



SINCE 1977



INTRODUCTION

P. 04

UFO FAMILY
T-slot / Thread Milling / Taper Pipe Reamer / Radius /
Double Corner / Concave Radius / Chamfer /
Dovetail / Circlip / Back Boring / Gear Machining



SAW BLADES
Side Milling Cutter
Disc Milling Cutter

P. 140



SPOT DRILL
CENTER DRILL

P. 208



COUNTER BORE

P. 230



CHAMFER

P. 250



MILLING CUTTERS

P. 275



APPENDIX

P. 292

PICTURE INDEX

COMPANY INTRODUCTION



Profile

Yih Troun set its first milestone in 1977 as a manufacturer of Milling, Drilling, Turning cutters and Carbide cutting tools in Taiwan. Since its inception, over 35 years, YT has always geared towards Research and Development of innovative insert type cutting tools, bearing the motto of "Increasing Production Efficiency" from our founder and president Mr. David Chen. Our trade mark products such as indexable slitting saw, UFO T-slot and thread mill products have led the company in the frontier and set a trade mark in the entire cutting tool industry.

Milestone

1977	Yih Troun established itself as a manufacturers of milling and turning holders.
1990	Started to import and distribute SECO(Sweden), Fraisa(Switzerland) and some other global wellknown brands in Taiwan.
1996	Started to export our own products, e.g.: Carbide cutting tools, Endmills, we also represented other domestic outstanding brands products for export.
2000	Innovated the "High Feed Cutter", it obtained the patents of several countries and won excellent reputation in the relative business field in the world.
2005	Established the Insert producing department, innovating and producing different kinds of insert. The insert specifications grow into than 1000 items.
2006	Exclusively created the "Locking Saw Blade", and gained the technological cooperation with National Taiwan University of Science and Technology.
2007	Won the "Top 100 Taiwan Enterprise Award".
2008	Yih Troun became the guided Factory of Ministry of Economic Affairs, R.O.C. Applied the right of priority of world patent from UN.
2009	Yih Troun "Locking Saw Blade", received the Taiwan R.O.C. patent approval.
2010	Established the world's most complete locking type saw blade and T-slot milling cutter. Indexable saw blade gain the Ringier innovation award 2010.
2012	Announced the patented "Indexable Countersink", comprehensive range from Ø4.0 ~Ø110mm, It's approved by Taiwan,China and UN patents.
2013	The smallest indexable thread mill and taps are announced, min Ø8.0mm with 2 flutes. Patent applications in progress.
2014	Special invitation in "Emerging Industry Incubation-Accelerating Program", received "Top 1,000 Taiwan D&B SME Award", "Ringier Technology Innovation Awards".
2016	German company "Yih Troun Cutting Tools GmbH" Set up.
2017	



Global Patent Certification

- 2000 Indexable High Feed Cutter - Global Patent
- 2007 Taiwan Top 100 Enterprise Award
- 2009 Taiwan Government Special Advisory for Factories
- 2009 Indexable Saw Blade - Global Patent
- 2010 Ringier Metal Industry Innovation Award

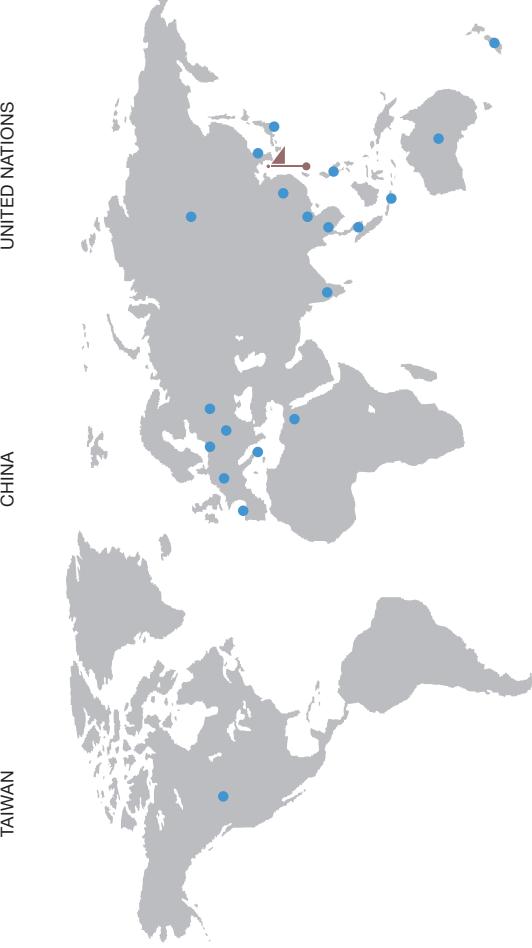
High technology, quality & performance guarantee.

Having established its strong base in Taiwan, Y.T. has spread its wings in Asia regions such as Japan, China, Thailand, Malaysia, Indonesia, Vietnam and Philippines. It has also set its foothold in Germany, Poland, Italy, Australia, thus broadening its business operation at the Global market. Y.T. operates in Automotive, Electronic industries, in General machining and in Machine making industries.



Customer Base

High technology, quality & performance guarantee.

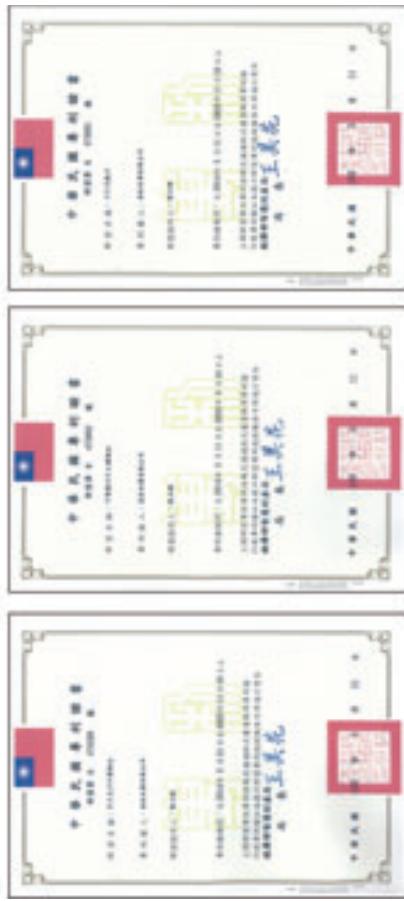


COUNTRIES ISSUING FOR PATENT CERTIFICATION



Product Line

Having established its strong base in Taiwan, Y.T. has spread its wings in Asia regions such as Japan, China, Thailand, Malaysia, Indonesia, Vietnam and Philippines. It has also set its foothold in Germany, Poland, Italy, Australia, thus broadening its business operation at the Global market. Y.T. operates in Automotive, Electronic industries, in General machining and in Machine making industries.



Indexable Tap Indexable Drill Spot Drill



New
System
For Hole
Making

390

Insert Center Positioning Patent Design



Optimal Center Positioning Design

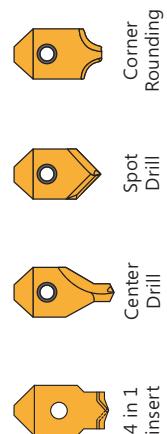
Insert taper profile is designed to optimize the center positioning to minimize the tolerance, which can reach the accuracy $\pm 0.01\text{mm}$ and bear economical efficiency.



Applications

There are total 4 applications:

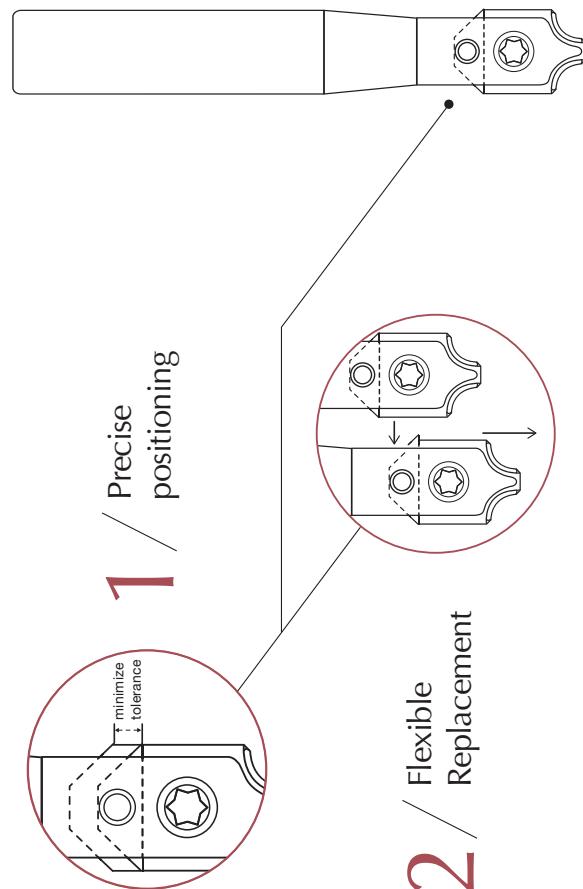
- 1.Center drill
- 2.Spot drill
- 3.Corner Rounding
4. 4 in 1 counterbore



Patent No.
M473882
M44588
M473881
*: 201310453057.2
201320772697.5

PCT Priority No.
PCT/CN2013/086393

For details, please refer to the page 208-243



New
Patent
Design

UFO Family

Optimal Tapered Polygon Design

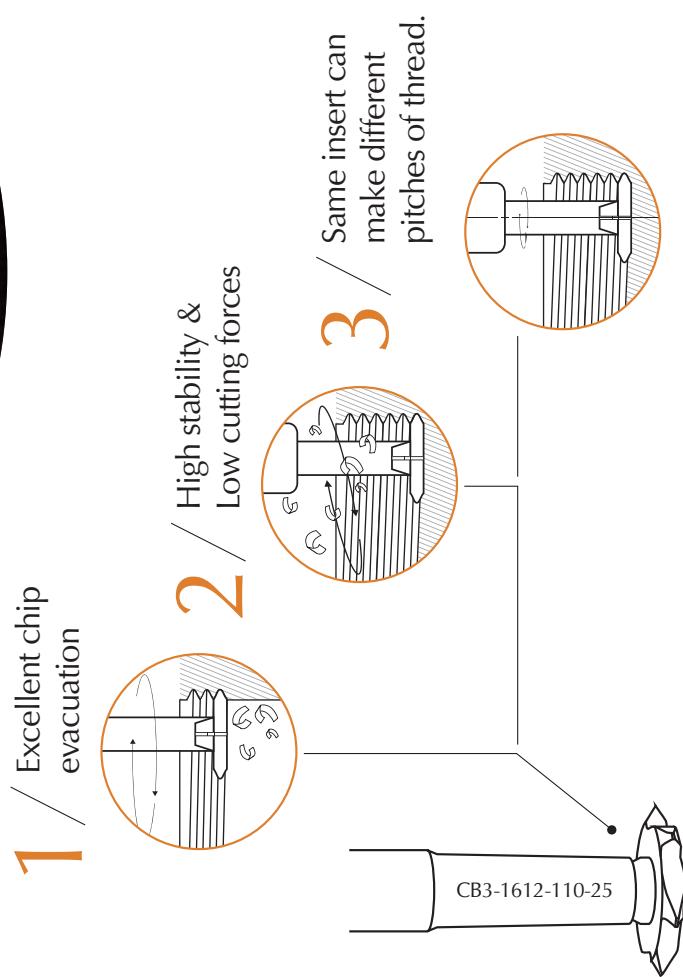
This unique UFO insert is designed with a taper polygon profile to optimize the stability and precision. It's an optimal center positioning with varieties of different UFO inserts, easy to change and easy to reach good tolerance.

Applications

8 different kinds of application are available in UFO family: T-slot, thread milling, radius, dovetail, chamfer, circlip, counterbore, gear machining.

Patent No.
M386958
 Patent No.
ZL 2010 2 0112933.7

For details, please refer to the page 18-139



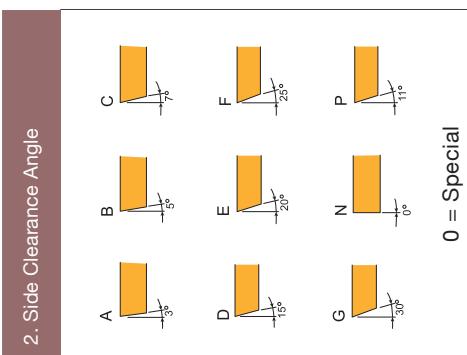
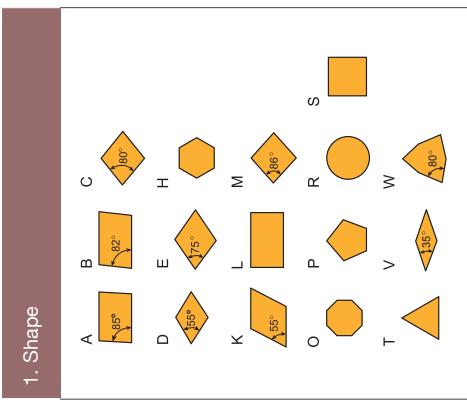
TECHNICAL GUIDE

Code Keys

3.Tolerances		Tolerance +/mm		For d, dimension mm	
Tol.- Class	m	AE	p		
A	0.005	0.025	0.025	•	•
E	0.025	0.025	0.025	•	•
F	0.005	0.025	0.013	•	•
G	0.025	0.13	0.025	•	•
H	0.013	0.025	0.013	•	•
	0.005	0.025	0.05	•	•
	0.005	0.025	0.08	•	•
J	0.005	0.025	0.10	•	•
	0.005	0.025	0.13	•	•
	0.005	0.025	0.15	•	•
K	0.013	0.025	0.05	•	•
	0.013	0.025	0.08	•	•
	0.013	0.025	0.10	•	•
	0.013	0.025	0.13	•	•
M	0.015	0.025	0.10	•	•
N	0.013	0.025	0.13	•	•
T	0.018	0.13	0.13	•	•
8	0.020	0.13	0.15	•	•
9	0.013	0.13	0.08	•	•
10	0.020	0.13	0.13	•	•
11	0.027	0.13	0.18	•	•
12	0.038	0.13	0.25	•	•

Code Keys

Insert Metric series, extract from the international standard. Dimension is theory measurement. The normal size and tolerance of type code which on following list are different. Each insert actual tolerance pleases reference to insert list.



Inserts Code Keys

Insert Grades

Grades

Cemented carbide is an alloy of tungsten carbide (WC) and cobalt (Co). Cubic carbides like tantalum carbide (TaC), titanium carbide (TiC) and niobium carbide (NbC) can also be added. Tungsten carbide is the main component and gives the hardness. Cobalt is the binder phase and gives the toughness. Cubic carbides are added in order to affect properties like hot hardness, deformation resistance and chemical wear resistance.

Most modern grades are coated with either CVD (Chemical Vapour Deposition) or PVD (Physical Vapour Deposition) technique.

The coating improves the wear resistance of the grade.

With CVD-technique layers of titanium carbide (TiC), titanium nitride (TiN), titanium carbonitride (Ti(C,N)) and alumina (Al₂O₃) can be made. CVD-coated grades are suitable for wear resistance in demanding applications with high feed rates and intermediate to high cutting speed.

The common coating materials made by PVD-technique are titanium nitride (TiN), titanium carbonitride (Ti(C,N)) and titanium alu-minium nitride ((Ti,Al)N). PVD-coated grades are recommended for applications with low feed rate where high edge toughness is required. PVD-coated grades are suitable for applications with low to intermediate cutting speed.

	P Steel	M Stainless Steel	K Cast iron	N Non Ferrous Metal	S Heat resistant super alloys	H Hardened steel
Grades	B100					S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10
						S01
						S30
						S20
						S10

Insert Grades

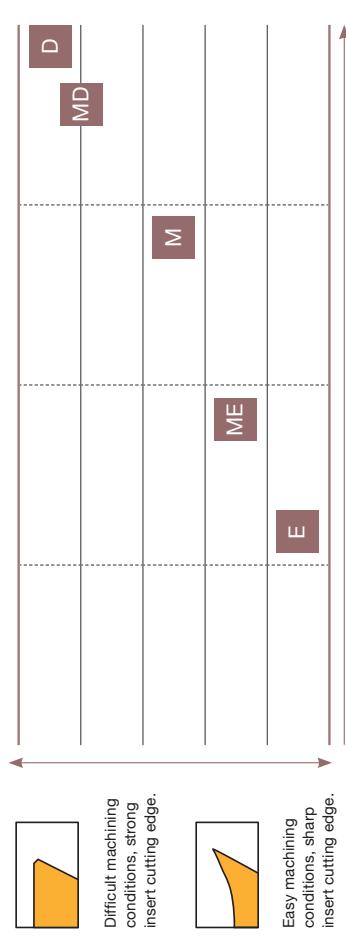
Insert Geometries

PVD coated grades

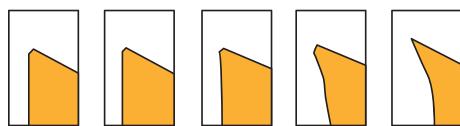
	B100	B100 is a unique rare metal grade with great heat and cracking resistance. Tialn
	B350	B350 has enhanced the toughness of the tungsten carbide to enable the durability. Specially used in the application of 390 design such as spot drill, center drill, 4-1 counterbore. Tialn
	C250	C250 has a tough substrate in steel machining. Helica
	C350	C350 is the best recommend grade for steel machining. Especially in 390 system. (Spot Drill, 4-1 Counterbore, Corner Rounding) Helica
	F20	This substrate is in accordance to the ISO K, N classification. For application in Cast iron and non-ferrous metal such as Aluminum, copper or plastic ... etc. TiN
	F30	F30 is the substrate with new and heat-resistance coating suitable for cast iron. Helica

Designation system

The YT designation system for milling inserts has been developed to provide the user with better guidance concerning the fields of application for the various insert geometries.



Examples of different insert geometries for a specific insert type.



.AFTN-D Negative and very protected cutting edge

.AFTN-M Positive and protected cutting edge

.AFTN-ME Very positive and protected cutting edge

.AFN-E Very positive and very sharp cutting edge

Uncoated Grades

	CE K10	Hard, wear resistant grade for milling in Aluminum and Non-ferrous metal.
---	-----------	---

UFO FAMILY SERIES

One Shank for Max.
Over 400 types inserts

“UFO” design is the Y.T.’s innovative-patented insert positioning with tapered polygonal design to achieve higher centering accuracy. It is named after UFO space ship because of its insert design. The holders of the entire series can fit in different types of inserts: T-slot, Thread milling, R grooving, Chamfering and Dovetail Circular, back boring inserts. The holders are available in different diameters and lengths.



Patent No.
M530197
ZL 2016120538204.5

Patent No.
MS30197
ZL 2016120538204.5

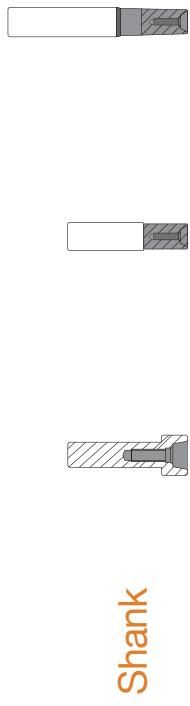


One holder can fit in Max. Over 400 types of inserts

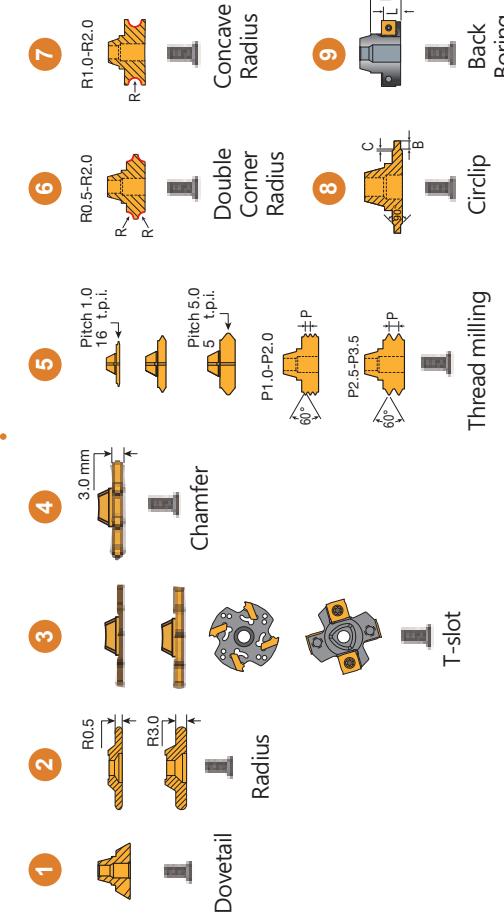
Design Of UFO Family

Shank

1. High precision pre-hardened steel HRC60) shank with good stability and excellent strength.
2. Comprehensive toolholders with three different shank types, available in overhangs from 40~180mm.
3. Same shank can be fitted into different inserts.



Insert



Tapered Polygon

Capacity

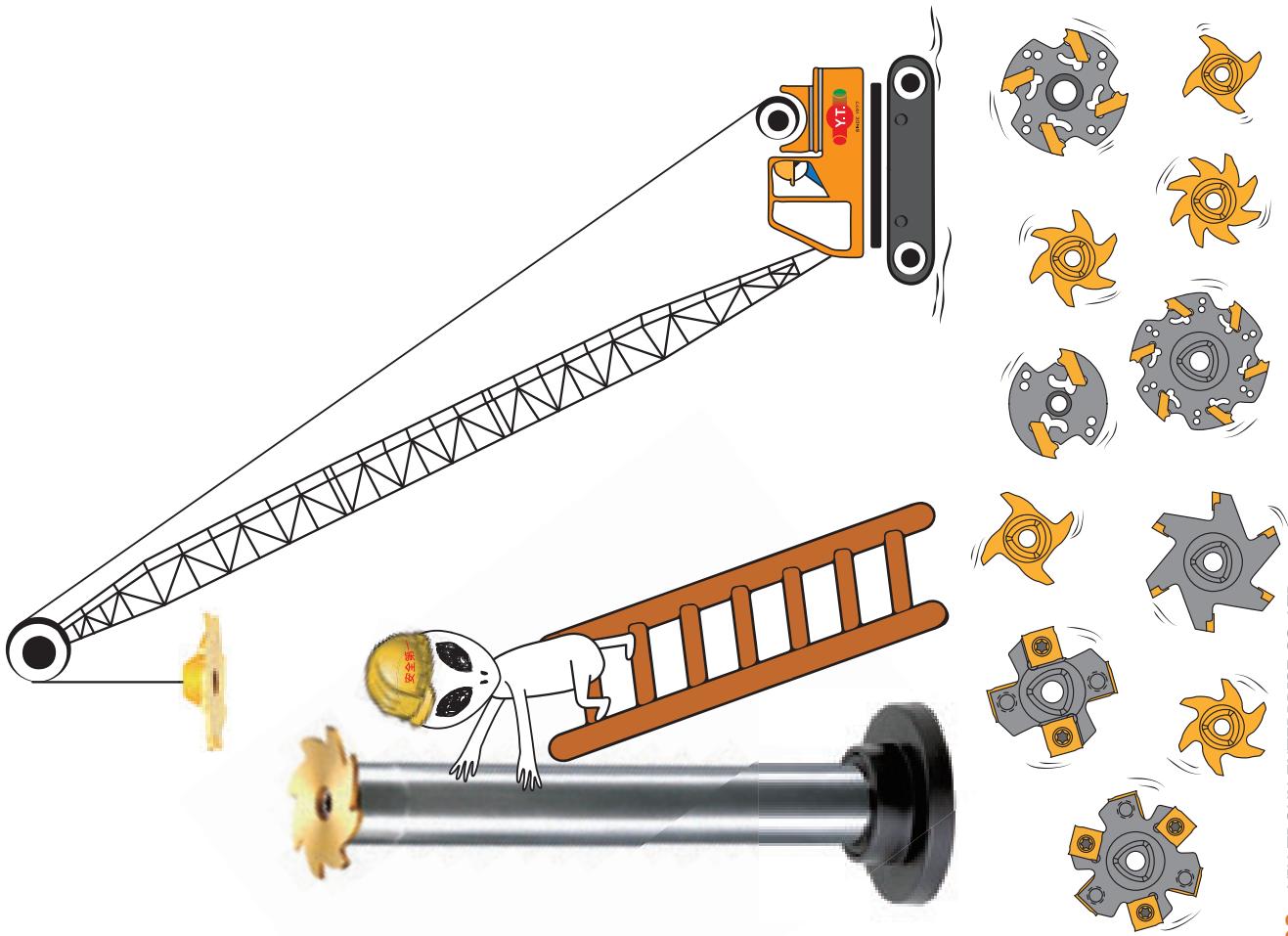
Polygon positioning design has a greater capacity for torque than any other positioning design, the load is generated over a generous area which assure the strength of the shaft.

Multi Application

Tapered polygon design offers a simple connection with different inserts and applications.

Center Positioning

Higher sitting accuracy with taper design enhance cutting speed and insert toollife.



Taper Polygon Arbor

Y.T. taper polygon arbor can fit cutter directly without fitting any holders or chucks, which enhance the clamping strength and best accuracy.

More benefits for the end-user:

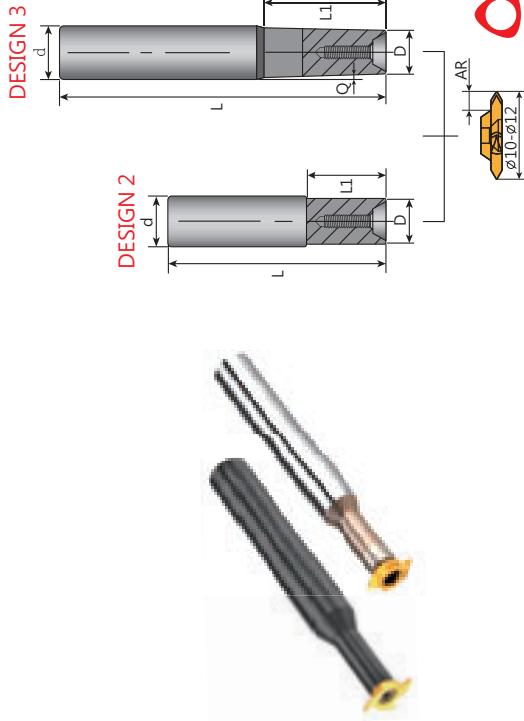
1. Cutter can fit directly on the arbor without any connecting holders or chucks, which can reach the best tolerance
2. Polygon positioning design has a greater capacity for torque than any other positioning design, the load is generated over a generous area which assure the strength of the shank.
3. Reduce tool cost by saving connecting holders and chucks, meanwhile less connecting parts can increase the toollife of insert.

Applicable cutter size: $\phi 18 \sim \phi 80$ mm



PRODUCT SPECIFICATIONS

UFO Family Common Toolholders



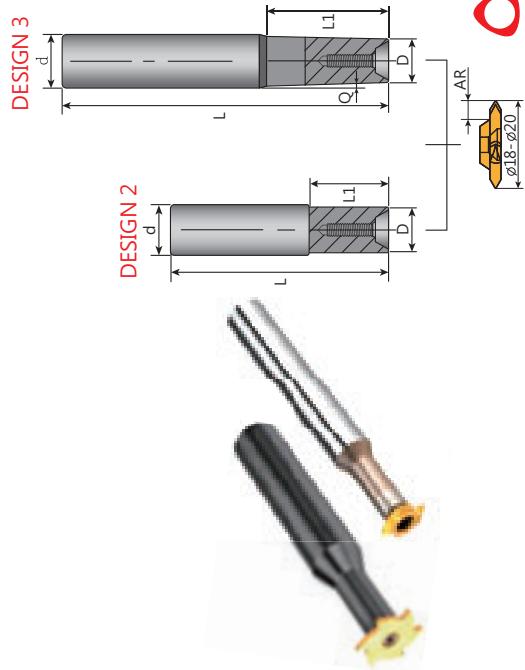
CB3

Order code	Dimensions(mm)				Design KG	Insert	Screw	Key
	D	d	L	L1				
CB3-0606-55-12	6.5	6	55	10	-	2	0.01	
CB3-0808-80-12	7.9	8	80			0.04	$\phi 10$	$\phi 11$
CB3-1006-100-12	6.5	10	100	20	1°	3	0.05	$\phi 12$
CB3-1008-100-12	7.9			30				

• For Max. AR please refer to insert specification page.

UFO Family Common Toolholders

UFO Family Common Toolholders



CB3

Order code	Dimensions(mm)				Design Q KG	Insert	Screw	Key
	D	d	L	L1				
CB3-1010-80-20			80	12	-			0.12
CB3-1010-100-20	9.8		100					0.15
CB3-1210-90-20			90	25	3.2°			0.17
CB3-1210-130-20			12	40	1.7°			0.20
CB3-1612-150-20			130					0.26
CB3-1616-150-20			11.8	16	55			
			15.8	20	2.4°			
					-			0.3

• For Max. AR please refer to insert specification page.



CB3

Order code	Dimensions(mm)				Design Q KG	Insert	Screw	Key
	D	d	L	L1				
CB3-0808-55-15	7.9	8	55	10	-			
CB3-1010-90-15	9.9	10	90		2	0.03		
CB3-1208-110-15	9.9	12	110	30	1°	0.06	Ø13	C03012
CB3-1210-120-15	9.9	12	120		3	0.05	Ø14	T09P
						Ø15		

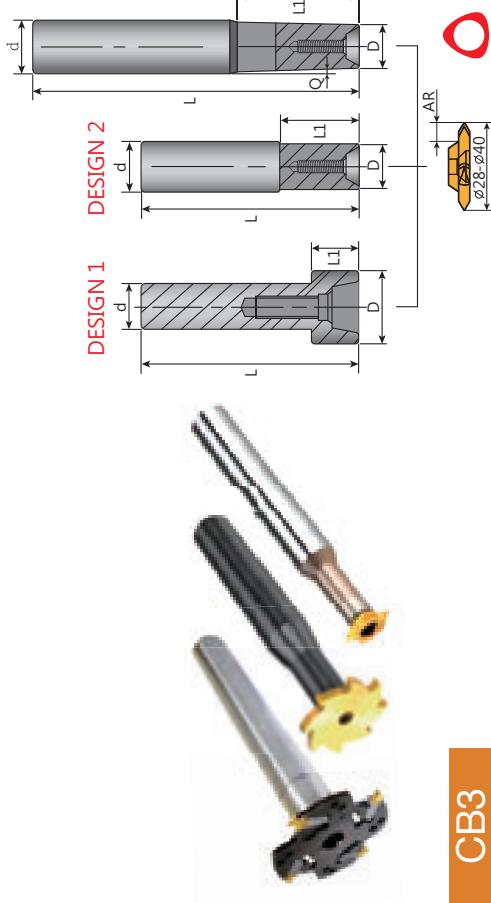
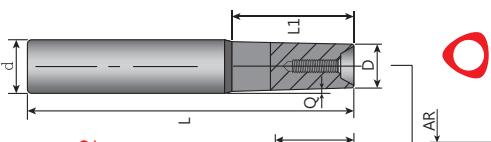
• For Max. AR please refer to insert specification page.

UFO Family Common Toolholders

UFO Family Common Toolholders

UFO

DESIGN 3

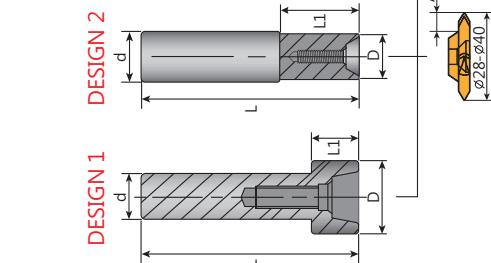
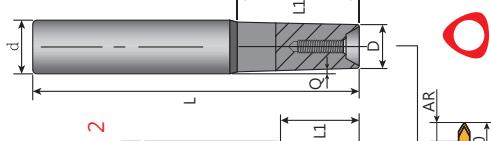


CB3

Order code	Dimensions(mm)				Design KG	Insert	Screw	Key
	D	d	L	L1				
CB3-1016-50-30	10	50	10	-	1	-	-	-
CB3-1616-120-30	16	120	15	-	2	0.17	Ø28	Ø29
CB3-1616-150-30	15.8	150	15	-	2	0.21	Ø30	Ø32
CB3-2016-150-30	20	180	20	-	2	0.24	Ø35	Ø40
CB3-2020-180-30	19.8	19.8	20	-	2	0.37	Ø37	Ø40

• For Max AR please refer to insert specification page.

DESIGN 3



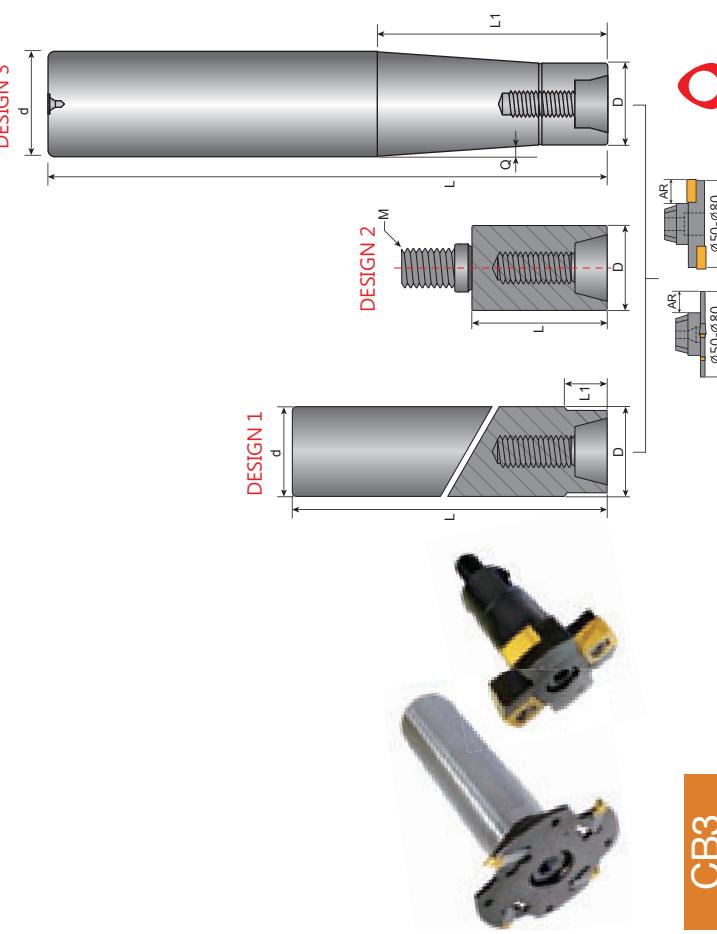
CB3

Order code	Dimensions(mm)				Design KG	Insert	Screw	Key
	D	d	L	L1				
CB3-1012-50-25	10	50	10	-	1	-	-	-
CB3-1212 -90-25	12	90	12	-	0.13	-	-	-
CB3-1212-110-25	11.8	110	110	-	2	0.16	Ø23	Ø24
CB3-1612-110-25	16	16	35	4.2°	0.22	Ø25	Ø25	Ø25
CB3-1612-150-25	19.8	19.8	150	55	3	0.26	Ø32	Ø32
CB3-2020-150-25	19.8	19.8	20	20	-	2	0.32	Ø35

• For Max AR please refer to insert specification page.

UFO Family Common Toolholders

Taper Polygon BT Arbor



Order code	Dimensions(mm)					Design KG	Insert	Screw	Key
	D	d	L	L_1	M				
CB3-2525-110	24.8	25	110	-	-	0.4		M0830	
CB3-2525-170		25	170	-	-	0.6			
CB3-25	25.0	-	40	-	12	0.2		M0830	
CB3-3225-110	24.8	32	110	40	-	0.6			
CB3-3225-170		32	170	70	-	0.8		M0830	

• For Max AR please refer to insert specification page.

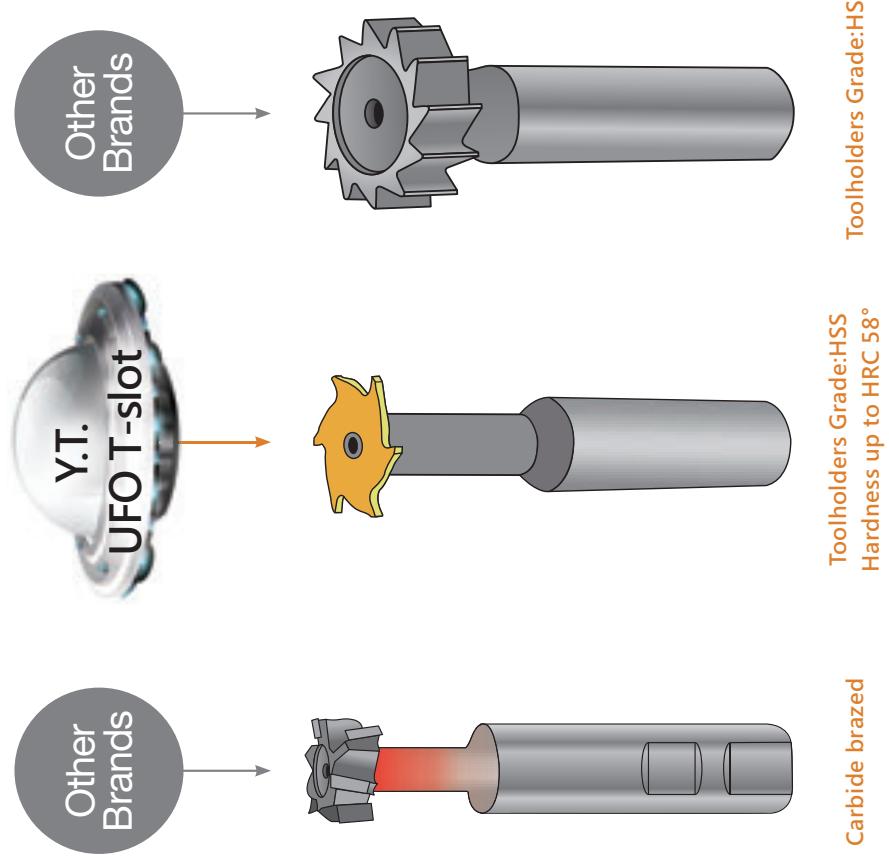
Order code	Dimensions(mm)					Screw	Key
	D	D_1	L	Q			
BT30-CB3-10-20	10	18-20	30	-	0.6	C03512	T10P
BT30-CB3-12-25	12	23-25	40	-	0.65	C04014	T15P
BT40-CB3-12-25	12	28-40	50	1.4	2°	C05016	T20P
BT40-CB3-16-30	16	28-40	50	3.6	2°	C05016	T20P
BT50-CB3-16-30	16	36	-	-	BT50-CB3-16-30	-	-
BT50-CB3-25-50	25	50-80	70	3.8	BT50-CB3-25-50	M0830	-

UFO T-SLOT CUTTER

Insert Design Inserts

1. Minimum thickness available from 0.5mm, and insert is available for every 0.1mm size.
2. 9 different types of inserts are available for selection, minimum insert diameter is 10mm.
3. The front-mounted insert are positioned in a taper seat for center-positioning, giving secure and continuous performance.
4. High productivity with many teeth.(4-8 teeth)

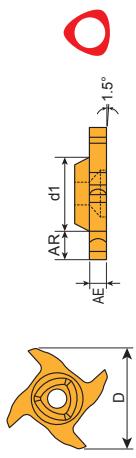
Product Introduction



- | Toolholders Grade:HSS | Carbide brazed |
|--|--|
| Hardness up to HRC 58° | Welding carbides on the cutter under high temperature will degrade the tool-holder hardness. |
| 1. One tool-holder can fit in 305 different types of inserts.
2. Insert has patented geometry design.
3. Most suitable for high speed cutting. | 1. Insufficient hardness.
2. Hard to regrind.
3. Not suitable for high speed cutting. |

UFO T-slot Insert

- Toolholders P. 23
- Cutting Data P. 131 - 132



Tolerances (mm)
D : +0.05
AE : ± 0.015

Tolerances (mm)
D : -0.05
AE : ± 0.015

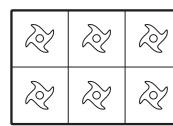
Dimensions in mm				
D	d1	AE	Max. AR	
10	6.5	1.5	1.5-1.6	
			1.7-1.8	
			1.9-2.0	
			2.2-2.5	
			3.0	

Inserts	Part No .	Grades				
		Carbide	Metal cermet	Uncoated cermet	CE250	CE30
310610-0.5-E	310611-0.5-E					
310610-0.6-E	310611-0.6-E					
310610-0.7-E	310611-0.7-E					
310610-0.8-E	310611-0.8-E					
310610-0.9-E	310611-0.9-E					
310610-1.0-E	310611-1.0-E					
310610-1.1-E	310611-1.1-E					
310610-1.2-E	310611-1.2-E					
310610-1.3-E	310611-1.3-E					
310610-1.4-E	310611-1.4-E					
310610-1.5-E	310611-1.5-E					
310610-1.6-E	310611-1.6-E					
310610-1.7-E	310611-1.7-E					
310610-1.8-E	310611-1.8-E					
310610-1.9-E	310611-1.9-E					
310610-2.0-E	310611-2.0-E					
310610-2.2-E	310611-2.2-E					
310610-2.5-E	310611-2.5-E					
310610-3.0-E	310611-3.0-E					

4 flute inserts



4 flute inserts



Inserts 6 PCS / Box
* M.O.Q. 12PCS

Inserts 6 PCS
* M.O.Q. 12PCS

4 flute inserts



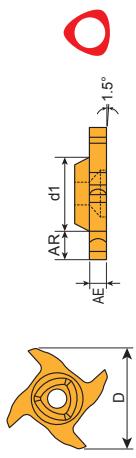
- Steel
- Stainless Steel
- Cast Iron
- Aluminum
- Steel/Cast Iron

- Steel
- Stainless Steel
- Cast Iron
- Aluminum
- Steel/Cast Iron

- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 310610-0.5-E K10

UFO T-slot Insert

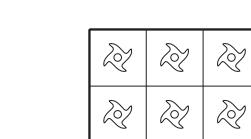
- Toolholders P. 23
- Cutting Data P. 131 - 132



Tolerances (mm)
D : +0.05
AE : ± 0.015

Inserts	Part No .	Grades				
		Carbide	Metal cermet	Uncoated cermet	CE250	CE30
310610-0.5-ME	310611-0.5-ME					
310610-0.6-ME	310611-0.6-ME					
310610-0.7-ME	310611-0.7-ME					
310610-0.8-ME	310611-0.8-ME					
310610-0.9-ME	310611-0.9-ME					
310610-1.0-ME	310611-1.0-ME					
310610-1.1-ME	310611-1.1-ME					
310610-1.2-ME	310611-1.2-ME					
310610-1.3-ME	310611-1.3-ME					
310610-1.4-ME	310611-1.4-ME					
310610-1.5-ME	310611-1.5-ME					
310610-1.6-ME	310611-1.6-ME					
310610-1.7-ME	310611-1.7-ME					
310610-1.8-ME	310611-1.8-ME					
310610-1.9-ME	310611-1.9-ME					
310610-2.0-ME	310611-2.0-ME					
310610-2.2-ME	310611-2.2-ME					
310610-2.5-ME	310611-2.5-ME					
310610-3.0-ME	310611-3.0-ME					

4 flute inserts



Inserts 6 PCS / Box
* M.O.Q. 12PCS

Inserts 6 PCS
* M.O.Q. 12PCS

4 flute inserts



- Steel
- Stainless Steel
- Cast Iron
- Aluminum
- Steel/Cast Iron

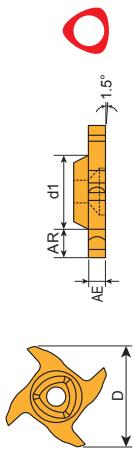
- Steel
- Stainless Steel
- Cast Iron
- Aluminum
- Steel/Cast Iron

- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 310610-0.5-E K10



UFO T-slot Insert

- Toolholders P. 23
- Cutting Data P. 131 - 132



D	Dimensions in mm		
	d1	AE	Max. AR
12	6.5	0.5-0.6 0.7-0.8 0.9-1.0 1.1-1.2 1.3-1.4 1.5-1.6 1.7-1.8 1.9-2.0 2.2-2.5 3.0	2.5

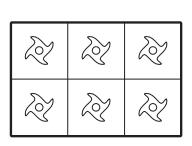
Inserts	Part No .	Grades						
		Carbide	Metal cermet	Uncoated	C ₆	K ₁₀	E	ME
370612-0.5-E								
370612-0.6-E								
370612-0.7-E								
370612-0.8-E								
370612-0.9-E								
370612-1.0-E								
370612-1.1-E								
370612-1.2-E								
370612-1.3-E								
370612-1.4-E								
370612-1.5-E								
370612-1.6-E								
370612-1.7-E								
370612-1.8-E								
370612-1.9-E								
370612-2.0-E								
370612-2.2-E								
370612-2.5-E								
370612-3.0-E								

D	Dimensions in mm		
	d1	AE	Max. AR
13	7.9	0.5-0.6 0.7-0.8 0.9-1.0 1.1-1.2 1.3-1.4 1.5-1.6 1.7-1.8 1.9-2.0 2.2-2.5 3.0	2.0

Inserts	Part No .	Grades						
		Carbide	Metal cermet	Uncoated	C ₆	K ₁₀	E	ME
370813-0.5-E								
370813-0.6-E								
370813-0.7-E								
370813-0.8-E								
370813-0.9-E								
370813-1.0-E								
370813-1.1-E								
370813-1.2-E								
370813-1.3-E								
370813-1.4-E								
370813-1.5-E								
370813-1.6-E								
370813-1.7-E								
370813-1.8-E								



4 flute inserts



4 flute inserts

Inserts 6 PCS / Box
* M.O.Q: 12PCS

- Steel ■ Stainless Steel ■ Steel/Stainless Steel ■ Cast Iron ■ Aluminum ■ Steel/Cast Iron ■ Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 370612-0.5-E, K10

- Toolholders P. 24
- Cutting Data P. 131 - 132

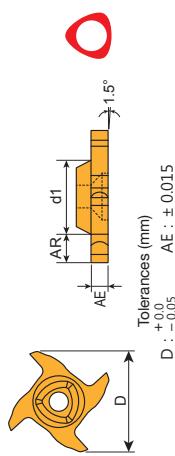
- ## UFO T-slot Insert
- Toolholders P. 24
 - Cutting Data P. 131 - 132

UFO T-slot Insert

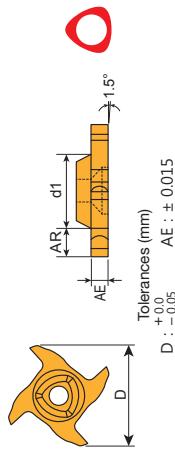
- Toolholders P. 24
- Cutting Data P. 131 - 132

UFO T-slot Insert

- Toolholders P. 24
- Cutting Data P. 131 - 132

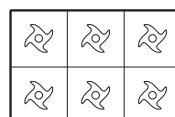


D	d1	Dimensions in mm		Max. AR
		AE	0.5-0.6	
		0.7-0.8	0.5-0.6	
		0.9-1.0	0.7-0.8	
		1.1-1.2	0.9-1.0	
		1.3-1.4	1.1-1.2	
		1.5-1.6	1.3-1.4	
		1.7-1.8	1.5-1.6	
		1.9-2.0	1.7-1.8	
		2.2-2.5	1.9-2.0	
		3.0	2.2-2.5	
		4.0	3.0	



D	d1	Dimensions in mm		AE	Max. AR
		AE	0.5-0.6		
		0.7-0.8	0.5-0.6		
		0.9-1.0	0.7-0.8		
		1.1-1.2	0.9-1.0		
		1.3-1.4	1.1-1.2		
		1.5-1.6	1.3-1.4		
		1.7-1.8	1.5-1.6		
		1.9-2.0	1.7-1.8		
		2.2-2.5	1.9-2.0		
		3.0	2.2-2.5		
		4.0	3.0		

Part No .	Inserts	Grades					
		Carbide	Metal cermet	Uncoated	CE	K10	CE250
3T0814-0.5-E							
3T0814-0.6-E							
3T0814-0.7-E							
3T0814-0.8-E							
3T0814-0.9-E							
3T0814-1.0-E							
3T0814-1.1-E							
3T0814-1.2-E							
3T0814-1.3-E							
3T0814-1.4-E							
3T0814-1.5-E							
3T0814-1.6-E							
3T0814-1.7-E							
3T0814-1.8-E							
3T0814-1.9-E							
3T0814-2.0-E							
3T0814-2.2-E							
3T0814-2.5-E							
3T0814-3.0-E							
3T0814-4.0-E							



4 flute inserts

Inserts 6 PCS / Box
* M.O.Q: 12PCS



4 flute inserts

Inserts 6 PCS / Box
* M.O.Q: 12PCS

Part No .	Inserts	Grades					
		Carbide	Metal cermet	Uncoated	CE	K10	CE250
3T0813-0.5-ME							
3T0813-0.6-ME							
3T0813-0.7-ME							
3T0813-0.8-ME							
3T0813-0.9-ME							
3T0813-1.0-ME							
3T0813-1.1-ME							
3T0813-1.2-ME							
3T0813-1.3-ME							
3T0813-1.4-ME							
3T0813-1.5-ME							
3T0813-1.6-ME							
3T0813-1.7-ME							
3T0813-1.8-ME							
3T0813-1.9-ME							
3T0813-2.0-ME							
3T0813-2.2-ME							
3T0813-2.5-ME							
3T0813-3.0-ME							
3T0813-4.0-ME							



4 flute inserts

Inserts 6 PCS / Box
* M.O.Q: 12PCS

- Steel █ Stainless Steel █ Steel/Stainless Steel █ Steel/Steel/Cast Iron █ Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T0813-0.5-ME, B100

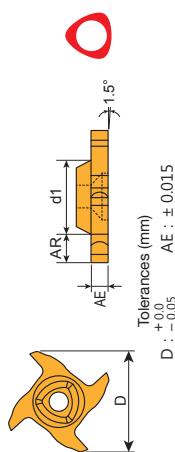
- Steel █ Stainless Steel █ Steel/Stainless Steel █ Steel/Steel/Cast Iron █ Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T0814-0.5-E, K10

