normal	1	TT8125	RT	240	0.56	TT8125	RT	240	0.56	TT8125	RT	235	0.56
				2	TT8115	RT	270	0.56	TT8115	RT	270	0.56	TT8115	RT	260	0.56
			Poor	1	TT8135	RT	160	0.45	TT8135	RT	160	0.45	TT8135	RT	140	0.45
				2												
		7.0 -	Normal	1	TT8125	RH	225	0.71	TT8125	RH	225	0.71	TT8115	RH	220	0.71
				2												
			Poor	1	TT8135	RH	150	0.57	TT8135	RH	150	0.57	TT8135	RH	140	0.57
				2												
P	F	- 1.0	Best	1	PV3010	FG	330	0.15	PV3010	FG	330	0.15	PV3010	FG	320	0.15
				2	CT3000	FG	295	0.15	CT3000	FG	295	0.15	CT3000	FG	285	0.15
	M	1.0 - 3.5	Best	1	TT8115	MT	285	0.20	TT8115	MT	285	0.20	TT8115	MT	275	0.20
				2	TT8125	MT	255	0.20	TT8125	MT	255	0.20	TT8125	MT	250	0.20
			Normal	1	TT8125	MT	255	0.20	TT8125	MT	255	0.20	TT8125	MT	250	0.20
				2	TT5100	MT	195	0.20	TT5100	MT	195	0.20	TT5100	MT	190	0.20
			Poor	1	TT8135	MT	180	0.20	TT8135	MT	180	0.20	TT8135	MT	170	0.20
				2												

Recommended Cutting Parameters

Insert style: **N** : Negative inserts **P** : Positive inserts

Application: **F** : Finishing **M** : Medium **R** : Roughing

Depth of cut (mm)

Workpiece, stability and machine condition
- **-Best:** no scale, no interruption, good rigidity
- **-Normal:** a little scale, a little interruption, good rigidity
- **-Poor:** heavy scale, severe interruptions, poor rigidity

First and second choice grade, chipbreaker, cutting speed & feed rate in mm/rev

					Workpiece Material											
					High Speed Steel (220 - 260BHN)				Cold Working Die Steel (240 - 260BHN)				Hard Material (40≦HRC)			
N	F	- 1.0	Best	1	PV3010	FG	230	0.10	TT8115	FG	240	0.14	AB2010		120	0.10
				2	CT3000	FG	210	0.10	TT8125	FG	210	0.14	TB610		120	0.10
	M	1.0 - 2.5	Best	1	TT5080	ML	180	0.15	TT8115	MP	230	0.28	AB2010		120	0.15
				2	TT5100	ML	160	0.15	TT8125	MP	210	0.28	TB670		120	0.15
			Normal	1	TT5080	MP	170	0.20	TT8115	PC	215	0.28	AB20		100	0.15
				2	TT5100	MP	150	0.20	TT8125	PC	195	0.28	TB730		100	0.15
			Poor	1	TT5100	MT	135	0.25	TT8135	RT	130	0.29	AB30		80	0.10
				2									KB90A		80	0.10
		2.5 - 4.0	Best	1	TT5080	MP	170	0.20	TT8115	PC	215	0.32	AB20		100	0.15
				2	TT5100	MP	145	0.20	TT8125	PC	195	0.32	KB90A		100	0.15
			Normal	1	TT5080	MT	160	0.25	TT8125	MT	175	0.32	AB20		100	0.15
				2	TT5100	MT	135	0.25	TT8125	MG-	185	0.37	KB90A		100	0.15
			Poor	1	TT8135	RT	140	0.25	TT8135	RT	130	0.33	AB30		80	0.10
				2									KB90A		80	0.10
	R	4.0 - 7.0	Normal	1					TT8125	RT	180	0.52				
				2					TT8115	RT	205	0.52				
			Poor	1					TT8135	RT	125	0.41				
				2												
		7.0 -	Normal	1					TT8125	RH	170	0.65				
				2												
			Poor	1					TT8135	RH	115	0.52				
				2												
P	F	- 1.0	Best	1	PV3010	FG	230	0.10	PV3010	FG	250	0.14	TB670		150	0.10
				2	CT3000	FG	210	0.10	CT3000	FG	225	0.14	AB20		120	0.10
	M	1.0 - 3.5	Best	1	TT5080	MT	165	0.15	TT8115	MT	215	0.18	TB670		150	0.12
				2	TT5100	MT	145	0.15	TT8125	MT	195	0.18	AB20		120	0.12
			Normal	1	TT5080	MT	160	0.15	TT8125	MT	215	0.18	AB20		100	0.12
				2	TT5100	MT	140	0.15	TT5100	MT	195	0.18	TB670		100	0.12
			Poor	1	TT8135	MT	135	0.15	TT8135	MT	160	0.18	AB30		80	0.08
				2									KB90A		80	0.08