UFO T-slot Insert

- Toolholders P. 24
- Cutting Data P. 131 - 132

UFO T-slot Insert

- Toolholders P. 24
- Cutting Data P. 131 - 132



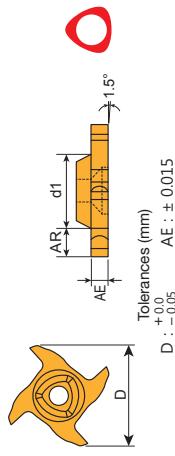
Dimensions in mm			Max. AR
D	d1	AE	0.5-0.6
14	7.9	2.5	0.5-0.6
			0.7-0.8
			0.9-1.0
			1.1-1.2
			1.3-1.4
			1.5-1.6
			1.7-1.8
			1.9-2.0
			2.2-2.5
			3.0
			4.0

Grades			Part No .
Carbide	Metal cermet	Uncarcted cermet	Inserts
B100	C100	CE25	3T0814-0.5-ME
		CE60	3T0814-0.6-ME
		F20	3T0814-0.7-ME
		F30	3T0814-0.8-ME
		C200	3T0814-0.9-ME
		C250	3T0814-1.0-ME
		C30	3T0814-1.1-ME
		F250	3T0814-1.2-ME
		F350	3T0814-1.3-ME
		C400	3T0814-1.4-ME
		C450	3T0814-1.5-ME
		C500	3T0814-1.6-ME
		C550	3T0814-1.7-ME
		C600	3T0814-1.8-ME
		C650	3T0814-1.9-ME
		C700	3T0814-2.0-ME
		C750	3T0814-2.2-ME
		C800	3T0814-2.5-ME
		C850	3T0814-3.0-ME
		C900	3T0814-4.0-ME



Inserts 6 PCS / Box
* M.O.Q: 12PCS

4 flute inserts



Dimensions in mm			Max. AR
D	d1	AE	0.5-0.6
14	7.9	2.5	0.5-0.6
			0.7-0.8
			0.9-1.0
			1.1-1.2
			1.3-1.4
			1.5-1.6
			1.7-1.8
			1.9-2.0
			2.2-2.5
			3.0
			4.0

Grades			Part No .
Carbide	Metal cermet	Uncarcted cermet	Inserts
B100	C100	CE25	3T0814-0.5-ME
		CE60	3T0814-0.6-ME
		F20	3T0814-0.7-ME
		F30	3T0814-0.8-ME
		C200	3T0814-0.9-ME
		C250	3T0814-1.0-ME
		C30	3T0814-1.1-ME
		F250	3T0814-1.2-ME
		F350	3T0814-1.3-ME
		C400	3T0814-1.4-ME
		C450	3T0814-1.5-ME
		C500	3T0814-1.6-ME
		C550	3T0814-1.7-ME
		C600	3T0814-1.8-ME
		C650	3T0814-1.9-ME
		C700	3T0814-2.0-ME
		C750	3T0814-2.2-ME
		C800	3T0814-2.5-ME
		C850	3T0814-3.0-ME
		C900	3T0814-4.0-ME

4 flute inserts



Inserts 6 PCS / Box

- Steel ■ Stainless Steel ■ Steel/Stainless Steel ■ Cast Iron ■ Aluminum ■ Steel/Cast Iron
- Steel ■ Stainless Steel ■ Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T0814-0.5-ME, B100

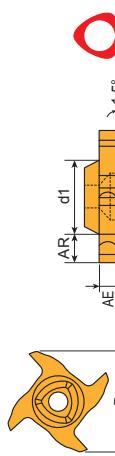
• Steel ■ Stainless Steel ■ Steel/Stainless Steel ■ Cast Iron ■ Aluminum ■ Steel/Cast Iron

- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T0815-0.5-E, K10



UFO T-slot Insert

- Toolholders P. 24
- Cutting Data P. 131 - 132



Tolerances (mm)
D : +0.05
AE : ± 0.015

Dimensions in mm			
D	d1	AE	Max. AR
15	7.9	3.0	3.0
			4.0

Grades			
Inserts	Part No .	Carbide	Metal cermet
◎	3T0815-0.5-ME	CE60	CE
◎	3T0815-0.6-ME	F30	K10
◎	3T0815-0.7-ME	C250	CE25
◎	3T0815-0.8-ME	C200	CE200
◎	3T0815-0.9-ME	B100	CF30
◎	3T0815-1.0-ME		F20
◎	3T0815-1.1-ME		C200
◎	3T0815-1.2-ME		C250
◎	3T0815-1.3-ME		C200
◎	3T0815-1.4-ME		B100
◎	3T0815-1.5-ME		
◎	3T0815-1.6-ME		
◎	3T0815-1.7-ME		
◎	3T0815-1.8-ME		
◎	3T0815-1.9-ME		
◎	3T0815-2.0-ME		
◎	3T0815-2.2-ME		
◎	3T0815-2.5-ME		
◎	3T0815-3.0-ME		
◎	3T0815-4.0-ME		

4 flute inserts

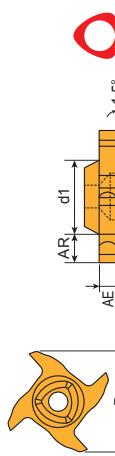


Inserts 6 PCS / Box

- Steel ■ Stainless Steel ◻ Steel/Stainless Steel Cast Iron ■ Aluminum ■ Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T0815-0.5-ME, B100

UFO T-slot Insert

- Toolholders P. 25
- Cutting Data P. 131 - 132



Tolerances (mm)
D : +0.05
AE : ± 0.015

Dimensions in mm			
D	d1	AE	Max. AR
15	7.9	3.0	3.0
			4.0

Grades			
Inserts	Part No .	Carbide	Metal cermet
◎	3T1018-0.5-E	CE60	CE
◎	3T1018-0.6-E	F30	K10
◎	3T1018-0.7-E	C250	CE25
◎	3T1018-0.8-E	C200	CE200
◎	3T1018-0.9-E	B100	CF30
◎	3T1018-1.0-E		F20
◎	3T1018-1.1-E		C200
◎	3T1018-1.2-E		C250
◎	3T1018-1.3-E		C200
◎	3T1018-1.4-E		B100
◎	3T1018-1.5-E		
◎	3T1018-1.6-E		
◎	3T1018-1.7-E		
◎	3T1018-1.8-E		
◎	3T1018-1.9-E		
◎	3T1018-2.0-E		
◎	3T1018-2.2-E		
◎	3T1018-2.5-E		
◎	3T1018-3.0-E		
◎	3T1018-3.5-E		
◎	3T1018-4.0-E		
◎	3T1018-4.2-E		
◎	3T1018-4.5-E		
◎	3T1018-5.0-E		
◎	3T1018-6.0-E		
◎	3T1018-8.0-E		

6 flute inserts

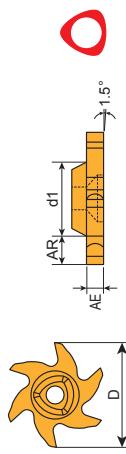


Inserts 6 PCS / Box

- Steel ■ Stainless Steel ◻ Steel/Stainless Steel Cast Iron ■ Aluminum ■ Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T1018-0.5-E, K10

UFO T-slot Insert

- Toolholders P. 25
- Cutting Data P. 131 - 132



D	d1	AE	Max. AR
18	9.9	3.5	0.5-0.6
		1.9-2.0	0.7-0.8
		2.2-2.5	0.9-1.0
		3.0-4.0	1.1-1.2
		5.0	1.3-1.4
		6.0	1.5-1.6
		8.0	1.7-1.8

Tolerances (mm)
D : +0.00
AE : ± 0.015

Grades			
Carbide	Metal cermet	Uncoated	
B100	C200	C250	CE250
◎	◎	◎	CE60
◎	◎	◎	K10
◎	◎	◎	CF
◎	◎	◎	F30
◎	◎	◎	F20
◎	◎	◎	C200
◎	◎	◎	B100

Inserts
Part No. .

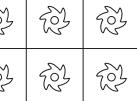
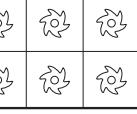
Inserts



6 flute inserts

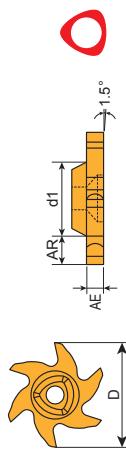
Inserts 6 PCS / Box
* M.O.Q: 12PCS

Inserts 6 PCS / Box
* M.O.Q: 12PCS



UFO T-slot Insert

- Toolholders P. 25
- Cutting Data P. 131 - 132



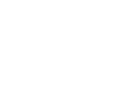
D	d1	AE	Max. AR
18	9.9	3.5	0.5-0.6
		1.9-2.0	0.7-0.8
		2.2-2.5	0.9-1.0
		3.0-4.0	1.1-1.2
		5.0	1.3-1.4
		6.0	1.5-1.6
		8.0	1.7-1.8

Tolerances (mm)
D : +0.00
AE : ± 0.015

Grades			
Carbide	Metal cermet	Uncoated	
B100	C200	C250	CE250
◎	◎	◎	CE60
◎	◎	◎	K10
◎	◎	◎	CF
◎	◎	◎	F30
◎	◎	◎	F20
◎	◎	◎	C200
◎	◎	◎	B100

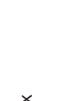
Inserts
Part No. .

Inserts



6 flute inserts

Inserts 6 PCS / Box
* M.O.Q: 12PCS



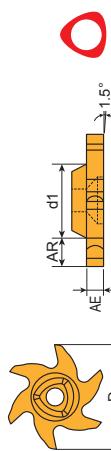
- Steel ■ Stainless Steel □ Steel/Stainless Steel ■ Cast Iron ■ Aluminum □ Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T1018-0.5-ME, B100

- Steel ■ Stainless Steel □ Steel/Stainless Steel ■ Cast Iron ■ Aluminum □ Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T1019-0.5-E, K10



UFO T-slot Insert

- Toolholders P. 25
- Cutting Data P. 131 - 132



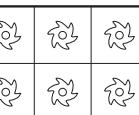
D	d1	AE	Max. AR
19	9.9	4.0	0.5-0.6
		0.7-0.8	0.7-0.8
		0.9-1.0	0.9-1.0
		1.1-1.2	1.1-1.2
		1.3-1.4	1.3-1.4
		1.5-1.6	1.5-1.6
		1.7-1.8	1.7-1.8
		1.9-2.0	1.9-2.0
		2.2-2.5	2.2-2.5
		3.0-4.0	3.0-4.0
		5.0	5.0
		6.0	6.0
		8.0	8.0

Inserts	Part No .	Grades			
		Carbide	Metal cermet	Uncoated	CE
3T1019-0.5-ME	◎	◎	◎	◎	K10
3T1019-0.6-ME	◎	◎	◎	◎	CE60
3T1019-0.7-ME	◎	◎	◎	◎	F30
3T1019-0.8-ME	◎	◎	◎	◎	C250
3T1019-0.9-ME	◎	◎	◎	◎	C200
3T1019-1.0-ME	◎	◎	◎	◎	B100
3T1019-1.1-ME	◎	◎	◎	◎	
3T1019-1.2-ME	◎	◎	◎	◎	
3T1019-1.3-ME	◎	◎	◎	◎	
3T1019-1.4-ME	◎	◎	◎	◎	
3T1019-1.5-ME	◎	◎	◎	◎	
3T1019-1.6-ME	◎	◎	◎	◎	
3T1019-1.7-ME	◎	◎	◎	◎	
3T1019-1.8-ME	◎	◎	◎	◎	
3T1019-1.9-ME	◎	◎	◎	◎	
3T1019-2.0-ME	◎	◎	◎	◎	
3T1019-2.2-ME	◎	◎	◎	◎	
3T1019-2.5-ME	◎	◎	◎	◎	
3T1019-3.0-ME	◎	◎	◎	◎	
3T1019-3.5-ME	◎	◎	◎	◎	
3T1019-4.0-ME	◎	◎	◎	◎	
3T1019-4.2-ME	◎	◎	◎	◎	
3T1019-4.5-ME	◎	◎	◎	◎	
3T1019-5.0-ME	◎	◎	◎	◎	
3T1019-6.0-ME	◎	◎	◎	◎	
3T1019-8.0-ME	◎	◎	◎	◎	



6 flute inserts

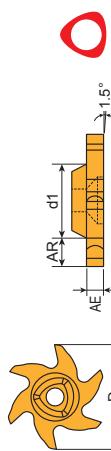
Inserts 6 PCS / Box
* M.O.Q: 12PCS



Inserts 6 PCS / Box
* M.O.Q: 12PCS

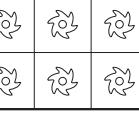
UFO T-slot Insert

- Toolholders P. 25
- Cutting Data P. 131 - 132



D	d1	AE	Max. AR
19	9.9	4.0	0.5-0.6
		0.7-0.8	0.7-0.8
		0.9-1.0	0.9-1.0
		1.1-1.2	1.1-1.2
		1.3-1.4	1.3-1.4
		1.5-1.6	1.5-1.6
		1.7-1.8	1.7-1.8
		1.9-2.0	1.9-2.0
		2.2-2.5	2.2-2.5
		3.0-4.0	3.0-4.0
		5.0	5.0
		6.0	6.0
		8.0	8.0

Inserts	Part No .	Grades			
		Carbide	Metal cermet	Uncoated	CE
3T1019-0.5-ME	◎	◎	◎	◎	K10
3T1019-0.6-ME	◎	◎	◎	◎	CE60
3T1019-0.7-ME	◎	◎	◎	◎	F30
3T1019-0.8-ME	◎	◎	◎	◎	C250
3T1019-0.9-ME	◎	◎	◎	◎	C200
3T1019-1.0-ME	◎	◎	◎	◎	B100
3T1019-1.1-ME	◎	◎	◎	◎	
3T1019-1.2-ME	◎	◎	◎	◎	
3T1019-1.3-ME	◎	◎	◎	◎	
3T1019-1.4-ME	◎	◎	◎	◎	
3T1019-1.5-ME	◎	◎	◎	◎	
3T1019-1.6-ME	◎	◎	◎	◎	
3T1019-1.7-ME	◎	◎	◎	◎	
3T1019-1.8-ME	◎	◎	◎	◎	
3T1019-1.9-ME	◎	◎	◎	◎	
3T1019-2.0-ME	◎	◎	◎	◎	
3T1019-2.2-ME	◎	◎	◎	◎	
3T1019-2.5-ME	◎	◎	◎	◎	
3T1019-3.0-ME	◎	◎	◎	◎	
3T1019-3.5-ME	◎	◎	◎	◎	
3T1019-4.0-ME	◎	◎	◎	◎	
3T1019-4.2-ME	◎	◎	◎	◎	
3T1019-4.5-ME	◎	◎	◎	◎	
3T1019-5.0-ME	◎	◎	◎	◎	
3T1019-6.0-ME	◎	◎	◎	◎	
3T1019-8.0-ME	◎	◎	◎	◎	



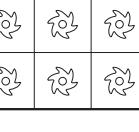
Inserts 6 PCS / Box

- Steel █ Stainless Steel █ Steel/Stainless Steel █ Cast Iron █ Aluminum █ Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T1020-0.5-ME, B100

- Steel █ Stainless Steel █ Steel/Stainless Steel █ Cast Iron █ Aluminum █ Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T1020-0.5-E, K10

Dimensions in mm			
D	d1	AE	Max. AR
19	9.9	4.0	0.5-0.6
		0.7-0.8	0.7-0.8
		0.9-1.0	0.9-1.0
		1.1-1.2	1.1-1.2
		1.3-1.4	1.3-1.4
		1.5-1.6	1.5-1.6
		1.7-1.8	1.7-1.8
		1.9-2.0	1.9-2.0
		2.2-2.5	2.2-2.5
		3.0-4.0	3.0-4.0
		5.0	5.0
		6.0	6.0
		8.0	8.0

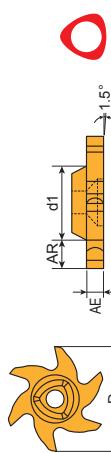
Grades			
Inserts	Part No .	Carbide	Metal cermet
3T1019-0.5-ME	◎	◎	◎
3T1019-0.6-ME	◎	◎	◎
3T1019-0.7-ME	◎	◎	◎
3T1019-0.8-ME	◎	◎	◎
3T1019-0.9-ME	◎	◎	◎
3T1019-1.0-ME	◎	◎	◎
3T1019-1.1-ME	◎	◎	◎
3T1019-1.2-ME	◎	◎	◎
3T1019-1.3-ME	◎	◎	◎
3T1019-1.4-ME	◎	◎	◎
3T1019-1.5-ME	◎	◎	◎
3T1019-1.6-ME	◎	◎	◎
3T1019-1.7-ME	◎	◎	◎
3T1019-1.8-ME	◎	◎	◎
3T1019-1.9-ME	◎	◎	◎
3T1019-2.0-ME	◎	◎	◎
3T1019-2.2-ME	◎	◎	◎
3T1019-2.5-ME	◎	◎	◎
3T1019-3.0-ME	◎	◎	◎
3T1019-3.5-ME	◎	◎	◎
3T1019-4.0-ME	◎	◎	◎
3T1019-4.2-ME	◎	◎	◎
3T1019-4.5-ME	◎	◎	◎
3T1019-5.0-ME	◎	◎	◎
3T1019-6.0-ME	◎	◎	◎
3T1019-8.0-ME	◎	◎	◎



Inserts 6 PCS / Box

UFO T-slot Insert

- Toolholders P. 25
- Cutting Data P. 131 - 132



Tolerances (mm)
D : +0.00
AE : ± 0.015

D	d1	AE	Max. AR
		0.5-0.6	
		0.7-0.8	
		0.9-1.0	
		1.1-1.2	
		1.3-1.4	
		1.5-1.6	
		1.7-1.8	
20	9.9	4.5	
		1.9-2.0	
		2.2-2.5	
		3.0-4.0	
		5.0	
		6.0	
		8.0	

Inserts	Part No .	Grades			
		Carbide	Metal cermet	Uncoated	CE
3T1020-0.5-ME		B100	C200	F20	K10
3T1020-0.6-ME			C250	F30	CE60
3T1020-0.7-ME				F50	CE255
3T1020-0.8-ME					CE
3T1020-0.9-ME					E
3T1020-1.0-ME					
3T1020-1.1-ME					
3T1020-1.2-ME					
3T1020-1.3-ME					
3T1020-1.4-ME					
3T1020-1.5-ME					
3T1020-1.6-ME					
3T1020-1.7-ME					
3T1020-1.8-ME					
3T1020-1.9-ME					
3T1020-2.0-ME					
3T1020-2.2-ME					
3T1020-2.5-ME					
3T1020-3.0-ME					
3T1020-3.5-ME					
3T1020-4.0-ME					
3T1020-4.2-ME					
3T1020-4.5-ME					
3T1020-5.0-ME					
3T1020-6.0-ME					
3T1020-8.0-ME					



6 flute inserts

Inserts	Part No .	Grades			
		Carbide	Metal cermet	Uncoated	CE
3T1223-0.5-E		B100	C200	F20	K10
3T1223-0.6-E			C250	F30	CE60
3T1223-0.7-E				F50	CE255
3T1223-0.8-E					CE
3T1223-0.9-E					E
3T1223-1.0-E					
3T1223-1.1-E					
3T1223-1.2-E					
3T1223-1.3-E					
3T1223-1.4-E					
3T1223-1.5-E					
3T1223-1.6-E					
3T1223-1.7-E					
3T1223-1.8-E					
3T1223-1.9-E					
3T1223-2.0-E					
3T1223-2.2-E					
3T1223-2.5-E					
3T1223-3.0-E					
3T1223-3.5-E					
3T1223-4.0-E					
3T1223-4.2-E					
3T1223-4.5-E					
3T1223-5.0-E					
3T1223-6.0-E					
3T1223-8.0-E					

Inserts 6 PCS / Box

• Steel ■ Stainless Steel | ◻ Steel/Stainless Steel | ◻ Cast Iron | ◻ Aluminum | ◻ Steel/Cast Iron

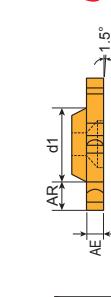
• Steel/Stainless Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: 3T1223-0.5-E, B100

UFO T-slot Insert

- Toolholders P. 26
- Cutting Data P. 131 - 132



Tolerances (mm)
D : +0.00
AE : ± 0.015

D	d1	AE	Max. AR
		0.5-0.6	
		0.7-0.8	
		0.9-1.0	
		1.1-1.2	
		1.3-1.4	
		1.5-1.6	
		1.7-1.8	
23	12	4.5	
		1.9-2.0	
		2.2-2.5	
		3.0-4.0	
		5.0	
		6.0	
		8.0	

Inserts	Part No .	Grades			
		Carbide	Metal cermet	Uncoated	CE
3T1223-0.5-E		B100	C200	F20	K10
3T1223-0.6-E			C250	F30	CE60
3T1223-0.7-E				F50	CE255
3T1223-0.8-E					CE
3T1223-0.9-E					E
3T1223-1.0-E					
3T1223-1.1-E					
3T1223-1.2-E					
3T1223-1.3-E					
3T1223-1.4-E					
3T1223-1.5-E					
3T1223-1.6-E					
3T1223-1.7-E					
3T1223-1.8-E					
3T1223-1.9-E					
3T1223-2.0-E					
3T1223-2.2-E					
3T1223-2.5-E					
3T1223-3.0-E					
3T1223-3.5-E					
3T1223-4.0-E					
3T1223-4.2-E					
3T1223-4.5-E					
3T1223-5.0-E					
3T1223-6.0-E					
3T1223-8.0-E					

Inserts 6 PCS / Box

• Steel ■ Stainless Steel | ◻ Steel/Stainless Steel | ◻ Cast Iron | ◻ Aluminum | ◻ Steel/Cast Iron

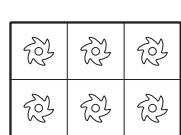
• Steel/Stainless Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: 3T1223-0.5-E, B100

Dimensions in mm			
D	d1	AE	Max. AR
		0.5-0.6	0.5-0.6
		0.7-0.8	0.7-0.8
		0.9-1.0	0.9-1.0
		1.1-1.2	1.1-1.2
		1.3-1.4	1.3-1.4
		1.5-1.6	1.5-1.6
		1.7-1.8	1.7-1.8
23	12	4.5	
		1.9-2.0	
		2.2-2.5	
		3.0-4.0	
		5.0	
		6.0	
		8.0	

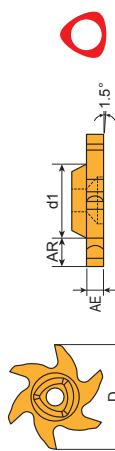
Grades			
Carbide	Metal cermet	Uncoated	CE
B100	C200	F20	K10
	C250	F30	CE60
		F50	CE255
			CE
			E



Inserts 6 PCS / Box
* M.O.Q. 12PCS

UFO T-slot Insert

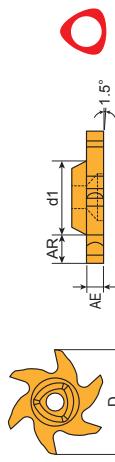
- Toolholders P. 26
- Cutting Data P. 131 - 132



Tolerances (mm)
D : +0.00
AE : ± 0.015

Dimensions in mm			
D	d1	AE	Max. AR
23	12	5.0	0.5-0.6
		6.0	0.7-0.8
		7.0	0.9-1.0
		8.0	1.1-1.2
		9.0	1.3-1.4
		10.0	1.5-1.6
		11.0	1.7-1.8
		12.0	1.9-2.0

Tolerances (mm)
D : +0.05
AE : ± 0.015



Tolerances (mm)
D : +0.00
AE : ± 0.015

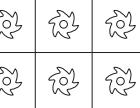
Inserts	Part No .	Grades			
		Carbide	Metal cermet	Uncoated	CE
3T1223-0.5-ME	3T1224-0.5-E				K10
3T1223-0.6-ME	3T1224-0.6-E				CE60
3T1223-0.7-ME	3T1224-0.7-E				F30
3T1223-0.8-ME	3T1224-0.8-E				F20
3T1223-0.9-ME	3T1224-0.9-E				C250
3T1223-1.0-ME	3T1224-1.0-E				C200
3T1223-1.1-ME	3T1224-1.1-E				B100
3T1223-1.2-ME	3T1224-1.2-E				
3T1223-1.3-ME	3T1224-1.3-E				
3T1223-1.4-ME	3T1224-1.4-E				
3T1223-1.5-ME	3T1224-1.5-E				
3T1223-1.6-ME	3T1224-1.6-E				
3T1223-1.7-ME	3T1224-1.7-E				
3T1223-1.8-ME	3T1224-1.8-E				
3T1223-1.9-ME	3T1224-1.9-E				
3T1223-2.0-ME	3T1224-2.0-E				
3T1223-2.2-ME	3T1224-2.2-E				
3T1223-2.5-ME	3T1224-2.5-E				
3T1223-3.0-ME	3T1224-3.0-E				
3T1223-3.5-ME	3T1224-3.5-E				
3T1223-4.0-ME	3T1224-4.0-E				
3T1223-4.2-ME	3T1224-4.2-E				
3T1223-4.5-ME	3T1224-4.5-E				
3T1223-5.0-ME	3T1224-5.0-E				
3T1223-6.0-ME	3T1224-6.0-E				
3T1223-8.0-ME	3T1224-8.0-E				



6 flute inserts

Inserts 6 PCS / Box
* M.O.Q. 12PCS

Inserts	Part No .	Grades			
		Carbide	Metal cermet	Uncoated	CE
3T1224-0.5-E	3T1223-0.5-ME				K10
3T1224-0.6-E	3T1223-0.6-ME				CE60
3T1224-0.7-E	3T1223-0.7-ME				F30
3T1224-0.8-E	3T1223-0.8-ME				F20
3T1224-0.9-E	3T1223-0.9-ME				C250
3T1224-1.0-E	3T1223-1.0-ME				C200
3T1224-1.1-E	3T1223-1.1-ME				B100
3T1224-1.2-E	3T1223-1.2-ME				
3T1224-1.3-E	3T1223-1.3-ME				
3T1224-1.4-E	3T1223-1.4-ME				
3T1224-1.5-E	3T1223-1.5-ME				
3T1224-1.6-E	3T1223-1.6-ME				
3T1224-1.7-E	3T1223-1.7-ME				
3T1224-1.8-E	3T1223-1.8-ME				
3T1224-1.9-E	3T1223-1.9-ME				
3T1224-2.0-E	3T1223-2.0-ME				
3T1224-2.2-E	3T1223-2.2-ME				
3T1224-2.5-E	3T1223-2.5-ME				
3T1224-3.0-E	3T1223-3.0-ME				
3T1224-3.5-E	3T1223-3.5-ME				
3T1224-4.0-E	3T1223-4.0-ME				
3T1224-4.2-E	3T1223-4.2-ME				
3T1224-4.5-E	3T1223-4.5-ME				
3T1224-5.0-E	3T1223-5.0-ME				
3T1224-6.0-E	3T1223-6.0-ME				
3T1224-8.0-E	3T1223-8.0-ME				



Inserts 6 PCS / Box
* M.O.Q. 12PCS

• Steel ■ Stainless Steel □ Steel/Stainless Steel ■ Cast Iron □ Aluminum ■ Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: 3T1223-0.5-ME, B100

• Steel ■ Stainless Steel □ Steel/Stainless Steel ■ Cast Iron □ Aluminum ■ Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: 3T1224-0.5-E, K10

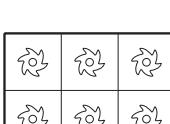


UFO T-slot Insert

- Toolholders P. 26
- Cutting Data P. 131 - 132



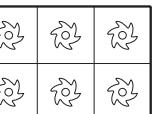
Inserts	Part No .	Grades			
		Carbide	Metal cermet	Uncoated	CE
3T1224-0.5-ME	3T1224-0.5-ME	○	○	○	K10
3T1224-0.6-ME	3T1224-0.6-ME	○	○	○	CE250
3T1224-0.7-ME	3T1224-0.7-ME	○	○	○	F30
3T1224-0.8-ME	3T1224-0.8-ME	○	○	○	F20
3T1224-0.9-ME	3T1224-0.9-ME	○	○	○	C250
3T1224-1.0-ME	3T1224-1.0-ME	○	○	○	C200
3T1224-1.1-ME	3T1224-1.1-ME	○	○	○	B100
3T1224-1.2-ME	3T1224-1.2-ME	○	○	○	
3T1224-1.3-ME	3T1224-1.3-ME	○	○	○	
3T1224-1.4-ME	3T1224-1.4-ME	○	○	○	
3T1224-1.5-ME	3T1224-1.5-ME	○	○	○	
3T1224-1.6-ME	3T1224-1.6-ME	○	○	○	
3T1224-1.7-ME	3T1224-1.7-ME	○	○	○	
3T1224-1.8-ME	3T1224-1.8-ME	○	○	○	
3T1224-1.9-ME	3T1224-1.9-ME	○	○	○	
3T1224-2.0-ME	3T1224-2.0-ME	○	○	○	
3T1224-2.2-ME	3T1224-2.2-ME	○	○	○	
3T1224-2.5-ME	3T1224-2.5-ME	○	○	○	
3T1224-3.0-ME	3T1224-3.0-ME	○	○	○	
3T1224-3.5-ME	3T1224-3.5-ME	○	○	○	
3T1224-4.0-ME	3T1224-4.0-ME	○	○	○	
3T1224-4.2-ME	3T1224-4.2-ME	○	○	○	
3T1224-4.5-ME	3T1224-4.5-ME	○	○	○	
3T1224-5.0-ME	3T1224-5.0-ME	○	○	○	
3T1224-6.0-ME	3T1224-6.0-ME	○	○	○	
3T1224-8.0-ME	3T1224-8.0-ME	○	○	○	



Inserts 6 PCS / Box
* M.O.Q. 12PCS

6 flute inserts

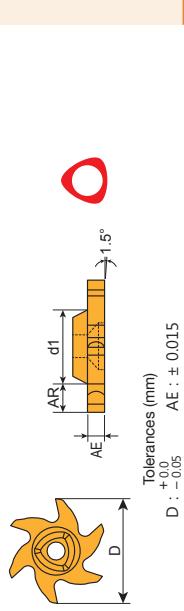
Inserts 6 PCS / Box



Inserts 6 PCS / Box

UFO T-slot Insert

- Toolholders P. 26
- Cutting Data P. 131 - 132

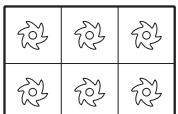


Inserts	Part No .	Grades			
		Carbide	Metal cermet	Uncoated	CE
3T1224-0.5-ME	3T1224-0.5-ME	○	○	○	K10
3T1224-0.6-ME	3T1224-0.6-ME	○	○	○	CE250
3T1224-0.7-ME	3T1224-0.7-ME	○	○	○	F30
3T1224-0.8-ME	3T1224-0.8-ME	○	○	○	F20
3T1224-0.9-ME	3T1224-0.9-ME	○	○	○	C250
3T1224-1.0-ME	3T1224-1.0-ME	○	○	○	C200
3T1224-1.1-ME	3T1224-1.1-ME	○	○	○	B100
3T1224-1.2-ME	3T1224-1.2-ME	○	○	○	
3T1224-1.3-ME	3T1224-1.3-ME	○	○	○	
3T1224-1.4-ME	3T1224-1.4-ME	○	○	○	
3T1224-1.5-ME	3T1224-1.5-ME	○	○	○	
3T1224-1.6-ME	3T1224-1.6-ME	○	○	○	
3T1224-1.7-ME	3T1224-1.7-ME	○	○	○	
3T1224-1.8-ME	3T1224-1.8-ME	○	○	○	
3T1224-1.9-ME	3T1224-1.9-ME	○	○	○	
3T1224-2.0-ME	3T1224-2.0-ME	○	○	○	
3T1224-2.2-ME	3T1224-2.2-ME	○	○	○	
3T1224-2.5-ME	3T1224-2.5-ME	○	○	○	
3T1224-3.0-ME	3T1224-3.0-ME	○	○	○	
3T1224-3.5-ME	3T1224-3.5-ME	○	○	○	
3T1224-4.0-ME	3T1224-4.0-ME	○	○	○	
3T1224-4.2-ME	3T1224-4.2-ME	○	○	○	
3T1224-4.5-ME	3T1224-4.5-ME	○	○	○	
3T1224-5.0-ME	3T1224-5.0-ME	○	○	○	
3T1224-6.0-ME	3T1224-6.0-ME	○	○	○	
3T1224-8.0-ME	3T1224-8.0-ME	○	○	○	



6 flute inserts

Inserts 6 PCS / Box



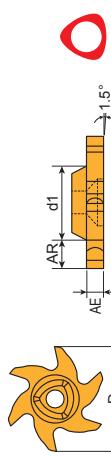
Inserts 6 PCS / Box

UFO

- Steel Stainless Steel Cast Iron Aluminum Steel/Cast iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, ie: 3T1224-0.5-ME, B100

UFO T-slot Insert

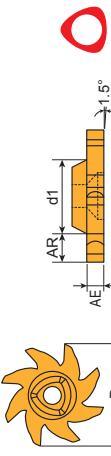
- Toolholders P. 26
- Cutting Data P. 131 - 132



Tolerances (mm)
D : +0.00
AE : ± 0.015

Dimensions in mm			
D	d1	AE	Max. AR
25	12	6.0	0.5-0.6
			0.7-0.8
			0.9-1.0
			1.1-1.2
			1.3-1.4
			1.5-1.6
			1.7-1.8
			1.9-2.0
			2.2-2.5
			3.0-4.0
			5.0
			6.0
			8.0

- Toolholders P. 27
- Cutting Data P. 131 - 132



Tolerances (mm)
D : +0.00
AE : ± 0.015

Dimensions in mm			
D	d1	AE	Max. AR
25	12	6.0	0.5-0.6
			0.7-0.8
			0.9-1.0
			1.1-1.2
			1.3-1.4
			1.5-1.6
			1.7-1.8
			1.9-2.0
			2.2-2.5
			3.0-4.0
			5.0
			6.0
			8.0

Tolerances (mm)
D : +0.00
AE : ± 0.015

Grades			
Inserts	Part No .	Carbide	Metal cermet
3T1225-0.5-ME	3T1225-0.5-ME	CE60	CE10
3T1225-0.6-ME	3T1225-0.6-ME	F30	CE25
3T1225-0.7-ME	3T1225-0.7-ME	F20	CE60
3T1225-0.8-ME	3T1225-0.8-ME	C200	F30
3T1225-0.9-ME	3T1225-0.9-ME	C250	F20
3T1225-1.0-ME	3T1225-1.0-ME	B100	C200
3T1225-1.1-ME	3T1225-1.1-ME	CE25	C250
3T1225-1.2-ME	3T1225-1.2-ME	CE60	C250
3T1225-1.3-ME	3T1225-1.3-ME	F30	C250
3T1225-1.4-ME	3T1225-1.4-ME	F20	C250
3T1225-1.5-ME	3T1225-1.5-ME	C200	C250
3T1225-1.6-ME	3T1225-1.6-ME	CE25	C250
3T1225-1.7-ME	3T1225-1.7-ME	CE60	C250
3T1225-1.8-ME	3T1225-1.8-ME	F30	C250
3T1225-1.9-ME	3T1225-1.9-ME	F20	C250
3T1225-2.0-ME	3T1225-2.0-ME	C200	C250
3T1225-2.2-ME	3T1225-2.2-ME	CE25	C250
3T1225-2.5-ME	3T1225-2.5-ME	CE60	C250
3T1225-3.0-ME	3T1225-3.0-ME	F30	C250
3T1225-3.5-ME	3T1225-3.5-ME	F20	C250
3T1225-4.0-ME	3T1225-4.0-ME	C200	C250
3T1225-4.2-ME	3T1225-4.2-ME	CE25	C250
3T1225-4.5-ME	3T1225-4.5-ME	CE60	C250
3T1225-5.0-ME	3T1225-5.0-ME	F30	C250
3T1225-6.0-ME	3T1225-6.0-ME	F20	C250
3T1225-8.0-ME	3T1225-8.0-ME	C200	C250



6 flute inserts

Inserts 6 PCS / Box

Inserts 6 PCS / Box
* M.O.Q. 12PCS



8 flute inserts

Inserts 6 PCS / Box

Inserts 6 PCS / Box
* M.O.Q. 12PCS

Dimensions in mm			
D	d1	AE	Max. AR
28	15.7	5.5	0.8-0.9
			1.0-1.1
			1.2-1.3
			1.4-1.5
			1.6-1.8
			1.9-2.0
			2.2-2.5
			3.0-4.0
			5.0

Dimensions in mm			
D	d1	AE	Max. AR
28	15.7	5.5	0.8-0.9
			1.0-1.1
			1.2-1.3
			1.4-1.5
			1.6-1.8
			1.9-2.0
			2.2-2.5
			3.0-4.0
			5.0

Grades			
Inserts	Part No .	Carbide	Metal cermet
3T1628-0.8-E	3T1628-0.8-E	CE60	CE10
3T1628-0.9-E	3T1628-0.9-E	F30	CE25
3T1628-1.0-E	3T1628-1.0-E	F20	CE60
3T1628-1.1-E	3T1628-1.1-E	C200	F30
3T1628-1.2-E	3T1628-1.2-E	C250	F20
3T1628-1.3-E	3T1628-1.3-E	B100	C200
3T1628-1.4-E	3T1628-1.4-E	CE25	C250
3T1628-1.5-E	3T1628-1.5-E	CE60	C250
3T1628-1.6-E	3T1628-1.6-E	F30	C250
3T1628-1.7-E	3T1628-1.7-E	F20	C250
3T1628-1.8-E	3T1628-1.8-E	C200	C250
3T1628-1.9-E	3T1628-1.9-E	CE25	C250
3T1628-2.0-E	3T1628-2.0-E	CE60	C250
3T1628-2.2-E	3T1628-2.2-E	F30	C250
3T1628-3.0-E	3T1628-3.0-E	F20	C250
3T1628-3.5-E	3T1628-3.5-E	C200	C250
3T1628-4.0-E	3T1628-4.0-E	CE25	C250
3T1628-4.2-E	3T1628-4.2-E	CE60	C250
3T1628-4.5-E	3T1628-4.5-E	F30	C250
3T1628-5.0-E	3T1628-5.0-E	F20	C250

• Steel ■ Stainless Steel □ Steel/Stainless Steel ■ Cast Iron □ Aluminum ■ Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: 3T1628-0.8-E, K100

• Toolholders P. 27

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: 3T1225-0.5-ME, B100



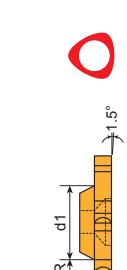
UFO T-slot Insert

- Toolholders P. 27
- Cutting Data P. 131 - 132

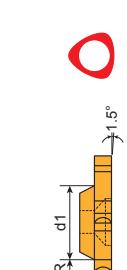
UFO T-slot Insert

- Toolholders P. 27
- Cutting Data P. 131 - 132

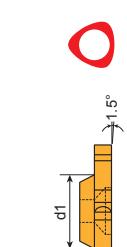
Dimensions in mm			
D	d1	AE	Max. AR
28	15.7	+0.00 -0.05	0.8-0.9 1.0-1.1 1.2-1.3 1.4-1.5 1.6-1.8 1.9-2.0 2.2-2.5 3.0-4.0 5.0
			Tolerances (mm)
			D : +0.00 AE : ± 0.015



Grades			
Inserts	Part No .	Carbide	Metal cermet
3T1628-0.8-ME	3T1629-0.8-E	CE100	CE250
3T1628-0.9-ME	3T1629-0.9-E	CE100	CE250
3T1628-1.0-ME	3T1629-1.0-E	CE100	CE250
3T1628-1.1-ME	3T1629-1.1-E	CE100	CE250
3T1628-1.2-ME	3T1629-1.2-E	CE100	CE250
3T1628-1.3-ME	3T1629-1.3-E	CE100	CE250
3T1628-1.4-ME	3T1629-1.4-E	CE100	CE250
3T1628-1.5-ME	3T1629-1.5-E	CE100	CE250
3T1628-1.6-ME	3T1629-1.6-E	CE100	CE250
3T1628-1.7-ME	3T1629-1.7-E	CE100	CE250
3T1628-1.8-ME	3T1629-1.8-E	CE100	CE250
3T1628-1.9-ME	3T1629-1.9-E	CE100	CE250
3T1628-2.0-ME	3T1629-2.0-E	CE100	CE250
3T1628-2.2-ME	3T1629-2.2-E	CE100	CE250
3T1628-2.5-ME	3T1629-2.5-E	CE100	CE250
3T1628-3.0-ME	3T1629-3.0-E	CE100	CE250
3T1628-3.5-ME	3T1629-3.5-E	CE100	CE250
3T1628-4.0-ME	3T1629-4.0-E	CE100	CE250
3T1628-4.2-ME	3T1629-4.2-E	CE100	CE250
3T1628-4.5-ME	3T1629-4.5-E	CE100	CE250
3T1628-5.0-ME	3T1629-5.0-E	CE100	CE250



Dimensions in mm			
D	d1	AE	Max. AR
29	15.7	+0.00 -0.05	0.8-0.9 1.0-1.1 1.2-1.3 1.4-1.5 1.6-1.8 1.9-2.0 2.2-2.5 3.0-4.0 5.0
			Tolerances (mm)
			D : +0.00 AE : ± 0.015



Grades			
Inserts	Part No .	Carbide	Metal cermet
3T1629-0.8-E	3T1629-0.8-E	CE100	CE250
3T1629-0.9-E	3T1629-0.9-E	CE100	CE250
3T1629-1.0-E	3T1629-1.0-E	CE100	CE250
3T1629-1.1-E	3T1629-1.1-E	CE100	CE250
3T1629-1.2-E	3T1629-1.2-E	CE100	CE250
3T1629-1.3-E	3T1629-1.3-E	CE100	CE250
3T1629-1.4-E	3T1629-1.4-E	CE100	CE250
3T1629-1.5-E	3T1629-1.5-E	CE100	CE250
3T1629-1.6-E	3T1629-1.6-E	CE100	CE250
3T1629-1.7-E	3T1629-1.7-E	CE100	CE250
3T1629-1.8-E	3T1629-1.8-E	CE100	CE250
3T1629-1.9-E	3T1629-1.9-E	CE100	CE250
3T1629-2.0-E	3T1629-2.0-E	CE100	CE250
3T1629-2.2-E	3T1629-2.2-E	CE100	CE250
3T1629-2.5-E	3T1629-2.5-E	CE100	CE250
3T1629-3.0-E	3T1629-3.0-E	CE100	CE250
3T1629-3.5-E	3T1629-3.5-E	CE100	CE250
3T1629-4.0-E	3T1629-4.0-E	CE100	CE250
3T1629-4.2-E	3T1629-4.2-E	CE100	CE250
3T1629-4.5-E	3T1629-4.5-E	CE100	CE250
3T1629-5.0-E	3T1629-5.0-E	CE100	CE250



Inserts 6 PCS / Box
* M.O.Q. 12PCS

8 flute inserts

Inserts 6 PCS / Box
* M.O.Q. 12PCS

8 flute inserts

- Steel
- Stainless Steel
- Steel/Stainless Steel/Cast Iron
- Cast Iron
- Aluminum
- Steel/Cast Iron

- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T1628-0.8-E, K10

- Steel
- Stainless Steel
- Steel/Stainless Steel/Cast Iron
- Cast Iron
- Aluminum
- Steel/Cast Iron

- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T1629-0.8-E, K10

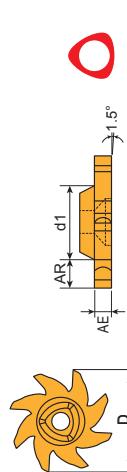
UFO T-slot Insert

- Toolholders P. 27
- Cutting Data P. 131 - 132

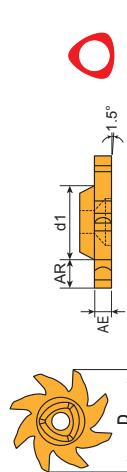
UFO T-slot Insert

- Toolholders P. 27
- Cutting Data P. 131 - 132

Dimensions in mm			
D	d1	AE	Max. AR
29	15.7	0.8-0.9 1.0-1.1 1.2-1.3 1.4-1.5 1.6-1.8 1.9-2.0 2.2-2.5 3.0-4.0 5.0	6.0
		+0.00 -0.05	Tolerances (mm)
		D : +0.00 AE : ± 0.015	



Grades			
B100	C200	F20	F30
Carbide	Metal cermet	Metal cermet	Uncoated
3T1629-0.8-ME	◎	◎	◎
3T1629-0.9-ME	◎	◎	◎
3T1629-1.0-ME	◎	◎	◎
3T1629-1.1-ME	◎	◎	◎
3T1629-1.2-ME	◎	◎	◎
3T1629-1.3-ME	◎	◎	◎
3T1629-1.4-ME	◎	◎	◎
3T1629-1.5-ME	◎	◎	◎
3T1629-1.6-ME	◎	◎	◎
3T1629-1.7-ME	◎	◎	◎
3T1629-1.8-ME	◎	◎	◎
3T1629-1.9-ME	◎	◎	◎
3T1629-2.0-ME	◎	◎	◎
3T1629-2.2-ME	◎	◎	◎
3T1629-2.5-ME	◎	◎	◎
3T1629-3.0-ME	◎	◎	◎
3T1629-3.5-ME	◎	◎	◎
3T1629-4.0-ME	◎	◎	◎
3T1629-4.2-ME	◎	◎	◎
3T1629-4.5-ME	◎	◎	◎
3T1629-5.0-ME	◎	◎	◎



Inserts 6 PCS / Box
* M.O.Q: 12PCS



8 flute inserts

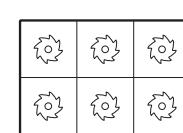
Inserts 6 PCS / Box
* M.O.Q: 12PCS



8 flute inserts

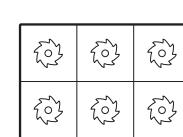
D	d1	AE	Max. AR
30	15.7	0.8-0.9 1.0-1.1 1.2-1.3 1.4-1.5 1.6-1.8 1.9-2.0 2.2-2.5 3.0-4.0 5.0	6.5
		+0.00 -0.05	Tolerances (mm)
		D : +0.00 AE : ± 0.015	

D	d1	AE	Max. AR
30	15.7	0.8-0.9 1.0-1.1 1.2-1.3 1.4-1.5 1.6-1.8 1.9-2.0 2.2-2.5 3.0-4.0 5.0	6.5
		+0.00 -0.05	Tolerances (mm)
		D : +0.00 AE : ± 0.015	



Inserts 6 PCS / Box

D	d1	AE	Max. AR
30	15.7	0.8-0.9 1.0-1.1 1.2-1.3 1.4-1.5 1.6-1.8 1.9-2.0 2.2-2.5 3.0-4.0 5.0	6.5
		+0.00 -0.05	Tolerances (mm)
		D : +0.00 AE : ± 0.015	



Inserts 6 PCS / Box

• Steel ■ Stainless Steel □ Steel/Stainless Steel ■ Cast Iron □ Aluminum □ Steel/Cast Iron

• Steel ■ Stainless Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: 3T1629-0.8-E, K10

• Steel ■ Stainless Steel □ Steel/Stainless Steel ■ Cast Iron □ Aluminum □ Steel/Cast Iron

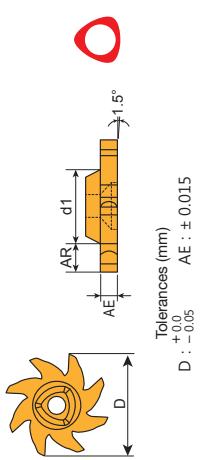
• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: 3T1630-0.8-E, K10

UFO T-SLOT CUTTER

UFO T-slot Insert

- Toolholders P. 27
- Cutting Data P. 131 - 132



D	d1	Dimensions in mm		
		AE	Max. AR	Min. AR
30	15.7	0.8-0.9 1.0-1.1 1.2-1.3 1.4-1.5 1.6-1.8	6.5	
		1.9-2.0 2.2-2.5 3.0-4.0 5.0		

Inserts	Part No .	Grades				
		Carbide	Metal cermet	Uncoated	C250	C200
3T1630-0.8-ME	B100	◎	◎	◎	CE60	CE250
3T1630-0.9-ME		◎	◎	◎	CE250	CE250
3T1630-1.0-ME		◎	◎	◎	CE250	CE250
3T1630-1.1-ME		◎	◎	◎	CE250	CE250
3T1630-1.2-ME		◎	◎	◎	CE250	CE250
3T1630-1.3-ME		◎	◎	◎	CE250	CE250
3T1630-1.4-ME		◎	◎	◎	CE250	CE250
3T1630-1.5-ME		◎	◎	◎	CE250	CE250
3T1630-1.6-ME		◎	◎	◎	CE250	CE250
3T1630-1.7-ME		◎	◎	◎	CE250	CE250
3T1630-1.8-ME		◎	◎	◎	CE250	CE250
3T1630-1.9-ME		◎	◎	◎	CE250	CE250
3T1630-2.0-ME		◎	◎	◎	CE250	CE250
3T1630-2.2-ME		◎	◎	◎	CE250	CE250
3T1630-2.5-ME		◎	◎	◎	CE250	CE250
3T1630-3.0-ME		◎	◎	◎	CE250	CE250
3T1630-3.5-ME		◎	◎	◎	CE250	CE250
3T1630-4.0-ME		◎	◎	◎	CE250	CE250
3T1630-4.2-ME		◎	◎	◎	CE250	CE250
3T1630-4.5-ME		◎	◎	◎	CE250	CE250
3T1630-5.0-ME		◎	◎	◎	CE250	CE250



8 flute inserts

- Steel ■ Stainless Steel ◻ Steel/Stainless Steel
- Steel/Cast Iron ◻ Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T1630-0.8-ME, B100

Features

- Durability **300%** UP
- Efficiency **400%** UP
- Variety of Machines CNC Milling machine
- Cost **200~300%** DOWN
- Available in materials P K M N S H

UFO T-slot Cutter

- Toolholders P. 27
- Insert P. 66 - 69
- Cutting Data P. 133 - 134

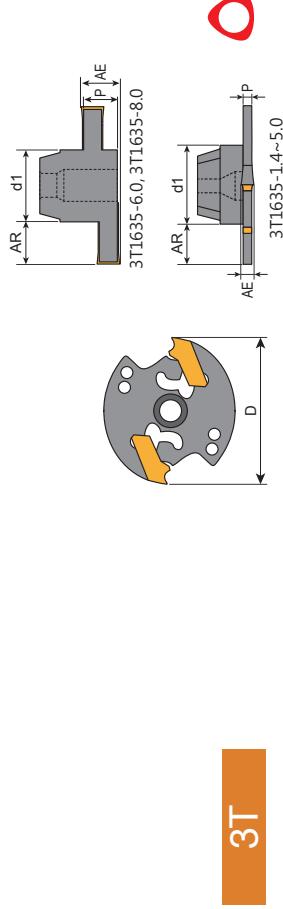
UFO T-slot Cutter

- Toolholders P. 27
- Insert P. 66 - 69
- Cutting Data P. 133 - 134



Order code	Dimensions(mm)					Key
	D	d1	AR	AE	P	
3T1632-1.4			1.4 1.5	1.2		1414 1415
3T1632-1.6			1.6	1.4		1616
3T1632-1.8			1.8	1.6		1818
3T1632-2.0	32	16	2.2 2.5	1.75 2.25	2	2020 2022 2025
3T1632-2.5			3.0	2.7 2.25		2525 2527 2530
3T1632-3.0			3.0	3.2 3.5		3030 3032 3035
3T1632-4.0			4.0	4.2 4.5		4040 4042 4045
3T1632-5.0			5.0	5.2 4.5		5050 5052 5055
3T1635-6.0						6.0
3T1635-8.0						8.0

* Key 150.10-30 is not included



Order code	Dimensions(mm)					Key
	D	d1	AR	AE	P	
3T1635-6.0, 3T1635-8.0						1414 1415
3T1635-1.4						1616
3T1635-1.6						1818
3T1635-1.8						2020 2022 2025
3T1635-2.0						2525 2527 2530
3T1635-2.5						3030 3032 3035
3T1635-3.0						4040 4042 4045
3T1635-4.0						5050 5052 5055
3T1635-5.0						6.0
3T1635-6.0						8.0
3T1635-8.0						7.5

* Key 150.10-30 is not included

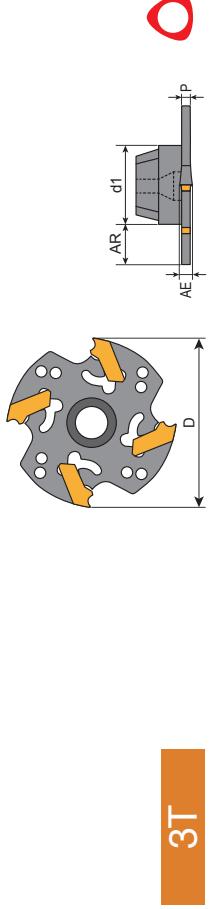
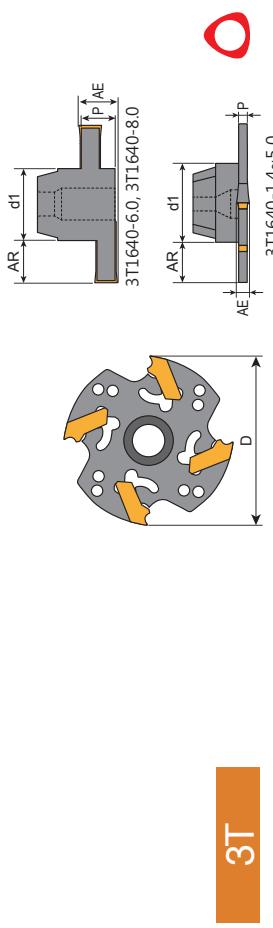
UFO T-slot Cutter

- Toolholders P. 27
- Insert P. 66 - 69
- Cutting Data P. 133 - 134

UFO T-slot Cutter

- Toolholders P. 28
- Insert P. 66 - 69
- Cutting Data P. 133 - 134

* Key 150.10-30 is not included



Order code	Dimensions(mm)					Key
	D	d1	AR	AE	P	
3T1640-1.4		1.4 1.5	1.2			1414 1415
3T1640-1.6		1.6	1.4			1616
3T1640-1.8		1.8	1.6	0.06		1818
3T1640-2.0		2.0 2.2 2.5	1.75			2020 2022 2025
3T1640-2.5		2.5	2.25			2525 2527 2530
3T1640-3.0	40	16	11.5	4	7500	150.10-30 3030 3032 3035
3T1640-4.0		4.0	3.7	0.07		4040 4042 4045
3T1640-5.0		5.0	4.5			5050 5052 5055
3T1640-6.0		6.0	5.5			5050NS
3T1640-8.0		8.0	7.5			

*

Key 150.10-30 is not included

Order code	Dimensions(mm)					Key
	D	d1	AR	AE	P	
3T2550-1.4						1414 1415
3T2550-1.6						1616
3T2550-1.8						1818
3T2550-2.0		50	25	12	4	2020 2022 2025
3T2550-2.5						2525 2527 2530
3T2550-3.0						3030 3032 3035
3T2550-4.0						4040 4042 4045
3T2550-5.0						5050 5052 5055

* Key 150.10-30 is not included

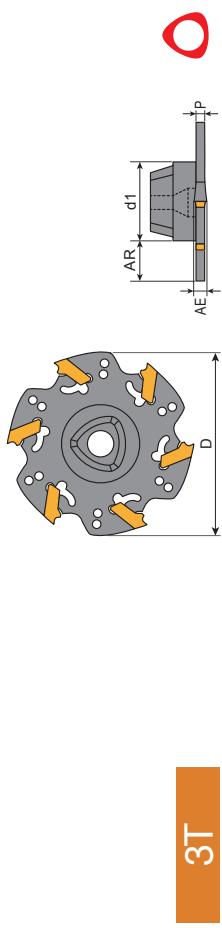


UFO T-slot Cutter

- Toolholders P. 28
- Insert P. 66 - 69
- Cutting Data P. 133 - 134

UFO T-slot Cutter

- Toolholders P. 28
- Insert P. 66 - 69
- Cutting Data P. 133 - 134



3T



3T

Order code	Dimensions(mm)						MAX RPM	Insert LNGT	Key
	D	d1	AR	AE	P				
3T2560-1.4							1414 1415		
3T2560-1.6							1616		
3T2560-1.8							1818		
3T2560-2.0							2020		
3T2560-2.5							2525		
3T2560-3.0							3030		
3T2560-4.0							4040		
3T2560-5.0							5050		

* Key 150.10-30 is not included

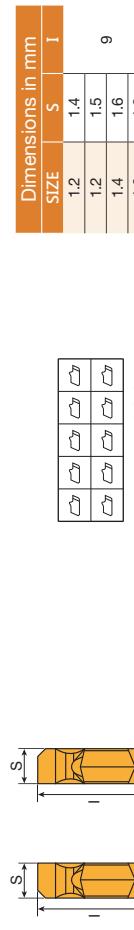
Order code	Dimensions(mm)						MAX RPM	Insert LNGT	Key
	D	d1	AR	AE	P				
3T2580-1.4							1.4 1.5	1.2	1414 1415
3T2580-1.6							1.6	1.4	1616
3T2580-1.8							1.8	1.6	1818
3T2580-2.0							2.0	2.2	2020
3T2580-2.5							2.5	2.7	2525
3T2580-3.0							3.0	3.2	3030
3T2580-4.0							4.0	4.2	4040
3T2580-5.0							5.0	5.2	5050

* Key 150.10-30 is not included



LNGT Insert

LNGT Insert



Inserts 10 PCS / Box

Inserts	Part No .	Grades		
		Carbide	Metal cermet	Uncoated
NLS	LNGT 1414NLS-EE			
NLS	LNGT 1415NLS-EE			
NLS	LNGT 1616NLS-EE			
NLS	LNGT 1818NLS-EE			
NRS	LNGT 1414NRS-EE			
NRS	LNGT 1415NRS-EE			
NRS	LNGT 1616NRS-EE			
NRS	LNGT 1818NRS-EE			

Inserts Sequencing Position (one left after than one right)

Inserts	Part No .	Grades		
		Carbide	Metal cermet	Uncoated
NLS	LNGT 1414NLS-M			
NLS	LNGT 1415NLS-M			
NLS	LNGT 1616NLS-M			
NLS	LNGT 1818NLS-M			
NRS	LNGT 1414NRS-M			
NRS	LNGT 1415NRS-M			
NRS	LNGT 1616NRS-M			
NRS	LNGT 1818NRS-M			

Inserts Sequencing Position (one left after than one right)

Inserts	Part No .	Grades		
		Carbide	Metal cermet	Uncoated
NLS	LNGT 1414NLS-M			
NLS	LNGT 1415NLS-M			
NLS	LNGT 1616NLS-M			
NLS	LNGT 1818NLS-M			
NRS	LNGT 1414NRS-M			
NRS	LNGT 1415NRS-M			
NRS	LNGT 1616NRS-M			
NRS	LNGT 1818NRS-M			

Inserts Sequencing Position (one left after than one right)

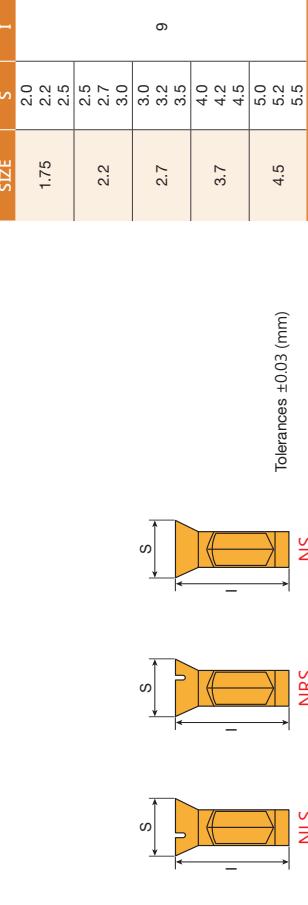
- Steel
- Stainless Steel
- Cast Iron
- Aluminum
- Steel/Cast Iron

- Steel
- Stainless Steel
- Cast Iron
- Aluminum
- Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: LNGT 1414NLS-M, B100

LNGT Insert



Inserts Sequencing

Position (one left after than one right)

Inserts	Part No .	Grades		
		Carbide	Metal cermet	Uncoated
NLS	LNGT 1414NLS-EE			
NLS	LNGT 1415NLS-EE			
NLS	LNGT 1616NLS-EE			
NLS	LNGT 1818NLS-EE			
NRS	LNGT 1414NRS-EE			
NRS	LNGT 1415NRS-EE			
NRS	LNGT 1616NRS-EE			
NRS	LNGT 1818NRS-EE			

Inserts Sequencing

Position (one left after than one right)

Inserts	Part No .	Grades		
		Carbide	Metal cermet	Uncoated
NLS	LNGT 1414NLS-EE			
NLS	LNGT 1415NLS-EE			
NLS	LNGT 1616NLS-EE			
NLS	LNGT 1818NLS-EE			
NRS	LNGT 1414NRS-EE			
NRS	LNGT 1415NRS-EE			
NRS	LNGT 1616NRS-EE			
NRS	LNGT 1818NRS-EE			

Inserts Sequencing

Position (one left after than one right)

- Steel
- Stainless Steel
- Cast Iron
- Aluminum
- Steel/Cast Iron

- Steel
- Stainless Steel
- Cast Iron
- Aluminum
- Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: LNGT 1414NLS-EE, F20

LNGT Insert

LNGT Insert

Dimensions in mm				
SIZE	S	I	C	
1.75	2.0 2.2 2.5			
2.2	2.5 2.7 3.0			
	2.7	3.2 3.5	9	0.05
	3.7	4.0 4.2 4.5		
	5.0	5.2 5.5		
				Tolerances ± 0.03 (mm)
				NS NRS NLS

Inserts	Part No .	Grades					Inserts Sequencing Position (one left after than one right)
		B100	C200	F200	C250	C300	
NLS	LNGT 2020NLS-M						
NLS	LNGT 2022NLS-M						
NRS	LNGT 2025NLS-M						
NRS	LNGT 2525NLS-M						
NRS	LNGT 2527NLS-M						
NLS	LNGT 2530NLS-M						
NLS	LNGT 3030NLS-M						
NLS	LNGT 3032NLS-M						
NLS	LNGT 3035NLS-M						
NLS	LNGT 4040NLS-M						
NLS	LNGT 4042NLS-M						
NRS	LNGT 4045NLS-M						
NRS	LNGT 5050NLS-M						
NLS	LNGT 5052NLS-M						
NLS	LNGT 5055NLS-M						
NRS	LNGT 2020NRS-M						
NRS	LNGT 2022NRS-M						
NRS	LNGT 2025NRS-M						
NRS	LNGT 2525NRS-M						
NRS	LNGT 2527NRS-M						
NRS	LNGT 2530NRS-M						
NRS	LNGT 3030NRS-M						
NRS	LNGT 3032NRS-M						
NRS	LNGT 3035NRS-M						
NRS	LNGT 4040NRS-M						
NRS	LNGT 4042NRS-M						
NRS	LNGT 4045NRS-M						
NRS	LNGT 5050NRS-M						
NRS	LNGT 5052NRS-M						
NRS	LNGT 5055NRS-M						
NS	LNGT 5050NS-M						

• Steel □ Stainless Steel ☐ Steel/Stainless Steel ■ Cast Iron ▲ Aluminum ▨ Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: LNGT 2020NLS-M, B100

NS

LNGT 5050NS-M

Inserts 10 PCS / Box

--	--	--	--	--	--	--	--	--	--	--

Inserts 10 PCS / Box

LNGT Insert

Dimensions in mm				
SIZE	S	I	C	
1.75	2.0 2.2 2.5			
2.2	2.5 2.7 3.0			
	2.7	3.2 3.5	9	0.05
	3.7	4.0 4.2 4.5		
	5.0	5.2 5.5		
				Tolerances ± 0.03 (mm)
				NS NRS NLS

Inserts	Part No .	Grades					Inserts Sequencing Position (one left after than one right)
		B100	C200	F200	C250	C300	
NLS	LNGT 2020NLS-M						
NLS	LNGT 2022NLS-M						
NRS	LNGT 2025NLS-M						
NRS	LNGT 2525NLS-M						
NRS	LNGT 2527NLS-M						
NLS	LNGT 2530NLS-M						
NLS	LNGT 3030NLS-M						
NLS	LNGT 3032NLS-M						
NLS	LNGT 3035NLS-M						
NLS	LNGT 4040NLS-M						
NLS	LNGT 4042NLS-M						
NRS	LNGT 4045NLS-M						
NRS	LNGT 5050NLS-M						
NLS	LNGT 5052NLS-M						
NLS	LNGT 5055NLS-M						
NRS	LNGT 2020NRS-M						
NRS	LNGT 2022NRS-M						
NRS	LNGT 2025NRS-M						
NRS	LNGT 2525NRS-M						
NRS	LNGT 2527NRS-M						
NRS	LNGT 2530NRS-M						
NRS	LNGT 3030NRS-M						
NRS	LNGT 3032NRS-M						
NRS	LNGT 3035NRS-M						
NRS	LNGT 4040NRS-M						
NRS	LNGT 4042NRS-M						
NRS	LNGT 4045NRS-M						
NRS	LNGT 5050NRS-M						
NRS	LNGT 5052NRS-M						
NRS	LNGT 5055NRS-M						
NS	LNGT 5050NS-M						

• Steel □ Stainless Steel ☐ Steel/Stainless Steel ■ Cast Iron ▲ Aluminum ▨ Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: LNGT 2020NLS-M, B100

NS

LNGT 5050NS-M

Inserts 10 PCS / Box

Dimensions in mm				
SIZE	S	I	C	
1.75	2.0 2.2 2.5			
2.2	2.5 2.7 3.0			
	2.7	3.2 3.5	9	0.05
	3.7	4.0 4.2 4.5		
	5.0	5.2 5.5		
				Tolerances ± 0.03 (mm)
				NS NRS NLS

Inserts	Part No .	Grades					Inserts Sequencing Position (one left after than one right)
		B100	C200	F200	C250	C300	
NLS	LNGT 2020NLS-M						
NLS	LNGT 2022NLS-M						
NRS	LNGT 2025NLS-M						
NRS	LNGT 2525NLS-M						
NRS	LNGT 2527NLS-M						
NLS	LNGT 2530NLS-M						
NLS	LNGT 3030NLS-M						
NLS	LNGT 3032NLS-M						
NLS	LNGT 3035NLS-M						
NLS	LNGT 4040NLS-M						
NLS	LNGT 4042NLS-M						
NRS	LNGT 4045NLS-M						
NRS	LNGT 5050NLS-M						
NLS	LNGT 5052NLS-M						
NLS	LNGT 5055NLS-M						
NS	LNGT 5050NS-M						

• Steel □ Stainless Steel ☐ Steel/Stainless Steel ■ Cast Iron ▲ Aluminum ▨ Steel/Cast Iron

• Correct price and stock are based on current situation

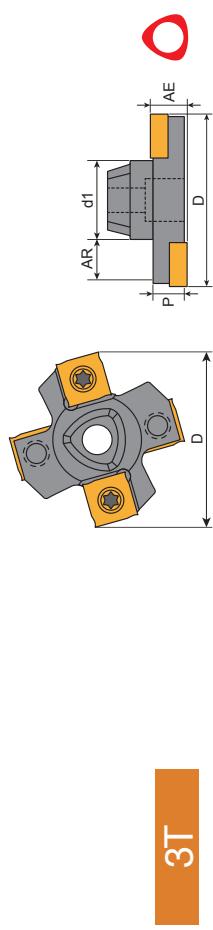
• Please specify model number and grade of insert, i.e.: LNGT 2020NLS-M, B100

UFO T-slot Cutter

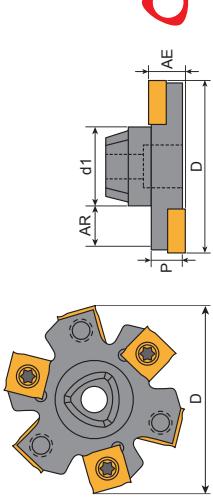
- Toolholders P. 28
- Insert P. 73
- Cutting Data P. 135 - 136

UFO T-slot Cutter

- Toolholders P. 28
- Insert P. 73
- Cutting Data P. 135 - 136



3T



3T

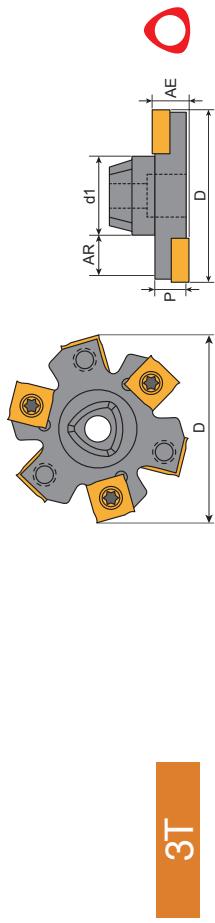
Order code	Dimensions(mm)				Z_c	$\frac{\text{kg}}{\text{KG}}$	MAX RPM	Insert SNGX	Screw	Key
	D	d1	AR	AE						
3TS2550-4.0		4	3.4				1102	T9354	T09P	
3TS2550-5.0		5	4.2				1103	T9355	T08P	
3TS2550-6.0		6	5		0.15		1203	T945		
3TS2550-7.0	50	25	12	7	4	2	17000	1204	T946	
3TS2550-8.0							12045	T947	T15P	
3TS2550-10							1205	T948		
3TS2550-12							1207	T9411		

Order code	Dimensions(mm)				Z_c	$\frac{\text{kg}}{\text{KG}}$	MAX RPM	Insert SNGX	Screw	Key
	D	d1	AR	AE						
3TS2560-4.0							4	3.4		
3TS2560-5.0							5	4.2		
3TS2560-6.0							6	5		
3TS2560-7.0							25	17		
3TS2560-8.0							6	3	15000	1204
3TS2560-10							10	9		1946
3TS2560-12							12	11		1205
										1948
										1207
										19411



UFO T-slot Cutter

- Toolholders P. 28
- Insert P. 73
- Cutting Data P. 135 - 136



SNGX Insert



SIZE	S	I
1102	2.3	11.0
1103	2.7	
1203	3.2	
1204	4.0	
12045	4.5	12.7
1205	5.4	
1207	7.0	

Inserts	Part No .	Cutting Rate	Port. Chamfer	Grades								Coat	
				Carbide	Angle	Width mm	Thickness mm	G100	C250	F20	C30	E60	
SNGX 1102-E													
SNGX 1103-E													
SNGX 1203-E													
SNGX 1204-E													
SNGX 12045-E													
SNGX 1205-E													
SNGX 1207-E													
E													
SNGX 1102-ME													
SNGX 1103-ME													
SNGX 1203-ME													
SNGX 1204-ME													
SNGX 12045-ME													
SNGX 1205-ME													
SNGX 1207-ME													
M													
SNGX 1102-TM													
SNGX 1103-TM													
SNGX 1203-TM													
SNGX 1204-TM													
SNGX 12045-TM													
SNGX 1205-TM													
SNGX 1207-TM													

• Steel ■ Stainless Steel □ Steel/Stainless Steel ■ Cast Iron ■ Aluminum ■ Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert i.e.: SNGX 1102-E, F20

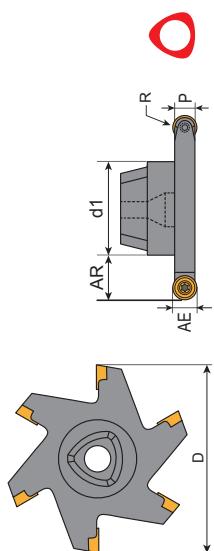


UFO T-slot Cutter

- Toolholders P. 28

UFO

THREAD MILLING

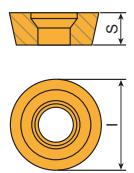


3T

Order code	Dimensions(mm)						MAX RPM /KG	Insert RDKT	Screw	Key
	D	d1	AR	AE	P					
3T2560-R4	60	17	8	6.2	4R	6	0.30	13000 12000	0803 C02506	T08P
3T2580-R4	80	27								
3T2560-R5	60	17	10	8.0	5R		0.35	13000 12000	10T3 C03006	T09P
3T2580-R5	80	27								
3T2560-R6	60	17	12	10	6R	4	0.50	9500 9000	1204 C03508	T15P
3T2580-R6	80	27								

Part No.	Tolerances (mm) $D = \pm 0.04$ $S = \pm 0.05$	Dimensions in mm									
		SIZE	S	1	R	C200	F20	C250	C260	C10	C6
RDKW 0803MOT-MD	0803		3.18		8						
RDKT 10T3MOT-M	10T3		3.97		10						
RPKT 1204MOT-M	1204		4.7		12						
Inserts 10 PCS / Box											

RDKT / RDKW / RPCT Insert



Dimensions in mm	SIZE		
	S	1	R
0803	3.18	8	4
10T3	3.97	10	5
1204	4.7	12	6

Inerts	Part No.	Grades									
		Carbide	Metal cermet	Uncoated cermet	C200	F20	C250	C260	C10	C6	
	RDKW 0803MOT-MD	◎									
	RDKT 10T3MOT-M		◎								
	RPKT 1204MOT-M		◎								

- Steel ◻ Stainless Steel ◎ Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: RDKW 0803MOT-MD, B100

Features

- Durability **300% UP**
- Efficiency **400% UP**
- Variety of Machines CNC Milling machine
- Cost **200~300% DOWN**
- Available in materials P K M N S H

UFO

New System
For Thread
Milling

Thread Milling

Optimal Center Positioning Design

This unique UFO thread milling insert has a tapered polygonal design to optimize the stability and tolerance of the insert. Special insert geometry design optimizes chip evacuation and reduce cutting force. It's the best choice to make a high precision thread with UFO thread milling.

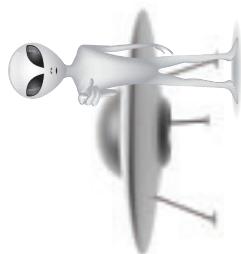
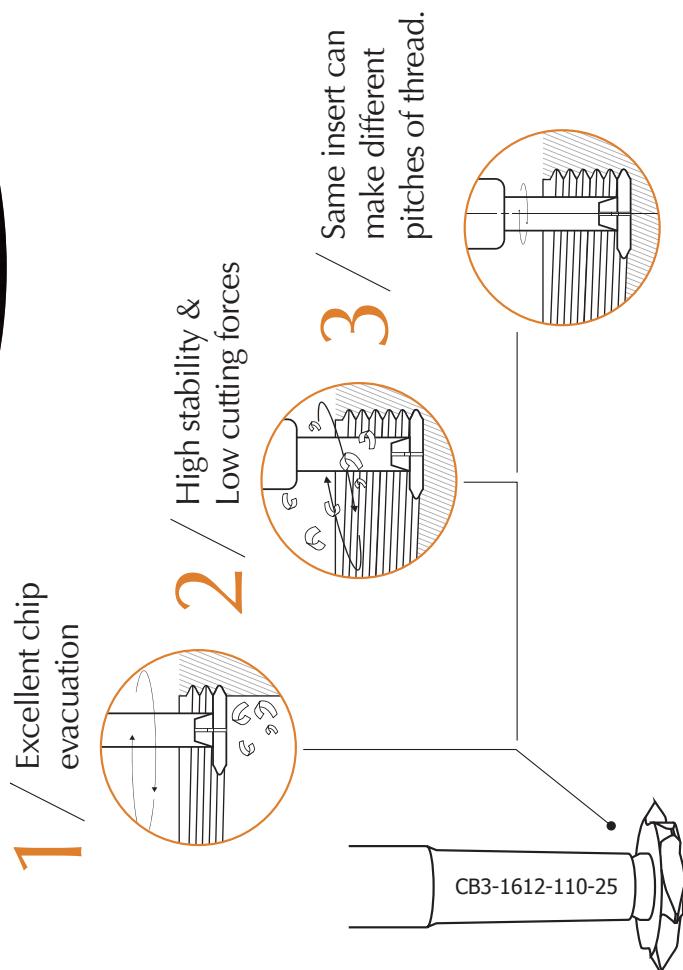
Applications

Metric, UN and Whitworth thread are available.
Same shank can fit T-slot(min 0.5mm)、chamfer、
Radius insert. Refer to Y.T. T-Slot and Saw Blade
catalogue for more informations.

Patent No.
M386953

* Patent No.
ZL 2010 2 0112933.7

For details, please refer to the page 76-116



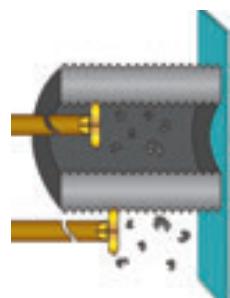
Product Advantages

Indexable UFO thread mill - Excellent in chip evacuation and small cutting force.

Insert Design

1. UFO thread milling insert dia. starts from M14/PITCH 1.5.it offers inserts for metric, UN and whitworth.
2. Unique tapered polygon design to get the excellent stability in high speed machining.
3. The front-mounted insert are positioned in a taper seat for center-positioning, giving secure and continuous performance.
4. High productivity with many teeth (4-8 teeth).

New



UFO thread mill is excellent in chip evacuation minimizes the problem of chip twining and tap breakage,reduces machine down time effectively, best choice for expensive components and reduces risk of tap breakage at the last stage of machining.

UFO thread mill inserts with single-point design has lower cutting force during machining, it's the first choice for medium to large threads in CNC M/C BT30 machining, thin-walled components and unstable conditions,such as milling thread with long overhangs.

Old

Machining with conventional HSS/Carbide solid tap gets problems easily in chip evacuation, tap breakage on the parts and machining stoppage,it takes time and cost to remove the breakage tap.

Advantages Of UFO Thread Milling

FIG.1

Same UFO thread milling insert for all holes and all pitches(only in V partial-profile insert). If use tap, it needs different taps for different holes and different pitches.

FIG.2

UFO thread milling can achieve full-bottom threading in a blind hole without any extra drill depth required. It's also easy to adjust the thread tolerance by programme and achieves better tolerance.

FIG.3

Same UFO thread milling inserts can be used in PT(NPT) thread without extra tool inventory. It provides better tool life and less cutting force than PT tap.

FIG.4

Same UFO thread milling insert is available for both external and internal threads.

Multiple Application

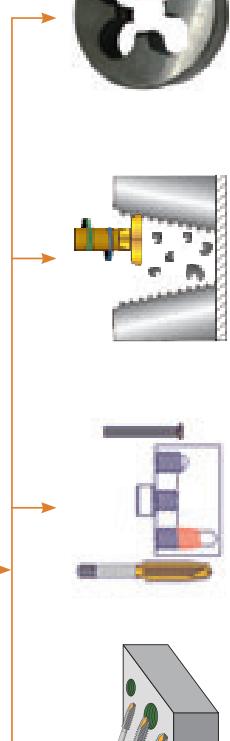
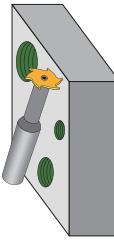


FIG.1

FIG.2

FIG.3

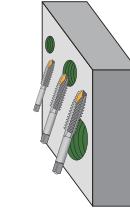


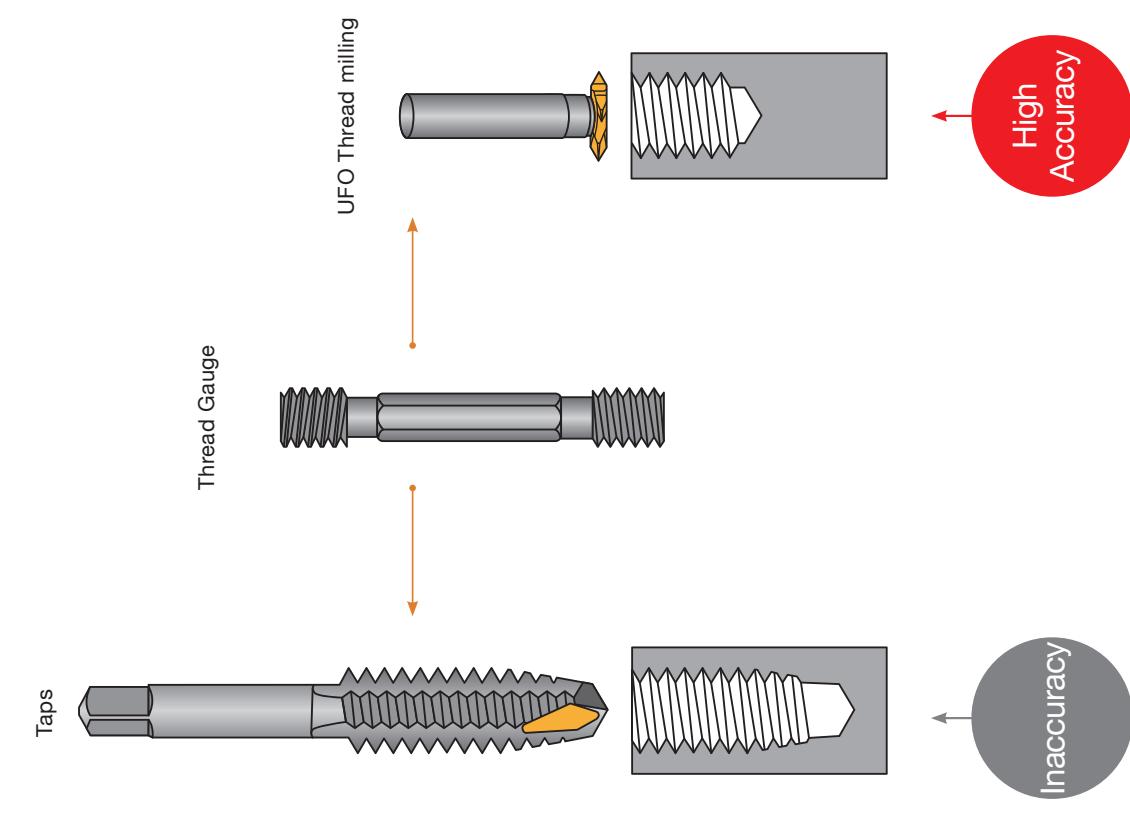
FIG.4



Patent No.
ZL 2010 2 0112933.7

Advantages Of UFO Thread Milling

How To Choose UFO Thread Milling Insert



UFO

$\frac{3T1}{1}$	$\frac{20}{2}$	$\frac{60}{3}$	$\frac{1.0}{4}$	$\frac{ME}{5}$	$\frac{B100}{6}$
-----------------	----------------	----------------	-----------------	----------------	------------------

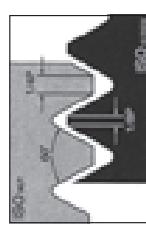
1. UFO Thread milling insert
 2. Insert dia.
 3. Thread angle
 4. Pitch size
 5. Insert geometry
 6. Insert grade
- Available in $\varnothing 12$, $\varnothing 15$, $\varnothing 20$, $\varnothing 25$
- Suitable for Non.Ferrous metal .
such as : Aluminum' Copper' Plastic
- Suitable for Steel' Stainless
Steel' Cast Iron

Solid Carbide Thread Milling (Single Pitch)-Partial Profile

- Cutting Data P. 137

Solid Carbide Thread Milling 2D (Multi-Pitch) MM

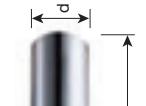
- Cutting Data P. 137



Thread Length Up To 2D

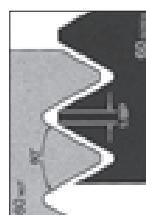
Order Number	Thread Size _e	Pitch	D	H	T	d	L
BT0240-50	M3.0 X 0.5	0.5	2.4	6.4	3	4	50
BT0275-50	M3.5 X 0.6	0.6	2.75	7.4	3	4	50
BT0315-60	M4 X 0.7	0.7	3.15	8.6	3	6	60
BT0400-60	M5 X 0.8	0.8	4.0	12.0	3	6	60
BT0475-60	M6 X 1.0	1.0	4.75	13.0	3	6	60
BT0600-60	M8 X 1.25	1.25	6.5	17.3	3	8	60
BT0790-60	M10 X 1.5	1.5	7.9	22.0	3	8	60
BT0950-75	M12 X 1.75	1.75	9.5	25.5	3	10	75

Solid Carbide Thread Milling 3D (Multi-Pitch) MM



Thread Length Up To 3D

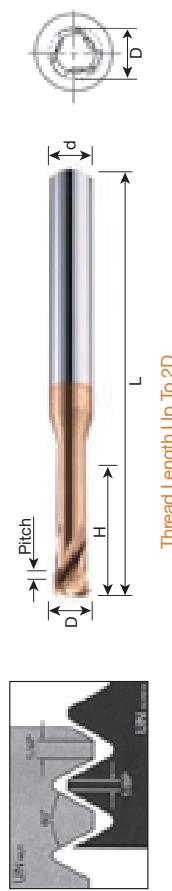
Order Number	Thread Size _e	Pitch	D	H	T	d	L
BTL0240-50	M3.0 X 0.5	0.5	2.4	9.3	3	4	50
BTL0315-60	M4.0 X 0.7	0.7	3.15	12.4	3	6	60
BTL0400-60	M5 X 0.8	0.8	4.0	15.6	3	6	60
BTL0475-60	M6 X 1.0	1.0	4.75	19.0	3	6	60
BTL0650-60	M8 X 1.25	1.25	6.5	24.3	3	8	60
BTL0790-60	M10 X 1.5	1.5	7.9	31.0	3	8	60
BTL0950-75	M12 X 1.75	1.75	9.5	36.5	3	10	75



Order Number	Pitch Range MM	TPI	D	H	T	d	L
AT0195-50	0.35-0.6	72-40	1.95	6.0	3	3	50
AT0245-50	0.5-0.8	48-32	2.45	7.7	3	3	50
AT0315-50	0.5-0.8	48-32	3.15	10	3	4	50
AT0400-50	0.5-1.0	48-24	4.0	12	3	4	50
AT0470-60	0.5-1.25	48-20	4.7	15	3	6	60
AT0600-60	0.5-1.25	48-20	6.0	18	3	6	60
AT0800-60	0.75-1.5	32-16	8.0	24	3	8	60
AT1000-100	1.0-2.5	24-10	10	30	4	10	100

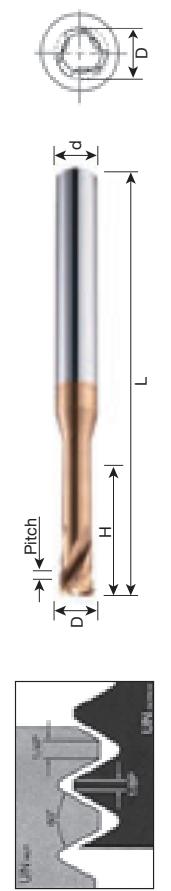
Solid Carbide Thread Milling 2D (Multi-Pitch) UN

• Cutting Data P. 137



Order code	UNC	UNF	Pitch	D	H	T	d	L
UT404-50	No.5 - 40 UNC	No.6 - 40 UNF	40	2.46	7.1	3	4	50
UT364-50	-	No.8 - 36 UNF	36	3.31	8.8	3	4	50
UT324-50	No.6 - 32 UNC	-	32	2.57	7.3	3	4	50
UT326-60	No.8 - 32 UNC	No.10 - 32 UNF	32	3.22	10.1	3	6	60
UT286-60	-	1/4 - 28 UNF	28	5.2	14	3	6	60
UT246-60	No.10 - 24 UNC	-	24	3.55	10.4	3	6	60
UT248-60	-	6/16 - 24 UNF	24	6.65	16.7	3	8	60
UT206-60	1/4 - 20 UNC	7/16 - 20 UNF	20	4.85	13.7	3	6	60
UT208-60	-	7/16 - 20 UNF	20	7.95	24	3	8	60
UT186-60	5/16 - 18 UNC	-	18	5.95	16.5	3	6	60
UT168-60	3/8 - 16 UNC	-	16	6.9	21	3	8	60
UT148-60	7/16 - 14 UNC	-	14	7.95	23.5	3	8	60
UT1310-75	1/2 - 13 UNC	-	13	9.3	27	3	10	75

Solid Carbide Thread Milling 3D (Multi-Pitch) UN



Order code	UNC	UNF	Pitch	D	H	T	d	L
UTL404-50	No.5 - 40 UNC	No.6 - 40 UNF	40	2.46	9.8	3	4	50
UTL324-60	No.6 - 32 UNC	-	32	2.57	10.7	3	4	60
UTL326-60	No.8 - 32 UNC	No.10 - 32 UNF	32	3.22	12.7	3	6	60
UTL286-60	-	1/4 - 28 UNF	28	5.2	19.3	3	8	60
UTL246-60	-	5/16 - 24 UNF	24	6.65	24.2	3	8	60
UTL206-60	1/4 - 20 UNC	7/16 - 20 UNF	20	4.85	19.4	3	6	60

UFO Thread Milling Insert

• Toolholders P. 23

• Cutting Data P. 138 - 139

Order code	UNC	UNF	Pitch	D	H	T	d	L
UT404-50	No.5 - 40 UNC	No.6 - 40 UNF	40	2.46	7.1	3	4	50
UT364-50	-	No.8 - 36 UNF	36	3.31	8.8	3	4	50
UT324-50	No.6 - 32 UNC	-	32	2.57	7.3	3	4	50
UT326-60	No.8 - 32 UNC	No.10 - 32 UNF	32	3.22	10.1	3	6	60
UT286-60	-	1/4 - 28 UNF	28	5.2	14	3	6	60
UT246-60	No.10 - 24 UNC	-	24	3.55	10.4	3	6	60
UT248-60	-	6/16 - 24 UNF	24	6.65	16.7	3	8	60
UT206-60	1/4 - 20 UNC	7/16 - 20 UNF	20	4.85	13.7	3	6	60
UT208-60	-	7/16 - 20 UNF	20	7.95	24	3	8	60
UT186-60	5/16 - 18 UNC	-	18	5.95	16.5	3	6	60
UT168-60	3/8 - 16 UNC	-	16	6.9	21	3	8	60
UT148-60	7/16 - 14 UNC	-	14	7.95	23.5	3	8	60
UT1310-75	1/2 - 13 UNC	-	13	9.3	27	3	10	75

Order code	UNC	UNF	Pitch	D	H	T	d	L
UTL404-50	No.5 - 40 UNC	No.6 - 40 UNF	40	2.46	9.8	3	4	50
UTL324-60	No.6 - 32 UNC	-	32	2.57	10.7	3	4	60
UTL326-60	No.8 - 32 UNC	No.10 - 32 UNF	32	3.22	12.7	3	6	60
UTL286-60	-	1/4 - 28 UNF	28	5.2	19.3	3	8	60
UTL246-60	-	5/16 - 24 UNF	24	6.65	24.2	3	8	60
UTL206-60	1/4 - 20 UNC	7/16 - 20 UNF	20	4.85	19.4	3	6	60

BSW
Defined by:
B.S.80/1156
DIN 29, ISO228/1:1982

BST
Defined by:
B.S.278/1956

Tolerance class: BSW-Medium class A, BSW-Medium class

Steel
Steel/Stainless Steel
Cast Iron
Aluminum
Steel/Cast Iron

Steel
Steel/Stainless Steel
Cast Iron
Aluminum
Steel/Cast Iron

Steel
Steel/Stainless Steel
Cast Iron
Aluminum
Steel/Cast Iron

- Please specify model number and grade of insert, ie.: 3T1-061-0612-55-16~10TPI-E, F20
- Full Profile insert is not in standard stock, it needs to be ordered

84 YIH TROUN ENTERPRISE CO., LTD

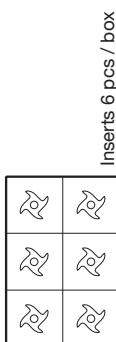
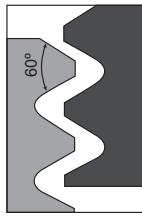
85

YIH TROUN ENTERPRISE CO., LTD

UFO Thread Milling Insert

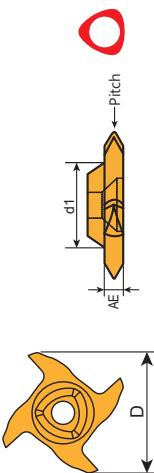
- Toolholders P. 24
- Cutting Data P. 138 - 139

External / Internal



Inserts 6 pcs / box

Dimensions in mm						
D	d1	AE	Pitch mm	Pitch t.p.i	Angle	Minimum hole diameter
					MM	INCH
15	7.9	4.0	-	11~8	55°	17.80 0.7"
						D : +0.05 AE : ± 0.015
						D : -0.05



Dimensions in mm						
D	d1	AE	Pitch mm	Pitch t.p.i	Angle	Minimum hole diameter
					MM	INCH
15	7.9	4.0	-	11~8	55°	17.80 0.7"
						D : +0.05 AE : ± 0.015
						D : -0.05

Dimensions in mm						
D	d1	AE	Pitch mm	Pitch t.p.i	Angle	Minimum hole diameter
					MM	INCH
15	7.9	4.0	-	11~8	55°	17.80 0.7"
						D : +0.05 AE : ± 0.015
						D : -0.05



BSW Defined by:
B.S.84/1956
DIN 259, ISO228/1:1982
BSF Defined by:
B.S.2778/1956
Tolerance class: BSW-Medium
class A, BSF-Medium class



Tolerance class: 6g/6H
Defined by: R262 (DIN 13)

BSW/M/ME

ISO Metric(M, MF)

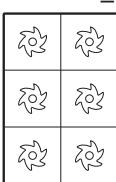
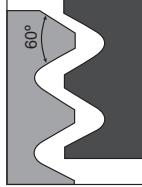
- Steel
- Stainless Steel
- Steel/Stainless Steel
- ▢ Cast Iron
- ▢ Aluminum
- ▢ Steel/Cast Iron

- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T1-1020-55-11~8TP1-E, F20
- Full Profile insert is not in standard stock, it needs to be ordered

UFO Thread Milling Insert

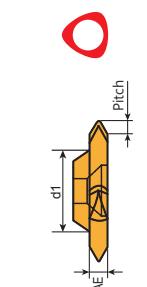
- Toolholders P. 25
- Cutting Data P. 138 - 139

External / Internal



Inserts 6 pcs / box

Dimensions in mm						
D	d1	AE	Pitch mm	Pitch t.p.i	Angle	Minimum hole diameter
					MM	INCH
20	9.9	4.6	-	11~6	55°	22.80 0.9"
						D : ± 0.05
						D : -0.05



Tolerances (mm)
D : +0.05 AE : ± 0.015

Dimensions in mm						
D	d1	AE	Pitch mm	Pitch t.p.i	Angle	Minimum hole diameter
					MM	INCH
20	9.9	4.6	-	11~6	55°	22.80 0.9"
						D : ± 0.05
						D : -0.05



BSW Defined by:
B.S.84/1956
DIN 259, ISO228/1:1982
BSF Defined by:
B.S.2778/1956
Tolerance class: BSW-Medium
class A, BSF-Medium class



Tolerance class: 6g/6H
Defined by: R262 (DIN 13)

BSW/M/ME

ISO Metric(M, MF)

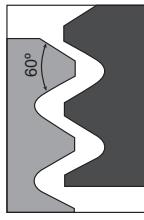
- Steel
- Stainless Steel
- Steel/Stainless Steel
- ▢ Cast Iron
- ▢ Aluminum
- ▢ Steel/Cast Iron

- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T1-1020-55-11~8TP1-E, F20
- Full Profile insert is not in standard stock, it needs to be ordered

UFO Thread Milling Insert

- Toolholders P. 26
- Cutting Data P. 138 - 139

External / Internal



Inserts	Part No .	Dimensions in mm					
		D	d1	AE	Pitch mm	Pitch t.p.i	Angle
BSW/BSF	3T1-1225-60-1.0-5.0-E 3T1-1225-60-1.0-5.0-ME	25	12	4.6	-	11-5	55°
ISO Metric(M,MF)	3T0610-ISO1.0-ME 3T0610-ISO1.25-ME 3T0610-ISO1.5-ME	30	18	5.0	-	12-7	60°

Tolerances (mm)
D : +0.05 AE : ± 0.015

Inserts	Part No .	Dimensions in mm					
		D	d1	AE	Pitch mm	Pitch t.p.i	Angle
ISO Metric(M,MF)	3T0610-ISO1.0-ME 3T0610-ISO1.25-ME 3T0610-ISO1.5-ME	30	18	5.0	-	12-7	60°

Tolerances (mm)
D : +0.05 AE : ± 0.015

ISO

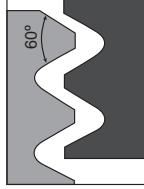


Inserts	Part No .	Dimensions in mm					
		D	d1	AE	Pitch mm	Pitch t.p.i	Angle
P1.0-P1.5	3T0610-ISO1.0-E 3T0610-ISO1.25-E 3T0610-ISO1.5-E	25	12	4.6	-	11-5	55°

Tolerances (mm)
D : +0.0 AE : ± 0.015

UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 23
- Cutting Data P. 138 - 139



Inserts	Part No .	Dimensions in mm					
		D	d1	AE	Pitch mm	Pitch t.p.i	Angle
P1.0-P1.5	3T0610-ISO1.0-E 3T0610-ISO1.25-E 3T0610-ISO1.5-E	25	12	4.6	-	11-5	55°

Tolerances (mm)
D : +0.0 AE : ± 0.015

Inserts	Part No .	Dimensions in mm					
		D	d1	AE	Pitch mm	Pitch t.p.i	Angle
ISO Metric(M,MF)	3T0610-ISO1.0-E 3T0610-ISO1.25-E 3T0610-ISO1.5-E	25	12	4.6	-	11-5	55°

Defined by: R262 (DIN 13)
Tolerance class 6g/6H

Inserts 6 PCS / Box
* M.O.Q: 12PCS

• Steel ■ Stainless Steel ■ Steel/Stainless Steel ■ Cast Iron ■ Aluminum ■ Steel/Cast Iron

• Steel ■ Stainless Steel ■ Steel/Stainless Steel ■ Cast Iron

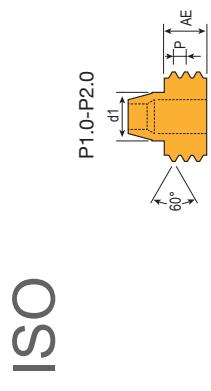
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T1-1225-55-11~5TP1-E, F20
- Full Profile insert is not in standard stock, it needs to be ordered

UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 23
- Cutting Data P. 138 - 139

UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 23
- Cutting Data P. 138 - 139



Dimensions in mm						
D	d1	AE	Pitch mm	Pitch t.p.	Angle	Minimum hole diameter MM INCH
12	6.5	6.5	4.5	1.25	-	60° 14.00
			5.5	1.5	-	
			7.0	2.0	-	
			6.0	2.5	-	

Tolerances (mm)
D : +0.05/-0.05
AE : ± 0.015

Inserts	Part No .	Grades					
		Carbide	Metal cermet	Uncoated	CE	K10	CE60
3T0612-ISO1.0-E							
3T0612-ISO1.25-E							
3T0612-ISO1.5-E							
3T0612-ISO2.0-E							
3T0612-ISO2.5-E							

Defined by: R262 DIN 13
Tolerance class 5g/6h

ISO Metric(M, MF)

Inserts 6 PCS / Box



3T0612-UNC16-ME
3T0612-UNC14-ME
3T0612-UNC13-ME
3T0612-UNC12-ME
3T0612-UNC11-ME
3T0612-UNC10-ME

UNC/NF

Defined by: R262 DIN 13
Tolerance class 5g/6h

Inserts	Part No .	Grades					
		Carbide	Metal cermet	Uncoated	CE	K10	CE60
3T0612-ISO1.0-ME							
3T0612-ISO1.25-ME							
3T0612-ISO1.5-ME							
3T0612-ISO2.0-ME							
3T0612-ISO2.5-ME							

Defined by: R262 DIN 13
Tolerance class 5g/6h

ISO Metric(M, MF)