Recommended Cutting Parameters

Insert style: **N** : Negative inserts **P** : Positive inserts

Application: **F** : Finishing **M** : Medium **R** : Roughing

Depth of cut (mm)

Workpiece, stability and machine condition
- **-Best:** no scale, no interruption, good rigidity
- **-Normal:** a little scale, a little interruption, good rigidity
- **-Poor:** heavy scale, severe interruptions, poor rigidity

First and second choice grade, chipbreaker, cutting speed & feed rate in mm/rev

					Workpiece Material							
					Martensitic/Ferritic Stainless Steel (180 - 200BHN)				Austenitic Stainless Steel (180 - 200BHN)			
N	F	- 1.0	Best	1	PV3010	SF	330	0.12	PV3010	SF	265	0.12
				2	TT9215	EA	260	0.12	TT9215	EA	210	0.12
	M	1.0 - 2.5	Best	1	TT9215	EM	230	0.20	TT9215	EM	200	0.20
				2								
			Normal	1	TT9225	EM	210	0.24	TT9225	EM	185	0.24
				2	TT9235	MP	180	0.24	TT9235	MP	145	0.24
			Poor	1	TT9235	MT	170	0.24	TT9235	MT	135	0.24
				2								
		2.5 - 4.0	Best	1	TT9225	EM	200	0.24	TT9225	EM	160	0.24
				2								
			Normal	1	TT9225	MP	190	0.28	TT9225	MP	150	0.28
				2	TT9235	MT	165	0.28	TT9235	MT	135	0.28
			Poor	1	TT9235	MT	165	0.24	TT9235	MT	125	0.24
				2								
	R	4.0 - 7.0	Normal	1	TT9225	ET	170	0.45	TT9225	ET	130	0.45
				2								
			Poor	1	TT9235	ET	150	0.36	TT9235	ET	110	0.36
				2								
		7.0 -	Normal	1	TT9225	RX	160	0.64	TT9225	RX	120	0.64
				2								
			Poor	1	TT9235	RX	135	0.55	TT9235	RX	100	0.55
				2								
P	F	- 1.0	Best	1	PV3010	FG	330	0.12	PV3010	FG	265	0.12
				2	TT9215	FG	270	0.12	TT9215	FG	220	0.12
	M	1.0 - 3.5	Best	1	TT9225	PC	195	0.17	TT9225	PC	160	0.17
				2								
			Normal	1	TT9225	PC	185	0.17	TT9225	PC	150	0.17
				2	TT9235	MT	160	0.17	TT9235	MT	130	0.17
			Poor	1	TT9235	MT	150	0.17	TT9235	MT	120	0.17
				2								

Recommended Cutting Parameters

Insert style: **N** : Negative inserts, **P** : Positive inserts

Application: **F** : Finishing, **M** : Medium, **R** : Roughing

Depth of cut (mm)

Workpiece, stability and machine condition
- **-Best:** no scale, no interruption, good rigidity
- **-Normal:** a little scale, a little interruption, good rigidity
- **-Poor:** heavy scale, severe interruptions, poor rigidity

First and second choice grade, chipbreaker, cutting speed & feed rate in mm/rev

					Workpiece Material							
					Ni Based Super Alloy Inconel 718 (300 - 350BHN)				Titanium Alloy Ti-6Al-4V			
N	F	- 1.0	Best	1	TC430		250	0.15	TT5080	EA	100	0.15
				2	TT5080	EA	60	0.15				
	M	1.0 - 2.5	Best	1	TC430		250	0.15	TT5080	EM	90	0.20
				2	TT5080	EM	60	0.20				
			Normal	1	TT5080	MP	50	0.20	TT5080	MP	80	0.20
				2								
			Poor	1	TT8020	MT	35	0.20	TT8020	MT	50	0.20
				2								
		2.5 - 4.0	Best	1	TT5080	EM	50	0.20	TT5080	EM	80	0.20
				2								
			Normal	1	TT5080	MP	45	0.20	TT5080	MP	70	0.20
				2								
			Poor	1	TT8020	MT	30	0.20	TT8020	MT	45	0.20
				2								
	R	4.0 - 7.0	Normal	1	TT5080	ET	40	0.20	TT5080	ET	60	0.20
				2								
			Poor	1	TT8020	ET	25	0.20	TT8020	ET	40	0.20
				2								
		7.0 -	Normal	1								
				2								
			Poor	1								
				2								
P	F	- 1.0	Best	1	TT5080	FG	60	0.10	TT5080	FG	100	0.10
				2								
	M	1.0 - 3.5	Best	1	TT5080	PC	50	0.15	TT5080	PC	80	0.15
				2								
			Normal	1	TT5080	PC	45	0.15	TT5080	PC	75	0.15
				2								
			Poor	1	TT8020	MT	30	0.15	TT8020	MT	50	0.15
				2								

Recommended Cutting Parameters

Insert style: **N** : Negative inserts **P** : Positive inserts

Application: **F** : Finishing **M** : Medium **R** : Roughing

Depth of cut (mm)

Workpiece, stability and machine condition
- **-Best:** no scale, no interruption, good rigidity
- **-Normal:** a little scale, a little interruption, good rigidity
- **-Poor:** heavy scale, severe interruptions, poor rigidity

First and second choice grade, chipbreaker, cutting speed & feed rate in mm/rev

					Workpiece Material							
					Gray Cast Iron (180 - 220BHN)				Ductile Cast Iron (200 - 240BHN)			
N	F	- 1.0	Best	1	AS500		600	0.25	AS500		440	0.20
				2	TT1300	MT	400	0.25	TT1300	MT	320	0.20
	M	1.0 - 2.5	Best	1	AS500		570	0.35	AS500		420	0.30
				2	TT1300	MT	380	0.35	TT1300	MT	305	0.30
			Normal	1	AS10		540	0.35	AS10		400	0.30
				2	TT1300	MT	360	0.35	TT1300	MT	290	0.30
			Poor	1	TT1300	RT	320	0.40	TT7310	RT	250	0.35
				2	TT7310	RT	270	0.40				
		2.5 - 4.0	Best	1	AS10		540	0.35	AS10		400	0.30
				2	TT1300	MT	360	0.35	TT1300	MT	275	0.30
			Normal	1	AS10		510	0.35	AS10		380	0.30
				2	TT1300	RT	320	0.40	TT7310	MT	260	0.35
			Poor	1	TT1300	RT	300	0.40	TT7310	RT	235	0.35
				2	TT7310	RT	255	0.40				
	R	4.0 - 7.0	Normal	1	TT1300	RT	300	0.60	TT7310	RT	240	0.52
				2								
			Poor	1	TT7310	RT	240	0.60	TT7310	RT	225	0.52
				2								
		7.0 -	Normal	1	TT1300	RT	270	0.80	TT7310	RT	210	0.70
				2								
			Poor	1	TT7310	RT	220	0.80	TT7310	RT	200	0.70
				2								
P	F	- 1.0	Best	1	TT1300	MT	400	0.18	TT1300	MT	320	0.15
				2	TB730		700	0.15				
	M	1.0 - 3.5	Best	1	TT1300	MT	380	0.25	TT1300	MT	305	0.20
				2								
			Normal	1	TT1300	MT	360	0.25	TT1300	MT	290	0.20
				2	TT7310	MT	305	0.25	TT7310	MT	250	0.20
			Poor	1	TT7310	MT	290	0.25	TT7310	MT	235	0.20
				2								