Inserts 6 PCS / Box



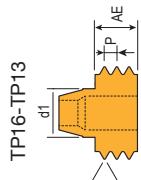
3T0612-UNC16-ME
3T0612-UNC14-ME
3T0612-UNC13-ME
3T0612-UNC12-ME
3T0612-UNC11-ME
3T0612-UNC10-ME

UNC/NF

Defined by: R262 DIN 13
Tolerance class 5g/6h

- Steel ■ Stainless Steel □ Steel/Stainless Steel ■ Cast Iron ■ Aluminum ■ Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T0612-UNC16-E, F20

UNC



Dimensions in mm						
D	d1	AE	Pitch mm	Pitch t.p.	Angle	Minimum hole diameter MM INCH
12	6.5	6.5	4.0	1.0	-	6.0
			4.5	1.25	-	6.5
			5.5	1.5	-	7.0
			7.0	2.0	-	7.5
			6.0	2.5	-	8.0

Tolerances (mm)
D : +0.05/-0.05
AE : ± 0.015

Inserts	Part No .	Grades					
		Carbide	Metal cermet	Uncoated	CE	K10	CE60
3T0612-UNC16-E							
3T0612-UNC14-E							
3T0612-UNC13-E							
3T0612-UNC12-E							
3T0612-UNC11-E							
3T0612-UNC10-E							

Defined by: R262 DIN 13
Tolerance class 5g/6h

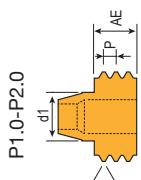
Inserts 6 PCS / Box



Defined by: R262 DIN 13
Tolerance class 5g/6h

Inserts 6 PCS / Box

ISO



Dimensions in mm						
D	d1	AE	Pitch mm	Pitch t.p.	Angle	Minimum hole diameter MM INCH
12	6.5	6.5	4.0	1.0	-	6.0
			4.5	1.25	-	6.5
			5.5	1.5	-	7.0
			7.0	2.0	-	7.5
			6.0	2.5	-	8.0

Tolerances (mm)
D : +0.05/-0.05
AE : ± 0.015

Inserts	Part No .	Grades					
		Carbide	Metal cermet	Uncoated	CE	K10	CE60
3T0612-ISO1.0-E							
3T0612-ISO1.25-E							
3T0612-ISO1.5-E							
3T0612-ISO2.0-E							
3T0612-ISO2.5-E							

Defined by: R262 DIN 13
Tolerance class 5g/6h

ISO Metric(M, MF)

Inserts 6 PCS / Box



3T0612-ISO1.0-E
3T0612-ISO1.25-E
3T0612-ISO1.5-E
3T0612-ISO2.0-E
3T0612-ISO2.5-E

ISO Metric(M, MF)

Defined by: R262 DIN 13
Tolerance class 5g/6h

Inserts 6 PCS / Box

UFO



Dimensions in mm						
D	d1	AE	Pitch mm	Pitch t.p.	Angle	Minimum hole diameter MM INCH
12	6.5	6.5	4.0	1.0	-	6.0
			4.5	1.25	-	6.5
			5.5	1.5	-	7.0
			7.0	2.0	-	7.5
			6.0	2.5	-	8.0

Tolerances (mm)
D : +0.05/-0.05
AE : ± 0.015

Inserts	Part No .	Grades					
		Carbide	Metal cermet	Uncoated	CE	K10	CE60
3T0612-UNC16-E							
3T0612-UNC14-E							
3T0612-UNC13-E							
3T0612-UNC12-E							
3T0612-UNC11-E							
3T0612-UNC10-E							

Defined by: R262 DIN 13
Tolerance class 5g/6h

Inserts 6 PCS / Box



Defined by: R262 DIN 13
Tolerance class 5g/6h

Inserts 6 PCS / Box

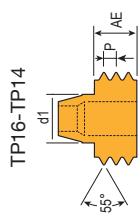
UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 23
- Cutting Data P. 138 - 139

UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 24
- Cutting Data P. 138 - 139

BSW



TP12-TP10

Dimensions in mm						
D	d1	AE	Pitch mm	Pitch t.p.i	Angle	Minimum hole diameter MM INCH
12	6.5	5.0	-	12	55°	16.51 0.65"
		5.0	-	11		
	6.0	-		10		

Tolerances (mm)
D : ± 0.05
AE : ± 0.015

Inserts	Part No .	Grades					
		Carbide	Metal cermet	Uncoated	CE	K10	CE60
3T0612-BSW16-E							
3T0612-BSW14-E							
3T0612-BSW12-E							
3T0612-BSW11-E							
3T0612-BSW10-E							
3T0612-BSW16-ME	◎						
3T0612-BSW14-ME	◎						
3T0612-BSW12-ME	◎						
3T0612-BSW11-ME	◎						
3T0612-BSW10-ME	◎						

BSW Defined by:
B.S.841956,
DIN259, ISO2291:1:1982
BSF Defined by:
B.S.2779:1956
Tolerance class: BSW-M
Medium class A, BSW-Medium class S

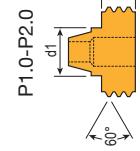
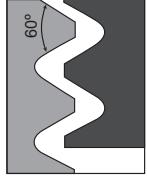
Inserts 6 PCS / Box



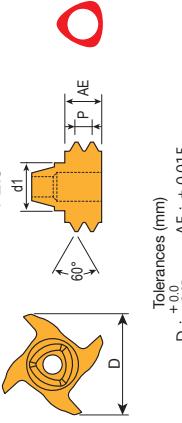
BSW/BSF

- Steel □ Stainless Steel ◎ Steel/Stainless Steel ■ Cast Iron □ Aluminum ■ Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, ie.: 3T0612-BSW16-E, F20

ISO



P1.0-TP2.0



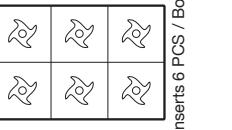
Tolerances (mm)
D : ± 0.05
AE : ± 0.015

Dimensions in mm						
D	d1	AE	Pitch mm	Pitch t.p.i	Angle	Minimum hole diameter MM INCH
15	7.9	4.5	4.0	1.0	-	-
		5.5	4.5	1.25	-	-
	15	7.9	5.5	1.5	-	-
			7.0	2.0	-	-
			6.0	2.5	-	-

Grades	Carbide	Metal cermet	Uncoated
B100			
C200			
C250			
F20			
F30			
CE25			
CE60			
K10			

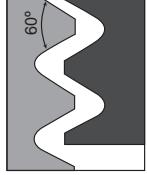


Defined by: R262 DIN 13
Tolerance class 5/6H

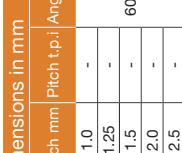


Inserts 6 PCS / Box

- Steel □ Stainless Steel ◎ Steel/Stainless Steel ■ Cast Iron □ Aluminum ■ Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, ie.: 3T0815-ISO1.0-E, F20



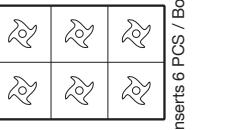
P2.5



Grades	Carbide	Metal cermet	Uncoated
B100			
C200			
C250			
F20			
F30			
CE25			
CE60			
K10			



Defined by: R262 DIN 13
Tolerance class 5/6H



Inserts 6 PCS / Box

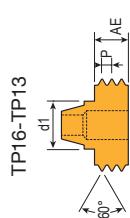
- Steel □ Stainless Steel ◎ Steel/Stainless Steel ■ Cast Iron □ Aluminum ■ Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, ie.: 3T0815-ISO1.0-E, F20



UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 24
- Cutting Data P. 138 - 139

UNC



TP16-TP13

Dimensions in mm						
D	d1	AE	Pitch mm	Pitch t.p.i	Angle	Minimum hole diameter
15	7.9	7.9	5.5	-	16	6.0
			6.0	-	14	5.5
			6.5	-	13	5.0
			5.0	-	12	4.5
			5.5	-	11	4.0
			6.0	-	10	3.5

Tolerances (mm)
D : ± 0.05
AE : ± 0.015

Inserts	Part No .	Grades						
		Carbide	Metal cermet	Uncoated	CF	CE25	CE60	CF
3T0815-UNC16-E		F30						
3T0815-UNC14-E		F20						
3T0815-UNC13-E		C250						
3T0815-UNC12-E		C200						
3T0815-UNC11-E		B100						
3T0815-UNC10-E								



Defined by: R262 DIN 13
Tolerances class 5g/6H

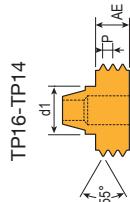
- Steel □ Stainless Steel
- Steel/Stainless Steel
- Cast Iron
- Aluminum
- Steel/Cast Iron

- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T0815-UNC16-E, F20

UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 24
- Cutting Data P. 138 - 139

BSW



TP16-TP14

Dimensions in mm						
D	d1	AE	Pitch mm	Pitch t.p.i	Angle	Minimum hole diameter
15	7.9	7.9	5.5	-	16	6.0
			6.0	-	14	5.5

Tolerances (mm)
D : ± 0.05
AE : ± 0.015

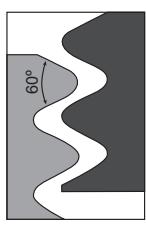
Inserts	Part No .	Grades						
		Carbide	Metal cermet	Uncoated	CF	CE25	CE60	CF
3T0815-BSW16-E		F30						
3T0815-BSW14-E		F20						
3T0815-BSW12-E		C250						
3T0815-BSW11-E		C200						
3T0815-BSW10-E		B100						



BSW Defined by:
B.S.847:1956,
DIN249, ISO228/1:1982
BSF Defined by:
B.S.2779:1956
Tolerances class: BSM-Medium & BSM-Medium class
class A, BSM-Medium class

- Steel □ Stainless Steel
- Steel/Stainless Steel
- Cast Iron
- Aluminum
- Steel/Cast Iron

- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T0815-BSW16-E, F20



TP16-TP10

Dimensions in mm						
D	d1	AE	Pitch mm	Pitch t.p.i	Angle	Minimum hole diameter
15	7.9	7.9	5.5	-	16	6.0
			6.0	-	14	5.5

AE : ± 0.05

Inserts	Part No .	Grades						
		Carbide	Metal cermet	Uncoated	CF	CE25	CE60	CF
3T0815-UNC16-E		F30						
3T0815-UNC14-E		F20						
3T0815-UNC13-E		C250						
3T0815-UNC12-E		C200						
3T0815-UNC11-E		B100						



Defined by: R262 DIN 13
Tolerances class 5g/6H

- Steel □ Stainless Steel
- Steel/Stainless Steel
- Cast Iron
- Aluminum
- Steel/Cast Iron

- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T0815-UNC16-E, F20

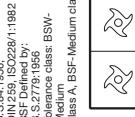


TP16-TP10

Dimensions in mm						
D	d1	AE	Pitch mm	Pitch t.p.i	Angle	Minimum hole diameter
15	7.9	7.9	5.5	-	16	6.0
			6.0	-	14	5.5

AE : ± 0.05

Inserts	Part No .	Grades						
		Carbide	Metal cermet	Uncoated	CF	CE25	CE60	CF
3T0815-BSW16-E		F30						
3T0815-BSW14-E		F20						
3T0815-BSW12-E		C250						
3T0815-BSW11-E		C200						
3T0815-BSW10-E		B100						



BSW Defined by:
B.S.847:1956,
DIN249, ISO228/1:1982
BSF Defined by:
B.S.2779:1956
Tolerances class: BSM-Medium & BSM-Medium class
class A, BSM-Medium class

- Steel □ Stainless Steel
- Steel/Stainless Steel
- Cast Iron
- Aluminum
- Steel/Cast Iron

- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T0815-BSW16-E, F20

- Steel □ Stainless Steel
- Steel/Stainless Steel
- Cast Iron
- Aluminum
- Steel/Cast Iron

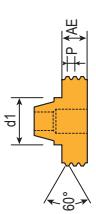
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T0815-BSW16-E, F20

UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 25
- Cutting Data P. 138 - 139

ISO

P1.0-P2.0



Dimensions in mm						
D	d1	AE	Pitch mm	Pitch t.p.i	Angle	Minimum hole diameter
	4.0	1.0	-			
	4.5	1.25	-			
	5.5	1.5	-			
20	9.9	2.0	-	60°	23.00	-
	6.0	2.5	-			
	7.0	3.0	-			
	8.0	3.5	-			

Tolerances (mm)
D : $+0.05$ -0.05
AE : ± 0.015

Grades						
Inserts	Part No .	Carbide	Metal cermet	Uncoated	CE	ME
3T1020-ISO1.0-E		F30	CE360	K10		
3T1020-ISO1.25-E		F20	CE250			
3T1020-ISO1.5-E		C200	CE250			
3T1020-ISO2.0-E		B100	CE200			
3T1020-ISO2.5-E						
3T1020-ISO3.0-E						
3T1020-ISO3.5-E						

Grades						
Inserts	Part No .	Carbide	Metal cermet	Uncoated	CE	ME
3T1020-ISO1.0-ME		○				
3T1020-ISO1.25-ME		○				
3T1020-ISO1.5-ME		○				
3T1020-ISO2.0-ME		○				
3T1020-ISO2.5-ME		○				
3T1020-ISO3.0-ME		○				
3T1020-ISO3.5-ME		○				



ISO Metric (M,MF)

• Steel □ Stainless Steel ■ Steel/Stainless Steel ▲ Cast Iron ▲ Aluminum □ Steel/Cast Iron

• Correct price and stock are based on current situation

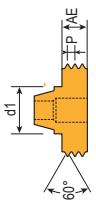
• Please specify model number and grade of insert, i.e.: 3T1020-ISO1.0-E, F20

UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 25
- Cutting Data P. 138 - 139

UNC

TP16-TP13



Dimensions in mm						
D	d1	AE	Pitch mm	Pitch t.p.i	Angle	Minimum hole diameter
	4.0	1.0	-			
	4.5	1.25	-			
	5.5	1.5	-			
20	9.9	2.0	-	60°	23.00	-
	6.0	2.5	-			
	7.0	3.0	-			
	8.0	3.5	-			

Tolerances (mm)
D : $+0.05$ -0.05
AE : ± 0.015

Grades						
Inserts	Part No .	Carbide	Metal cermet	Uncoated	CE	ME
3T1020-UNC1.6-E		○				
3T1020-UNC1.4-E		○				
3T1020-UNC1.3-E		○				
3T1020-UNC1.2-E		○				
3T1020-UNC1.1-E		○				
3T1020-UNC1.0-E		○				
3T1020-UNC9-E		○				

Grades						
Inserts	Part No .	Carbide	Metal cermet	Uncoated	CE	ME
3T1020-UNC1.6-ME		○				
3T1020-UNC1.4-ME		○				
3T1020-UNC1.3-ME		○				
3T1020-UNC1.2-ME		○				
3T1020-UNC1.1-ME		○				
3T1020-UNC1.0-ME		○				
3T1020-UNC9-ME		○				



UNC/JNF

• Steel □ Stainless Steel ■ Steel/Stainless Steel ▲ Cast Iron ▲ Aluminum □ Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: 3T1020-UNC1.6-E, F20

UFO

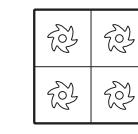
TP16-TP13

Dimensions in mm

D	d1	AE	Pitch mm	Pitch t.p.i	Angle	Minimum hole diameter
	5.5	1.5	-			
20	9.9	2.0	-	60°	23.00	-
	6.0	2.5	-			
	7.0	3.0	-			
	8.0	3.5	-			

Tolerances (mm)
D : $+0.05$ -0.05
AE : ± 0.015

Inserts	Part No .	Carbide	Metal cermet	Uncoated	CE	ME
3T1020-UNC1.6-E		○				
3T1020-UNC1.4-E		○				
3T1020-UNC1.3-E		○				
3T1020-UNC1.2-E		○				
3T1020-UNC1.1-E		○				
3T1020-UNC1.0-E		○				
3T1020-UNC9-E		○				



Inserts 6 PCS / Box

• Steel □ Stainless Steel ■ Steel/Stainless Steel ▲ Cast Iron ▲ Aluminum □ Steel/Cast Iron

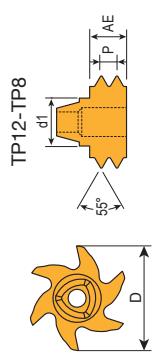
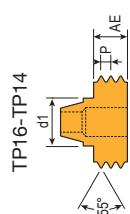
• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: 3T1020-UNC1.6-E, F20

UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 25
- Cutting Data P. 138 - 139

BSW



Tolerances (mm)
D : $+0.05$
AE : ± 0.05

Dimensions in mm						
D	d1	AE	Pitch mm	Pitch t.p.i.	Angle	Minimum hole diameter MM INCH
20	9.9	5.5	-	16	55°	22.86 0.9"
	6.0	-	6.0	-	14	
	5.0	-	5.0	-	12	
	6.5	-	6.0	-	11	
	7.5	-	6.5	-	10	
					9	
					8	

Inserts	Part No .	Grades							Inserts 6 PCS / Box
		Carbide	Metal cermet	Uncoated	CE250 C200 C100	CE30 F20 F30	CE40 K10	CE50 P6	
3T1020-BSW16-E	◎								
3T1020-BSW14-E	◎								
3T1020-BSW12-E	◎								
3T1020-BSW11-E	◎								
3T1020-BSW10-E	◎								
3T1020-BSW9-E	◎								
3T1020-BSW8-E	◎								
3T1020-BSW16-ME	◎								
3T1020-BSW14-ME	◎								
3T1020-BSW12-ME	◎								
3T1020-BSW11-ME	◎								
3T1020-BSW10-ME	◎								
3T1020-BSW9-ME	◎								
3T1020-BSW8-ME	◎								



BSW/BSF

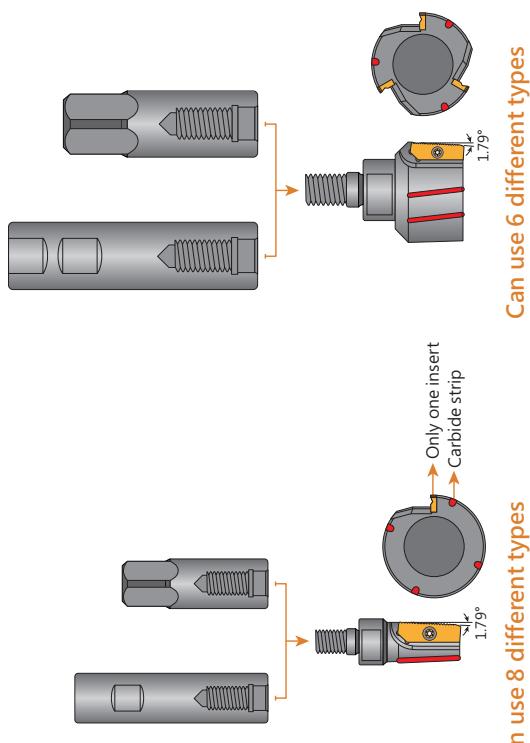
- Steel ■ Stainless Steel ◎ Steel/Stainless Steel ■ Cast Iron ■ Aluminum ■ Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T1020-BSW16-E, F20

INDEXABLE TAPER PIPE REAMER RC/NPT SERIES



PRODUCT DESIGN

- One insert can fit in different size holders
- Patented carbide strip design on the cutter body for longer shank tool-life
- Using reaming process will reduce the resistance and prevent tap breakage



Can use 6 different types

RC & NPT
 $1\frac{1}{4}^{\prime \prime}$, $1\frac{1}{2}^{\prime \prime}$, $1\frac{3}{4}^{\prime \prime}$

RC & NPT
 $\frac{3}{8}^{\prime \prime}$, $\frac{1}{2}^{\prime \prime}$, $\frac{3}{4}^{\prime \prime}$, $1^{\prime \prime}$

■ Patent No. M442206
■ Patent No. ZL201220187047.X
■ PCT Priority No.
■ PCT/CN2012/001022

PRODUCT SPECIFICATIONS

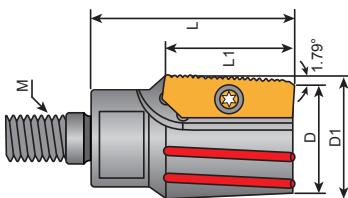
Indexable taper pipe reamer

- Used for Tapered pipe thread RC (BSPT)-Taper 1:16
- Common Insert TA (3/8" - 2")
- Combi holders see P. 102
- Insert details and cutting data see P. 103



TA-RC

Order code	Dimensions(mm)					Insert 	Screw 	Key
	D	D1	M	L	L1			
TA-RC-3/8"	14.10	15.34						
TA-RC-1/2"	17.95	19.18	M14					
TA-RC-3/4"	23.39	24.63						
TA-RC-1"	29.70	30.94		42	25	1	TA2504	T10P
TA-RC-1 1/4"	38.37	39.60	M16					
TA-RC-1 1/2"	44.26	45.49						
TA-RC-2"	56.06	57.30			3			
					47			



TA-NPT

Order code	Dimensions(mm)					Insert 	Screw 	Key
	D	D1	M	L	L1			
TA-NPT-3/8"				14.22	15.46			
TA-NPT-1/2"				17.93	19.16	M14		
TA-NPT-3/4"				23.28	24.51			
TA-NPT-1"				29.49	30.72			
TA-NPT-1 1/4"				38.25	39.48			
TA-NPT-1 1/2"				44.32	45.55	M16		
TA-NPT-2"				56.36	57.59			
				47				

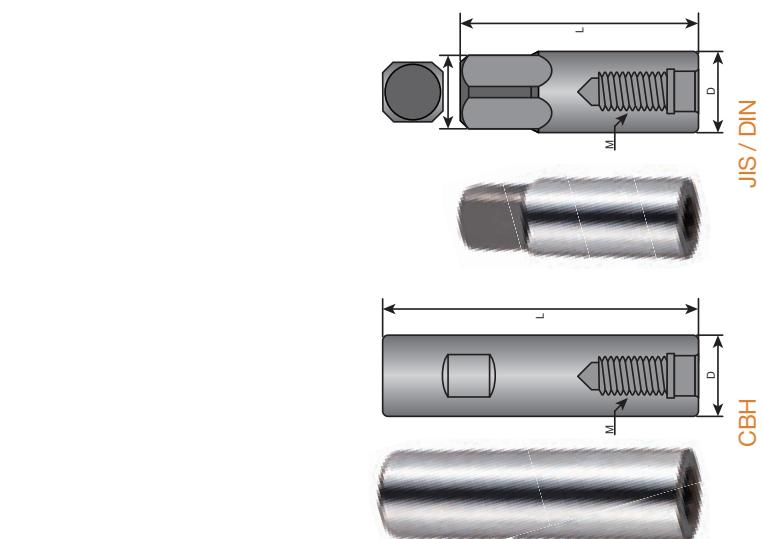


Indexable taper pipe reamer

- Used for Tapered pipe thread RC (BSPT)-Taper 1:16
- Common Insert TA (3/8" - 2")
- Combi holders see P. 102
- Insert details and cutting data see P. 103



Exclusive extendable holders - JIS/DIN/CBH



Extendable Holder

Order code	Dimensions(mm)			KG	JIS / DIN	CBH	CBH-2020-100	JIS-3232-78	DIN-3232-78	CBH-3232-120
	D	L	M							
JIS-2020-60	20	60	M14		15					
DIN-2020-60	20	70	-		16					
CBH-2020-100			-			26				
JIS-3232-78			-			24				
DIN-3232-78	32	78	M16				12-13	20-30	0.2	0.2
CBH-3232-120		80	-						0.4	0.4

Reamer insert for taper pipe thread 1:16

Carbide inserts TA series - RC(3/8"-2") , NPT(3/8"-2")

Inserts	Part No .	TA-2504-M TA-2504-ME	Grade						Grades
			Carbide	Metal cermet	Uncoated	K10	C	F	
			F30	CE60					
			F20	CE25					
			B150						
			B100						
			C125						

Dimensions in mm

L1	D	AE
25.00	8	3.20

Tolerances(mm)

D: ± 0.02	AE: $\pm 0.01\sim 0.015$
---------------	--------------------------

TA-2504-E

Recommended Cutting Data And Insert Grade

• Selecting suitable insert grades table for taper pipe reamer

Material group No .	Cutting speed Vc(m/min)	Recom.feed Fz(mm/ tooth)	Grades				Grades
			3/8 - 1"	1 1/4 - 2"	M	E	
1-2	15-20	0.1 0.2	0.1 0.2	0.1 0.2	B100	-	-
3	15-20	0.1 0.2	0.1 0.2	B100	-	-	-
4-5-6	10-15	0.1 0.2	0.1 0.2	B100	-	-	-
7	8-13	0.05 0.10	0.05 0.10	B100	-	-	-
8-11	8-13	0.1 0.2	0.1 0.2	B100	-	-	-
12-13	20-30	0.2 0.4	0.2 0.4	-	-	-	F20
14-15	20-30	0.2 0.4	0.2 0.4	-	-	-	F20

TECHNICAL GUIDE

Technical Guide

Thread Infeed Depth Recommendation

Number of passes and infeed depths

The below recommended data is for steel

• External ISO - metric threads

Pitch(mm)	6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.75	1.5	1.25	1.0	0.80	0.75	0.50
Total inf. depth (mm)	3.82	3.52	3.19	2.87	2.53	2.23	1.92	1.60	1.25	1.13	0.93	0.81	0.65	0.52	0.48	0.48
Pass 1 (mm)	1.50	1.50	1.30	1.60	1.53	1.23	1.0	1.60	1.25	1.13	0.93	0.81	0.65	0.52	0.48	0.48
Pass 2 (mm)	1.30	1.20	1.10	1.37	1.0	0.92	-	-	-	-	-	-	-	-	-	-
Pass 3 (mm)	1.02	0.82	0.79	-	-	-	-	-	-	-	-	-	-	-	-	-

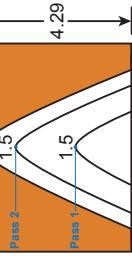
• Internal ISO-metric threads

Pitch TPI	4.0	4.5	5.0	6.0	7.0	8.0	9.0	10	11	12	14	16	18	19	20	26	28
Total inf. depth (mm)	3.54	3.25	2.96	2.65	2.33	2.05	1.78	1.48	1.17	1.05	0.85	0.75	0.60	0.49	0.46	0.31	
Pass 1 (mm)	1.50	1.30	1.60	1.50	1.33	1.10	1.0	1.48	1.17	1.05	0.85	0.75	0.60	0.49	0.46	0.31	
Pass 2 (mm)	1.20	1.10	1.39	1.15	1.0	0.95	0.78	-	-	-	-	-	-	-	-	-	
Pass 3 (mm)	0.84	0.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

• Internal-Inch threads

Pitch TPI	4.0	4.5	5.0	6.0	7.0	8.0	9.0	10	11	12	14	16	18	19	20	26	28
Total inf. depth (mm)	4.29	3.82	3.44	2.96	2.50	2.17	1.93	1.76	1.58	1.45	1.20	1.13	1.01	0.96	0.92	0.72	0.69
Pass 1 (mm)	1.50	1.50	1.50	1.60	1.40	1.20	1.10	1.48	1.17	1.05	0.85	0.75	0.60	0.49	0.46	0.31	
Pass 2 (mm)	1.50	1.30	1.20	1.36	1.10	0.97	0.83	-	-	-	-	-	-	-	-	-	
Pass 3 (mm)	1.29	1.02	0.74	-	-	-	-	-	-	-	-	-	-	-	-	-	

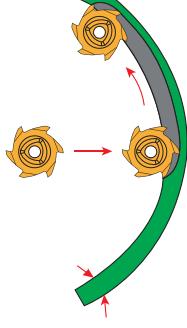
Example of thread infeed method



- On stainless steel, the infeed depth per pass should be decreased.
- The threading insert nose radius is relatively small and can be easily damaged if it is overloaded.

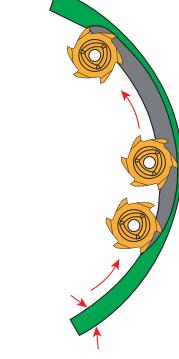
Internal Thread

1



Ramping Is The Best Choice

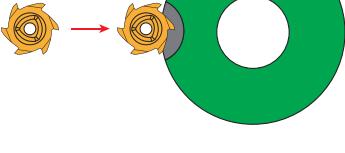
2



Plunging Is Not Recommended

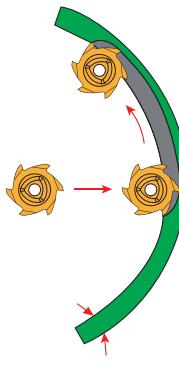
External Thread

2



Ramping Is The Best Choice

1



Plunging Is Not Recommended

About Thread Milling

In order to perform a thread milling operation, a milling machine with three-axis control capable of helical interpolation is required. Helical interpolation is a CNC function producing movement movement along helical path. This helical motion combines circular movement in one plane with a simultaneous linear motion in a plane perpendicular to the first. For example, the path from point A to point B (Fig.A) on the surface of the cylinder making a circular movement in the xy plane with a linear displacement in the z direction.

Thread Milling Methods

External

Internal

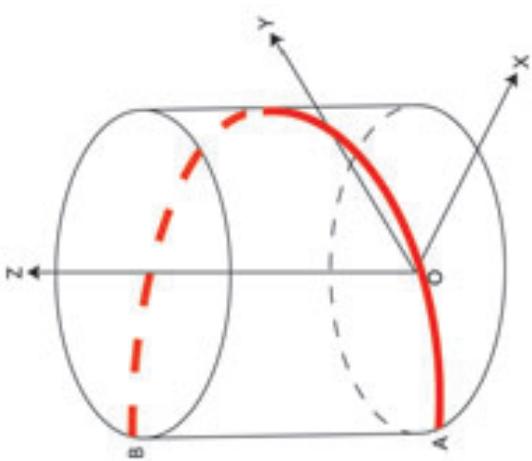
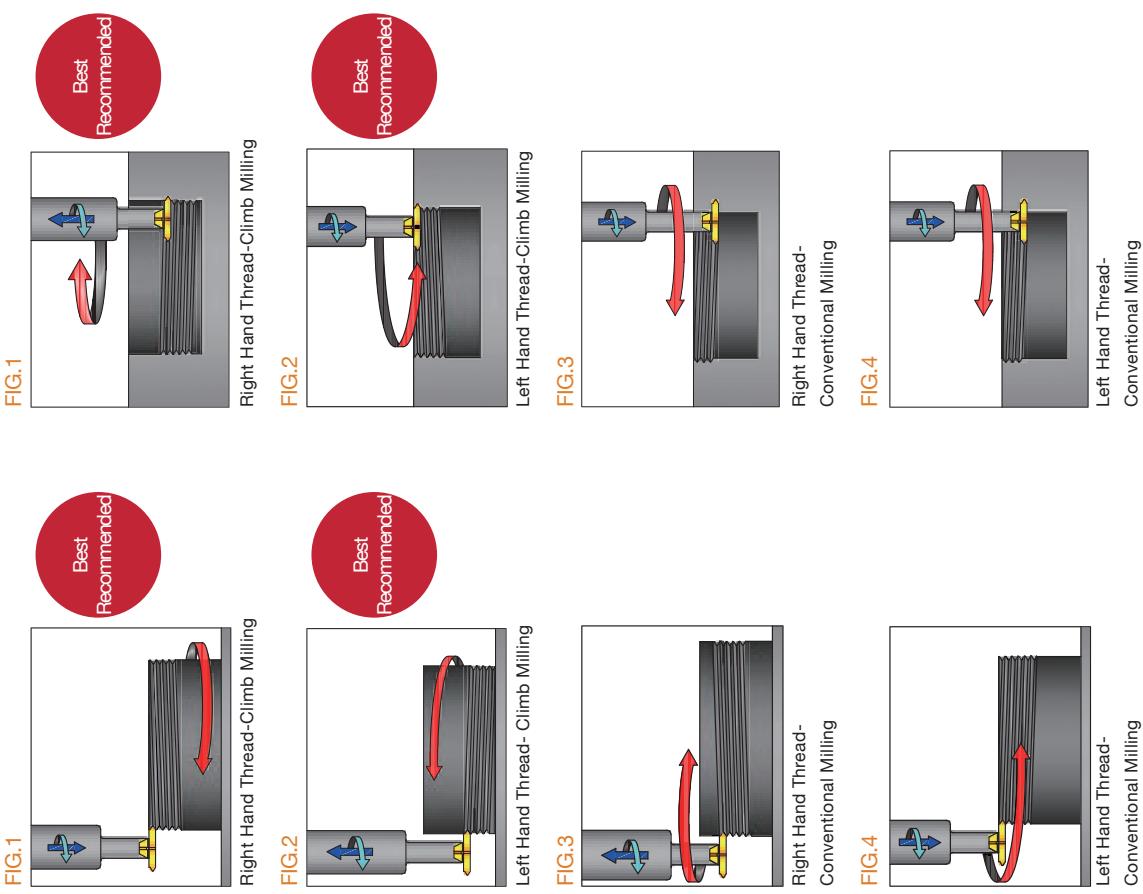
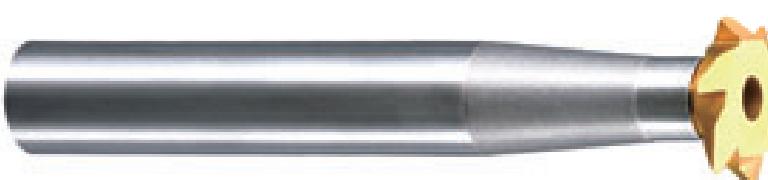


FIG.A



Internal Thread Milling Example Cnc Code

Internal Thread Milling Example Cnc Code

Method 1/Tool offset-cutter compensation

- Insert code / 3T1-0612-60-1.0~2.5
- Milling / Climb milling / Internal thread
- CNC programme / Fanuc / Mitsubishi
- Thread / M16*2.0P

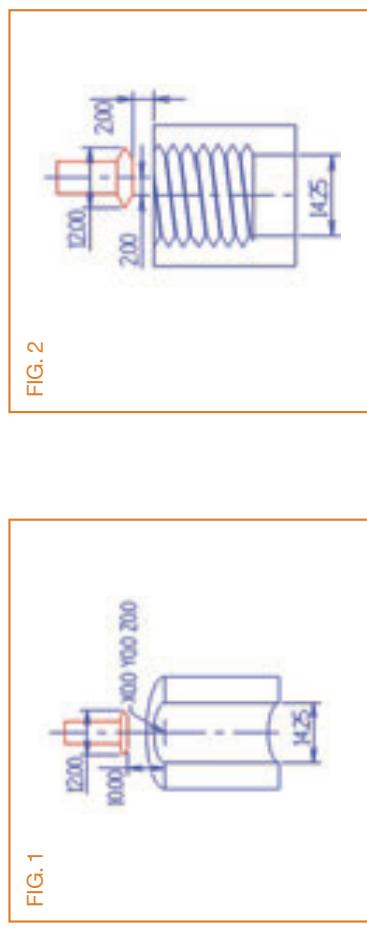


FIG. 1

FIG. 2



Method 2: Reset the starting point(X) and (l)figure

- Insert code / 3T1-0612-60-1.0~2.5
- Milling / Climb milling / Internal thread
- CNC programme / Fanuc / Mitsubishi
- Thread / M16*2.0P

Fanuc

G90 G0 G54 X0.0 Y0.0
G43 Z10.0 H1 S3978 M3 (On centerline of workpiece Fig1)

M7

G00 Z1.0 (Move to the starting point Fig 2)

G01 Z-6.0 F200

G41 D? (outer compensation)

G91 G03 X2.0 Y0.0 R2.0 F150

G03l-2.0 Z2.0 F630 (Thread milling)

G03l-2.0 Z2.0

G03l-2.0 Z2.0

G03l-2.0 Z2.0

G03l-2.0 Z2.0

G03l-2.0 Z2.0

G90 G01 X0.0 Y0.0 (Move out from workpiece,ready to retract)

G90 G00 Z50.0 M9 (Retract the tool)

G40 (Offset finish)

M30 (Programme finish,check the quality of thread ,modify **G41 D** figure)

Fanuc

G90 G0 G54 X0.0 Y0.0
G43 Z10.0 H1 S3978 M3 (On centerline of workpiece Fig1)

M7

G00 Z1.0 (Move to the starting point Fig 2)

G01 Z-6.0 F200

G91 G03 X2.0 Y0.0 R2.0 F150

G03 [-2.0] Z2.0 F630 (Thread milling)

G03 [-2.0] Z2.0

G90 G01 X0.0 Y0.0 (Move out from workpiece,ready to retract)

G90 G00 Z50.0 M9 (Retract the tool)

M30 (Programme finish,check the quality of thread ,modify **G41 D** figure)

Exact cutting data
see page 138 / 139

External Thread Milling Example Cnc Code

Method 1/Tool offset-cutter compensation

- Insert code / 3T1-0612-60-1.0-2.5
- Thread / M16*2.0P
- Milling / Climb milling / External thread
- CNC programme / Fanuc/Mitsubishi

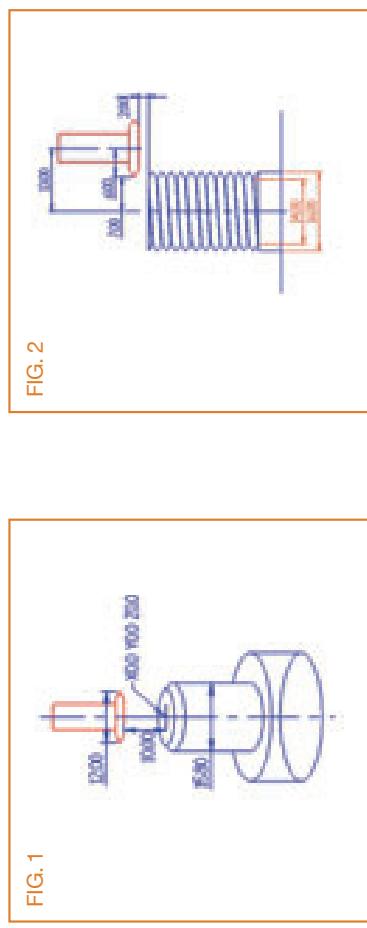


FIG. 2

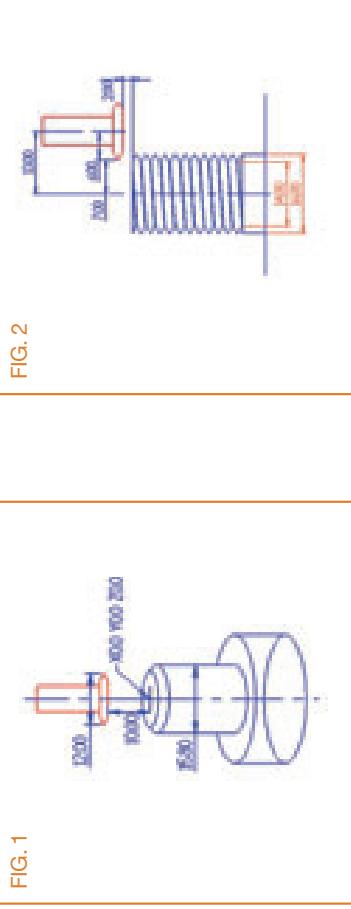


FIG. 1

External Thread Milling Example Cnc Code

Method 2: Reset the starting point(X) and (l)figure

- Insert code / 3T1-0612-60-1.0-2.5
- Thread / M16*2.0P
- Milling / Climb milling / External thread
- CNC programme / Fanuc / Mitsubishi

Fanuc

```
G90 G0 G54 X0.0 Y0.0  
G43 Z10.0 H1 S3978 M3 (On centerline of workpiece Fig1)  
M7  
G00 X13.0 Y0.0 (Move to the starting point Fig 2)  
G01 Z2.0 F200  
G91 G02 [-13.0] Z-2.0 [F630] (Thread milling)  
G02 [-13.0] Z-2.0  
G02 [-13.0] Z-2.0  
G02 [-13.0] Z-2.0  
G90 G01 X16.0 (Move out from workpiece,ready to retract)  
G90 G00 Z50.0 M9 (Retract the tool)  
M30 (Programme finish,check the quality of thread,modify G41 D figure)
```

```
G90 G0 G54 X0.0 Y0.0  
G43 Z10.0 H1 S3978 M3 (On centerline of workpiece Fig1)  
M7  
G00 X13.0 Y0.0 (Move to the contour starting point Fig2)  
G01 Z2.0 F200  
G91 G02 [-13.0] Z-2.0 [F630] (Thread milling)  
G02 [-13.0] Z-2.0  
G02 [-13.0] Z-2.0  
G02 [-13.0] Z-2.0  
G90 G01 X16.0 (Move out from workpiece,ready to retract)  
G90 G00 Z50.0 M9 (Retract the tool)  
M30 (Programme finish,check the quality of thread,modify G41 D figure)
```

Exact cutting data
see page 138 / 139

Recommended Preparatory Drill Diameter

Recommended Preparatory Drill Diameter

Size	Maximum drill diameter			Size	Maximum drill diameter		
	4H	5H	6H		4H	5H	6H
M1 x 0.25	0.77	0.78	0.80	M8 x 1.00	7.06	7.10	7.15
M1 x 0.20	0.82	0.83	0.84	M8 x 0.75	7.30	7.33	7.37
M1.1 x 0.25	0.87	0.88	0.90	M8 x 0.50	7.54	7.57	7.59
M1.1 x 0.20	0.92	0.93	0.94	M9 x 1.25	7.81	7.86	7.91
M1.2 x 0.25	0.97	0.98	1.00	M9 x 1.00	8.06	8.10	8.15
M1.2 x 0.20	1.02	1.03	1.04	M9 x 0.75	8.30	8.33	8.37
M1.4 x 0.30	1.12	1.14	1.16	M9 x 0.50	8.54	8.57	8.59
M1.4 x 0.20	1.22	1.23	1.24	M10 x 1.50	8.52	8.61	8.67
M1.6 x 0.35	1.28	1.30	1.32	M10 x 1.25	8.81	8.85	8.91
M1.6 x 0.20	1.42	1.43	1.44	M10 x 1.00	9.06	9.10	9.15
M1.7 x 0.35	1.38	1.40	1.42	M10 x 0.75	9.30	9.33	9.37
M1.7 x 0.30	1.42	1.44	1.46	M10 x 0.50	9.54	9.57	9.59
M1.7 x 0.25	1.47	1.48	1.50	M11 x 1.50	9.52	9.61	9.67
M1.7 x 0.20	1.52	1.53	1.54	M11 x 1.00	10.06	10.10	10.15
M1.8 x 0.35	1.48	1.50	1.52	M11 x 0.75	10.30	10.33	10.37
M1.8 x 0.20	1.62	1.63	1.64	M11 x 0.50	10.54	10.57	10.59
M2 x 0.40	1.63	1.65	1.67	M12 x 1.75	10.31	10.37	10.44
M2 x 0.25	1.77	1.78	1.80	M12 x 1.50	10.56	10.61	10.67
M2.2 x 0.45	1.79	1.81	1.83	M12 x 1.25	10.81	10.85	10.91
M2.2 x 0.25	1.97	1.98	2.00	M12 x 1.00	11.06	11.10	11.15
M2.3 x 0.40	1.93	1.95	1.97	M12 x 0.75	11.30	11.33	11.37
M2.3 x 0.35	1.98	2.00	2.02	M12 x 0.50	11.54	11.57	11.59
M2.3 x 0.25	2.07	2.08	2.10	M13 x 1.75	11.31	11.37	11.44
M2.5 x 0.45	2.09	2.11	2.13	M13 x 1.50	11.56	11.61	11.67
M2.5 x 0.35	2.18	2.20	2.22	M13 x 1.25	11.81	11.85	11.91
M2.6 x 0.45	2.19	2.22	2.23	M13 x 1.00	12.06	12.10	12.15
M2.6 x 0.35	2.28	2.30	2.32	M13 x 0.75	12.03	12.33	12.37
M3 x 0.50	2.54	2.57	2.59	M13 x 0.50	12.64	12.57	12.59
M3 x 0.35	2.68	2.70	2.72	M14 x 2.00	12.07	12.13	12.21
M3.5 x 0.60	2.95	2.97	3.01	M14 x 1.50	12.56	12.61	12.67
M3.5 x 0.35	3.18	3.20	3.22	M14 x 1.25	-	-	12.91
M4 x 0.70	3.35	3.38	3.42	M14 x 1.00	13.06	13.10	13.15
M4 x 0.50	3.54	3.57	3.59	M14 x 0.75	13.30	13.33	13.37
M4.5 x 0.75	3.80	3.83	3.87	M14 x 0.50	13.54	13.57	13.59
M4.5 x 0.50	4.04	4.07	4.09	M15 x 2.00	13.07	13.13	13.21
M5 x 0.90	4.15	4.19	4.23	M15 x 1.50	13.56	13.61	13.67
M5 x 0.80	4.25	4.29	4.33	M15 x 1.25	13.81	13.85	13.91
M5 x 0.50	4.54	4.57	4.59	M15 x 1.00	14.06	14.10	14.15
M5.5 x 0.90	4.65	4.69	4.73	M15 x 0.75	14.30	14.33	14.37
M5.5 x 0.75	4.80	4.83	4.87	M15 x 0.50	14.54	14.57	14.59
M5.5 x 0.50	5.04	5.07	5.09	M16 x 2.00	14.07	14.13	14.21
M6 x 1.00	5.06	5.10	5.15	M16 x 1.50	14.56	14.61	14.67
M6 x 0.75	5.30	5.33	5.37	M16 x 1.00	15.06	15.10	15.15
M6 x 0.50	5.54	5.57	5.59	M17 x 2.00	15.07	15.13	15.21
M7 x 1.00	6.06	6.10	6.15	M17 x 1.50	15.56	15.61	15.67
M7 x 0.75	6.30	6.33	6.37	M17 x 1.25	15.81	15.85	15.91
M7 x 0.50	6.54	6.57	6.59	M17 x 1.00	16.06	16.10	16.15
M8 x 1.25	6.81	6.85	6.91	M28 x 1.50	26.56	26.61	26.67

Size	Maximum drill diameter			Size	Maximum drill diameter		
	4H	5H	6H		4H	5H	6H
M17 x 0.75	16.30	16.33	16.37	M28 x 1.00	27.06	27.10	27.15
M17 x 0.50	16.54	16.57	16.59	M30 x 3.50	26.56	26.66	26.77
M18 x 2.50	15.57	15.64	15.74	M30 x 3.00	27.06	27.15	27.25
M18 x 2.00	16.07	16.13	16.21	M30 x 2.00	28.07	28.13	28.21
M18 x 1.50	16.61	16.67	16.73	M30 x 1.50	28.56	28.61	28.67
M18 x 1.00	17.06	17.10	17.15	M30 x 1.00	29.06	29.10	29.15
M19 x 2.50	16.57	16.64	16.74	M32 x 3.00	29.06	29.15	29.25
M19 x 2.00	17.07	17.13	17.21	M32 x 2.00	30.07	30.13	30.21
M19 x 1.50	17.56	17.61	17.67	M32 x 1.50	30.56	30.61	30.67
M19 x 1.25	17.81	17.85	17.91	M33 x 3.50	29.56	29.66	29.77
M19 x 1.00	18.06	18.10	18.15	M33 x 3.00	30.06	30.15	30.25
M19 x 0.75	18.30	18.33	18.37	M33 x 2.00	31.07	31.13	31.21
M19 x 0.50	18.54	18.57	18.59	M33 x 1.50	31.56	31.61	31.67
M20 x 2.50	17.57	17.64	17.74	M33 x 1.00	32.06	32.10	32.15
M20 x 2.00	18.07	18.13	18.21	M34 x 3.00	31.06	31.15	31.25
M20 x 1.50	18.56	18.61	18.67	M34 x 2.00	32.07	32.13	32.21
M20 x 1.00	19.06	19.10	19.15	M34 x 1.50	32.56	32.61	32.67
M21 x 2.50	19.57	19.64	19.74	M34 x 1.00	33.06	33.10	33.15
M21 x 1.50	19.56	19.61	19.67	M35 x 3.00	32.06	32.15	32.25
M21 x 1.00	20.06	20.10	20.15	M35 x 1.50	33.56	33.61	33.67
M22 x 2.50	19.57	19.64	19.74	M35 x 1.00	34.06	34.10	34.15
M22 x 2.00	20.07	20.13	20.21	M36 x 4.00	32.04	32.14	32.27
M22 x 1.50	20.56	20.61	20.67	M36 x 3.00	33.06	33.15	33.25
M22 x 1.00	21.06	21.10	21.15	M36 x 2.00	34.07	34.13	34.21
M23 x 2.50	20.57	20.64	20.74	M36 x 1.50	34.56	34.61	34.67
M23 x 2.00	21.07	21.13	21.21	M36 x 1.00	35.06	35.10	35.15
M23 x 1.50	21.56	21.61	21.67	M37 x 1.50	35.56	35.61	35.67
M23 x 1.00	22.06	22.10	22.15	M37 x 1.00	36.06	36.10	36.15
M24 x 3.00	21.06	21.15	21.25	M38 x 4.00	34.04	34.14	34.27
M24 x 2.50	22.07	22.13	22.21	M38 x 3.00	35.06	35.15	35.25
M24 x 2.00	22.56	22.61	22.67	M38 x 2.00	36.07	36.13	36.21
M24 x 1.50	23.06	23.10	23.15	M38 x 1.50	36.56	36.61	36.67
M24 x 1.00	22.06	22.15	22.25	M39 x 4.00	35.04	35.14	35.27
M25 x 3.00	23.07	23.13	23.21	M39 x 3.00	36.06	36.15	36.25
M25 x 2.50	23.56	23.61	23.67	M39 x 2.00	37.07	37.13	37.21
M25 x 2.00	24.06	24.10	24.15	M40 x 1.50	38.56	38.61	38.67
M25 x 1.50	24.57	24.64	24.74	M40 x 1.00	39.06	39.10	39.15
M25 x 1.00	25.07	25.13	25.21	M40 x 4.50	36.04	36.14	36.27
M26 x 2.00	24.07	24.13	24.21	M40 x 3.00	37.06	37.15	37.25
M26 x 1.50	24.56	24.61	24.67	M40 x 2.00	38.07	38.13	38.21
M26 x 1.00	25.56	25.61	25.67	M40 x 1.50	37.56	37.61	37.67
M27 x 2.50	24.67	24.74	24.74	M40 x 1.00	38.06	38.10	38.15
M27 x 2.00	24.57	24.64	24.71	M42 x 4.50	37.55	37.65	37.79
M27 x 1.50	24.06	24.10	24.25	M42 x 4.00	38.04	38.14	38.27
M27 x 1.00	26.06	26.10	26.15	M42 x 3.00	39.06	39.15	39.25
M28 x 3.00	25.06	25.15	25.25	M42 x 2.00	40.70	40.13	40.21
M28 x 2.00	26.07	26.13	26.21	M42 x 1.50	40.56	40.61	40.67



Recommended Preparatory Drill Diameter

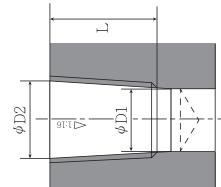
RC (BSPT)

Recommended Thread Dia / T.p.i / Minimum Bore Dia

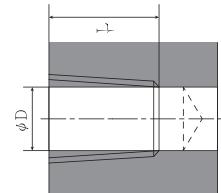
Size	Maximum drill diameter			Size	Maximum drill diameter			Nom. size D	P Gage (tpi)	ϕ_D	L
	4H	5H	6H		4H	5H	6H				
M45 x 4.50	40.55	40.65	40.79	M62 x 1.50	60.5	60.6	60.6	Rc 1/16"	28	6.1	6.56
M45 x 4.00	41.04	41.14	41.27	M64 x 6.00	58	58.1	58.2	1/8"	28	8.1	8.57
M45 x 3.00	42.06	42.15	42.25	M64 x 4.00	60	60.1	60.2	1/4"	19	10.75	11.45
M45 x 2.00	43.07	43.13	43.21	M64 x 3.00	61	61.1	61.2	3/8"	19	14.25	14.85
M45 x 1.50	43.56	43.61	43.67	M64 x 2.00	62	62.1	62.2	1/2"	14	17.7	18.63
M45 x 1.00	44.06	44.10	44.15	M64 x 1.50	62.5	62.6	62.6	3/4"	14	23.1	24.12
M46 x 1.50	44.56	44.61	44.67	M65 x 4.00	61	61.1	61.2	1"	11	29.1	30.29
M48 x 5.00	43.03	43.14	43.29	M65 x 3.00	62	62.1	62.2	1 1/4"	11	37.6	38.95
M48 x 4.00	44.04	44.14	44.27	M65 x 2.00	63	63.1	63.2	1 1/2"	11	43.5	44.85
M48 x 3.00	45.06	45.15	45.25	M65 x 1.50	63.5	63.6	63.6	2"	11	55	56.66
M48 x 2.00	46.07	46.13	46.21	M68 x 6.00	62	62.1	62.2				
M48 x 1.50	46.56	46.61	46.67	M68 x 4.00	64	64.1	64.2				
M48 x 1.00	47.06	47.10	47.15	M68 x 3.00	65	65.1	65.2				
M50 x 5.00	45.03	45.14	45.29	M68 x 2.00	66	66.1	66.2				
M50 x 3.00	47.06	47.15	47.25	M68 x 1.50	66.5	66.6	66.6				
M50 x 2.00	48.07	48.13	48.21	M70 x 6.00	64	64.1	64.3				
M50 x 1.50	48.56	48.61	48.67	M70 x 4.00	66	66.1	66.2				
M50 x 1.00	49.10	49.15	49.15	M70 x 3.00	67	67.1	67.2				
M52 x 5.00	47.00	47.10	47.20	M70 x 2.00	68	68.1	68.2				
M52 x 4.00	48.00	48.10	48.20	M72 x 6.00	66	66.1	66.3				
M52 x 3.00	49.00	49.10	49.20	M72 x 4.00	68	68.1	68.2				
M52 x 2.00	50.00	50.10	50.20	M72 x 3.00	69	69.1	69.2				
M52 x 1.50	50.50	50.60	50.60	M72 x 2.00	70	70.1	70.2				
M52 x 1.00	51.00	51.10	51.20	M75 x 4.00	71	71.1	71.2				
M55 x 3.00	52.00	52.10	52.20	M75 x 3.00	72	72.1	72.2				
M55 x 2.00	53.00	53.10	53.20	M75 x 2.00	73	73.1	73.2				
M55 x 1.50	53.50	53.60	53.60	M76 x 2.00	74	74.1	74.2				
M56 x 5.50	50.50	50.60	50.70	M80 x 6.00	74	74.1	74.3				
M56 x 4.00	52.00	52.10	52.20	M80 x 4.00	76	76.1	76.2				
M56 x 3.00	53.00	53.10	53.20	M80 x 3.00	77	77.1	77.2				
M56 x 2.00	54.00	54.10	54.20	M80 x 2.00	78	78.1	78.2				
M56 x 1.50	54.50	54.60	54.60	M85 x 6.00	79	79.1	79.3				
M58 x 4.00	54.00	54.10	54.20	M85 x 4.00	81	81.1	81.2				
M58 x 3.00	55.00	55.10	55.20	M85 x 3.00	82	82.1	82.2				
M58 x 2.00	56.00	56.10	56.20	M85 x 2.00	83	83.1	83.2				
M58 x 1.50	56.50	56.60	56.80	M90 x 6.00	84	84.1	84.3				
M60 x 5.50	54.50	54.60	54.70	M90 x 4.00	86	86.1	86.2				
M60 x 4.00	56.00	56.10	56.20	M90 x 2.00	88	88.1	88.2				
M60 x 3.00	57.00	57.10	57.20	M95 x 6.00	89	89.1	89.3				
M60 x 2.00	58.00	58.10	58.20	M95 x 4.00	91	91.1	91.2				
M60 x 1.50	58.50	58.60	58.60	M95 x 2.00	93	93.1	93.2				
M62 x 4.00	58.00	58.10	58.20	M100x 6.00	94	94.1	94.3				
M62 x 3.00	59.00	59.10	59.20	M100x 4.00	96	96.1	96.2				
M62 x 2.00	60.00	60.10	60.2	M100x 2.00	98	98.1	98.2				

Hole forms 1 to 2, RC threads are best recommended.