Recommended Cutting Parameters

Insert style: **N** : Negative inserts **P** : Positive inserts

Application: **F** : Finishing **M** : Medium **R** : Roughing

Depth of cut (mm)

Workpiece, stability and machine condition
- **-Best:** no scale, no interruption, good rigidity
- **-Normal:** a little scale, a little interruption, good rigidity
- **-Poor:** heavy scale, severe interruptions, poor rigidity

First and second choice grade, chipbreaker, cutting speed & feed rate in mm/rev

					Workpiece Material											
					Low Si Aluminum Alloy (12.2%≧Si)				High Si Aluminum Alloy (12.2%<Si)				Copper Alloy			
N	F	- 1.0	Best	1	KP300	-	1300	0.10	KP500	-	600	0.10	KP300	-	1100	0.10
				2	K10	ML	500	0.15	K10	ML	150	0.15	TT5100	ML	500	0.15
	M	1.0 - 2.5	Best	1	KP300	-	1300	0.15	KP500	-	600	0.15	KP300	-	1100	0.15
				2	K10	ML	500	0.35	K10	ML	150	0.30	TT5100	ML	400	0.25
			Normal	1	KP300	-	1300	0.15	KP500	-	600	0.15	KP300	-	1100	0.15
				2	K10	ML	500	0.35	K10	ML	150	0.30	TT5100	ML	400	0.25
			Poor	1	KP300	-	1000	0.15	KP500	-	600	0.15	KP300	-	900	0.15
				2	K10	ML	400	0.35	K10	ML	120	0.30	TT5100	MP	320	0.25
		2.5 - 4.0	Best	1	KP300	-	1300	0.15	KP500	-	600	0.15	KP300	-	1100	0.15
				2	K10	ML	500	0.35	K10	ML	150	0.30	TT5100	MP	400	0.30
			Normal	1	KP300	-	1300	0.15	KP500	-	600	0.15	KP300	-	1100	0.15
				2	K10	ML	500	0.35	K10	ML	150	0.30	TT5100	MP	400	0.30
			Poor	1	KP300	-	1000	0.15	KP500	-	600	0.15	KP300	-	900	0.15
				2	K10	ML	400	0.35	K10	ML	120	0.30	TT5100	MT	320	0.30
P	F	- 1.0	Best	1	KP300	-	1300	0.10	KP500	-	600	0.10	KP300	-	1100	0.10
				2	K10	FL	500	0.15	K10	FL	150	0.13	TT5100	FG	400	0.15
	M	1.0 - 3.5	Best	1	KP300	-	1300	0.15	KP500	-	600	0.15	KP300	-	1100	0.15
				2	K10	FL	500	0.25	K10	FL	150	0.22	TT5100	FG	400	0.20
			Normal	1	KP300	-	1300	0.15	KP500	-	600	0.15	KP300	-	1100	0.15
				2	K10	FL	500	0.25	K10	FL	150	0.22	TT5100	FG	400	0.20
			Poor	1	KP300	-	1000	0.15	KP500	-	500	0.15	KP300	-	900	0.15
				2	K10	FL	400	0.25	K10	FL	120	0.25	TT5100	MT	320	0.20