2. Cylindrical drilling with reamer to form taper thread



1. Cylindrical drilling with reamer



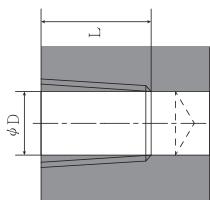
Size D	P Gage (tpi)	ϕ_D	L
Rc 1/16"	28	6.1	6.56
1/8"	28	8.1	8.57
1/4"	19	10.75	11.45
3/8"	19	14.25	14.85
1/2"	14	17.7	18.63
3/4"	14	23.1	24.12
1"	11	29.1	30.29
1 1/4"	11	37.6	38.95
1 1/2"	11	43.5	44.85
2"	11	55	56.66

Nom. size D	P Gage (tpi)	ϕ_D	L
Rc 1/16"	28	6.1	6.56
1/8"	28	8.1	8.57
1/4"	19	10.75	11.45
3/8"	19	14.25	14.85
1/2"	14	17.7	18.63
3/4"	14	23.1	24.12
1"	11	29.1	30.29
1 1/4"	11	37.6	38.95
1 1/2"	11	43.5	44.85
2"	11	55	56.66

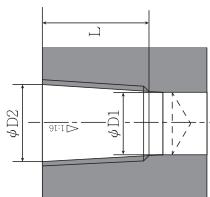
NPT Recommended Thread Dia / T.p.i / Minimum Bore Dia

Hole forms 1 to 2, NPT threads are best recommended.

1. Cylindrical drilling without reamer



2. Cylindrical drilling with reamer to form taper thread



UFO RADIUS

DOUBLE CORNER CONCAVE RADIUS CHAMFER DOVETAIL CIRCLIP



Nom. size D	P Gg/1" (tpi)	φ D	L	Nom. size D	P Gg/1" (tpi)	φ D1	φ D2	L
NPT 1/16"	27	6:15	8.3	NPT 1/16"	27	5.95	6.39	8.3
1/8"	27	8.5	8.3	1/8"	27	8.3	8.74	8.3
1/4"	18	11	12.15	1/4"	18	10.75	11.38	12.15
3/8"	18	14.4	12.45	3/8"	18	14.15	14.80	12.45
1/2"	14	17.8	16.3	1/2"	14	17.45	18.32	16.3
3/4"	14	23.15	16.3	3/4"	14	22.8	23.67	16.3
1"	11 1/2"	29.05	19.55	1"	11 1/2"	28.65	29.69	19.55
1 1/4"	11 1/2"	37.8	20.05	1 1/4"	11 1/2"	37.35	38.45	20.05
1 1/2"	11 1/2"	43.85	20.05	1 1/2"	11 1/2"	43.45	44.52	20.05
2"	11 1/2"	55.85	20.45	2"	11 1/2"	55.45	56.56	20.45

Nom. size D	P Gg/1" (tpi)	φ D	L
NPT 1/16"	27	6:15	8.3
1/8"	27	8.5	8.3
1/4"	18	11	12.15
3/8"	18	14.4	12.45
1/2"	14	17.8	16.3
3/4"	14	23.15	16.3
1"	11 1/2"	29.05	19.55
1 1/4"	11 1/2"	37.8	20.05
1 1/2"	11 1/2"	43.85	20.05
2"	11 1/2"	55.85	20.45

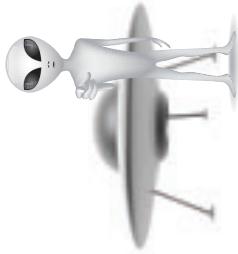


Features

- Available in materials P K M N S H
- Cost 200~300% DOWN
- Variety of Machines CNC Milling machine
- Efficiency 400% UP
- Durability 300% UP

UFO
R-groove
Chamfer
System

UFO



UFO Radius Insert

- Toolholders P. 25
- Cutting Data P. 131 - 132

UFO Radius Cutter

Y.T. has R0.5 to R2.5 cutters now readily available in the stock as standard products. There will be no more need of customization and 6 flutes cutters will certainly boost efficiency.

45°, 60° angles are available with 6 flutes.

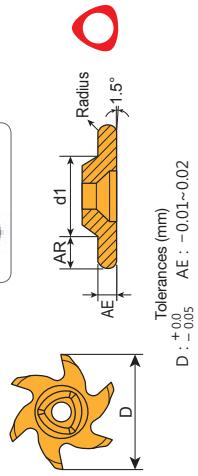


UFO Chamfer Cutter

Diameter 12 and 15 inserts have both 30 and 45 degree, specially made for back chamfering. It has minimum 4 flutes to increase machining efficiency.

UFO Dovetail Cutter

Standard circlip insert with width: 1.1~4.15 mm



D	d1	AE	R	Dimensions in mm	
				CE	Max. AR
			0.5	1.0	0.5
			0.75	1.5	0.75
			1.0	2.0	1.0
			1.25	2.5	1.25
			1.5	3.0	1.5
			2.0	4.0	2.0
			2.5	5.0	2.5
			3.0	6.0	3.0

Part No .	Inserts	Grades		
		Carbide	Metal cermet	Uncoated
3T1020-R0.5-E		CE		
3T1020-R0.75-E		F20		
3T1020-R1.0-E		C250		
3T1020-R1.25-E		C200		
3T1020-R1.5-E		CE60		
3T1020-R2.0-E		F30		
3T1020-R2.5-E		K10		
3T1020-R3.0-E		CE25		
3T1020-R0.5-ME			ME	
3T1020-R0.75-ME			E	
3T1020-R1.0-ME				ME
3T1020-R1.25-ME				E
3T1020-R1.5-ME				
3T1020-R2.0-ME				
3T1020-R2.5-ME				
3T1020-R3.0-ME				

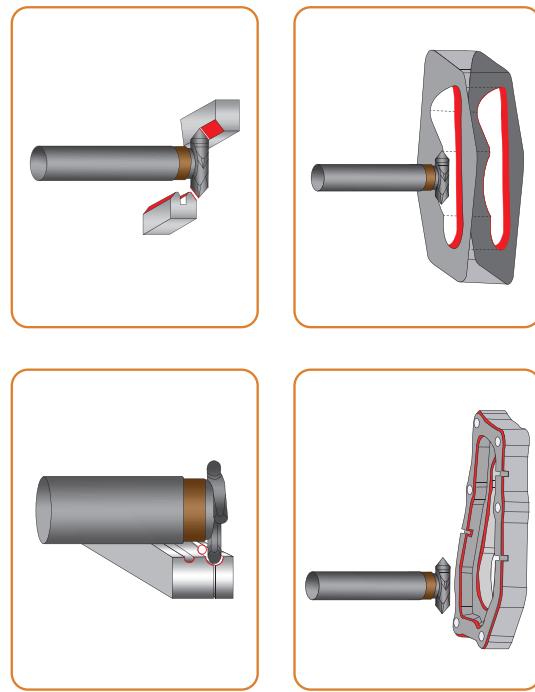
Inserts 6 PCS / Box	
---------------------	--

• Steel ■ Stainless Steel ■ Steel/Stainless Steel/Cast Iron

• Steel/Stainless Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, ie.: 3T1020-R0.5-E, F20

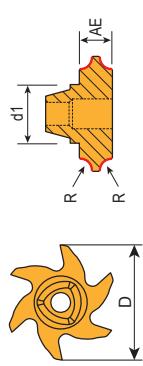


UFO Double Corner Radius Insert

- Toolholders P. 23, P. 25
- Cutting Data P. 131 - 132



Dimensions in mm				
D	d1	AE	R	Max. AR
9.8		3.0	0.5	1.0
	6.5	4.0	1.0	
11.8		3.0	0.5	
	4.0	1.0	1.5	
	5.0	1.5		
	3.0	0.5		
	3.5	0.75		
	4.0	1.0		
19.8	9.9	4.5	1.25	
		5.0	1.5	
		6.0	2.0	



Tolerances (mm)
D : $+0.05$ AE : $-0.01\sim-0.02$

Grades				
Part No.	Carbide	Metal cermet	Uncoated cermet	E
3T0610-DCR05-E				
3T0610-DCR10-E				
3T0612-DCR05-E				
3T0612-DCR10-E				
3T0612-DCR15-E				
3T1020-DCR05-E				
3T1020-DCR075-E				
3T1020-DCR10-E				
3T1020-DCR125-E				
3T1020-DCR15-E				
3T1020-DCR20-E				
3T0610-DCR05-ME	◎			
3T0610-DCR10-ME	◎			
3T0612-DCR05-ME	◎			
3T0612-DCR10-ME	◎			
3T0612-DCR15-ME	◎			
3T1020-DCR05-ME	◎			
3T1020-DCR075-ME	◎			
3T1020-DCR10-ME	◎			
3T1020-DCR125-ME	◎			
3T1020-DCR15-ME	◎			
3T1020-DCR20-ME	◎			



6 flute inserts

3T1020-CR1.0-ME	◎
3T1020-CR2.5-ME	◎
3T1020-CR1.5-ME	◎
3T1020-CR2.0-ME	◎

3T1020-CR1.0-ME	◎
3T1020-CR2.5-ME	◎
3T1020-CR1.5-ME	◎
3T1020-CR2.0-ME	◎

3T1020-CR1.0-ME	◎
3T1020-CR2.5-ME	◎
3T1020-CR1.5-ME	◎
3T1020-CR2.0-ME	◎

3T1020-CR1.0-ME	◎
3T1020-CR2.5-ME	◎
3T1020-CR1.5-ME	◎
3T1020-CR2.0-ME	◎

3T1020-CR1.0-ME	◎
3T1020-CR2.5-ME	◎
3T1020-CR1.5-ME	◎
3T1020-CR2.0-ME	◎

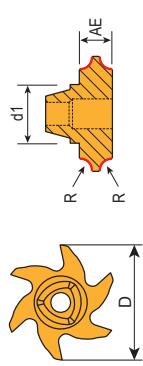
- Steel ■ Stainless Steel ◻ Cast Iron ◻ Aluminum ◻ Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T0610-DCR05-E

UFO Concave Radius Insert

- Toolholders P. 25
- Cutting Data P. 131 - 132



Dimensions in mm				
D	d1	AE	R	Max. AR
9.8		3.0	0.5	1.0
	6.5	4.0	1.0	
11.8		3.0	0.5	
	4.0	1.0	1.5	
	5.0	1.5		
	3.0	0.5		
	3.5	0.75		
	4.0	1.0		
19.8	9.9	4.5	1.25	
		5.0	1.5	
		6.0	2.0	



Tolerances (mm)
D : $+0.05$ AE : $-0.01\sim-0.02$

Grades				
Part No.	Carbide	Metal cermet	Uncoated cermet	E
3T0610-DCR05-E				
3T0610-DCR10-E				
3T0612-DCR05-E				
3T1020-DCR05-E				
3T1020-DCR075-E				
3T1020-DCR10-E				
3T1020-DCR125-E				
3T1020-DCR15-E				
3T1020-DCR20-E				



6 flute inserts

3T1020-CR1.0-ME	◎
3T1020-CR2.5-ME	◎
3T1020-CR1.5-ME	◎
3T1020-CR2.0-ME	◎

3T1020-CR1.0-ME	◎
3T1020-CR2.5-ME	◎
3T1020-CR1.5-ME	◎
3T1020-CR2.0-ME	◎

3T1020-CR1.0-ME	◎
3T1020-CR2.5-ME	◎
3T1020-CR1.5-ME	◎
3T1020-CR2.0-ME	◎

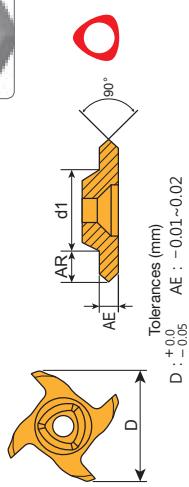
3T1020-CR1.0-ME	◎
3T1020-CR2.5-ME	◎
3T1020-CR1.5-ME	◎
3T1020-CR2.0-ME	◎

3T1020-CR1.0-ME	◎
3T1020-CR2.5-ME	◎
3T1020-CR1.5-ME	◎
3T1020-CR2.0-ME	◎

- Steel ■ Stainless Steel ◻ Cast Iron ◻ Aluminum ◻ Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 3T0610-DCR05-E

UFO Chamfer Insert

- Toolholders P. 23 - 24
- Cutting Data P. 131 - 132



Dimensions in mm				
D	d1	AR	AE	Max. AR
9.8	6.5		3	1
11.8	6.5		3.0	
14.8	7.9		3.0	1.5

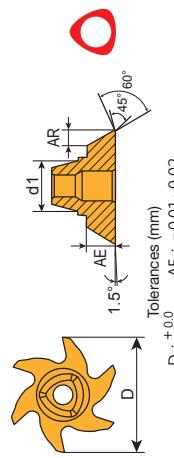
Inserts	Part No .	Grades				
		Carbide	Metal cermet	Uncoated	C	K
3T0610-3-45-E	B100				CE25	CE60
3T0612-3-45-E					CE30	CE60
3T0815-3-45-E					CE35	CE60
3T0610-3-45-ME	◎				CE40	CE60
3T0612-3-45-ME	◎				CE45	CE60
3T0815-3-45-ME	◎				CE50	CE60

4 flute inserts

Inserts 6 PCS / Box

UFO Dovetail Insert

- Toolholders P. 25
- Cutting Data P. 131 - 132



Dimensions in mm				
D	d1	AE	Angle	Max. AR
20	9.9	5.0	45°	3.0

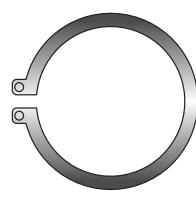
Inserts	Part No .	Grades				
		Carbide	Metal cermet	Uncoated	C	K
3T1020-45-E	B100				CE25	CE60
3T1020-60-E					CE30	CE60
3T1020-45-ME	◎				CE35	CE60
3T1020-60-ME	◎				CE40	CE60

6 flute inserts

Inserts 6 PCS / Box

UFO Circlip Insert

- Toolholders P. 25
- Cutting Data P. 131 - 132



Customized for the depth of B size.
* M.O.Q 12PCS on standard price

D	d1	Dimensions in mm				
		A	B	C	AE	Max. AR
9.8	6.5		1.1	0.85	0.1	2.2
11.8	6.5		1.3	0.85	1.0	
14.8	7.9		1.6	1.0		

Dimensions in mm	
D	d1
CE25	CE60
CE30	CE60
CE35	CE60
CE40	CE60
CE45	CE60
CE50	CE60

Inserts 6 PCS / Box

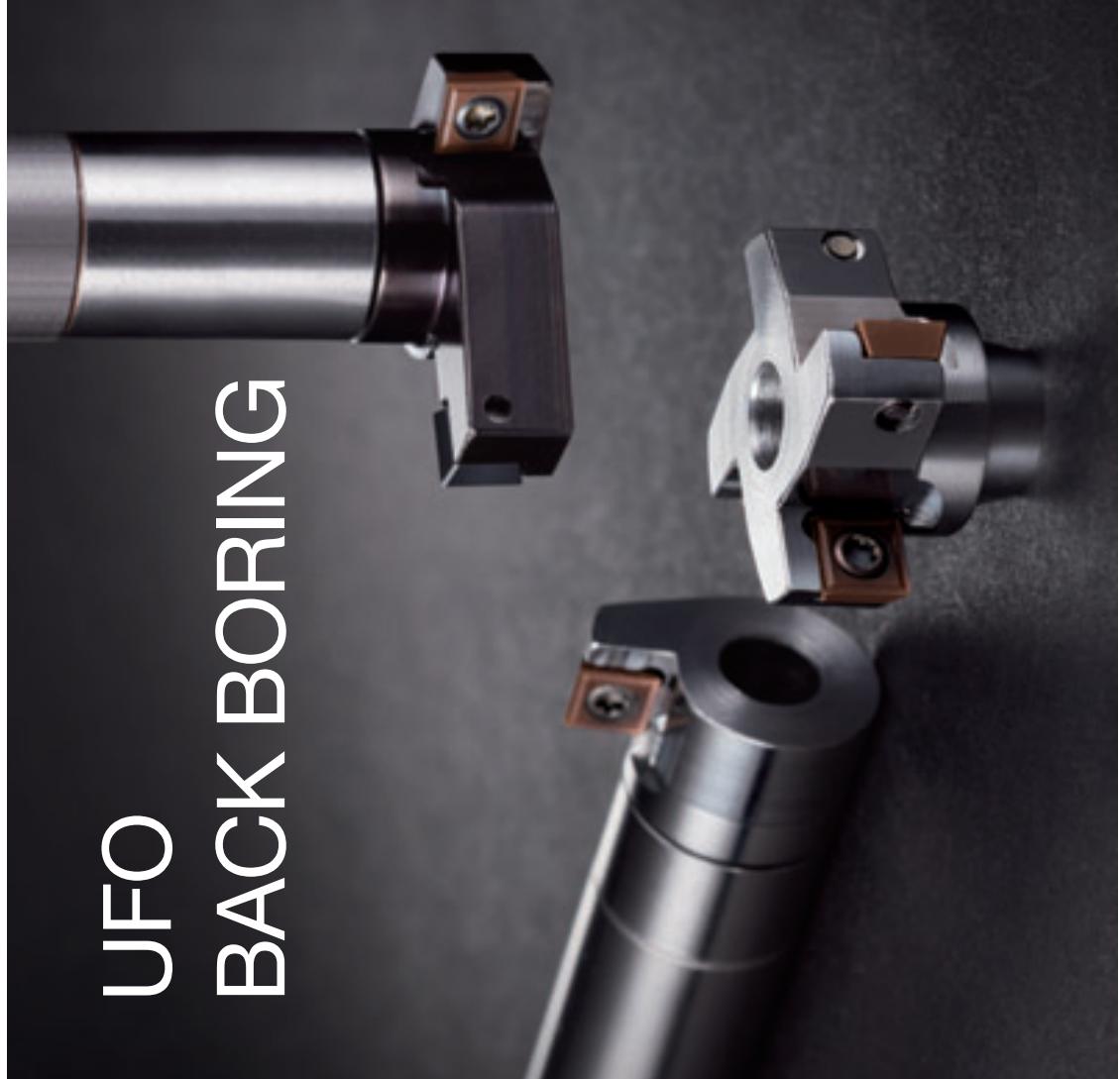
• Steel ■ Stainless Steel ◎ Steel/Stainless Steel Cast Iron □ Aluminum ■ Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, ie.: C3T1020-11-E K10



UFO BACK BORING



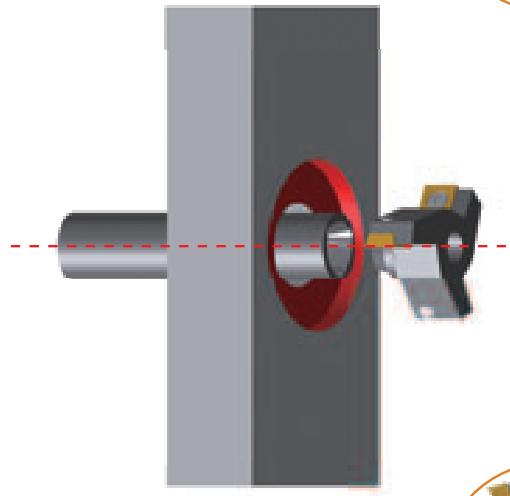
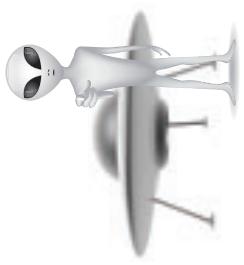
Features

- Available in materials P K M N S H
- Cost 200~300% DOWN
- Variety of Machines CNC Milling machine Drilling MC
- Efficiency 400% UP
- Durability 300% UP

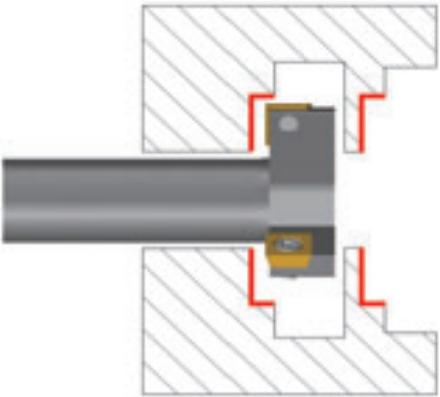
UFO
A Type
Back Boring
Cutter

UFO

UFO



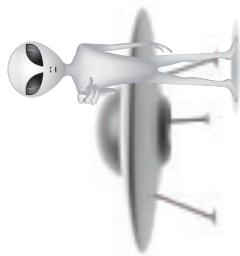
Inserts with equal
sitting distance.
Applicable in cutter
ø17-ø22 mm



Inserts with unequal
sitting distance.
Applicable in cutter
ø23-ø40 mm.

UFO
B Type
Back Boring
Cutter

UFO

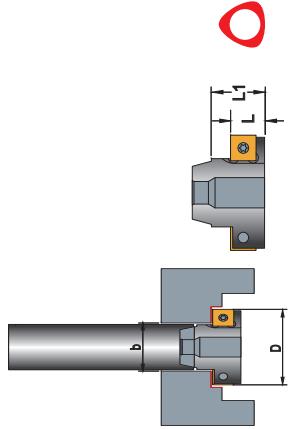


PRODUCT SPECIFICATIONS

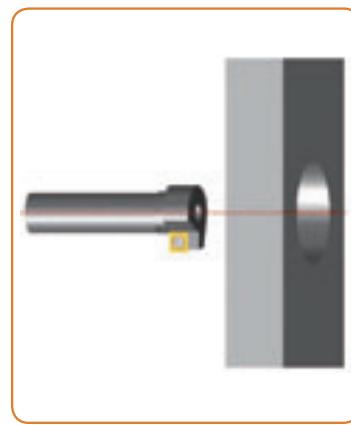
UFO

UFO Back Boring Cutter - A Type

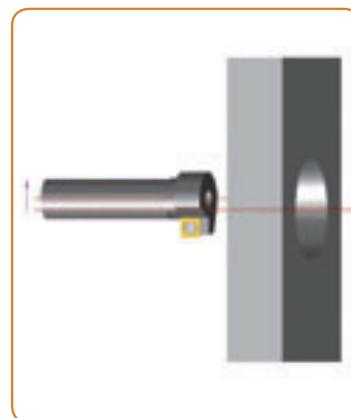
- Toolholders P. 25
- Insert P. 130
- Cutting Data P. 130



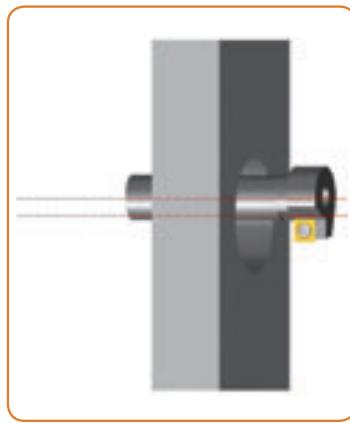
1. Centerline



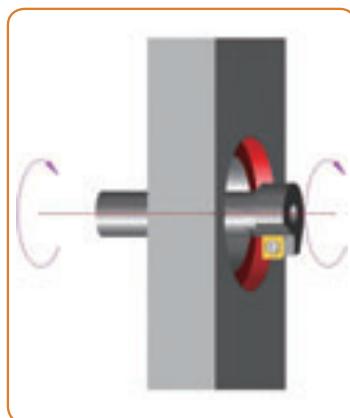
2. Tool displacement



3. Machining



4. Back to center line

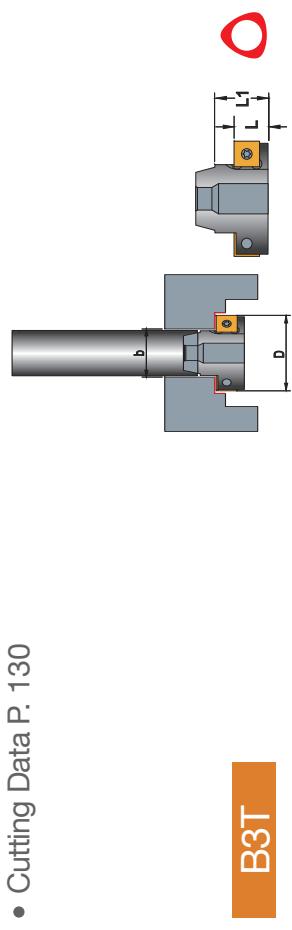


* Correct price and delivery time are based on current situation.

Order code	Cutter	Dimensions(mm)	b	D	L	L ₁	ZC 	MAX RPM 	Insert SDET	Screw	Key
B3T-1018					18						
B3T-1018.5					18.5						
B3T-1019					19						
B3T-1019.5					19.5						
CB3-1010-80-20	B3T-1020	10.4	20	9	14		1	14000	0602	CB2506	T08P
CB3-1010-100-20	B3T-1020.5					20.5					
	B3T-1021										
	B3T-1021.5										
	B3T-1022										

UFO Back Boring Cutter - A Type

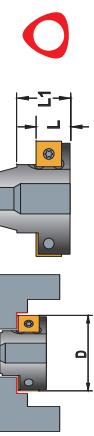
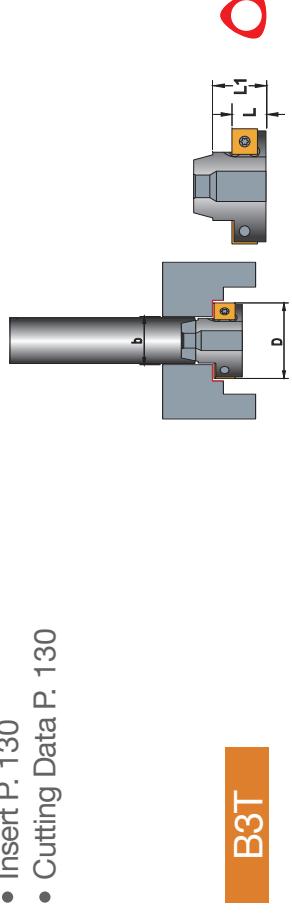
- Toolholders P. 26 - 27
- Insert P. 130
- Cutting Data P. 130



B3T

UFO Back Boring Cutter - A Type

- Toolholders P. 28
- Insert P. 130
- Cutting Data P. 130



B3T

Order code		Dimensions(mm)				ZC KG	MAX RPM	Insert SDET	Screw	Key
Shank	Cutter	b	D	L	L1					
B3T-1223		23								
B3T-1224		24								
B3T-1225		25								
B3T-1226	B3T-1226	26								
CB3-1212-90-25	B3T-1227	12.4	0.25	13000						
CB3-1212-110-25	B3T-1227	27								
B3T-1228	B3T-1228	28								
B3T-1229	B3T-1229	29	9	14						
B3T-1230	B3T-1230	30								
B3T-1631	B3T-1631	31								
B3T-1632	B3T-1632	32								
B3T-1633	B3T-1633	33								
B3T-1634	B3T-1634	34								
CB3-1616-120-30	B3T-1635	35								
CB3-1616-150-30	B3T-1636	36	16.4							
B3T-1637	B3T-1637	37								
B3T-1638	B3T-1638	38	12	17						
B3T-1639	B3T-1639	39								
B3T-1640	B3T-1640	40								

Order code		Dimensions(mm)				ZC KG	MAX RPM	Insert SDET	Screw	Key
Shank	Cutter	b	D	L	L1					
B3T-2541		41								
B3T-2542		42								
B3T-2543		43								
B3T-2544		44								
B3T-2545		45								
B3T-2546		46								
B3T-2547		47								
B3T-2548		48								
B3T-2549		49								
CB3-2525-110	CB3-2525-110									
B3T-2550	B3T-2550	50								
B3T-2551	B3T-2551	51								
B3T-2552	B3T-2552	52								
B3T-2553	B3T-2553	53								
B3T-2554	B3T-2554	54								
B3T-2555	B3T-2555	55								
B3T-2556	B3T-2556	56								
B3T-2557	B3T-2557	57								
B3T-2558	B3T-2558	58								
B3T-2559	B3T-2559	59								
B3T-2560	B3T-2560	60								
T15P										
09T3	09T3									
C04011	C04011									
T15P										

Recommended Insert Grade

• UFO Back Boring Cutter Insert Grade Selection

Material group No.	Recom. feed f_z mm/tooth	Insert			
		SDET...ME	SDET...E	SDET...M	SDET...E
1	0.04-0.08	B100	-	-	-
2	0.04-0.08	B100	-	-	-
3	0.04-0.07	B100	-	-	-
4	0.04-0.07	B100	-	-	-
5	0.04-0.06	B100	-	-	-
6	0.04-0.06	B100	-	-	-
7	0.04-0.06	B100	-	-	-
8	0.04-0.08	B100	-	-	-
9	0.04-0.08	B100	-	-	-
10	0.04-0.06	B100	-	-	-
11	0.04-0.06	B100	-	-	-
12	0.07-0.1	F30	-	-	-
13	0.07-0.1	F30	-	-	-
14	0.07-0.08	F30	-	-	-
15	0.07-0.08	F30	-	-	-
16	0.1-0.2	K10	-	-	-
17	0.1-0.2	K10	-	-	-
18	0.04-0.06	B100	-	-	-
19	0.04-0.06	B100	-	-	-
20	0.04-0.05	B100	-	-	-
21	0.03-0.04	B100	-	-	-
22	0.04-0.05	B100	-	-	-

Recommended Insert Grade - UFO T-slot Cutter / Radius / Chamfer / Dovetail / Circlip / Radius

• UFO Back Boring Cutter Insert Grade Selection

Material group No.	Recom. feed f_z mm/tooth	Insert			
		SDET...ME	SDET...E	SDET...M	SDET...E
1	0.04-0.08	B100	-	-	-
2	0.04-0.08	B100	-	-	-
3	0.04-0.07	B100	-	-	-
4	0.04-0.07	B100	-	-	-
5	0.04-0.06	B100	-	-	-
6	0.04-0.06	B100	-	-	-
7	0.04-0.06	B100	-	-	-
8	0.04-0.08	B100	-	-	-
9	0.04-0.08	B100	-	-	-
10	0.04-0.06	B100	-	-	-
11	0.04-0.06	B100	-	-	-
12	0.07-0.1	F30	-	-	-
13	0.07-0.1	F30	-	-	-
14	0.07-0.08	F30	-	-	-
15	0.07-0.08	F30	-	-	-
16	0.1-0.2	K10	-	-	-
17	0.1-0.2	K10	-	-	-
18	0.04-0.06	B100	-	-	-
19	0.04-0.06	B100	-	-	-
20	0.04-0.05	B100	-	-	-
21	0.03-0.04	B100	-	-	-
22	0.04-0.05	B100	-	-	-

Recommended Cutting Data - UFO Back Boring Cutter

• Recommended Cutting speed, V_c (m/min)

Material group No.	0.04-0.06-0.08	Grades				Cutting speed, V_c (m/min)		
		B100	C250	F20	CE60	CE	K10	F30
		Feed , f_z (mm/tooth)						
1	0.04-0.06-0.08	16	18	20	-	-	-	-
2	0.04-0.06-0.08	16	18	20	-	-	-	-
3	0.04-0.06-0.08	14	12	10	-	-	-	-
4	0.04-0.06-0.08	14	12	10	-	-	-	-
5	0.04-0.06-0.08	12	10	8	-	-	-	-
6	0.04-0.06-0.08	12	10	8	-	-	-	-
7	0.04-0.06-0.08	8	-	-	-	-	-	-
8	0.04-0.06-0.08	14	12	10	-	-	-	-
9	0.04-0.06-0.08	14	12	10	-	-	-	-
10	0.04-0.06-0.08	12	10	8	-	-	-	-
11	0.04-0.06-0.08	12	10	8	-	-	-	-
12	0.04-0.06-0.08	-	-	-	-	-	-	-
13	0.04-0.06-0.08	-	-	-	-	-	-	-
14	0.04-0.06-0.08	-	-	-	-	-	-	-
15	0.04-0.06-0.08	-	-	-	-	-	-	-
16	0.04-0.06-0.08	-	-	-	-	-	-	-
17	0.04-0.06-0.08	-	-	-	-	-	-	-
18	0.04-0.06-0.08	-	-	-	-	-	-	-
19	0.04-0.06-0.08	-	-	-	-	-	-	-
20	0.04-0.06-0.08	-	-	-	-	-	-	-
21	0.04-0.06-0.08	-	-	-	-	-	-	-
22	0.04-0.06-0.08	-	-	-	-	-	-	-

Recommended Insert Grade - UFO T-slot Cutter Insert Grade Selection

• UFO T-slot Cutter Insert Grade Selection

Material group No.	Recom. feed f_z mm/tooth	Insert			
		SDET...ME	SDET...E	SDET...M	SDET...E
1	0.04-0.08	B100	-	-	-
2	0.04-0.08	B100	-	-	-
3	0.04-0.07	B100	-	-	-
4	0.04-0.07	B100	-	-	-
5	0.04-0.06	B100	-	-	-
6	0.04-0.06	B100	-	-	-
7	0.04-0.06	B100	-	-	-
8	0.04-0.08	B100	-	-	-
9	0.04-0.08	B100	-	-	-
10	0.04-0.06	B100	-	-	-
11	0.04-0.06	B100	-	-	-
12	0.07-0.1	F30	-	-	-
13	0.07-0.1	F30	-	-	-
14	0.07-0.08	F30	-	-	-
15	0.07-0.08	F30	-	-	-
16	0.1-0.2	K10	-	-	-
17	0.1-0.2	K10	-	-	-
18	0.04-0.06	B100	-	-	-
19	0.04-0.06	B100	-	-	-
20	0.04-0.05	B100	-	-	-
21	0.03-0.04	B100	-	-	-
22	0.04-0.05	B100	-	-	-

Inserts	Part No.	Dimensions in mm				Grades	Operations	Ae / Dc	Recom. feed f_z mm/tooth	Speed Factor
		Tolerances (\pm mm)	S	B	Dimensions in mm					
	SDET060208N-ME SDET091308TN-ME	0.03	0.025	0.0602 0.0913	6.0 9.0	E25 F20 G20 H20 I20 K10	Radial Infeed	2%	0.21	0.65
	SDET060208N-ME SDET091308TN-ME	0.03	0.025	0.0602 0.0913	6.0 9.0	E25 F20 G20 H20 I20 K10	Side Milling	5%	0.14	0.28

• Steel ■ Stainless Steel ■ Steel/Stainless Steel ■ Cast Iron ■ Aluminum ■ Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: SDET060208N-ME, B100

Operations	Ae / Dc	Recom. feed f_z mm/tooth	Data Reference			
			Radial Infeed	Side Milling	Average Chip Thickness hm	Speed Factor
Radial Infeed	-	0.06	0.21	0.10	0.14	0.65
Side Milling	20%	0.10	0.14	0.20	0.30	1.10

Operations	Ae / Dc	Recom. feed f_z mm/tooth	Data Reference			
			Radial Infeed	Side Milling	Average Chip Thickness hm	Speed Factor
Radial Infeed	-	0.06	0.21	0.10	0.14	0.65
Side Milling	20%	0.10	0.14	0.20	0.30	1.10

• Steel ■ Stainless Steel ■ Steel/Stainless Steel ■ Cast Iron ■ Aluminum ■ Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: SDET060208N-ME, B100

Recommended Cutting Data - UFO T-slot Cutter / Radius / Chamfer / Dovetail / Circlip / Radius



• Recommended Cutting speed, Vc(m/min)

Material group No.	Grades						
	B100	C350	F20	CE60	CE	K10	F30
1	179	161	140	-	-	-	-
2	140	126	113	-	-	-	-
3	126	113	102	-	-	-	-
4	112	102	91	-	-	-	-
5	101	91	81	-	-	-	-
6	91	-	-	-	-	-	-
7	40	-	-	-	-	-	-
8	160	-	80	-	-	-	-
9	160	-	80	-	-	-	-
10	80	-	50	-	-	-	-
11	80	-	50	-	-	-	-
12	-	-	-	130	120	110	-
13	-	-	-	120	110	100	-
14	-	-	-	90	80	70	-
15	-	-	-	60	50	-	-
16	-	-	-	-	-	1150	950/850
17	-	-	-	-	-	950	780/700
18	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-
20	50	45	-	-	-	-	-
21	35	40	-	-	-	-	-
22	50	45	-	-	-	-	-

Recommended Insert Grade - UFO T-slot Cutter



• Recommended Cutting speed, Vc(m/min)

Material group No.	Cutting speed, Vc (m/min)					
	B100	C350	F20	CE60	CE	K10
1	179	161	140	-	-	-
2	140	126	113	-	-	-
3	126	113	102	-	-	-
4	112	102	91	-	-	-
5	101	91	81	-	-	-
6	91	-	-	-	-	-
7	40	-	-	-	-	-
8	160	-	80	-	-	-
9	160	-	80	-	-	-
10	80	-	50	-	-	-
11	80	-	50	-	-	-
12	-	-	-	130	120	110
13	-	-	-	120	110	100
14	-	-	-	90	80	70
15	-	-	-	60	50	-
16	-	-	-	-	-	1150
17	-	-	-	-	-	950
18	-	-	-	-	-	780
19	-	-	-	-	-	700
20	50	45	-	-	-	-
21	35	40	-	-	-	-
22	50	45	-	-	-	-

• Feed fz (mm/tooth)

Diameter AF	Feed fz					
	1	2	3	4	5	6
0.5-0.7 mm	0.02-0.03	0.02-0.03	0.02-0.03	0.02-0.04	0.02-0.05	0.01-0.015
0.8-1.0 mm	0.02-0.03	0.02-0.03	0.02-0.03	0.02-0.04	0.02-0.05	0.01-0.02
1.1-1.3 mm	0.025-0.04	0.015-0.04	0.015-0.04	0.02-0.05	0.02-0.06	0.015-0.025
1.4-1.6 mm	0.025-0.04	0.02-0.03	0.02-0.04	0.025-0.06	0.03-0.07	0.02-0.03
1.7-2.2 mm	0.03-0.05	0.02-0.04	0.02-0.05	0.03-0.07	0.03-0.08	0.02-0.035
2.5-3.0 mm	0.03-0.05	0.03-0.045	0.03-0.05	0.03-0.08	0.04-0.10	0.025-0.04
3.5-4.0 mm	0.03-0.05	0.03-0.045	0.03-0.05	0.03-0.08	0.04-0.10	0.025-0.04
4.2-5.0 mm	0.04-0.07	0.03-0.06	0.04-0.07	0.05-0.10	0.05-0.10	0.025-0.05
Average Chip Thickness hm	-	-	-	-	-	-
Operations	Material group No.					
Radial Infeed	1	2	3	4	5	6
Side Milling	8	9	10	11	12	13
Operations	Ae / Dc					
Radial Infeed	-	-	-	-	-	-
Side Milling	2%	5%	10%	20%	30%	40%
Operations	Recom. feed fz mm/tooth					
Radial Infeed	0.06	0.10	0.14	0.21	0.44	0.65
Side Milling	0.06	0.12	0.15	0.20	0.30	0.40
Operations	Speed Factor					
Radial Infeed	0.65	0.85	1.00	1.20	1.40	1.60
Side Milling	0.65	0.85	1.00	1.20	1.40	1.60

Data Reference

Operations	Data Reference					
	Ae / Dc	Recom. feed fz mm/tooth	Speed Factor	Ae / Dc	Recom. feed fz mm/tooth	Speed Factor
Radial Infeed	-	-	-	0.06	0.10	0.14
Side Milling	2%	5%	10%	0.07	0.14	0.21
Operations	Data Reference					
Radial Infeed	0.06	0.12	0.15	0.07	0.14	0.21
Side Milling	0.06	0.12	0.15	0.07	0.14	0.21

Recommended Cutting Data - UFO T-slot Cutter



• Recommended Cutting speed, Vc(m/min)

Material group No .	Grades					Data Reference
	B100	C350	F20	CE00	CE	
1	255 230 200	-	-	-	-	
2	200 180 162	-	-	-	-	
3	180 162 145	-	-	-	-	
4	160 145 130	-	-	-	-	
5	144 130 116	-	-	-	-	
6	130 117 105	-	-	-	-	
7	-	-	-	-	-	
8	160 - 80	-	-	-	-	
9	160 - 80	-	-	-	-	
10	80 - 50	-	-	-	-	
11	80 - 50	-	-	-	-	
12	-	-	140 119 105	-	-	
13	-	-	126 105 98	-	-	
14	-	-	112 98 91	-	-	
15	-	-	88 81 -	-	-	
16	-	-	1150 950 850	-	-	
17	-	-	950 780 700	-	-	
20	50 45 -	-	-	-	-	
21	35 40 -	-	-	-	-	
22	50 45 -	-	-	-	-	

• Feed fz (mm/tooth)

Material group No.	Feed fz				Data Reference
	1 2 3 4	5 6	8 9 10 11	12 13 14 15	
1.4-1.7 mm	0.02-0.03	0.015-0.025	0.02-0.03	0.02-0.04	0.015-0.025
1.8-2.2 mm	0.03-0.05	0.03-0.04	0.02-0.03	0.03-0.06	0.02-0.03
2.5-3.0 mm	0.03-0.06	0.03-0.05	0.03-0.06	0.03-0.08	0.03-0.04
3.0-3.5 mm	0.04-0.08	0.03-0.06	0.03-0.06	0.04-0.10	0.03-0.05
4.0-4.5 mm	0.04-0.08	0.03-0.06	0.03-0.06	0.04-0.10	0.03-0.05
5.0-5.5 mm	0.05-0.10	0.04-0.08	0.04-0.07	0.05-0.12	0.04-0.06

Recommended Insert Grade - UFO T-slot Cutter



Data Reference

Material group No .	Cutting speed, Vc (m/min)					Data Reference
	B100	C350	F20	CE00	CE	
1	-	-	-	-	-	
2	-	-	-	-	-	
3	-	-	-	-	-	
4	-	-	-	-	-	
5	-	-	-	-	-	
6	-	-	-	-	-	
7	-	-	-	-	-	
8	-	-	-	-	-	
9	-	-	-	-	-	
10	-	-	-	-	-	
11	-	-	-	-	-	
12	-	-	-	-	-	
13	-	-	-	-	-	
14	-	-	-	-	-	
15	-	-	-	-	-	
16	-	-	-	-	-	
17	-	-	-	-	-	
20	50 45 -	-	-	-	-	
21	35 40 -	-	-	-	-	
22	50 45 -	-	-	-	-	

• UFO T-slot Cutter Insert Grade Selection

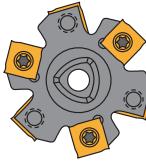
Material group No.	Recom. feed fz/mm/tooth	Insert				Data Reference
		SNGX ... M	SNGX...ME	SNGX...EE	SNGX...ME	
1	0.14-0.30	C250/B100	B100	-	-	
2	0.14-0.25	C250/B100	B100	-	-	
3	0.14-0.22	C250/B100	B100	-	-	
4	0.14-0.22	C250/B100	B100	-	-	
5	0.14-0.20	C250/B100	B100	-	-	
6	0.10-0.15	C250/B100	B100	-	-	
7	0.10-0.13	C250/B100	B100	-	-	
8	0.14-0.25	-	B100	-	-	
9	0.14-0.22	-	B100	-	-	
10	0.14-0.20	-	B100	-	-	
11	0.10-0.15	-	B100	-	-	
12	0.14-0.30	-	F30	-	-	
13	0.14-0.22	-	F30	-	-	
14	0.14-0.20	-	F30	-	-	
15	0.10-0.15	-	F30	-	-	
16	0.16-0.30	-	F20	-	-	
17	0.16-0.25	-	F20	-	-	
18	0.16-0.20	-	F20	-	-	
19	0.14-0.20	-	B100	-	-	
20	0.14-0.18	-	B100	-	-	
21	0.10-0.13	-	B100	-	-	
22	0.14-0.20	-	B100	-	-	

Data Reference

Operations	Ae / Dc	Recom. feed fz mm/tooth				Speed Factor
		Radial Infeed	-	-	-	
Side Milling		2%	0.21	0.44	0.65	1.20
		5%	0.14	0.28	0.41	1.10
		10%	0.10	0.20	0.30	1.00
		20%	0.07	0.14	0.21	0.90
Average Chip Thickness hm	-	30%	0.06	0.12	0.18	0.85
		0.03	0.06	0.09	0.09	-



Recommended Cutting Data - UFO T-slot Cutter



• Recommended Cutting speed, Vc(m/min)

Data Reference

Material group No.	grades												
	B100			C250			F20			CE60	CE	K10	F30
	0.1	0.2	0.3	0.1	0.2	0.3	0.1	0.2	0.3	0.1	0.2	0.3	
Cutting SPEED, V _c (m/min)													
1	186	166	150	166	146	130	-	-	-	-	-		
2	168	150	135	148	130	115	-	-	-	-	-		
3	151	136	122	131	116	102	-	-	-	-	-		
4	136	122	110	116	102	90	-	-	-	-	-		
5	120	110	99	100	90	79	-	-	-	-	-		
6	92	78	-	72	58	-	-	-	-	-	-		
7	-	-	-	-	-	-	-	-	-	-	-		
8	112	95	87	-	-	-	-	-	-	-	-		
9	98	84	76	-	-	-	-	-	-	-	-		
10	84	70	64	-	-	-	-	-	-	-	-		
11	64	56	-	-	-	-	-	-	-	-	-		
12	-	-	-	-	-	-	-	-	-	-	-		
13	-	-	-	-	-	-	-	-	-	-	-		
14	-	-	-	-	-	-	-	-	-	-	-		
15	-	-	-	-	-	-	-	-	-	-	-		
16	-	-	-	1150	950	850	-	-	-	-	-		
17	-	-	-	950	780	700	-	-	-	-	-		
18	-	-	-	950	780	700	-	-	-	-	-		
19	55	45	-	-	-	-	-	-	-	-	-		
20	55	45	-	-	-	-	-	-	-	-	-		
21	46	38	-	-	-	-	-	-	-	-	-		
22	55	45	-	-	-	-	-	-	-	-	-		

Recommended Cutting Data - Solid Thread Milling

- Recommended Cutting speed, Vc(m/min)
- Data Reference

Material group No.	grades									
	B100			C250			F20			CE60
0.1	0.2	0.3	0.1	0.2	0.3	0.1	0.2	0.3	0.1	0.2
Cutting SPEED, V _c (m/min)										
1	186	166	150	166	146	130	-	-	-	-
2	168	150	135	148	130	115	-	-	-	-
3	151	136	122	131	116	102	-	-	-	-
4	136	122	110	116	102	90	-	-	-	-
5	120	110	99	100	90	79	-	-	-	-
6	92	78	-	72	58	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-
8	112	95	87	-	-	-	-	-	-	-
9	98	84	76	-	-	-	-	-	-	-
10	84	70	64	-	-	-	-	-	-	-
11	64	56	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-
16	-	-	-	1150	950	850	-	-	-	-
17	-	-	-	950	780	700	-	-	-	-
18	-	-	-	950	780	700	-	-	-	-
19	55	45	-	-	-	-	-	-	-	-
20	55	45	-	-	-	-	-	-	-	-
21	46	38	-	-	-	-	-	-	-	-
22	55	45	-	-	-	-	-	-	-	-

• Feed.fz (mm/tooth)

Data Reference

Material group No.	Pitch mm	Feed.fz (mm/tooth)									
		1	2	3	4	5	6	7	8	9	10
1	1.0-1.5	0.04-0.06	0.03-0.05	0.04-0.06	0.04-0.07	0.04-0.07	0.04-0.08	0.04-0.08	0.04-0.08	0.04-0.08	0.03-0.04
2	1.75-2.5	0.05-0.07	0.04-0.06	0.05-0.07	0.05-0.07	0.05-0.08	0.05-0.08	0.05-0.08	0.05-0.08	0.05-0.08	0.04-0.05
3	3.0-4.0	0.06-0.08	0.05-0.07	0.06-0.08	0.06-0.08	0.06-0.08	0.06-0.08	0.06-0.08	0.06-0.08	0.06-0.08	0.05-0.06
4	5.0-6.0	0.06-0.08	0.05-0.07	0.06-0.08	0.06-0.08	0.06-0.08	0.06-0.08	0.06-0.08	0.06-0.08	0.06-0.08	0.05-0.06

Data Reference

Material group No.	Feed.fz	Material group No.									
		1	2	3	4	5	6	7	8	9	10
1	1.0-1.5	0.04-0.06	0.03-0.05	0.04-0.06	0.04-0.07	0.04-0.07	0.04-0.08	0.04-0.08	0.04-0.08	0.04-0.08	0.03-0.04
2	1.75-2.5	0.05-0.07	0.04-0.06	0.05-0.07	0.05-0.07	0.05-0.08	0.05-0.08	0.05-0.08	0.05-0.08	0.05-0.08	0.04-0.05
3	3.0-4.0	0.06-0.08	0.05-0.07	0.06-0.08	0.06-0.08	0.06-0.08	0.06-0.08	0.06-0.08	0.06-0.08	0.06-0.08	0.05-0.06
4	5.0-6.0	0.06-0.08	0.05-0.07	0.06-0.08	0.06-0.08	0.06-0.08	0.06-0.08	0.06-0.08	0.06-0.08	0.06-0.08	0.05-0.06

Recommended Insert Grade - UFO Thread Milling Cutter



• UFO Thread Milling Cutter Insert Grade Selection

Material group No .	Recom. feed f_z mm/tooth $a_e/D_c = 10\%$	Grades			Data Reference
		M	E	ME	
1	-	B100	-	-	
2	-	B100	-	-	
3	-	B100	-	-	
4	-	B100	-	-	
5	-	B100	-	-	
6	-	B100	-	-	
7	-	B100	-	-	
8	-	B100	-	-	
9	-	B100	-	-	
10	-	B100	-	-	
11	-	B100	-	-	
12	-	F20	-	-	
13	-	F20	-	-	
14	-	F20	-	-	
15	-	F20	-	-	
16	-	K10	-	-	
17	-	K10	-	-	
18	-	K10	-	-	
19	-	B100	-	-	
20	-	B100	-	-	
21	-	B100	-	-	
22	-	B100	-	-	

Recommended Cutting Data - UFO Thread Milling Cutter



• Recommended Cutting speed, V_c (m/min)

Material group No .	Cutting speed, V_c (m/min)	Grades					Data Reference
		B100	C350	F20	CE60	CE	
1	25.5 230 200	-	-	-	-	-	
2	20.0 180 162	-	-	-	-	-	
3	18.0 162 145	-	-	-	-	-	
4	16.0 145 130	-	-	-	-	-	
5	14.4 130 116	-	-	-	-	-	
6	13.0 117 105	-	-	-	-	-	
7	4.0 -	-	-	-	-	-	
8	16.0 - 80	-	-	-	-	-	
9	16.0 - 80	-	-	-	-	-	
10	8.0 - 50	-	-	-	-	-	
11	8.0 - 50	-	-	-	-	-	
12	-	-	-	-	-	-	
13	-	-	-	-	-	-	
14	-	-	-	-	-	-	
15	-	-	-	-	-	-	
16	-	-	-	-	-	-	
17	-	-	-	-	-	-	
18	-	-	-	-	-	-	
19	-	-	-	-	-	-	
20	-	-	-	-	-	-	
21	-	-	-	-	-	-	
22	-	-	-	-	-	-	

• Feed f_z (mm/tooth)

Pitch mm	1 2 3 4	5 6	8 9 10 11	12 13 14 15	16 17	Feed f_z		Data Reference
						Material group No.	Material group No.	
1.0-1.5	0.04-0.06	0.03-0.05	0.04-0.06	0.04-0.07	0.05-0.08	0.03-0.04	0.03-0.04	
1.75-2.5	0.05-0.07	0.04-0.06	0.05-0.07	0.05-0.08	0.06-0.09	0.04-0.05	0.04-0.05	
3.0-4.0	0.06-0.08	0.05-0.07	0.06-0.08	0.06-0.09	0.07-0.1	0.05-0.06	0.05-0.06	
5.0-6.0	0.06-0.08	0.05-0.07	0.06-0.08	0.06-0.09	0.07-0.1	0.05-0.06	0.05-0.06	

• Feed f_z (mm/tooth)

Pitch mm	1 2 3 4	5 6	8 9 10 11	12 13 14 15	16 17	Feed f_z		Data Reference
						Material group No.	Material group No.	
1.0-1.5	0.04-0.06	0.03-0.05	0.04-0.06	0.04-0.07	0.05-0.08	0.03-0.04	0.03-0.04	
1.75-2.5	0.05-0.07	0.04-0.06	0.05-0.07	0.05-0.08	0.06-0.09	0.04-0.05	0.04-0.05	
3.0-4.0	0.06-0.08	0.05-0.07	0.06-0.08	0.06-0.09	0.07-0.1	0.05-0.06	0.05-0.06	
5.0-6.0	0.06-0.08	0.05-0.07	0.06-0.08	0.06-0.09	0.07-0.1	0.05-0.06	0.05-0.06	

UFO Gear Milling Cutter - Applications



SAW BLADES SERIES

The Safest Saw

Patented clamping system assure the rigidity of insert sitting, which enhance toolife of insert and cutter. Meanwhile a higher cutting speed is realized for higher productivity.



SAW BLADES

Traditional And New



Features



Video

- Available in materials P K M N S H
- Cost DOWN 200~300%
- Variety of Machines CNC Milling machine
- Efficiency UP 300~500%
- Durability UP 300%

"Yih Troun" New developed insert locking type(cassette type)
precision saw blades,first in the world.



1. Machining (cutting) speed increases 300% - 500%
2. Extending insert life with TiALN coating
3. Cut down the cost of cutting tools

Patent No. : M538848

★ ; Patent No. : ZL 2016 2 13000067.8



Old

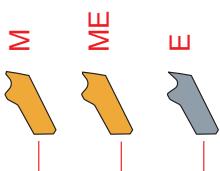
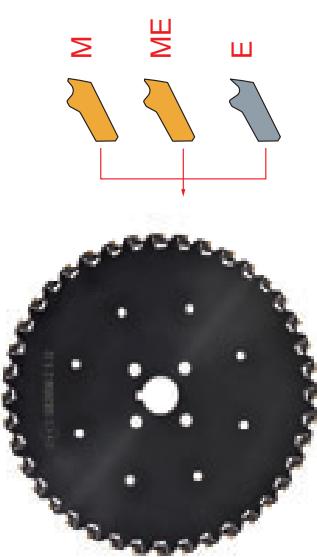
Solid type saw blade:

1. Raw material HSS : process speed will slow down, if speed up the blade will be damaged easily.
2. Welding insert : welded by high temperature, the raw material of the body will be damaged easily

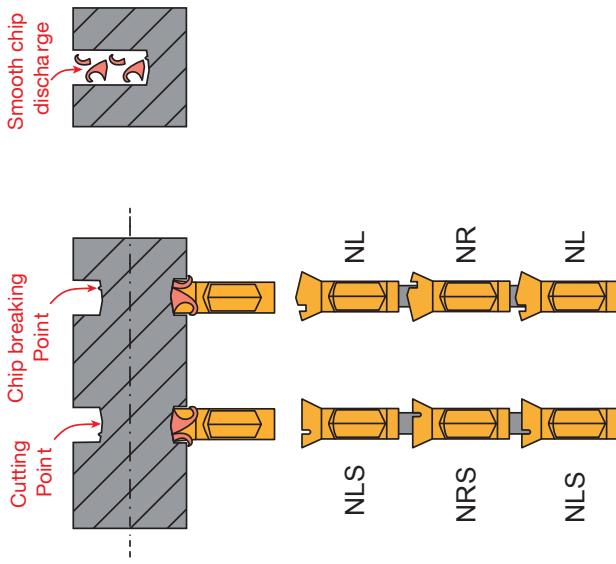
Multipurpose Saw Blades Applications



Patent No. : ZL 2016213000678
PCT/CN 2008/002103



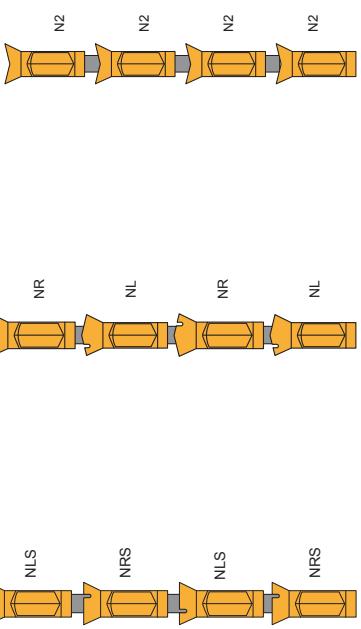
Y.T. Patent Chip Breaker System



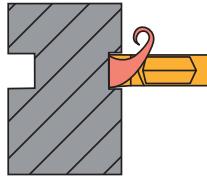
Characteristics

- Insert has efficient chip breaking design to break the chips into two halves and the chips are easily discharged while machining deep grooves and slot applications.
- It has accurate center positioning design which enables stronger and steady cutter condition while machining and lessen vibration.
- The required power and resistance is comparatively small to increase machining efficiency.

Other Brands



Chips evacuation with different chip breaker position.



Characteristics

- While deep grooving the chips easily get stuck in the work-piece slot.
- Heavy vibration while machining large contact surface.
- Requires heavy power and machine resistance for machining.
- As a result there will be poor efficiency.

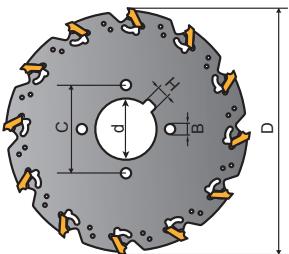
Change The Insert

PRODUCT SPECIFICATIONS

Saw Blades

- Insert P. 193 - 199
- Cutting Data P. 201 - 203

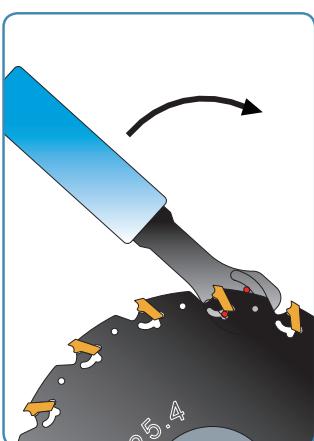
P AE



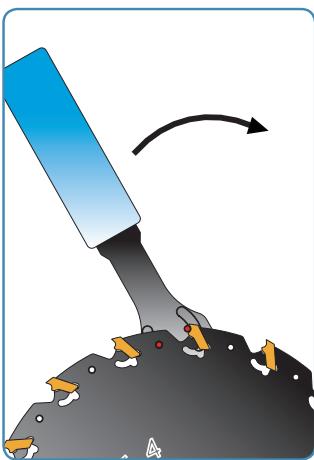
SB

Order code	Dimensions(mm)						MAX RPM	Insert LNGT	Key
	D	AE	P	d	C				
SB050-1.4-13	50			13		4	-	12000	
SB050-1.4-12.7				12.7					11000
SB063-1.4-16	63			16		6	-	0.1	
SB063-1.4-15.875				15.875					
SB080-1.4-22	80			22		8	-	8000	1414
SB080-1.4-25.4				25.4					150.10-30
SB100-1.4-22	100			1.2	22		6.35	0.15	1415
SB100-1.4-25.4				1.5					
SB100-1.4-27	100			25.4		10	-	6300	
SB125-1.4-22				25.4					
SB125-1.4-25.4	125			27					
SB125-1.4-32				22					
				32					

* Key 150.10-30 is not included



Insert fit off



Insert fit on



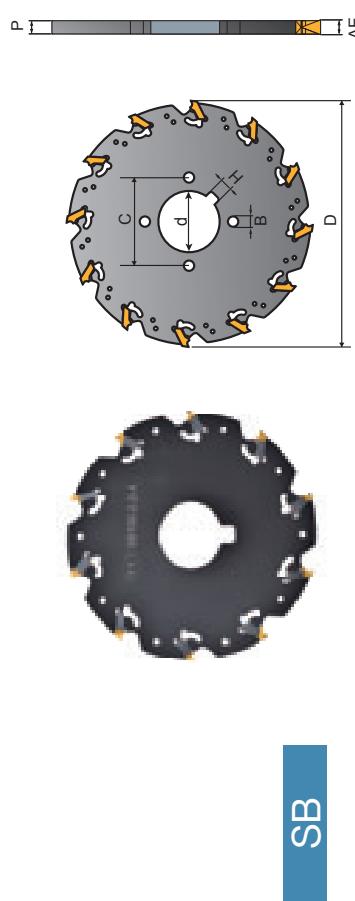
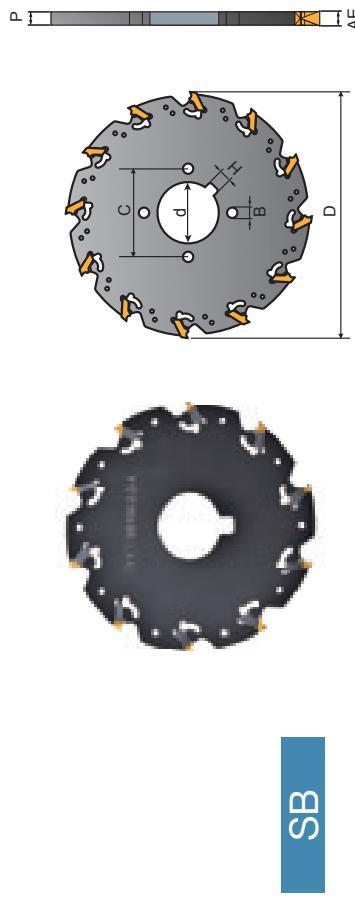
Using marker pen (oil-based) on each surface of insert for helping smoothly fit the insert into blade

Saw Blades

- Insert P. 193 - 199
- Cutting Data P. 201 - 203

Saw Blades

- Insert P. 193 - 199
- Cutting Data P. 201 - 203



Order code	Dimensions(mm)							MAX RPM	Insert LNGT	Key
	D	AE	P	d	C	B				
SB050-1.6-13	50		13	4		12000				
SB050-1.6-12.7			12.7	-	0.1					
SB063-1.6-16	63		16	6		11000				
SB063-1.6-15.875			15.875							
SB080-1.6-22	80		22	8	0.15	8000				
SB080-1.6-25.4			25.4							
SB100-1.6-22	100	1.6	1.4	4	0.15	6300				
SB100-1.6-25.4			25.4	-	7					
SB100-1.6-27			2.7	10						
SB125-1.6-22	125		22	6	0.35	5000				
SB125-1.6-25.4			25.4							
SB125-1.6-32	160		32	12	0.2					
SB160-1.6-25.4			25.4	8	0.35					
SB160-1.6-32	160		32	8	0.25	4000				
SB160-1.6-40			40		16	10				

* Key 150.10-30 is not included

Order code	Dimensions(mm)							H		MAX RPM	Insert LNGT	Key
	D	AE	P	d	C	B						
SB050-1.8-13	50		13	4		12000		13		4		12000
SB050-1.8-12.7			12.7	-	0.1			12.7		-	0.1	
SB063-1.8-16	63		16	6		11000		63		6		11000
SB063-1.8-15.875			15.875					15.875				
SB080-1.8-22	80		22	8	0.15	8000		80		8		8000
SB080-1.8-25.4			25.4					80		25.4		
SB100-1.8-22	100	1.6	1.4	4	0.15	6300		100		1.6	0.15	6300
SB100-1.8-25.4			25.4	-	7			100		-	10	
SB100-1.8-27			2.7	10				100		7		
SB125-1.8-22	125		22	6	0.35	5000		125		12	0.2	5000
SB125-1.8-25.4			25.4					125		12	0.2	
SB125-1.8-32	160		32	12	0.2			125		32		
SB160-1.8-25.4			25.4	8	0.35			125		32		
SB160-1.8-32	160		32	8	0.25	4000		160		16	0.25	4000
SB160-1.8-40			40		16	10		160		16	10	

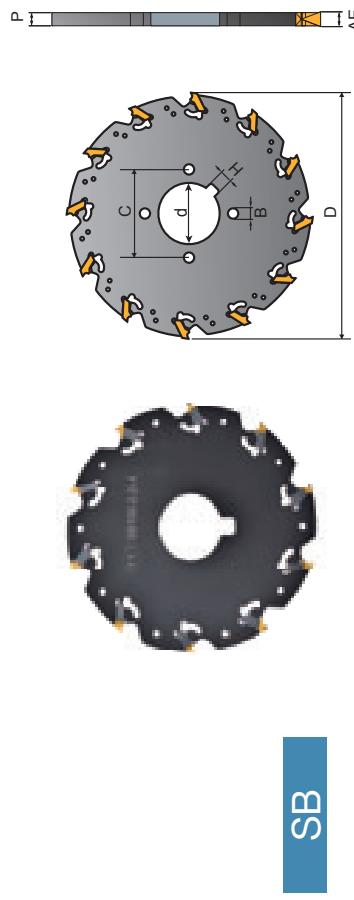
* Key 150.10-30 is not included

Saw Blades

- Insert P. 193 - 199
- Cutting Data P. 201 - 203

Saw Blades

- Insert P. 193 - 199
- Cutting Data P. 201 - 203



Order code	Dimensions(mm)							H KG	MAX RPM	Insert LNGT	Key
	D	AE	P	d	C	B					
SB050-2-13	50	13	4	12000							
SB050-2-12.7		12.7	-	0.1							
SB063-2-16	63	16	6	11000							
SB063-2-15.875		15.875									
SB080-2-22	80	22	8	8000							
SB080-2-25.4		25.4	6.35	0.15	2020						
SB100-2-22		2.0	2.2	1.75	6300	150.10-30					
SB100-2-25.4	100	25.4	-	10	2022	2025					
SB100-2-27		2.5	27	7							
SB125-2-22		22									
SB125-2-25.4	125	25.4	12	6.35	0.2	5000					
SB125-2-32		32		8							
SB160-2-25.4		25.4		6							
SB160-2-32	160	32	16	8	0.25	4000					
SB160-2-40		40		10							

* Key 150.10-30 is not included



Order code	Dimensions(mm)							H KG	MAX RPM	Insert LNGT	Key
	D	AE	P	d	C	B					
SB200-2-25.4					25.4				20		
SB200M-2-25.4					-				26		
SB200-2-32	200				32	63			20	8	
SB200M-2-32									26		
SB200-2-40						11			20	10	
SB200M-2-40									26		
SB250-2-25.4				2.0	40	90			20	0.5	-
SB250M-2-25.4				2.2	1.75				26		
SB285-2-32				2.5	25.4				34		
SB285M-2-32									26		
SB050-2-5-13	50		2.5	2.25	13				26		
SB050-2-12.7			3.0	12.7	-				34	0.7	

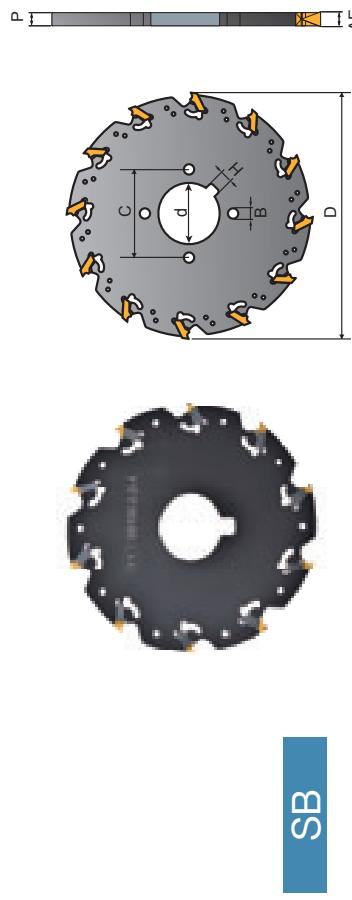
* Key 150.10-30 is not included

Saw Blades

- Insert P. 193 - 199
- Cutting Data P. 201 - 203

Saw Blades

- Insert P. 193 - 199
- Cutting Data P. 201 - 203



Order code	Dimensions(mm)							H KG	MAX RPM	Insert LNGT	Key
	D	AE	P	d	C	B					
SB063-2.5-16	63	16	-	-	11000						
SB063-2.5-15.875		15.875									
SB080-2.5-22	80	22	8	8000							
SB080-2.5-25.4		25.4	6.35								
SB100-2.5-22	100	22	10	6300	0.15						
SB100-2.5-25.4		25.4	10								
SB100-2.5-27		27	7	2525							
SB125-2.5-22	125	2.7	2.25	22	-	6.35	2527	150.10-30			
SB125-2.5-25.4		3.0				12	0.2	2530			
SB125-2.5-32						8					
SB160-2.5-25.4		25.4				6.35					
SB160-2.5-32	160	32	16	8	0.25	4000					
SB160-2.5-40			40				10				
SB200-2.5-25.4		200	25.4			6.35	0.5	3200			
SB200M-2.5-40			26				26				

* Key 150.10-30 is not included



Order code	Dimensions(mm)							H KG	MAX RPM	Insert LNGT	Key
	D	AE	P	d	C	B					
SB200-2.5-32		200	32	63	11						
SB200M-2.5-32			40	90	26	10					
SB200-2.5-40							26				
SB200M-2.5-40							26				
SB250-2.5-25.4		250	25.4	-	-	6.35					
SB250M-2.5-25.4			25.4	-	-	34					
SB250-2.5-32		250	32	63	26	8	0.7	2600	2526		
SB250M-2.5-32			3.0	40	90	10					
SB250-2.5-40							26				
SB250M-2.5-40							26				
SB300-2.5-25.4		300	25.4	-	-	34					
SB300M-2.5-25.4			25.4	-	-	34					
SB300-2.5-32							26				
SB300M-2.5-32							26				
SB300-2.5-40							26				
SB300M-2.5-40							26				

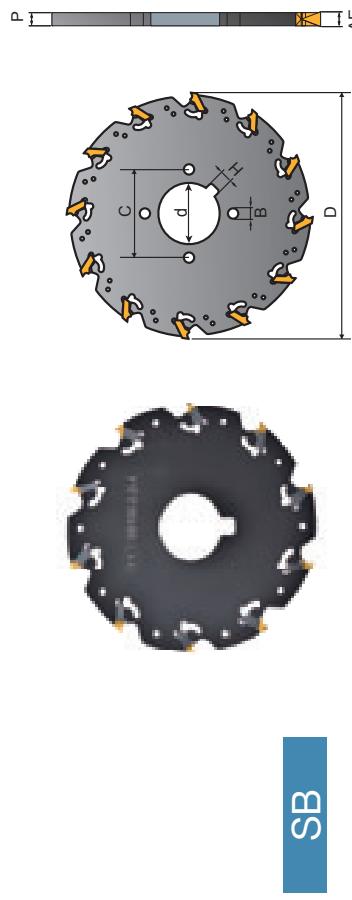
* Key 150.10-30 is not included

Saw Blades

- Insert P. 193 - 199
- Cutting Data P. 201 - 203

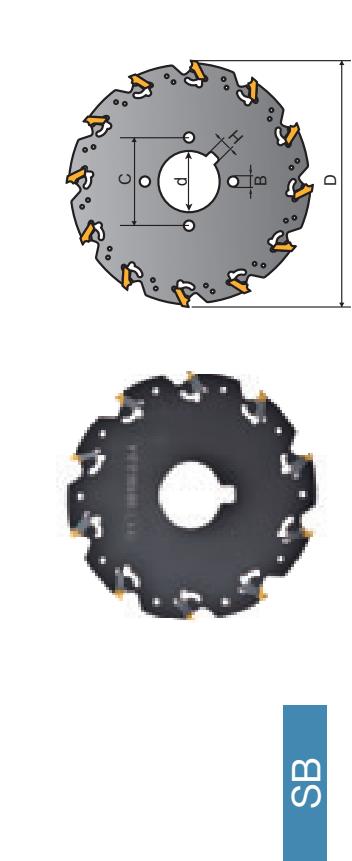
Saw Blades

- Insert P. 193 - 199
- Cutting Data P. 201 - 203



Order code	Dimensions(mm)							MAX RPM KG	Insert LNGT	Key
	D	AE	P	d	C	B				
SB050-3-13	50		13	4	-	12000				
SB050-3-12.7			12.7		0.1					
SB063-3-16	63		16	6	-	11000				
SB063-3-15.875			15.875							
SB080-3-22	80		22	8		8000				
SB080-3-25.4			25.4	6.35	0.17					
SB100-3-22	100		22	10		6300				
SB100-3-25.4			25.4	6.35	0.2	5000				
SB100-3-27	100		27	-	7	3030				
SB125-3-22			22			3035				
SB125-3-25.4	125		25.4	12	6.35					
SB125-3-32			32		8					
SB160-3-25.4			25.4		6.35					
SB160-3-32	160		32	16	8	4000				
SB160-3-40			40		10					
SB200-3-25.4	200		25.4		20	6.35				
SB200M-3-25.4			25.4		26	3200				

* Key 150.10-30 is not included



Order code	Dimensions(mm)							H KG	MAX RPM	Insert LNGT	Key
	D	AE	P	d	C	B					
SB200-3-32			32	63					20	8	
SB200M-3-32	200				11				26		
SB200-3-40			40	90					20	10	
SB200M-3-40					26						
SB250-3-25.4			25.4		-				6.35		
SB250M-3-25.4	250				3.0				34		
SB250-3-32			32	63					26	8	
SB250M-3-32					34						
SB250-3-40			40	90					26	10	
SB250M-3-40	250				3.5				34		
SB300-3-25.4			30.0		2.7				11		
SB300M-3-25.4											
SB300-3-32	300										
SB300M-3-32											
SB300-3-40			40	90							
SB300M-3-40					40						

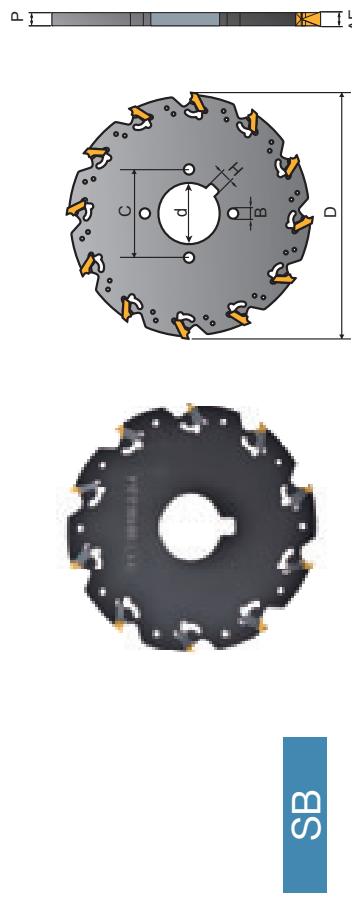
* Key 150.10-30 is not included

Saw Blades

- Insert P. 193 - 199
- Cutting Data P. 201 - 203

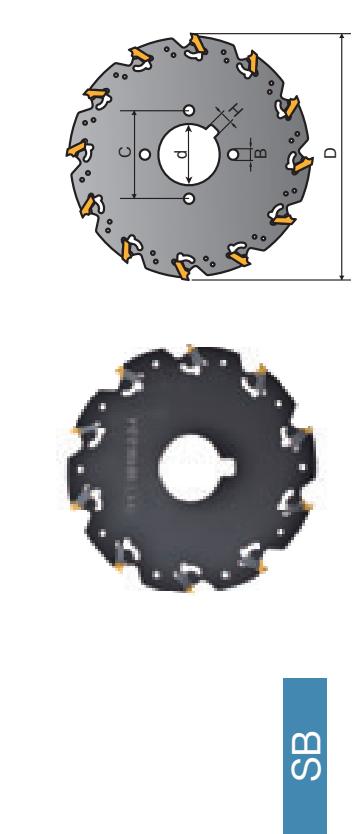
Saw Blades

- Insert P. 193 - 199
- Cutting Data P. 201 - 203



Order code	Dimensions(mm)							MAX RPM KG	Insert LNGT	Key
	D	AE	P	d	C	B				
SB050-4-13	50		13	4	-	12000				
SB050-4-12.7			12.7		0.1					
SB063-4-16	63		16	6	-	11000				
SB063-4-15.875			15.875							
SB080-4-22	80		22	8	8000					
SB080-4-25.4			25.4	6.35	0.2					
SB100-4-22			22	10	6300	4040		150.10-30		
SB100-4-25.4	100	4.0	25.4	10						
SB100-4-27		4.2	3.7	27	-	7		4042		
SB125-4-22		4.5	22		6.35	5000				
SB125-4-25.4	125		25.4	12	0.3					
SB125-4-32			32	8						
SB160-4-25.4			25.4		6.35					
SB160-4-32	160		32	16	8	4000				
SB160-4-40			40		10					
SB200-4-25.4			200	20	6.35	1.2				
SB200M-4-25.4			26			3200				

* Key 150.10-30 is not included



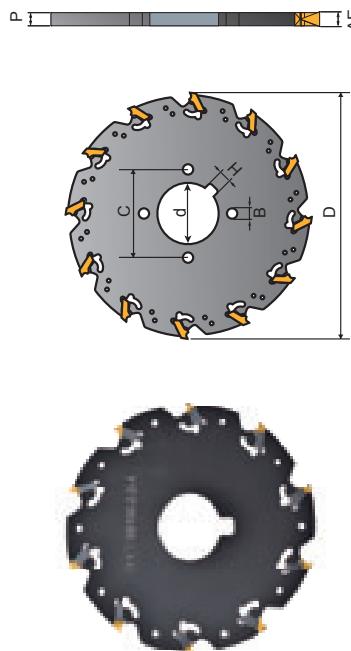
Order code	Dimensions(mm)							H KG	MAX RPM	Insert LNGT	Key
	D	AE	P	d	C	B					
SB200-4-32			200		32	63		20	8		
SB200M-4-32					11	26		1.2	3200		
SB200-4-40			40	90		34					
SB200M-4-40											
SB250-4-25.4			250	25.4	-	26		6.35			
SB250M-4-25.4											
SB250-4-32			250	4.0	3.7	26					
SB250M-4-32											
SB250-4-40			250	4.5	40	90					
SB250M-4-40											
SB300-4-25.4			300	25.4	-	34					
SB300M-4-25.4											
SB300-4-32			300	32	63			26	10		
SB300M-4-32											
SB300-4-40			300	40	90						
SB300M-4-40											

* Key 150.10-30 is not included

Saw Blades

- Insert P. 193 - 199
- Cutting Data P. 201 - 203

T-SLOT TRANSFORMER SERIES



SB

Order code	Dimensions(mm)							MAX RPM min^{-1}	Insert LNGT	Key
	D	AE	P	d	C	B	H			
SB050-5-13	50			13			4	12000		
SB050-5-12.7				12.7			-	0.15		
SB063-5-16	63			16			6	11000		
SB063-5-15.875				15.875						
SB080-5-22	80			22			8	8000		
SB080-5-25.4				25.4			6.35			
SB100-5-22	100	5.2	4.5	25.4	-	10	2.25	6300	5050	150.10-30
SB100-5-25.4		5.5							5052	
SB100-5-27				27			7		5055	
SB125-5-22	125			22			6.35	0.35	5000	
SB125-5-25.4				25.4			12			
SB125-5-32				32			8			
SB160-5-25.4	160			25.4			6.35			
SB160-5-32				32			16	8	0.43	4000
SB160-5-40				40					10	

* Key 150.10-30 is not included

Features

Available in materials
P K M N S H

Cost DOWN
200~300%

Variety of Machines
CNC Milling machine

Efficiency UP
300~500%

Durability UP
300%

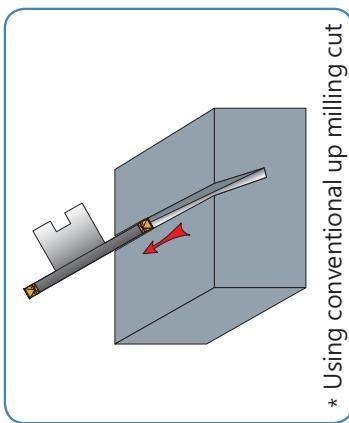
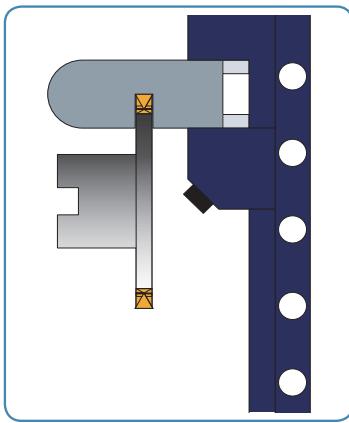
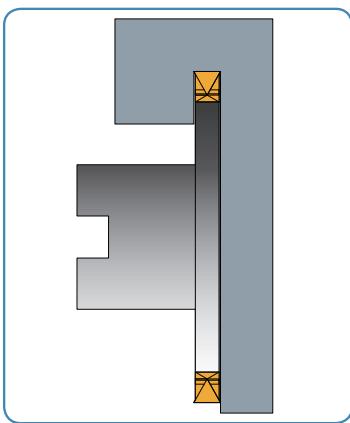
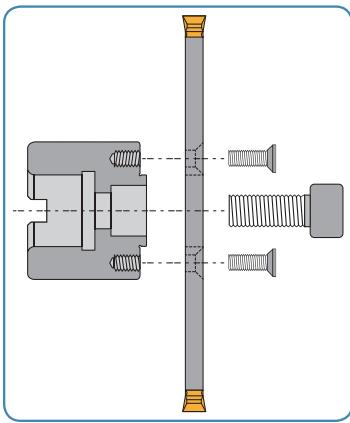


Video

New
System
For T-Slot
Milling

TRANSFORMER HOLDER

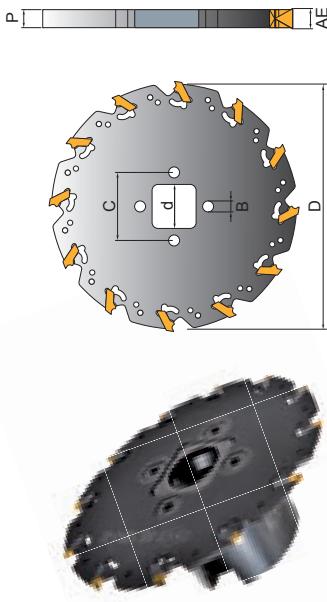
Slitting / Slotting / Cut-off



PRODUCT SPECIFICATIONS

Saw Milling Cutters

- Combination Holder P. 165
- Insert P. 193 - 199
- Cutting Data P. 201 - 203



Order code	Dimensions(mm)						H KG	MAX RPM	Insert LNGT	Key
	D	AE	P	d	C	B				
SBL080-1.4-22	80			22	34	5	8	0.15	8000	
SBL100-1.4-22	100	1.4		1.2		10	-	0.15	6300	1414
SBL125-1.4-32	125	1.5			32	46	6	0.2	5000	1415
SBL160-1.4-32	160					16	16	0.28	4000	150.10-30
SBL080-1.6-22	80			22	34	5	8	0.15	8000	
SBL100-1.6-22	100	1.6		1.4		10	-	0.2	6300	1616
SBL125-1.6-32	125				32	46	6	0.28	5000	150.10-30
SBL160-1.6-32	160					16	16	0.28	4000	

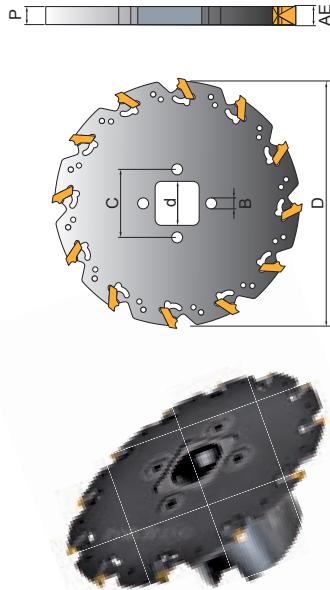
* Key 150.10-30 is not included

Saw Milling Cutters

- Combination Holder P. 165
- Insert P. 193 - 199
- Cutting Data P. 201 - 203

Saw Milling Cutters

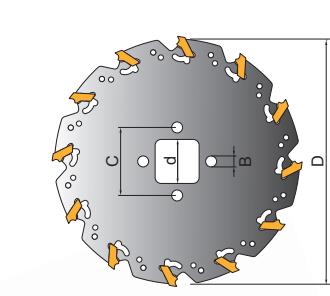
- Combination Holder P. 165
- Insert P. 193 - 199
- Cutting Data P. 201 - 203



SBL

Order code	Dimensions(mm)						Key
	D	AE	P	d	C	B	
SBL080-1.8-22	80			22	34	5	8
SBL100-1.8-22	100			10	-	0.15	8000
SBL125-1.8-32	125	1.8	1.6		12	-	6300
SBL160-1.8-32	160			32	46	6	150.10-30
SBL080-2.5-22	80			22	34	5	1848
SBL100-2.5-22	100	2.0	1.75	10	-	0.2	5000
SBL125-2.5-32	125	2.5		12	-	0.28	4000
SBL160-2.5-32	160			16	-	-	2020
SBL080-2.5-22	80			22	34	5	150.10-30
SBL100-2.5-22	100	2.5	2.25	10	-	0.15	6300
SBL125-2.5-32	125	3.0		12	-	0.2	2525
SBL160-2.5-32	160			16	-	0.28	2527
SBL080-2.5-22	80			22	34	5	150.10-30
SBL100-2.5-22	100	2.5	2.25	10	-	0.15	6300
SBL125-2.5-32	125	3.0		12	-	0.2	5000
SBL160-2.5-32	160			16	-	0.28	2530

* Key 150.10-30 is not included



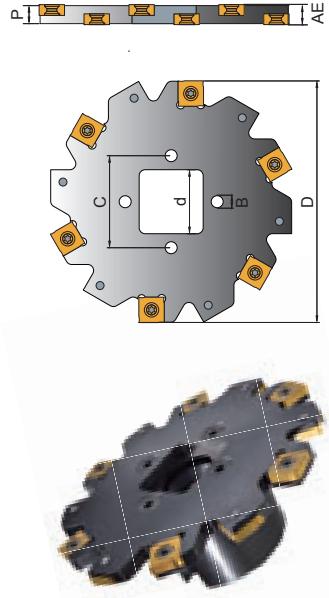
SBL

Order code	Dimensions(mm)						Key
	D	AE	P	d	C	B	
SBL080-3-22	80			22	34	5	8
SBL100-3-22	100			2.7	-	3.0	10
SBL125-3-32	125			3.5	-	3.2	12
SBL160-3-32	160			4.0	-	4.6	16
SBL080-4-22	80			22	34	5	8
SBL100-4-22	100			4.0	-	4.2	10
SBL125-4-32	125			3.7	-	3.2	12
SBL160-4-32	160			4.5	-	4.6	16
SBL080-5-22	80			22	34	5	8
SBL100-5-22	100			5.0	-	5.2	10
SBL125-5-32	125			4.5	-	5.5	12
SBL160-5-32	160			5.0	-	5.2	16

* Key 150.10-30 is not included

Side Milling Cutters

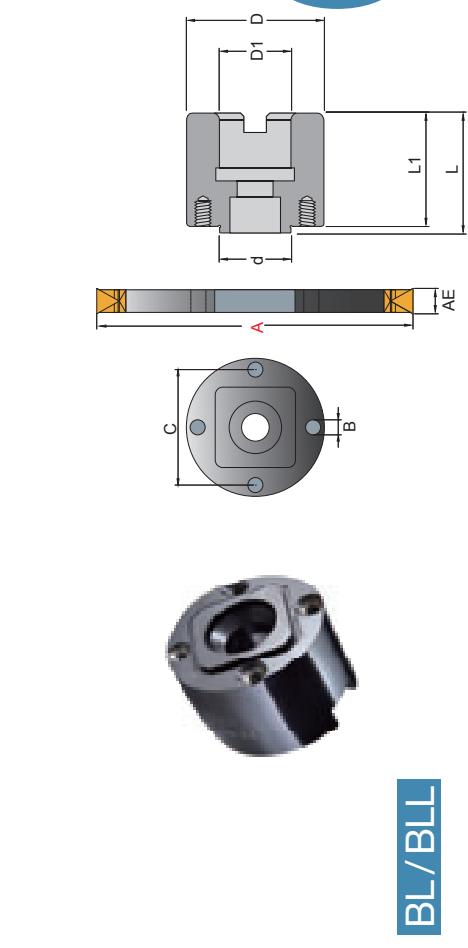
- Combination Holder P. 165
- Insert P. 200
- Cutting Data P. 204 - 205



STL

Order code	Dimensions(mm)							H KG	MAX RPM	Insert SNGX	Screw	Key
	D	AE	P	d	C	B						
STL080-4-22	4	3.4				8		0.2	13700	1102 T9354	T09P	
STL080-5-22	80	5	4.2		22	34	5			1103 T9355	T08P	
STL100-4-22	100	4	3.4			10		0.5	12000	1102 T9354	T09P	
STL100-5-22		5	4.2							1103 T9355	T08P	
STL125-4-32	125		4	3.4						1102 T9354	T09P	
STL125-5-32		5	4.2			12		0.6	10900	1103 T9355	T08P	
STL160-4-32	160		4	3.4		16		0.7	8300	1102 T9354	T09P	
STL160-5-32		5	4.2							1103 T9355	T08P	

Combination Holder



BL / BLL

Order code	Dimensions(mm)							Screw KG	Insert LNGT / SNGX
	D	D1	d	C	B	L			
BL45-22		45	22	22	34	5	43	41.8	80
BL45-25.4		45	25.4		45	43.8	100	0.2	0.4
BL58-31.75		58	31.75	32	46	6	55	53.8	125
BL58-32			32				160		0.5
BLL45-22		45	22	22	34	5	43	40.5	80
BLL45-25.4		45	25.4		45	42.5	100	0.6	0.4
BLL58-31.75		58	31.75	32	46	6	55	52.5	125
BLL58-32			32				160		0.7

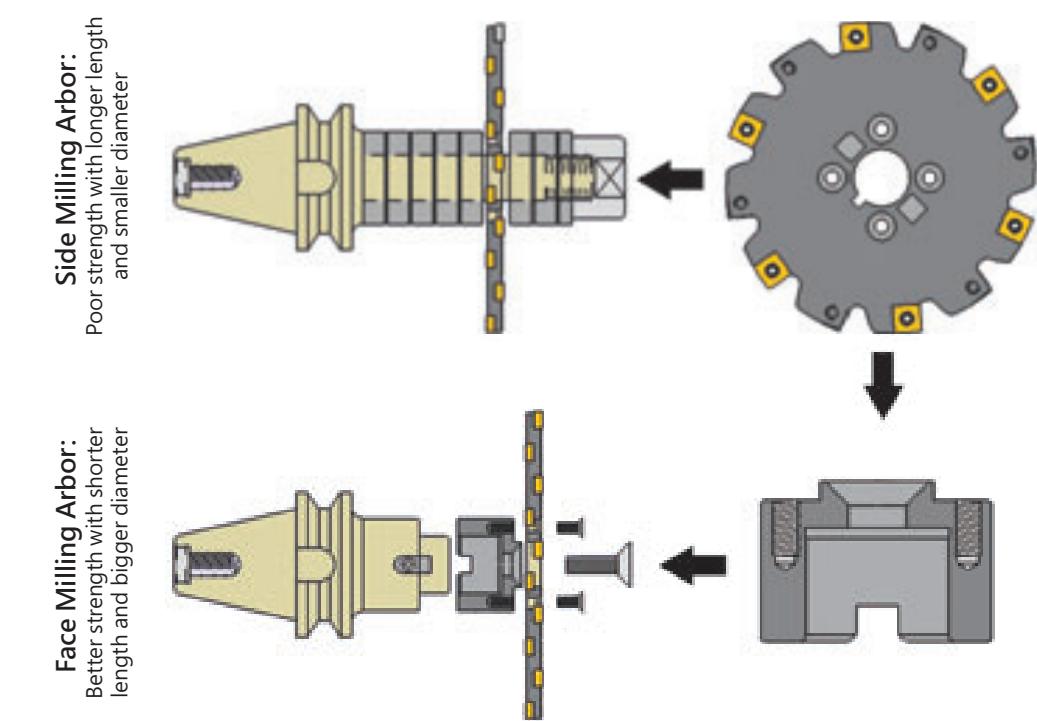
Standard Spare Parts

Holders	Screw	Holders	Screw	Arbor Screw
BL-42-22	C90512	BLL42-22	C90512	M1035
BL42-25.4		BLL42-25.4		M1235
BL-55-31.75	C90612	BLL55-31.75	C90612	M1235/M1635/W2403
BL-55-32		BLL55-32		M1635

TRANSFORMER SERIES

Product Introduction

Dia. range $\phi 160 \sim \phi 250$ / AE 6 ~ 30mm



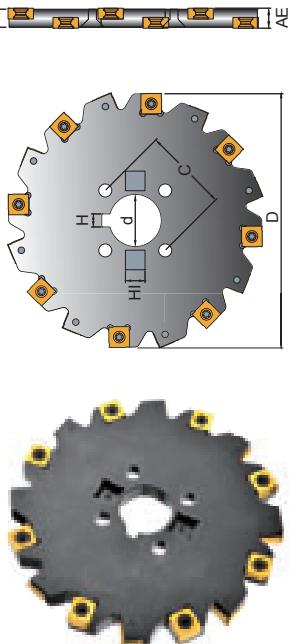
Features

- Available in materials P K M N S H
- Cost DOWN 200~300%
- Variety of Machines CNC Milling machine
- Efficiency UP 300%
- Durability UP 300%

PRODUCT SPECIFICATIONS

Side Milling Cutters

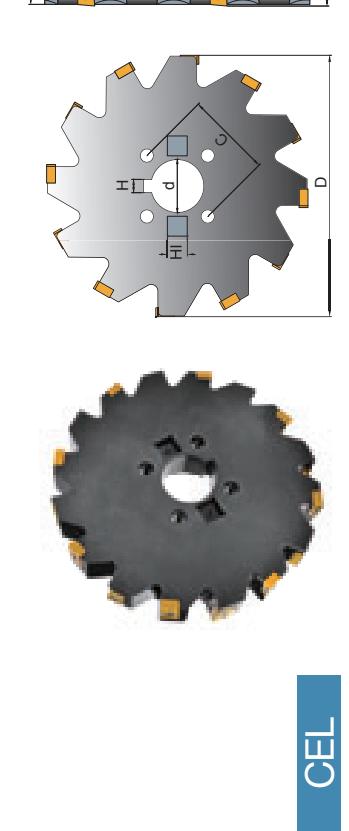
- Combination Holder P. 171
- Insert P. 200
- Cutting Data P. 204 - 205