T-TURN Comparison of Chipbreaker

P M K N S H

Description			TaeguTec	Sandvik	Kennametal	Seco	Walter	Valenite	Mitsubishi	Sumitomo	Kyocera	Tungaloy	Korloy	Iscar
Negative Insert	For Steel	Double sided	WS	WF, WL	FW	W-MF2	NF	W3	SW	LUW, SEW	WP	AFW	LW	
			WT	WMX,WM	MW	W-M3	NM	W6	MW	GUW	WQ	ASW	VW,HW	WG
			FA		FF FS	FF1		F2	FH	FL,FA	GP, DP	TF	HU	SF
			FG	QF	FP FN	MF2	NF3 NFT		SH	SU SE	HQ	ZF ZM,TS,NS,NM TSF	VG,HF,GF VF VQ	NF
			FC	PF, LC			NS6		FY,SA	LU	CJ CQ		VL, VB, HC	
			VF	K		95			ES	GX,HM		S		
			ML	GP-	GP-K,MS- MS GP		G-NMT,NS4 NS5,G1		FJ,SY MJ	UP	A3, AH	CB,17	HA	12 PP
			MP	QM	P	MF3	NM4	M2					HS,GS	TF VL
			MC	SM	MN	MR3	NM4				GS	AS	HC	
			PC	PM		M3	NM6		MP, MV	GE,GU	PS	TM	VM	
			MT		MP RP		NS8	M3	MA	UX,UG	HS CS		HM,GM	GN
			MG-		UN	M4	MG-		MG-	UZ	MG- C	38 DM,MG- 33,37	B20,B25	MG-
			RT	PR HM	UM RN MG-	M5 MR7	NM5,NM7 NRT NM6,NM9	R3	MH,GJ GH HAS,HDS	ME MU, MX	GT,PT PH,HT	TH	HR, GR	NR
		Single sided	RX	PR	RM		NRF				PX			
			RH	QR MR	RP	R6,RR9 R5,R4,37 RR6	NR6 NR5,NR8 NR7	R6	HZ HA HH	MP HG HP	HX	TRS 57	GH	RP NM
			HT, HD	HR, 31	RH	R8,56,57 R7	NRR		HC5 HX,HBS	HF HU		65 TU	VT,HH	
			HY, HZ						HV,HDS,HXD	HW			VH,B40	
	Stainless Steel	Double sided	EA,SF	MF	FP	MF1	NF4	F5	FS MS	SU EX	MQ,GU MU MS		HA	
			EM	MM	UP	MF4	NM4					SS	HS	
			ET	MR MM-MR	RP	MR6, MF5 MM-RR6	NR4	M5		GU	HU	SM	GS	TNM
			SU	SF, SGF MX-SM, 23, SM SR, SMR								HMM, SA		
	Cast Iron	Double sided	MT	KF,KM	FN				MA	UZ	MG-	CF CM		
			MG-		RP		NM5		MG-		C		B25	
			RT	KR	UN				GH	GZ	ZS, GC	CH	GR	
Positive Insert	for Steel		WT	WM	MW	W-F2			MW					WG
			FA	PF,UF	UF,11,GM	FF1	PF4 PF5		FV	LU FP	GK, GP, DP	01,PF,PSF	HFP	38, PF
			SA						SMG	FC	CF, GF GQ GR	JS		
			FG	UM	FP LF	F1	PS4 PS5	PM3 PM4	SQ,SV	FK SU SC,SK	HQ		VF HMP,C05	SM 16, GT-
			PC	PM	MP		PF2					PSS PS		
			MT	PR,UR	MF	F2	PM5 E47, MT-	PM5	MQ,MV MT- G	SF,MU	MT-	PM	C25	14, 17 19, MT-
			PMR-	PMR-	PMR-		PMR-		PMR-	UJ	GP,HQ G,PMR-			
	for Aluminum		FL	AL	HP	AL	PM2	IL	AZ	AG	AH	AL	AR	AF, AS