Order code	Dimensions(mm)						Zc /KG	MAX RPM	Insert SNGX	Screw	Key
	D	AE	P	H	C						
SCL-160-6-32	6	5					1203	7945			1005
SCL-160-8-32	8	7	8	52	32	16	8	12045	T947		2.1
SCL-160-10-32	160	10	9				8300	1205	T948		1605
SCL-160-12-32	12	11					1.1	1207	T9411		6100
SCL-200-6-40	6	5					1.6	1203	T945		1305
SCL-200-8-40	8	7					1.7	12045	T947		1605
SCL-200-10-40	200	10	9				1.8	4200	1205		T15P
SCL-200-12-40	12	11					2.1	1207	T9411		2.5
SCL-250-6-40	6	5					3.3	1203	T945		2.7
SCL-250-8-40	8	7					3.5	3800	12045		3.0
SCL-250-10-40	250	10	9				3.7		T948		3.5
SCL-250-12-40	12	11					3.9	1207	T9411		

Disc Milling Cutters

- Combination Holder P. 171
- Insert P. 201
- Cutting Data P. 206 - 207

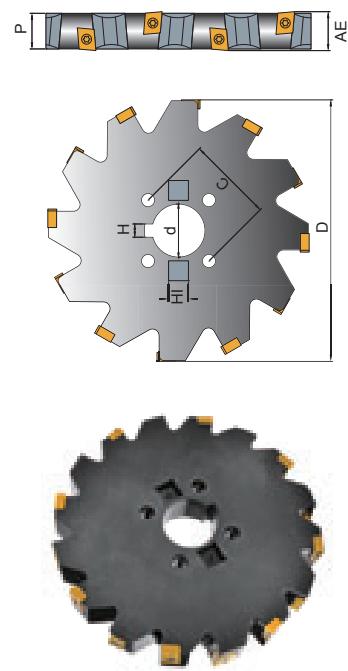


Order code	Dimensions(mm)						Zc /KG	MAX RPM	Insert CNGX	Screw	Key
	D	AE	P	H	C						
CEL160-14-32	14							1.4	12.5		1.7
CEL160-16-32		16					8	14.5	32		1.9
CEL160-18-32			18					18	16.5		
CEL160-20-32	160							20	18.5		
CEL160-22-32			22					20.5			2.1
CEL160-25-32				25				23.5	-		2.3
CEL160-30-32			30					28.5			2.5
CEL160-32-32					1.4			12.5			1.9
CEL160-35-32											1005
CEL160-38-32											2.1
CEL160-40-32											2.3
CEL160-42-32											2.5
CEL160-45-32											1005
CEL160-48-32											2.1
CEL160-50-32											2.3
CEL160-52-32											2.5
CEL160-55-32											1305
CEL160-58-32											T15P
CEL160-60-32											C04011

Disc Milling Cutters

- Combination Holder P. 171
- Insert P. 201
- Cutting Data P. 206 - 207

Combination Holders

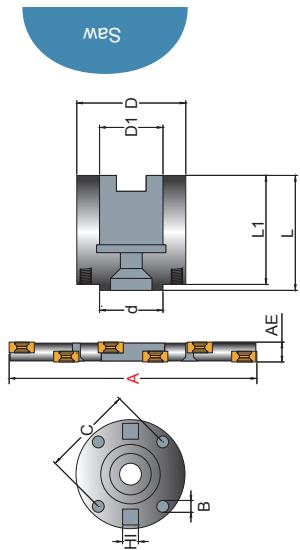


CEL

Order code	Dimensions(mm)						
	D	AE	P	H	C	d	
CEL250-14-40	14	12.5				2.9	1006
CEL250-16-40	16	14.5	10	70	40	3.1	
CEL250-18-40	18	16.5				3.2	
CEL250-20-40	250	20	18.5			3.5	5500 C04011 T15P
CEL250-22-40	22	20.5				3.9	
CEL250-25-40	25	23.5	-	-	16	8	4.2
CEL250-30-40	30	28.5				4.5	

CWL

Order code	Dimensions(mm)						
	D	AE	P	H	C	d	
CWL-160-32	160		12	16.5	10	70	40
CWL-200-40	200					20	2.3
CWL-250-40	250					24	3.2

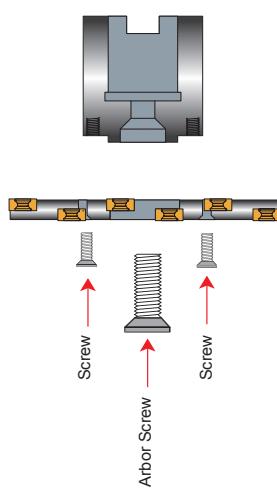


BCL

Order code	Dimensions(mm)						
	D	D1	d	C	B	L	
BCL65-32			32				
BCL65-31.75			31.75				
BCL65-40			40				
BCL65-38.1			38.1				
BCL90-40			40				
BCL90-38.1			38.1				
BCL90-50			50				
BCL90-50.8			50.8				

Standard Spare Parts

SIDE MILLING CUTTER



Holders	Screw	Arbor Screw	Arbor Screw
SCL-160-6-32	C90815		CEL160-14-32
SCL-160-8-32			CEL160-16-32
SCL-160-10-32	C90820		CEL160-18-32
SCL-160-12-32			CEL160-20-32
SCL-200-6-40	C90815		CEL160-22-32
SCL-200-8-40			CEL160-25-32
SCL-200-10-40	C90820		CEL160-30-32
SCL-200-12-40			CEL200-14-40
SCL-250-6-40	C90815		CEL200-16-40
SCL-250-8-40			CEL200-18-40
SCL-250-10-40	C90820		CEL200-20-40
SCL-250-12-40			CEL200-22-40
CWL-160-32	C90825		CEL200-25-40
CWL-200-40			CEL200-30-40
CWL-250-40			CEL250-14-40
			CEL250-16-40
			CEL250-18-40
			CEL250-20-40
			CEL250-22-40
			CEL250-25-40
			CEL250-30-40

Features



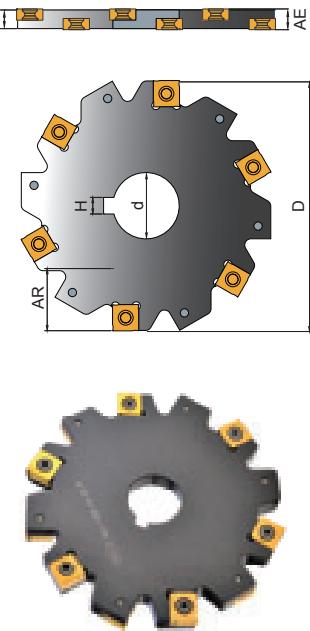
Video



PRODUCT SPECIFICATIONS

Side Milling Cutters

- Insert P. 200
- Cutting Data P. 204 - 205

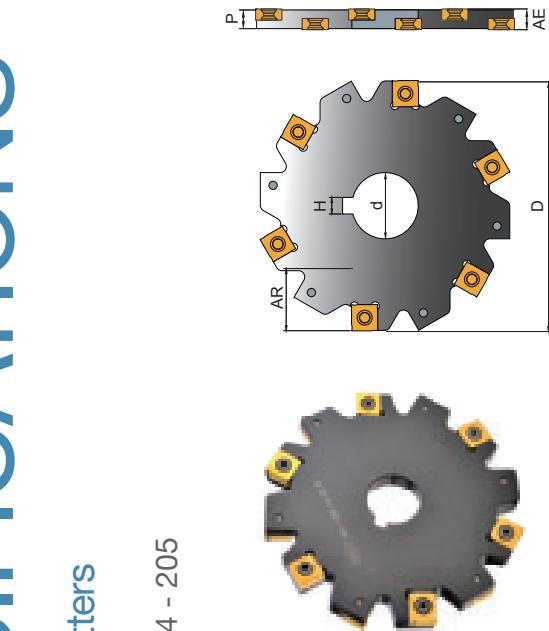


SC

PRODUCT SPECIFICATIONS

Side Milling Cutters

- Insert P. 200
- Cutting Data P. 204 - 205



SC

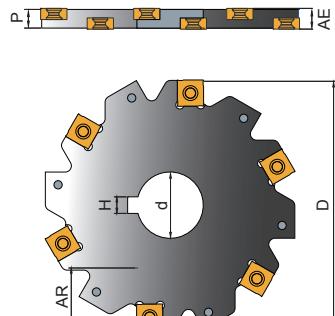
Order code	Dimensions(mm)					Z_c /KG	MAX RPM	Insert SNGX	Screw	Key
	D	AE	AR	P	H					
SC-100-8-27				8	7				12045	T947
SC-100-10-27	100	10	28	9	7				1205	T948
SC-100-12-27			12	11					1207	T9411
SC-125-4-32			4	3.4					1102	T9354
SC-125-5-32			5	4.2					1103	T9355
SC-125-6-32			6	5					1203	T945
SC-125-7-32			7	6	8	32			1204	T946
SC-125-8-32			8	7					12045	T947
SC-125-10-32			10	9					1205	T948
SC-125-12-32			12	11	33				1207	T9411
SC-125-4-40			4	3.4					1102	T9354
SC-125-5-40			5	4.2					1103	T9355
SC-125-6-40			6	5					1203	T945
SC-125-7-40			7	6	10				1204	T946
SC-125-8-40			8	7					12045	T947
SC-125-10-40			10	9					1205	T948
SC-125-12-40			12	11					1207	T9411

Side Milling Cutters

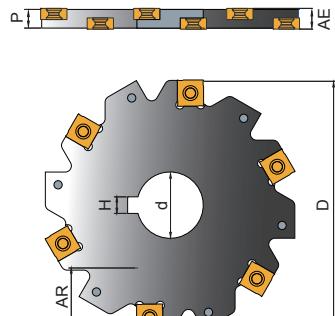
- Insert P. 200
- Cutting Data P. 204 - 205

Side Milling Cutters

- Insert P. 200
- Cutting Data P. 204 - 205



SC



SC

Order code	Dimensions(mm)							Zc /KG	MAX RPM	Insert SNGX	Screw	Key
	D	AE	AR	P	H	d						
SC-160-4-32	4			3.4					4		3.4	
SC-160-5-32	5			4.2					5		4.2	
SC-160-6-32	6			5					6		5	
SC-160-7-32	7			6	32				80	7	18	6
SC-160-8-32	8			7					8		7	
SC-160-10-32	10			9					10		9	
SC-160-12-32	12			11					12		11	
SC-160-4-40	160	4	3.4	16	8				4		3.4	
SC-160-5-40	5		4.2		7				5		4.2	
SC-160-6-40	6		5		10				6		5	
SC-160-7-40	7		6	0.8	40				100	7	28	6
SC-160-8-40	8		7							8		7
SC-160-10-40	10		9							10		9
SC-160-12-40	12		11							12		11

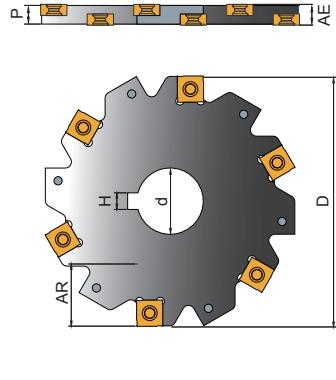
Order code	Dimensions(mm)							Zc /KG	MAX RPM	Insert SNGX	Screw	Key
	D	AE	AR	P	H	d						
SC-80-4-25.4						4			3.4			
SC-80-5-25.4						5			4.2			
SC-80-6-25.4						6			5			
SC-80-7-25.4						80	7		18	6		
SC-80-8-25.4						8			8	4	0.3	13700
SC-80-9-25.4						1205			12045	12045	12045	T15P
SC-80-10-25.4						1205			1205	1205	1205	T15P
SC-80-12-25.4						1207			1207	1207	1207	T15P
SC-100-4-25.4						1102			1102	1102	1102	T09P
SC-100-5-25.4						1103			1103	1103	1103	T08P
SC-100-6-25.4						1203			1203	1203	1203	T08P
SC-100-7-25.4						1204			1204	1204	1204	T08P
SC-100-8-25.4						1205			1205	1205	1205	T08P
SC-100-10-25.4						1207			1207	1207	1207	T08P
SC-100-12-25.4						1205			1205	1205	1205	T08P
SC-125-4-25.4						1207			1207	1207	1207	T08P
SC-125-5-25.4						1207			1207	1207	1207	T08P
SC-125-6-25.4						1207			1207	1207	1207	T08P

Side Milling Cutters

- Insert P. 200
- Cutting Data P. 204 - 205

Side Milling Cutters

- Insert P. 200
- Cutting Data P. 204 - 205



SC

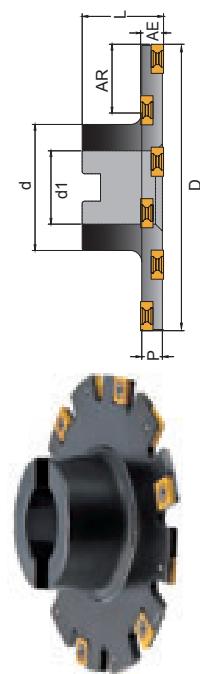
Order code	Dimensions(mm)						Zc /KG	MAX RPM	Insert SNGX	Screw	Key
	D	AE	AR	P	H	d					
SC-125-7-25.4	7	6					1204	T946			
SC-125-8-25.4	8	7					12045	T947			
SC-125-10-25.4	125	33	9				10900	T948	T15P		
SC-125-12-25.4	10	10	9				1205	T948			
SC-160-4-25.4	12	11					1207	T9411			
SC-160-5-25.4	4	3.4					1102	T9354	T09P		
SC-160-5-25.4	5	4.2	6.35	25.4			1103	T9355	T08P		
SC-160-6-25.4	6	5					1203	T945			
SC-160-7-25.4	7	6					8300	T946			
SC-160-8-25.4	8	7					12045	T947	T15P		
SC-160-10-25.4	10	9					1205	T948			
SC-160-12-25.4	12	11					1207	T9411			
SC-160-4-31.75	160	45					1102	T9354	T09P		
SC-160-5-31.75	4	3.4					0.7	1103	T9355	T08P	
SC-160-6-31.75	5	4.2						1203	T945		
SC-160-7-31.75	6	5					0.8	8300	1204	T946	
SC-160-8-31.75	7	6	8	31.75				12045	T947	T15P	
SC-160-10-31.75	8	7						1205	T948		
SC-160-12-31.75	10	9						1207	T9411		

Order code	Dimensions(mm)						Zc /KG	MAX RPM	Insert SNGX	Screw	Key			
	D	AE	AR	P	d	d1								
ST-80-6-22					6		5				1203	T945		
ST-80-7-22					7		6				1204	T946		
ST-80-8-22					80	8	16.5	7	22	35	4	13700	T947	
ST-80-10-22					10		9				0.8	1205	T948	
ST-80-12-22					12	11					0.9	1207	T9411	
ST-100-6-27					6		5				1203	T945		
ST-100-7-27					7		6				0.7	1204	T946	
ST-100-8-27					100	8	26.5	7	27	35	5	12000	T947	
ST-100-10-27					10		9				0.8	1205	T948	
ST-100-12-27					12	11					0.9	1207	T9411	
ST-125-6-32					6		5				1203	T945		
ST-125-7-32					7		6				1.5	1204	T946	
ST-125-8-32					125	8	30.5	7	12	6	10900	T947		
ST-125-10-32					10		9				1.6	1205	T948	
ST-125-12-32					12	11					1.6	1207	T9411	
ST-160-6-32					6		5				1203	T945		
ST-160-7-32					160	45					2.0	1204	T946	
ST-160-8-32					16	8					8300	12045	T947	
ST-160-10-32					0.8						16	8	1205	T948
ST-160-12-32					1.1						2.1	1207	T9411	

Side Milling Cutters

- Insert P. 200
- Cutting Data P. 204 - 205

DISC MILLING CUTTER



ST

Order code	Dimensions(mm)							MAX RPM /KG	Insert SNGX	Screw	Key
	D	AE	AR	P	d	d1					
ST-80-6-25.4	6		5						1203	T945	
ST-80-7-25.4	7		6						1204	T946	
ST-80-8-25.4	80	8	16.5	7			8	4	13700	12045	T947
ST-80-10-25.4		10	9						1205	T948	
ST-80-12-25.4		12	11						1207	T9411	
ST-100-6-25.4	6		5						1203	T945	
ST-100-7-25.4	7		6						1204	T946	
ST-100-8-25.4	100	8	26.5	7			10	5	12000	12045	T947
ST-100-10-25.4		10	9						1205	T948	
ST-100-12-25.4	12		11						1207	T9411	
ST-125-6-31.75	6		5					35			T15P
ST-125-7-31.75	7		6						1203	T945	
ST-125-8-31.75	125	8	30.5	7			12	6	10900	12045	T947
ST-125-10-31.75	10		9						1205	T948	
ST-125-12-31.75	12		11						1207	T9411	
ST-160-6-31.75	6		5						1203	T945	
ST-160-7-31.75	7		6						1204	T946	
ST-160-8-31.75	160	8	48	7			16	8	8300	12045	T947
ST-160-10-31.75		10	9						1205	T948	
ST-160-12-31.75	12		11						1207	T9411	

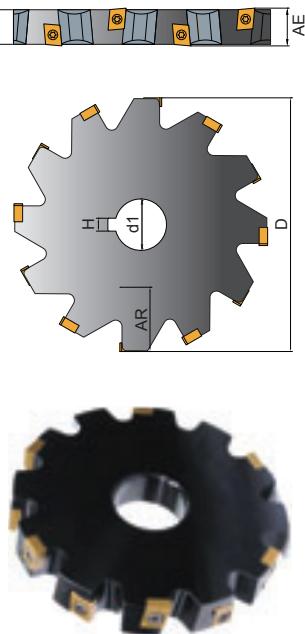
Features

- Available in materials P, K, M, N, S, H
- Cost DOWN ~100~300%
- Variety of Machines CNC Milling machine
- Efficiency UP ~300%
- Durability UP 300%

PRODUCT SPECIFICATIONS

Disc Milling Cutters

- Insert P. 201
- Cutting Data P. 206 - 207

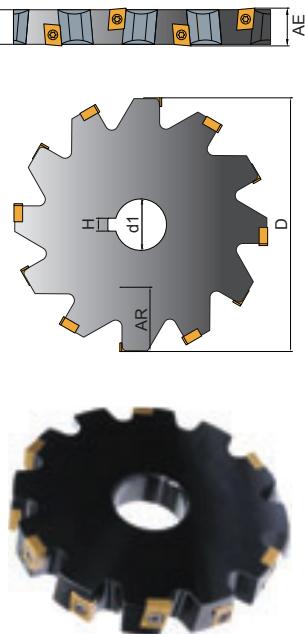


CE

PRODUCT SPECIFICATIONS

Disc Milling Cutters

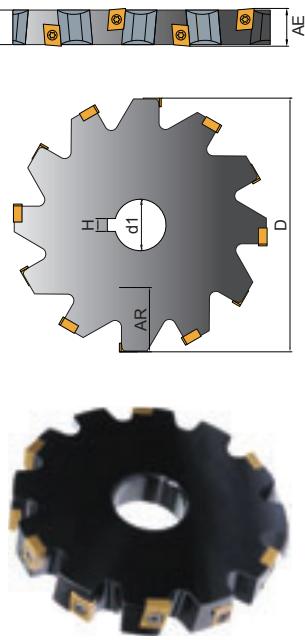
- Insert P. 201
- Cutting Data P. 206 - 207



CE

Disc Milling Cutters

- Insert P. 201
- Cutting Data P. 206 - 207



CE

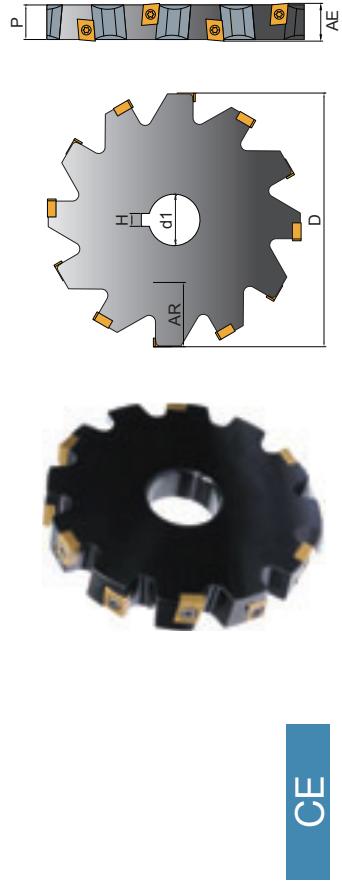
Order code	Dimensions(mm)					Zc KG	MAX RPM	Insert CNGX	Screw	Key
	D	AE	AR	P	H					
CE100-20-27	20			18.5						1.2
CE100-22-27	22		20.5		7	27	8	4	1.4	12000
CE100-25-27	25		23.5							1.6
CE100-30-27	30		28.5							1.9
CE125-14-32	14		12.5							1.3
CE125-16-32	16		14.5							1.5
CE125-18-32	18		16.5							1.7
CE125-20-32	20	30	18.5	8	32	12	6	1.9	10900	1305
CE125-22-32	22		20.5							2.3
CE125-25-32	25		23.5							2.5
CE125-30-32	30		28.5							2.8
CE080-14-22	14	12.5		0.65	1005					
CE080-16-22	16	14.5		0.7						
CE080-18-22	18	16.5		0.8						
CE080-20-22	20	16	18.5	6	22	1.0	13700	1305		
CE080-22-22	22		20.5			1.2				
CE080-25-22	25		23.5			1.4				
CE080-30-22	30		28.5			1.5				
CE100-14-27	14		12.5							
CE100-16-27	16	26	14.5	7	27	1.0	12000	1005		
CE100-18-27	18		16.5			1.1				

Disc Milling Cutters

- Insert P. 201
- Cutting Data P. 206 - 207

Disc Milling Cutters

- Insert P. 201
- Cutting Data P. 206 - 207



Order code	Dimensions(mm)						Zc /KG	MAX RPM	Insert CNGX	Screw	Key
	D	AE	AR	P	H	d1					
CE080-25-25.4	25	16	23.5			1.4	13700	1605			1005
CE080-30-25.4	80	30	28.5			1.5					0.8
CE100-14-25.4		14	12.5			0.9	1005				0.9
CE100-16-25.4		16	14.5			1.0					1.1
CE100-18-25.4		18	16.5			1.1					1.3
CE100-20-25.4	100	20	18.5			1.2	1305				1.55
CE100-22-25.4		22	20.5			1.4					1.605
CE100-25-25.4		25	23.5			1.6					1.7
CE100-30-25.4	30	26	28.5			1.9	12000	1605	C04011	T15P	1005
CE125-14-25.4		14	12.5			1.3	1005				1.1
CE125-16-25.4		16	14.5			1.5					1.2
CE125-18-25.4		18	16.5			1.7					1.3
CE125-20-25.4	125	20	18.5			1.9	1305				1.6
CE125-22-25.4		22	20.5			2.3					1.8
CE125-25-25.4		25	23.5			2.5					1.605
CE125-30-25.4		30	28.5			2.8					2.3

Order code	Dimensions(mm)						Zc /KG	MAX RPM	Insert CNGX	Screw	Key
	D	E	AR	P	d	d1					
CW080-14-22		14						12.5			0.75
CW080-16-22		16						14.5			1.1
CW080-18-22		18						16.5			1.3
CW080-20-22	80	20	16.5	18.5	40	22		35			1305
CW080-22-22		22						20.5			
CW080-25-22		25						23.5			
CW080-30-22		30						28.5			
CW100-14-27		14						12.5			1.0
CW100-16-27		16						14.5			1.1
CW100-18-27		18						16.5			1.2
CW100-20-27	100	20	26.5	28.5	45	27		35			10900
CW100-22-27		22						20.5			
CW100-25-27		25						23.5			
CW100-30-27		30						28.5			
CW125-14-32		14						12.5			1.5
CW125-16-32	125	30	55	32	35	12	6	14.5			10900
CW125-25-32		16						16			1.7

Disc Milling Cutters

- Insert P. 201
- Cutting Data P. 206 - 207

Disc Milling Cutters

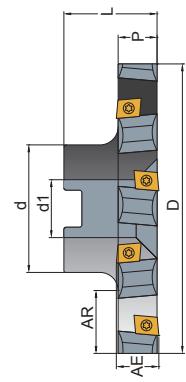
- Insert P. 201
- Cutting Data P. 206 - 207



CW



CW



CW

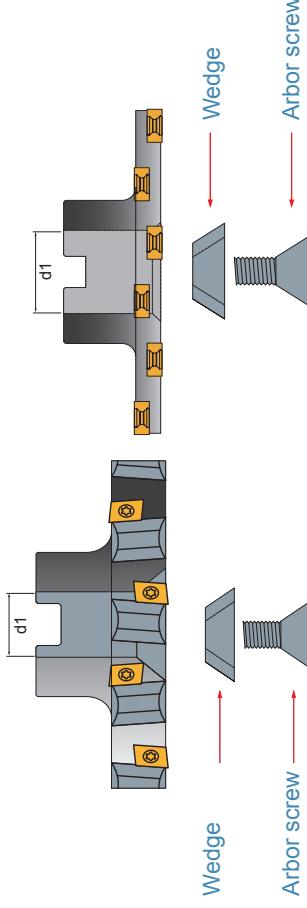
Order code	Dimensions(mm)						Insert CNGX	Screw	Key
	D	E	AR	P	d	d1			
CW080-14-25.4	14	12.5				0.75	1005		1.9
CW080-16-25.4	16	14.5				0.8			
CW080-18-25.4	18	16.5				0.9			
CW080-20-25.4	80	20	16.5	18.5	40	35	1.1	13700	1305
CW080-22-25.4	22	20.5				1.3			
CW080-25-25.4	25	23.5				1.55	1605		
CW080-30-25.4	30	28.5				1.7			
CW100-14-25.4		14		12.5			1.0	1005	
CW100-16-25.4	16	14.5					1.1	12000	
CW100-18-25.4	100	18	26.5	45		35	1.2	1305	
CW100-20-25.4		20				1.3			

Order code	Dimensions(mm)						Zc	KG	MAX RPM	Insert CNGX	Screw	Key
	D	E	AR	P	d	d1						
CW100-22-25.4	22				20.5				35	8	4	1.6
CW100-25-25.4	100	25	26.5	23.5	45	25.4				4000	12000	-
CW100-30-25.4	30				28.5				40			1605
CW125-14-31.75		14				12.5						2.3
CW125-16-31.75	16					14.5						1.5
CW125-18-31.75	18					16.5						1.7
CW125-20-31.75	20	30	18.5	31.75	55	31.75			35	12	6	1005
CW125-22-31.75												1305
CW125-25-31.75	22											2.5
CW125-28-31.75	25											2.8
CW125-30-31.75	30											3.4
C04011												40
T15P												
C04011												
T15P												

DISC MILLING CUTTER



Mounting Dimensions



cutter dimension d1	Arbor screw	Wedge
ST Ø22	C901035	WE30
ST Ø27	C901235	WE45
ST Ø32	C901635	WE30
ST Ø25.4	C901235	WE30, WE45
ST Ø31.75	C901235, C901635	WE30, WE45
CW Ø22	C901035	WE30
CW Ø27	C901235	WE45
CW Ø32	C901635	WE63
CW Ø40	C901640	WE30
CW Ø25.4	C901235	WE30, WE45
CW Ø31.75	C901235, C901635	WE63
CW Ø38.1	C901635	
CW Ø50.8		

Features

- Durability **300%** UP
- Efficiency **300%** UP
- Variety of Machines CNC Milling machine
- Cost **100~300%** DOWN
- Available in materials P K M N S H

Product Advantages

The inserts of back milling and side grooving cutter can be used up to 4 corners.

PRODUCT SPECIFICATIONS

Back milling Cutter

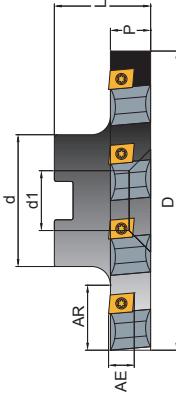
- Insert P.201
- Cutting Data P. 206 - 207



Double side cutter

Back milling Cutter

- Insert P.201
- Cutting Data P. 206 - 207



Order code	Dimensions(mm)						MAX RPM ◎ /KG	Insert CNGX	Screw	Key
	D	AE	P	d	d1	L				
CB-100-27	100	12	16.5	45	27	35	25	10	1.2	12000
CB-125-32	125	12	16.5	55	32	30	30	12	1.9	10900

Double side cutter

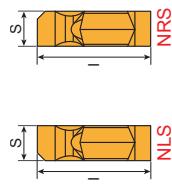
- Insert P. 201
- Cutting Data P. 206 - 207



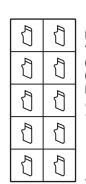
CDL/CDR

Order code	Dimensions(mm)					MAX RPM /KG	Insert CNGX	Screw	Key
	D	AE	P	d	H				
CDL-100-27	100		27	7	L	10	1.1	12000	
CDR-100-27				R					
CDL-125-32	125	12	165	32	8	L	12	1.7	10900
CDR-125-32				R					
CDL-160-40	160		40	10	L	16	1.9	6900	
CDR-160-40				R					

LNGT Insert



Tolerances ±0.03 (mm)



Inserts 10 PCS / Box

Part No .	Inserts	Grades				Inserts Sequencing Position (one left after than one right)
		Carbide	Metal cermet	Uncoated	EE	
LNGT 1414NLS-SEE	NLS	B100	C200	F20	CE250	
LNGT 1415NLS-SEE						
LNGT 1616NLS-SEE	NLS					
LNGT 1818NLS-SEE						
LNGT 1414NRS-SEE	NRS	B100	C200	F20	CE250	
LNGT 1415NRS-SEE						
LNGT 1616NRS-SEE	NRS					
LNGT 1818NRS-SEE						

Part No .	Inserts	Grades				Inserts Sequencing Position (one left after than one right)
		Carbide	Metal cermet	Uncoated	EE	
LNGT 1414NLS-M	NLS	B100	C200	F20	CE250	
LNGT 1415NLS-M						
LNGT 1616NLS-M	NLS					
LNGT 1818NLS-M						
LNGT 1414NRS-M	NRS	B100	C200	F20	CE250	
LNGT 1415NRS-M						
LNGT 1616NRS-M	NRS					
LNGT 1818NRS-M						

Part No .	Inserts	Grades				Inserts Sequencing Position (one left after than one right)
		Carbide	Metal cermet	Uncoated	EE	
LNGT 1414NLS-ME	NLS	B100	C200	F20	CE250	
LNGT 1415NLS-ME						
LNGT 1616NLS-ME	NLS					
LNGT 1818NLS-ME						
LNGT 1414NRS-ME	NRS	B100	C200	F20	CE250	
LNGT 1415NRS-ME						
LNGT 1616NRS-ME	NRS					
LNGT 1818NRS-ME						

• Steel ■ Stainless Steel □ Steel/Stainless Steel | Cast Iron ■ Aluminum ■ Steel/Cast Iron

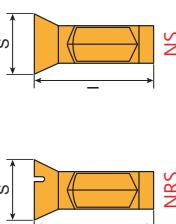
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, ie.: LNGT 1414NLS-M, B100

LNGT Insert

Dimensions in mm		
SIZE	S	I
1.75	2.0 2.2 2.5	2.5
2.2	2.5 2.7 3.0	3.0
2.7	3.0 3.2 3.5	9
3.7	4.0 4.2 4.5	4.5
4.5	5.0 5.2 5.5	4.5

Tolerances ± 0.03 (mm)

NS

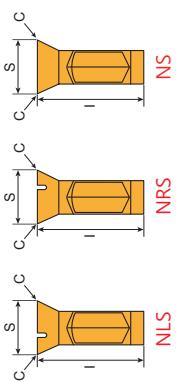


LNGT Insert

Dimensions in mm		
SIZE	S	I
1.75	2.0 2.2 2.5	2.5
2.2	2.5 2.7 3.0	3.0
2.7	3.0 3.2 3.5	2.7
3.7	4.0 4.2 4.5	3.7
4.5	5.0 5.2 5.5	4.5

Tolerances ± 0.03 (mm)

NS



Inserts	Part No .	Grades					
		B100	C200	C250	F20	F30	Carbide
Inserts Sequencing Position (one left after than one right)							
NLS	LNGT 2525NLS-EE						
NRS	LNGT 2527NLS-EE						
NLS	LNGT 2530NLS-EE						
NLS	LNGT 3030NLS-EE						
NLS	LNGT 3032NLS-EE						
NLS	LNGT 3035NLS-EE						
NRS	LNGT 4040NLS-EE						
NLS	LNGT 4042NLS-EE						
NLS	LNGT 4045NLS-EE						
NLS	LNGT 5050NLS-EE						
NLS	LNGT 5052NLS-EE						
NLS	LNGT 5055NLS-EE						
Inserts Sequencing Position (one left after than one right)							
NRS	LNGT 2020NRS-EE						
NRS	LNGT 2022NRS-EE						
NRS	LNGT 2025NRS-EE						
NRS	LNGT 2525NRS-EE						
NRS	LNGT 2527NRS-EE						
NRS	LNGT 2530NRS-EE						
NRS	LNGT 3030NRS-EE						
NRS	LNGT 3032NRS-EE						
NRS	LNGT 3035NRS-EE						
NRS	LNGT 4040NRS-EE						
NRS	LNGT 4042NRS-EE						
NRS	LNGT 4045NRS-EE						
NRS	LNGT 5050NRS-EE						
NRS	LNGT 5052NRS-EE						
NRS	LNGT 5055NRS-EE						

Inserts 10 PCS / Box

NS

LNGT 5050NRS-EE

LNGT 5055NRS-EE

Inserts 10 PCS / Box

NS

LNGT 5050NLS-EE

LNGT 5055NLS-EE

Inserts 10 PCS / Box

- Steel ■ Stainless Steel □ Steel/Stainless Steel
- Steel/Stainless Steel/Cast Iron ■ Cast Iron □ Steel/Cast Iron
- Aluminum ■ Aluminum □ Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: LNGT 2020NLS-M, B100

- Steel ■ Stainless Steel □ Steel/Stainless Steel
- Steel/Stainless Steel/Cast Iron ■ Cast Iron □ Steel/Cast Iron
- Aluminum ■ Aluminum □ Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: LNGT 2020NLS-M, B100

- Steel ■ Stainless Steel □ Steel/Stainless Steel
- Steel/Stainless Steel/Cast Iron ■ Cast Iron □ Steel/Cast Iron
- Aluminum ■ Aluminum □ Steel/Cast Iron

• Correct price and stock are based on current situation

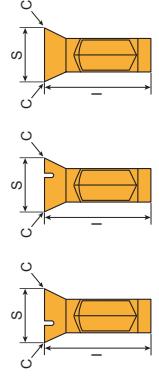
• Please specify model number and grade of insert, i.e.: LNGT 2020NLS-M, B100

LNGT Insert

LNGT Insert

Dimensions in mm			
SIZE	S	I	C
1.75	2.0 2.2 2.5	9 9 9	0.05
2.2	2.5 2.7 3.0	4.0 4.2 4.5	4.5
	3.2 3.5 3.7	4.2 4.5 4.7	5.0 5.2 5.5

Tolerances ±0.03 (mm)



Inserts	Part No .	Grades			
		Carbide	Metal cermet	Uncoated	CE
NLS	LNGT 2020NLS-ME	◎	◎	◎	CE
NLS	LNGT 2022NLS-ME	◎	◎	◎	CE
NLS	LNGT 2025NLS-ME	◎	◎	◎	CE
NLS	LNGT 2527NLS-ME	◎	◎	◎	CE
NLS	LNGT 2530NLS-ME	◎	◎	◎	CE
NLS	LNGT 3030NLS-ME	◎	◎	◎	CE
NLS	LNGT 3032NLS-ME	◎	◎	◎	CE
NLS	LNGT 3035NLS-ME	◎	◎	◎	CE
NLS	LNGT 4040NLS-ME	◎	◎	◎	CE
NLS	LNGT 4042NLS-ME	◎	◎	◎	CE
NLS	LNGT 4045NLS-ME	◎	◎	◎	CE
NLS	LNGT 5050NLS-ME	◎	◎	◎	CE
NLS	LNGT 5052NLS-ME	◎	◎	◎	CE
NRS	LNGT 2020NRS-ME	◎	◎	◎	CE
NRS	LNGT 2022NRS-ME	◎	◎	◎	CE
NRS	LNGT 2025NRS-ME	◎	◎	◎	CE
NRS	LNGT 2527NRS-ME	◎	◎	◎	CE
NRS	LNGT 2530NRS-ME	◎	◎	◎	CE
NRS	LNGT 3030NRS-ME	◎	◎	◎	CE
NRS	LNGT 3032NRS-ME	◎	◎	◎	CE
NRS	LNGT 3035NRS-ME	◎	◎	◎	CE
NRS	LNGT 4040NRS-ME	◎	◎	◎	CE
NRS	LNGT 4042NRS-ME	◎	◎	◎	CE
NRS	LNGT 4045NRS-ME	◎	◎	◎	CE
NRS	LNGT 5050NRS-ME	◎	◎	◎	CE
NRS	LNGT 5052NRS-ME	◎	◎	◎	CE

Inserts 10 PCS / Box

- Steel [Yellow] Stainless Steel [Blue] Steel/Stainless Steel [Red] Cast Iron [Green] Aluminum [Orange] Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron [Red]
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: LNGT 2020NLS-ME, B100

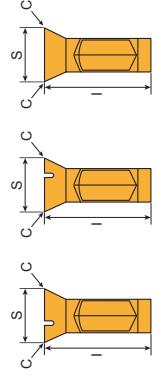
- Steel [Yellow] Stainless Steel [Blue] Steel/Stainless Steel [Red] Cast Iron [Green] Aluminum [Orange] Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron [Red]
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: LNGT 1616N2-EE, F20

Inserts 10 PCS / Box

LNGT Insert

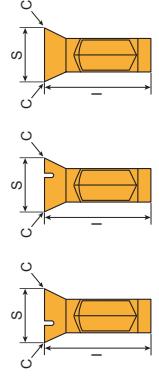
Dimensions in mm			
SIZE	S	I	C
1.4	1.6	1.8	1.8
1.6	1.75	2.0	2.0
1.75	2.0	2.2	2.5
2.0	2.2	2.5	2.5
2.2	2.5	2.7	2.7
2.5	2.7	3.0	3.0
2.7	3.0	3.2	3.2
3.0	3.2	3.5	3.5
3.2	3.5	3.7	3.7
3.5	3.7	4.0	4.0
3.7	4.0	4.2	4.2
4.0	4.2	4.5	4.5
4.2	4.5	4.7	4.7
4.5	4.7	5.0	5.0
5.0	5.2	5.5	5.5
5.2	5.5	5.7	5.7
5.5	5.7	6.0	6.0

Tolerances ±0.03 (mm)



Inserts	Part No .	Grades			
		Carbide	Metal cermet	Uncoated	CE
NRS	LNGT 1616N2-EE	◎	◎	◎	CE
NRS	LNGT 1818N2-EE	◎	◎	◎	CE
NRS	LNGT 2020N2-EE	◎	◎	◎	CE
NRS	LNGT 2022N2-EE	◎	◎	◎	CE
NRS	LNGT 2025N2-EE	◎	◎	◎	CE
NRS	LNGT 2252N2-EE	◎	◎	◎	CE
NRS	LNGT 2527N2-EE	◎	◎	◎	CE
NRS	LNGT 2827N2-EE	◎	◎	◎	CE
NRS	LNGT 2530N2-EE	◎	◎	◎	CE
NRS	LNGT 3030N2-EE	◎	◎	◎	CE
NRS	LNGT 3032N2-EE	◎	◎	◎	CE
NRS	LNGT 3035N2-EE	◎	◎	◎	CE
NRS	LNGT 3038N2-EE	◎	◎	◎	CE
NRS	LNGT 4040N2-EE	◎	◎	◎	CE
NRS	LNGT 4042N2-EE	◎	◎	◎	CE
NRS	LNGT 4045N2-EE	◎	◎	◎	CE
NRS	LNGT 5050N2-EE	◎	◎	◎	CE
NRS	LNGT 5052N2-EE	◎	◎	◎	CE

Inserts Sequencing Position (one left after than one right)

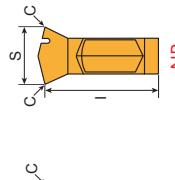


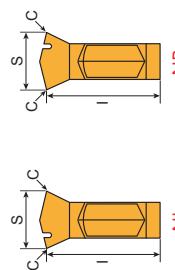
Inserts 10 PCS / Box

LNGT Insert

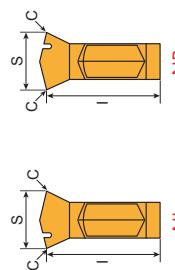
LNGT Insert

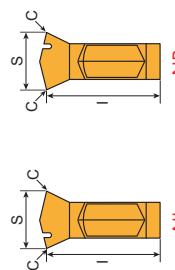
Dimensions in mm				
SIZE	S	I	C	
1.75	2.0 2.2 2.5			
2.2	2.5 2.7 3.0			
	2.7	3.2 3.5	9	0.05
	3.7	4.0 4.2 4.5		
	4.5	5.0 5.2 5.5		
Tolerances ±0.03 (mm)				

 NL

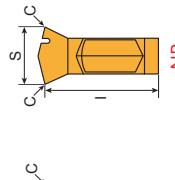
 NR

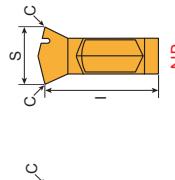
Dimensions in mm				
SIZE	S	I	C	
1.75	2.0 2.2 2.5			
2.2	2.5 2.7 3.0			
	2.7	3.2 3.5	9	0.05
	3.7	4.0 4.2 4.5		
	4.5	5.0 5.2 5.5		
Tolerances ±0.03 (mm)				

 NL

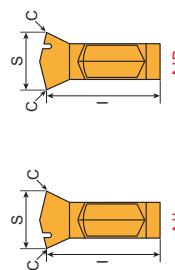
 NR

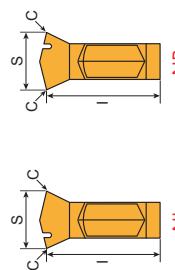
Dimensions in mm				
SIZE	S	I	C	
1.75	2.0 2.2 2.5			
2.2	2.5 2.7 3.0			
	2.7	3.2 3.5	9	0.05
	3.7	4.0 4.2 4.5		
	4.5	5.0 5.2 5.5		
Tolerances ±0.03 (mm)				

 NL

 NR

Dimensions in mm				
SIZE	S	I	C	
1.75	2.0 2.2 2.5			
2.2	2.5 2.7 3.0			
	2.7	3.2 3.5	9	0.05
	3.7	4.0 4.2 4.5		
	4.5	5.0 5.2 5.5		
Tolerances ±0.03 (mm)				

 NL

 NR

Dimensions in mm				
SIZE	S	I	C	
1.75	2.0 2.2 2.5			
2.2	2.5 2.7 3.0			
	2.7	3.2 3.5	9	0.05
	3.7	4.0 4.2 4.5		
	4.5	5.0 5.2 5.5		
Tolerances ±0.03 (mm)				

Dimensions in mm				
SIZE	S	I	C	
1.75	2.0 2.2 2.5			
2.2	2.5 2.7 3.0			
	2.7	3.2 3.5	9	0.05
	3.7	4.0 4.2 4.5		
	4.5	5.0 5.2 5.5		
Tolerances ±0.03 (mm)				

- Steel
- Stainless Steel
- Cast Iron
- Aluminum
- Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron

- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: LNGT 2020NL-M_B100

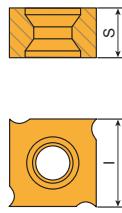
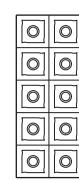
- Steel
- Stainless Steel
- Cast Iron
- Aluminum
- Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron

- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: LNGT 2020NL-M_B100

SNGX Insert

Dimensions in mm		
SIZE	S	I
1102	2.3	11.0
1103	2.7	
1203	3.2	
1204	4.0	
12045	4.5	12.7
1205	5.4	
1207	7.0	

Tolerances (mm) $I = \pm 0.025$, $S = \pm 0.025$

Inserts 10 PCS / Box

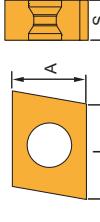
Part No.	Inserts	Grades			Data reference
		Carbide	Metal cermet	Uncoated	
CNGX 1005-E					
CNGX 1305-E					
CNGX 1605-E					
CNGX 1005-ME					
CNGX 1305-ME					
CNGX 1605-ME					
CNGX 1005-TM					
CNGX 1305-TM					
CNGX 1605-TM					

• Steel ■ Stainless Steel ◻ Steel/Stainless Steel ■ Cast Iron ■ Aluminum ■ Steel/Cast Iron
 • Correct price and stock are based on current situation
 • Please specify model number and grade of insert, i.e.: CNGX 1005-E, F20

CNGX Insert

SIZE	S	I	Dimensions in mm		
			1005	1305	1605
1102	2.3	11.0	10.0	12.7	16.0
1103	2.7				
1203	3.2				
1204	4.0				
12045	4.5	12.7			
1205	5.4				
1207	7.0				

Tolerances ± 0.03 (mm)



Part No.	Inserts	Grades			Data reference
		Carbide	Metal cermet	Uncoated	
CNGX 1005-E					
CNGX 1305-E					
CNGX 1605-E					
CNGX 1005-ME					
CNGX 1305-ME					
CNGX 1605-ME					
CNGX 1005-TM					
CNGX 1305-TM					
CNGX 1605-TM					

• Steel ■ Stainless Steel ◻ Steel/Stainless Steel ■ Cast Iron ■ Aluminum ■ Steel/Cast Iron
 • Correct price and stock are based on current situation
 • Please specify model number and grade of insert, i.e.: CNGX 1005-E, F20

Recommendation-LNGT Insert

LNGT Insert Grade Selection

Material group No.	Recom. feed fz mm/tooth	Insert			LNGT..EE
		LNGT ... M	LNGT ... N	LNGT ... ME	
1	0.04-0.12	B100	B100	-	-
2	0.04-0.10	B100	B100	-	-
3	0.04-0.10	B100	B100	-	-
4	0.04-0.10	B100	B100	-	-
5	0.04-0.08	B100	B100	-	-
6	0.04-0.07	B100	B100	-	-
7	0.03-0.06	-	B100	-	-
8	0.04-0.12	-	B100	-	-
9	0.04-0.10	-	B100	-	-
10	0.04-0.09	-	B100	-	-
11	0.04-0.12	F20	-	-	-
12	0.04-0.12	F20	-	-	-
13	0.04-0.12	F20	-	-	-
14	0.04-0.11	F20	-	-	-
15	0.04-0.10	F20	-	-	-
16	0.06-0.13	-	F20	-	-
17	0.06-0.12	-	F20	-	-
18	0.06-0.11	-	F20	-	-
19	0.06-0.09	-	B100	-	-
20	0.06-0.08	-	B100	-	-
21	0.04-0.06	-	B100	-	-
22	0.04-0.07	-	B100	-	-

• Steel ■ Stainless Steel ◻ Steel/Stainless Steel ■ Cast Iron ■ Aluminum ■ Steel/Cast Iron
 • Correct price and stock are based on current situation
 • Please specify model number and grade of insert, i.e.: SNGX 1102-E, F20

Recommendation-LNGT Insert

Recommendation-LNGT Insert

- LNGT Insert Recommended Cutting speed, V_c (m/min)

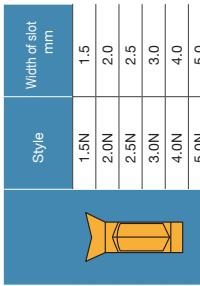
Material group No.	B100 0.02 0.04 0.06	grades				Feed , f_z (mm/tooth) 0.04 0.08 0.12	Cutting SPEED, V_c (m/min)	Data reference				
		B250	F20	CE60	CE			Material group No.	Feed f_z	Material group No.	Feed f_z	
1	179 161 140	-	-	-	-	-	-	-	-	-	-	
2	140 126 113	-	-	-	-	-	-	-	-	-	-	
3	126 113 102	-	-	-	-	-	-	-	-	-	-	
4	112 102 91	-	-	-	-	-	-	-	-	-	-	
5	101 91 81	-	-	-	-	-	-	-	-	-	-	
6	91 -	-	-	-	-	-	-	-	-	-	-	
7	-	-	-	-	-	-	-	-	-	-	-	
8	108 89 79	-	-	-	-	-	-	-	-	-	-	
9	92 76 66	-	-	-	-	-	-	-	-	-	-	
10	76 60 54	-	-	-	-	-	-	-	-	-	-	
11	54 45 -	-	-	-	-	-	-	-	-	-	-	
12	-	-	-	140 119 105	-	-	-	-	-	-	-	
13	-	-	-	126 105 96	-	-	-	-	-	-	-	
14	-	-	-	112 98 91	-	-	-	-	-	-	-	
15	-	-	-	88 81 -	-	-	-	-	-	-	-	
16	-	-	-	1150 950 850	-	-	-	-	-	-	-	
17	-	-	-	950 780 700	-	-	-	-	-	-	-	
18	-	-	-	950 780 700	-	-	-	-	-	-	-	
19	50 45 -	-	-	-	-	-	-	-	-	-	-	
20	50 45 -	-	-	-	-	-	-	-	-	-	-	
21	35 40 -	-	-	-	-	-	-	-	-	-	-	
22	50 45 -	-	-	-	-	-	-	-	-	-	-	

- Cutting Data-Side Milling

Data reference

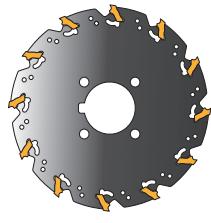
Operations	a_e/D_c	Recom. feed f_z mm/tooth	Speed factor	Style	Width of slot mm
Radial infeed	-	0.05 0.1	0.14 0.65	1.5N 2.0N 2.5N	1.5 2.0 2.5
Side milling	2% 5% 10% 20% 30%	0.21 0.14 0.20 0.07 0.06	0.41 0.30 0.21 0.18 0.12	1.20 3.0N 4.0N	4.0 5.0
Average chip thickness	0.03	0.06	0.09	-	-

- Type Of Insert



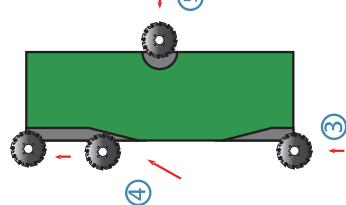
- 1 Plunging to mill F_z to 50%
- 2 Ramping to mill F_z to 100%
- 3 Mill F_z to 100%
- 4 Ramping F_z to 100%
- 5 Plunging to mill F_z to 50%

Feed f_z (mm/th)



Data reference

Material group No.	0.02 0.04 0.06	Cutting SPEED, V_c (m/min)					Material group No.	Feed f_z
		B100	C250	F20	CE60	CE		
1	179 161 140	-	-	-	-	-	-	-
2	140 126 113	-	-	-	-	-	-	-
3	126 113 102	-	-	-	-	-	-	-
4	112 102 91	-	-	-	-	-	-	-
5	101 91 81	-	-	-	-	-	-	-
6	91 -	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-
8	108 89 79	-	-	-	-	-	-	-
9	92 76 66	-	-	-	-	-	-	-
10	76 60 54	-	-	-	-	-	-	-
11	54 45 -	-	-	-	-	-	-	-
12	-	-	-	140 119 105	-	-	-	-
13	-	-	-	126 105 96	-	-	-	-
14	-	-	-	112 98 91	-	-	-	-
15	-	-	-	88 81 -	-	-	-	-
16	-	-	-	1150 950 850	-	-	-	-
17	-	-	-	950 780 700	-	-	-	-
18	-	-	-	950 780 700	-	-	-	-
19	50 45 -	-	-	-	-	-	-	-
20	50 45 -	-	-	-	-	-	-	-
21	35 40 -	-	-	-	-	-	-	-
22	50 45 -	-	-	-	-	-	-	-



Recommendation-SNGX Insert

Recommendation-SNGX Insert

SNGX Insert Grade Selection

Material group No.	Recom. feed f_z mm/tooth	Insert			Data reference
		SNGX...M	SNGX...ME	SNGX...EE	
1	0.14-0.30	C250/B100	B100	-	
2	0.14-0.25	C250/B100	B100	-	
3	0.14-0.22	C250/B100	B100	-	
4	0.14-0.22	C250/B100	B100	-	
5	0.14-0.20	C250/B100	B100	-	
6	0.10-0.15	C250/B100	B100	-	
7	0.10-0.13	C250/B100	B100	-	
8	0.14-0.25	-	B100	-	
9	0.14-0.22	-	B100	-	
10	0.14-0.20	-	B100	-	
11	0.10-0.15	-	B100	-	
12	0.14-0.30	-	F30	-	
13	0.14-0.22	-	F30	-	
14	0.14-0.20	-	F30	-	
15	0.10-0.15	-	F30	-	
16	0.16-0.30	-	F20	-	
17	0.16-0.25	-	F20	-	
18	0.16-0.20	-	F20	-	
19	0.14-0.20	-	B100	-	
20	0.14-0.18	-	B100	-	
21	0.10-0.13	-	B100	-	
22	0.14-0.20	-	B100	-	

• Recommended Cutting speed, V_c (m/min)

Material group No.	grades			Data reference		
	Feed f_z (mm/tooth)			Cutting SPEED, V_c (m/min)		
	0.1	0.2	0.3	0.1	0.2	0.3
1	186	166	150	166	146	130
2	168	150	135	148	130	115
3	151	136	122	131	116	102
4	136	122	110	116	102	90
5	120	110	99	100	90	79
6	92	78	-	72	58	-
7	-	-	-	-	-	-
8	112	95	87	-	-	-
9	98	84	76	-	-	-
10	84	70	64	-	-	-
11	64	56	-	-	-	-
12	-	-	-	-	-	-
13	-	-	-	-	-	-
14	-	-	-	-	-	-
15	-	-	-	-	-	-
16	-	-	-	1150	950	850
17	-	-	-	-	950	780
18	-	-	-	-	950	780
19	55	45	-	-	-	-
20	55	45	-	-	-	-
21	46	38	-	-	-	-
22	55	45	-	-	-	-

Data reference

• Recommended Cutting speed, V_c (m/min)

Operations	A_e / D_c	Recom. feed f_z mm/tooth	Data reference		
			Style	Width of slot mm	Speed Factor
Radial Infeed	-	0.05	0.10	0.14	0.65
	2%	0.21	0.44	0.65	1.20
	5%	0.14	0.28	0.41	1.10
Side Milling	10%	0.10	0.20	0.30	1.00
	20%	0.07	0.14	0.21	0.90
	30%	0.06	0.12	0.18	0.85
Average Chip Thickness hm	-	0.03	0.06	0.09	-



Recommendation-CNGX Insert

Recommendation-CNGX Insert

CNGX Insert Grade Selection

Data reference

Material group No.	Recom. feed fz/mm/tooth	Insert			CNGX...M	CNGX...ME	CNGX...E
		C250/B100	B100	-			
1	0.2-0.4	C250/B100	B100	-	-	-	-
2	0.2-0.4	C250/B100	B100	-	-	-	-
3	0.2-0.35	C250/B100	B100	-	-	-	-
4	0.2-0.35	C250/B100	B100	-	-	-	-
5	0.2-0.32	C250/B100	B100	-	-	-	-
6	0.2-0.32	C250/B100	B100	-	-	-	-
7	0.15-0.3	C250/B100	B100	-	-	-	-
8	0.2-0.4	-	B100	-	-	-	-
9	0.2-0.4	-	B100	-	-	-	-
10	0.2-0.33	-	B100	-	-	-	-
11	0.2-0.33	-	B100	-	-	-	-
12	0.22-0.4	-	F30	-	-	-	-
13	0.22-0.4	-	F30	-	-	-	-
14	0.2-0.35	-	F30	-	-	-	-
15	0.2-0.35	-	F30	-	-	-	-
16	0.22-0.42	-	-	F20	-	-	-
17	0.22-0.42	-	-	F20	-	-	-
18	0.22-0.42	-	-	F20	-	-	-
19	0.2-0.3	-	B100	-	-	-	-
20	0.2-0.3	-	B100	-	-	-	-
21	0.15-0.25	-	B100	-	-	-	-
22	0.2-0.25	-	B100	-	-	-	-

• Recommended Cutting speed, Vc(m/min)

Data reference

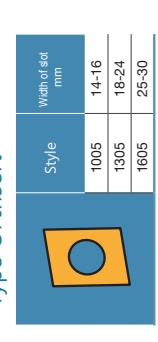
Material group No.	grades					
	B100	C250	F20	CE60	CE	K10
	0.15	0.20	0.40	0.15	0.20	0.40
Feed fz (mm/tooth)						
1	162	140	123	162	140	123
2	146	123	105	146	123	105
3	120	101	92	120	101	92
4	109	92	84	109	92	84
5	90	78	70	90	78	70
6	63	56	-	64	56	-
7	-	-	28	-	-	-
8	112	95	87	-	-	-
9	98	84	76	-	-	-
10	84	70	64	-	-	-
11	64	56	-	-	-	-
12	-	-	-	-	-	-
13	-	-	-	-	-	-
14	-	-	-	-	-	-
15	-	-	-	-	-	-
16	-	-	-	805	665	595
17	-	-	-	665	549	490
18	-	-	-	-	-	-
19	-	-	-	-	-	-
20	-	-	-	-	-	-
21	-	-	-	-	-	-
22	-	-	-	-	-	-

• Cutting Data-Side Milling

Data reference

Operations	Ae / Dc	Recom. feed fz mm/tooth	Speed Factor	
			Width of slot mm	Style
Radial Infeed	-	0.05	0.10	0.14
	2%	0.21	0.44	0.65
	5%	0.14	0.28	1.20
Side Milling	10%	0.10	0.20	1.10
	20%	0.07	0.14	1.00
	30%	0.06	0.12	0.90
Average Chip Thickness hm	-	0.03	0.06	0.85
		-	-	-

• Type Of Insert



CENTER SERIES

- CENTER/SPOT DRILL IN MILLING AND TURNING

Features Description

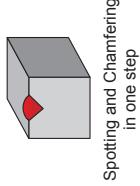
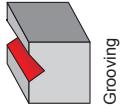
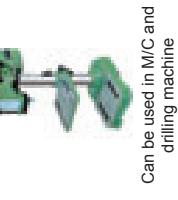
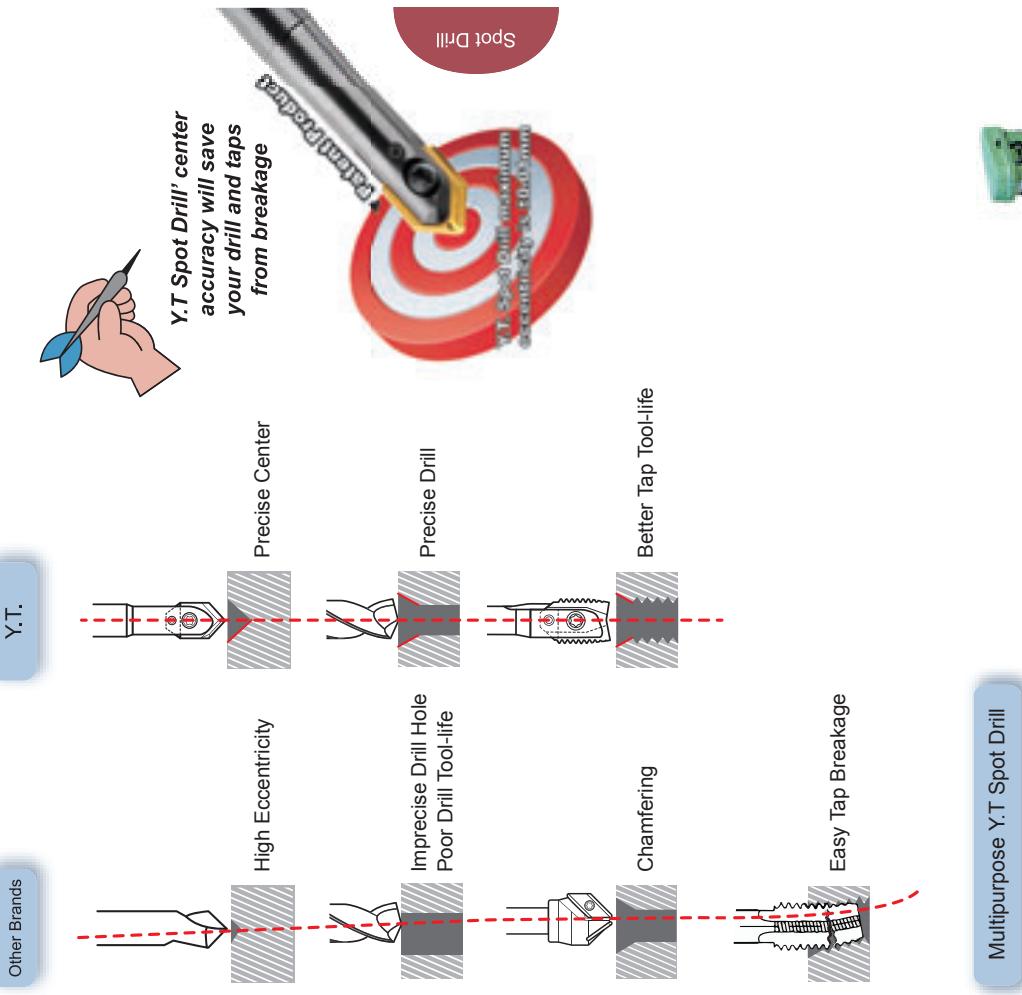
A very precise eccentricity $\pm 0.01\text{ mm}$ enhance the tool life of tap and drill - special carbide insert with unique geometry improve the strength of insert tip.

Center Drill: dia. 1.6-6 mm
Spot Drill: dia. 8-16 mm



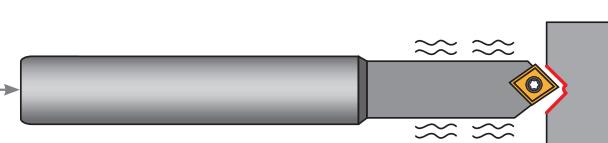
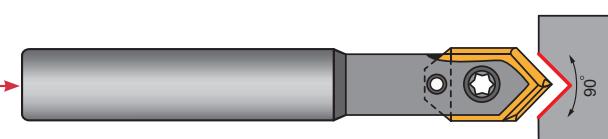
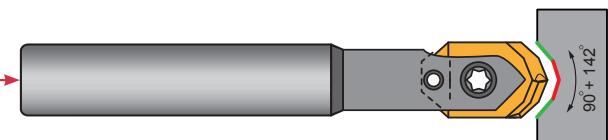
SPOT DRILL - 390 SYSTEM

Product Design



Product Introduction

PRODUCT SPECIFICATIONS



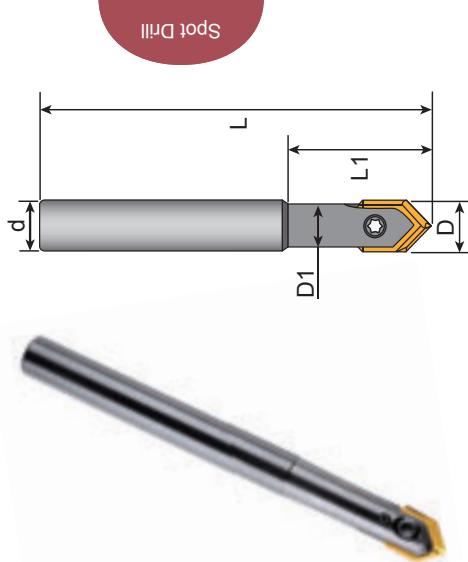
The maximum eccentricity
 $\pm 0.01 \text{ mm}$

The minimum
eccentricity is 0.3 mm

1. The centering is accurate and close to perfection, which help drill tool life.
2. 142° is perfect for carbide drill and HSS Drill.
3. Spot and chamfer in one step.
1. The chamfer used for centering is likely to break.
2. The non-centric is too big with this type of tool.
3. The speed of the chamfer tool with one flute is too slow.

Spot Drill Toolholders

- Insert P. 214
- Cutting Data P. 215 - 219



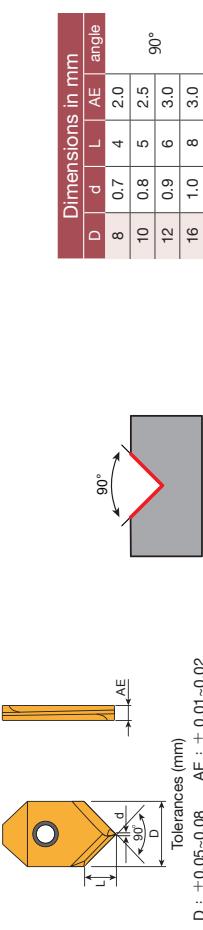
13

Order code	Dimensions(mm)						KG	Insert	Screw	Key
	D	D ₁	d	L	L ₁	L ₂				
13-0808-60	8	7.8	8	60	20	-	0.13	23-0802	C02506 S025025	T08P L013
13-0808-85				85			0.15			
13-1010-65	10	9.8	10	65	20	-	0.18	23-1002	C03008 S02503	T09P L013
13-1010-100				100						
13-1212-80	12	11.7	12	80	30	-	0.25	23-1203	C03010 S0304	T09P L015
13-1212-110				110			0.3			
13-1616-100	16	15.3	16	100	35	-	0.35	23-1603	C03512 S0405	T10P L02
13-1616-130				130			0.4			

23 Insert

Recommended Cutting Data And Insert Grade

- Spot Drill recommended cutting speed, V_c (m/min), Feed, f_z (mm/tooth).
- The effective no. of teeth is calculated with 1 flute.



A23 Insert

Dimensions in mm

D	d	L	AE	angle
8	0.7	4	2.0	90°
10	0.8	5	2.5	
12	0.9	6	3.0	
16	1.0	8	3.0	

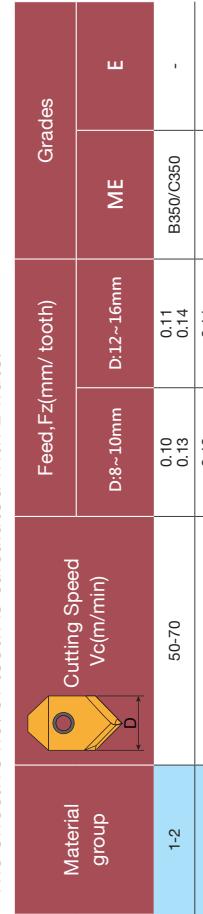
Tolerances (mm)

$D : \pm 0.05-0.08$ $AE : \pm 0.01-0.02$

Inserts Part No .

Inserts	Part No .	Grades	Carbide	Metal cermet	Uncoated	Cf	Kt ₀	Cf ₆₀	F30	F20	C350	C125
23-0802-90-E												
23-1002-90-E												
23-1203-90-E												
23-1603-90-E												
23-0802-90-ME												
23-1002-90-ME												
23-1203-90-ME												
23-1603-90-ME												

Inserts 10 PCS / Box



A23 Insert

Dimensions in mm

D	d	L	AE	angle
8	0.7	4	2.0	90°
10	0.8	5	2.5	
12	0.9	6	3.0	
16	1.0	8	3.0	

Material group

Cutting Speed V_c (m/min)

Feed, F_z (mm/tooth)

Grades

D: 1-2 D: 3-7 D: 8-11 D: 12-16mm

D: 12-16mm ME E

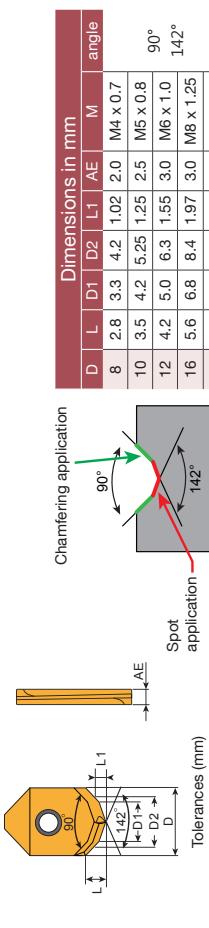
D : $\pm 0.05-0.08$ $AE : \pm 0.01-0.02$

Inserts Part No .

Inserts	Part No .	Grades	Carbide	Metal cermet	Uncoated	Cf	Kt ₀	Cf ₆₀	F30	F20	C350	C125
A23-0802-M4-ME												
A23-1002-M5-ME												
A23-1203-M6-ME												
A23-1603-M8-ME												
A23-1603-M10-ME												

Inserts 10 PCS / Box

A23 Insert



A23 Insert

Chamfering application

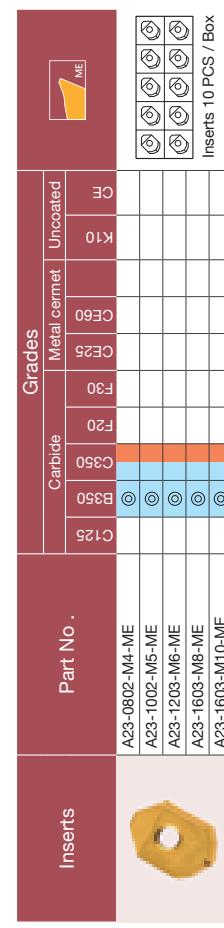
Dimensions in mm

D	L	D ₁	D ₂	L ₁	AE	M	angle
8	2.8	3.3	4.2	1.02	2.0	M4 x 0.7	90°
10	3.5	4.2	5.25	1.25	2.5	M5 x 0.8	90°
12	4.2	5.0	6.3	1.55	3.0	M6 x 1.0	142°
16	5.6	6.8	8.4	1.97	3.0	M8 x 1.25	
16	5.1	8.5	10.5	2.46	3.0	M10 x 1.5	

Tolerances (mm)

$D : \pm 0.05-0.08$ $AE : \pm 0.01-0.02$

Inserts 10 PCS / Box



A23 Insert

Grades

Insert dimension (D mm)

Screw A

Screw B/C

Key

Steel/Stainless Steel

Steel/Stainless Steel/Cast Iron

Steel/Stainless Steel/Aluminum

Steel/Cast Iron

Steel/M4-ME

Steel/M5-ME

Steel/M6-ME

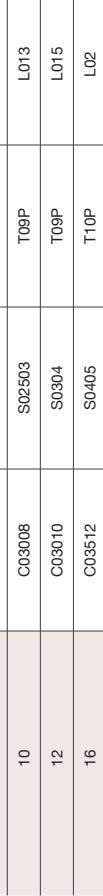
Steel/M8-ME

Steel/M10-ME

Inserts 10 PCS / Box

Inserts	Part No .	Grades	Carbide	Metal cermet	Uncoated	Cf	Kt ₀	Cf ₆₀	F30	F20	C350	C125
A23-0802-M4-ME												
A23-1002-M5-ME												
A23-1203-M6-ME												
A23-1603-M8-ME												
A23-1603-M10-ME												

- Steel
- Steel/Stainless Steel
- Steel/Stainless Steel/Cast Iron
- Steel/Stainless Steel/Aluminum
- Steel/Cast Iron
- Steel/M4-ME, B350
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, ie.: A23-0802-M4-ME, B350
- Please specify model number and grade of insert, ie.: A23-0802-M4-ME, B350



A23 Insert

Grades

Insert dimension (D mm)

Screw A

Screw B/C

Key

Steel/Stainless Steel

Steel/Stainless Steel/Cast Iron

Steel/Stainless Steel/Aluminum

Steel/Cast Iron

Steel/M4-ME

Steel/M5-ME

Steel/M6-ME

Steel/M8-ME

Steel/M10-ME

Inserts 10 PCS / Box

Inserts	Part No .	Grades	Carbide	Metal cermet	Uncoated	Cf	Kt ₀	Cf ₆₀	F30	F20	C350	C125
A23-0802-M4-ME												
A23-1002-M5-ME												
A23-1203-M6-ME												
A23-1603-M8-ME												
A23-1603-M10-ME												

How to Fit Insert - Screw A,B,C.

Screwing the Insert

Step 1: • Put the insert into the slot of shank and press it with the finger

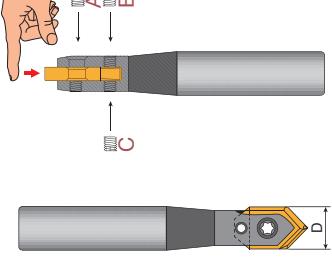
- Fully tighten the screw A first

Step 2: Half tighten the screw B on one side

Step 3: Half tighten the screw C on other side

Step 4: Fully tighten the screw B again (Important)

Step 5: Fully tighten the screw C again (Important)



Standard spare parts



Standard spare parts

Insert dimension (D mm)

Screw A

Screw B/C

Key

Steel

Steel/Stainless Steel

Steel/Stainless Steel/Cast Iron

Steel/Stainless Steel/Aluminum

Steel/Cast Iron

Steel/M4-ME

Steel/M5-ME

Steel/M6-ME

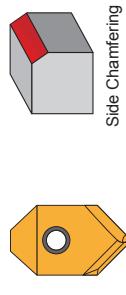
Steel/M8-ME

Steel/M10-ME

Inserts 10 PCS / Box

Key	Screw A	Screw B/C	Insert dimension (D mm)
8	C02506	S025025	10
10	C03008	S02503	12
12	C03010	S0304	16
16	C03512	S0405	16

Recommended Cutting Data

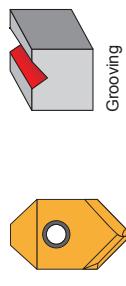


Side Chamfering

Chamfering Application

Material	Steel	Heat Treatment	Stainless	Inconel	Cast	Aluminium	
Using Insert	C350	B350		C350	F20		
Insert	Cut Depth	S	F	S	F	S	F
Ø8	1C	4800	720	2000	240	280	1600
Ø10	1C	3800	570	1600	190	220	1300
Ø10	2C	3800	450	1600	160	190	1300
Ø12	1C	3200	480	1300	150	1600	190
Ø12	2C	3200	380	1300	130	1600	160
Ø12	3C	3200	320	1300	100	1600	1050
Ø16	1C	2400	360	1000	120	1200	145
Ø16	2C	2400	290	1000	100	1200	800
Ø16	3C	2400	240	1000	80	1200	100
Ø16	4C	2000	160	800	65	1000	80

Recommended Cutting Data

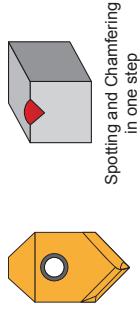


Grooving

V Groove Application

Material	Steel	Heat Treatment	Stainless	Inconel	Cast	Aluminium	
Using Insert	C350	C350	B350	C350	F20		
Insert	Cut Depth	S	F	S	F	S	F
Ø8	2mm	4800	380	1200	95	2400	140
Ø10	2mm	3800	300	950	75	1900	115
Ø10	3mm	3800	280	950	55	1900	750
Ø12	2mm	3200	260	800	65	1600	95
Ø12	3mm	3200	190	800	50	1600	65
Ø16	2mm	2400	190	600	50	1200	70
Ø16	3mm	2400	145	600	35	1200	50
Ø16	4mm	2400	100	600	25	1200	25

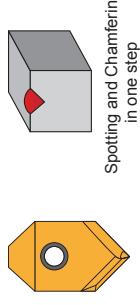
Recommended Cutting Data



Spot Application

		Spot Application																					
		Material					Steel					Heat Treatment			Stainless		Inconel		Cast		Aluminium		
Using Insert		C350					B350					C350			B350		C350		B350		C350		
Insert	Cut Depth	S	F	S	F	S	F	S	F	S	F	Insert	Cut Depth	S	F	S	F	S	F	S	F		
$\varnothing 8$	1mm	2000	300	800	95	1600	160	1000	100	2800	560	$\varnothing 12$	4mm	1300	130	550	45	1050	50	650	35	1850	280
	2mm	2000	250	800	80	1600	120	1000	75	2800	490		5mm	1050	105	400	45	800	40	530	30	1600	240
	3mm	2000	250	800	80	1600	120	1000	75	2800	490		6mm	1050	85	400	30	800	30	530	20	1600	200
	4mm	2000	200	800	65	1600	80	1000	50	2800	420		1mm	1000	150	400	45	800	80	500	50	1400	280
$\varnothing 10$	1mm	1600	240	650	80	1300	130	800	80	2200	440	$\varnothing 16$	2mm	1000	125	400	40	800	60	500	40	1400	245
	2mm	1600	200	650	65	1300	100	800	60	2200	38/5		3mm	1000	125	400	40	800	60	500	40	1400	245
	3mm	1600	200	650	65	1300	100	800	60	2200	385		4mm	1000	100	400	30	800	40	500	25	1400	210
	4mm	1600	160	650	50	1300	65	800	40	2200	330		5mm	800	80	300	25	600	30	400	20	1200	180
$\varnothing 12$	1mm	1300	200	550	65	1050	105	650	65	1850	370	$\varnothing 20$	6mm	800	65	300	20	600	25	400	16	1200	150
	2mm	1300	160	550	55	1050	80	650	50	1850	315		7mm	800	65	300	20	600	25	400	16	1200	150
	3mm	1300	160	550	55	1050	80	650	50	1850	315		8mm	800	50	300	15	600	18	400	12	1200	120
	4mm	1300	130	500	40	1000	50	650	30	1900	285		5mm	800	80	300	25	600	30	400	20	1200	180

Recommended Cutting Data



Spot Application

		Spot Application																					
		Material					Steel					Heat Treatment			Stainless		Inconel		Cast		Aluminium		
Using Insert		C350					B350					C350			B350		C350		B350		C350		
Insert	Cut Depth	S	F	S	F	S	F	S	F	S	F	Insert	Cut Depth	S	F	S	F	S	F	S	F		
$\varnothing 8$	1mm	2000	300	800	95	1600	160	1000	100	2800	560	$\varnothing 12$	4mm	1300	130	550	45	1050	50	650	35	1850	280
	2mm	2000	250	800	80	1600	120	1000	75	2800	490		5mm	1050	105	400	45	800	40	530	30	1600	240
	3mm	2000	250	800	80	1600	120	1000	75	2800	490		6mm	1050	85	400	30	800	30	530	20	1600	200
	4mm	2000	200	800	65	1600	80	1000	50	2800	420		1mm	1000	150	400	45	800	80	500	50	1400	280
$\varnothing 10$	1mm	1600	240	650	80	1300	130	800	80	2200	440	$\varnothing 16$	2mm	1000	125	400	40	800	60	500	40	1400	245
	2mm	1600	200	650	65	1300	100	800	60	2200	38/5		3mm	1000	125	400	40	800	60	500	40	1400	245
	3mm	1600	200	650	65	1300	100	800	60	2200	385		4mm	1000	100	400	30	800	40	500	25	1400	210
	4mm	1600	160	650	50	1300	65	800	40	2200	330		5mm	800	80	300	25	600	30	400	20	1200	180
$\varnothing 12$	1mm	1300	200	550	65	1050	105	650	65	1850	370	$\varnothing 20$	6mm	800	65	300	20	600	25	400	16	1200	150
	2mm	1300	160	550	55	1050	80	650	50	1850	315		7mm	800	65	300	20	600	25	400	16	1200	150
	3mm	1300	160	550	55	1050	80	650	50	1850	315		8mm	800	50	300	15	600	18	400	12	1200	120
	4mm	1300	130	500	40	1000	50	650	30	1900	285		5mm	800	80	300	25	600	30	400	20	1200	180

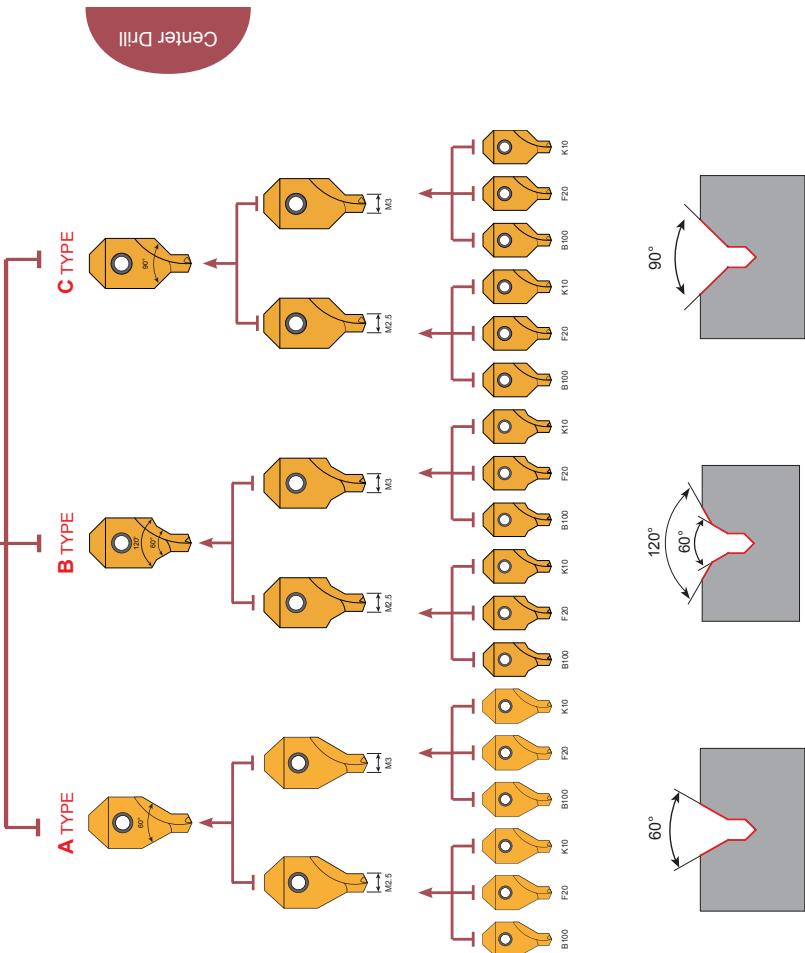
CENTER DRILL - 390 SYSTEM

Surface Finish Ra < 0.5 μm

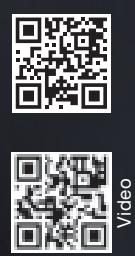
Product (Design)

One Shank
for 18
different
inserts

TU1
(Ø10)



Patent No.
M473882
M474588
M473881
PCT Priority No.
2013/0453057.2
2013/02072697.5
PCT/CN2013/086393



Features
Video

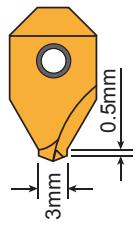
- Available in materials P, K, M, N, S, H
- Cost 300~500% DOWN
- Variety of Machines Milling / Turning
- Efficiency 300% UP
- Durability 300% UP

TECHNICAL GUIDE

Traditional and New



Dedicated Hole Center Drill for Hole Shaft

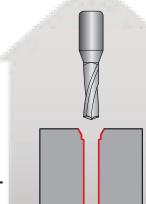


Efficiency 400~600% up

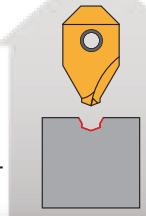


Durability 400~600% up

Step 3

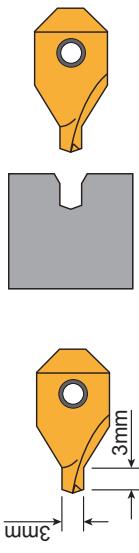


Step 2



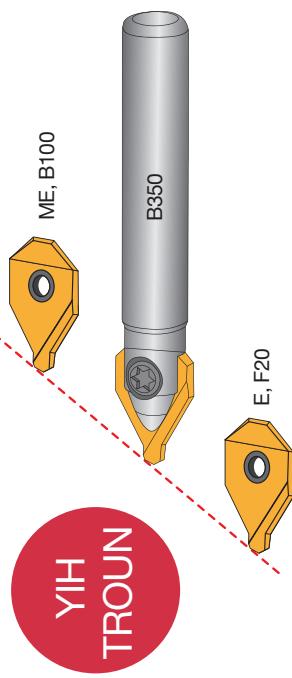
Step 1

Old Standard Center Drill



Indexable center drill

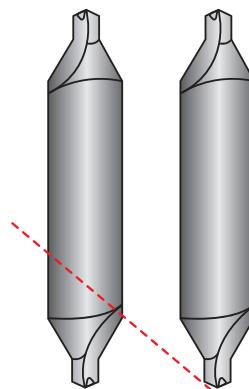
- Carbide insert with higher toollife
- Only change a new insert without resetting every time



YIH
TROUN

Solid center drill

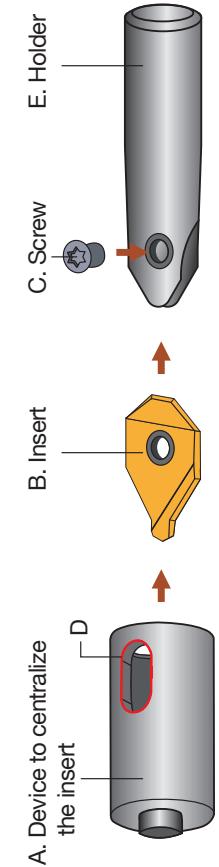
- Poor toollife with HSS center drill
- Need to re-set every time



HSS
SOLID

Device to centralize the insert: Methods to mount

Fitting inserts with device is necessary on the machine



Mounting Steps

- Step 1. Place the insert **B** into the holder **E**
- Step 2. Place the center drill (**B+E**) into the device **A**, press device **A** with the finger
- Step 3. Place the screw hole of the holder **E** parallel to the device slot **D**
- Step 4. Mount the screw **C**
- Step 5. Complete setup

Center Drill Toolholders (Milling And Turning)

- Insert P. 226 - 227
- Cutting Data P. 228



Order code	Dimensions(mm)				$\frac{\text{KG}}{\text{KG}}$	Insert	Screw	Key
	D	D1	d	L				
TU1-0808-60	8	8.2	8	60	20	0.11	080216 080220	T08P
TU1-1010-65	10	10.2	10	65	25	0.14	100220 100225	T09P
TU1-1212-65	12	12.2	12	65	30	0.23	120340 120350	C03010
TU1-1616-70	16	16.2	16	70	35	0.3	160360 160360	C03512 T10P

Center Drill Toolholders (Turning)

- Insert P. 226 - 227
- Cutting Data P. 228



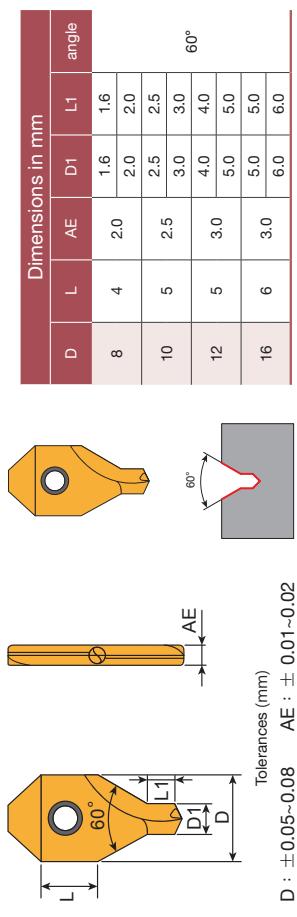
Order code	Dimensions(mm)				$\frac{\text{KG}}{\text{KG}}$	Insert	Screw	Key
	D	D1	d	L				
TU-0808-85	8	8.2	8	85	20	7.5	0.14	080216 080220
TU-1010-100	10	10.2	10	100	25	9.5	0.18	100225 100230
TU-1212-110	12	12.2	12	110	30	11.5	0.3	120340 120350
TU-1616-130	16	16.2	16	130	35	15.5	0.4	160360 160360

Device to centralize the insert



Order code	D	D1	L	h	$\frac{\text{KG}}{\text{KG}}$		Insert	Screw	Key
					8	10			
GA-0814	15	8.2	25						
GA-1016	16	10.2	30						
GA-1218	18	12.2	33						
GA-1622	22	16.2	38						

A 24 Insert

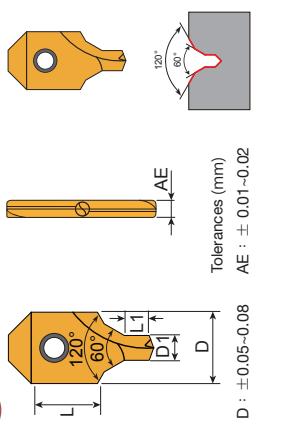


Inserts	Part No .	Grades					
		C125	B350	F20	F30	C350	Carbide
							CE60
							K10
							CE
							K10
							CE60
							F30
							C25
							CE25
							CE30
							C125

Inserts	Part No .	Grades					
		C125	B350	F20	F30	C350	Carbide
							CE60
							K10
							CE
							K10
							CE60
							F30
							C25
							CE25
							CE30
							C125

- Steel
- Stainless Steel
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: A24-080216-60-E, K10

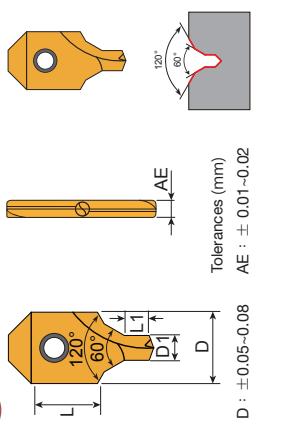
B 24 Insert



Inserts	Part No .	Grades					
		C125	B350	F20	F30	C350	Carbide
							CE60
							K10
							CE
							K10
							CE60
							F30
							C25
							CE25
							CE30
							C125

Inserts	Part No .	Grades					
		C125	B350	F20	F30	C350	Carbide
							CE60
							K10
							CE
							K10
							CE60
							F30
							C25
							CE25
							CE30
							C125

C 24 Insert



Inserts	Part No .	Grades					
		C125	B350	F20	F30	C350	Carbide
							CE60
							K10
							CE
							K10
							CE60
							F30
							C25
							CE25
							CE30
							C125

Inserts	Part No .	Grades					
		C125	B350	F20	F30	C350	Carbide
							CE60
							K10
							CE
							K10
							CE60
							F30
							C25
							CE25
							CE30
							C125

- Steel
- Stainless Steel
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: C24-080216-90-ME, B350

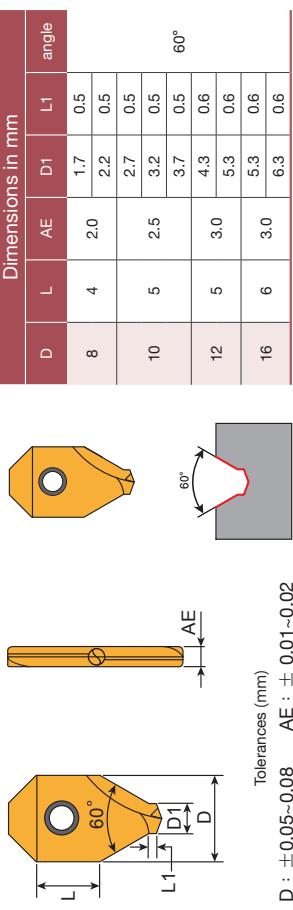
D 24 Insert

Recommended Cutting Data And Insert Grade

- Center Drill recommended cutting speed, V_c (m/min), Feed, f_z (mm/tooth).
The effective no. of teeth is calculated with 1 flute.

Material group	Cutting Speed V_c (m/min)	CNC lathe M/C V_c (m/min)	Feed, F_z (mm/tooth)		Grades	
			D1:1.5~2.5mm	D1:3~5mm	ME	E
1-2	15-20	50-120	0.03 0.06	0.05 0.10	B350	-
			0.03 0.06	0.05 0.10	B350	-
			0.03 0.06	0.05 0.10	B350	-
3	12-18	50-120	0.03 0.06	0.05 0.10	B350	-
			0.03 0.06	0.05 0.10	B350	-
			0.03 0.06	0.05 0.10	B350	-
4-5-6	10-15	5-10	0.03 0.06	0.05 0.08	B350	-
			0.03 0.06	0.05 0.09	B350	-
			0.03 0.06	0.05 0.08	B350	-
7	8-9	8-12	0.03 0.06	0.05 0.09	B350	-
			0.03 0.06	0.05 0.08	B350	-
			0.03 0.06	0.05 0.08	B350	-
10-11	5-10	5-10	0.03 0.06	0.05 0.08	B350	-
			0.03 0.06	0.05 0.08	B350	-
			0.03 0.06	0.05 0.08	B350	-
12-13	20-25	60-80	0.05 0.08	0.06 0.13	B350	-
			0.05 0.08	0.06 0.13	B350	-
			0.05 0.08	0.06 0.13	B350	-
14-15	15-20	60-80	0.05 0.08	0.06 0.13	B350	-
			0.05 0.08	0.06 0.13	B350	-
			0.05 0.08	0.06 0.13	B350	-
16-18	30-50	300-800	0.05 0.08	0.06 0.13	F20	-
			0.05 0.08	0.06 0.13	F20	-
			0.05 0.08	0.06 0.13	F20	-

Inserts	Part No .	Grades					
		C125	Carbide	Metal cermet	Uncoated	F	K10
D24-080217-60-ME							
D24-080222-60-ME							
D24-100227-60-ME							
D24-100232-60-ME							
D24-100237-60-ME							
D24-120343-60-ME							
D24-120353-60-ME							
D24-160353-60-ME							
D24-160363-60-ME							



Surface Finishing Test Result

Holder	TU-1010-100	Material	Stainless Steel
Insert	24-100225-60-ME, B100	Material	Steel/Stainless Steel
S	1600 min ⁻¹	Material	Steel/Cast Iron
f	0.05 mm/rev	Material	Aluminum
		Material	Steel/Cast Iron

- Steel Stainless Steel Cast Iron Aluminum Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: D24-080217-60-ME, B350

COUNTER BORE SERIES

Features Description

Patent design with carbide strip on the head to improve cutter tool life. Most economical with 4 cutting edge insert. 4 in 1 counterbore reduce machining process from 4 steps to 2 steps.

Counter Bore : Dia 8-36 mm

Counter Bore with chamfer: Dia.8-36 mm

4 In 1 Counter Bore: M3-M12



4 IN 1 COUNTER BORE

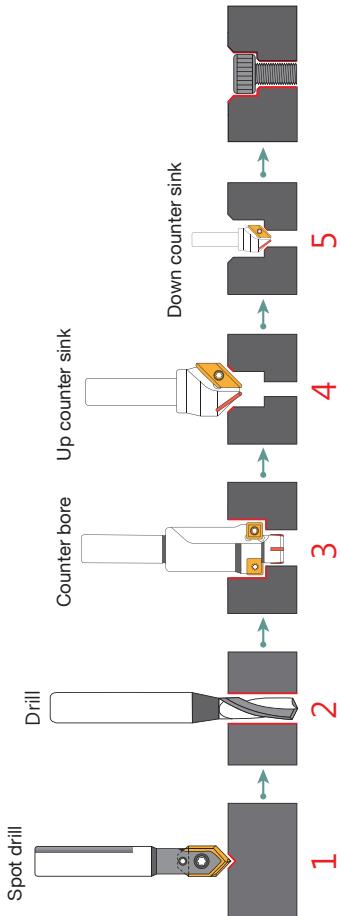


Features



- Available in materials **P K M S H**
- Cost DOWN** **300~500%**
- Variety of Machines** Milling / Drilling / Radial drilling
- Efficiency UP** **300%**
- Durability UP** **300%**

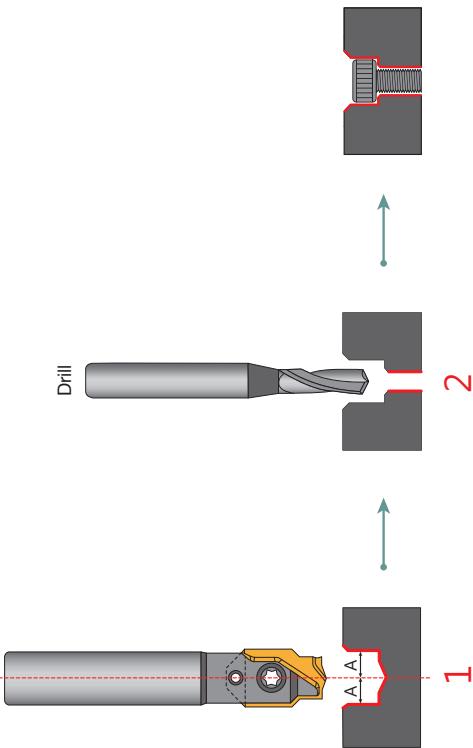
Standard Procedure: Need 5 Tools



New Procedure: Need Only 2 Tools



4 in 1 counter bore = 1+3+4+5



- Accurate spot drill, no vibration.
- Center of bore and counter bore is synchronized.
- Just need 3 seconds.

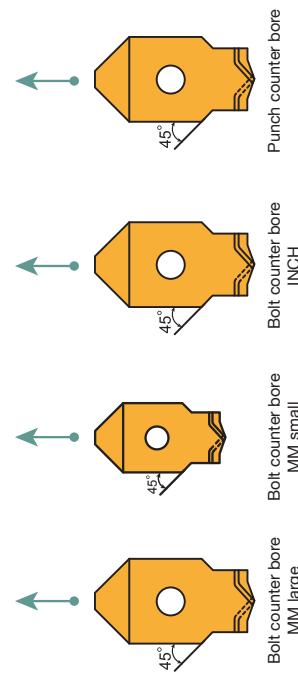
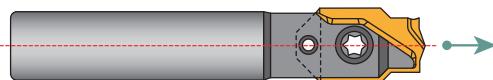
Counterbore

Product Design

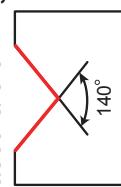
4 main functions

- Bolt counter bore
- 140° spot drill
- Standard punch
- 1 shank for different types of inserts

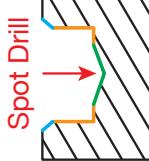
* Patent Pending



Can make 140° Spot
for accurate drilling



Up Chamfering
Bolt Counter Bore
Down Chamfering



4 In 1 Counter Bore Shank

- Insert P. 236 - 238
- Cutting Data P. 240

Dimensions (mm)

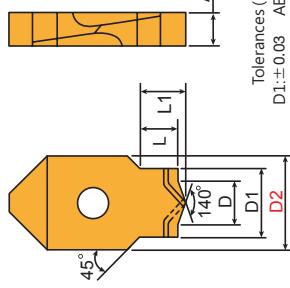
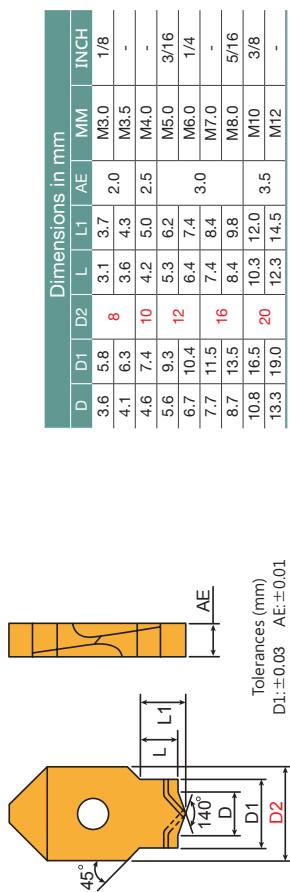
Order code	Screw Dimensions			L	L1	L2	Key
	MM	INCH	D				
14-0803-70	3.0	1/8	8	70	15	3.1	C12506 S025025
14-0803-90	3.5	-	7.4	90	20	3.6	T08P L013
14-1004-80	4.0	3/16	10	9.4	10	4.2	C03007 S02508
14-1004-100	-	-	-	100	21	4.2	T09P L013
14-1206-80	5.0	-	12	11.3	80	20	5.3
14-1206-110	6.0	1/4	-	12	110	25	6.4
14-1208-80	-	5/16	-	-	80	22	8.4
14-1608-100	7.0	8.0	-	16	100	25	7.4
14-1608-130	-	5/16	-	-	130	30	8.4
14-2010-100	10	3/8	20	19.0	100	20	0.26
14-2010-140	12	-	-	-	140	35	0.34

4 In 1 Counter Bore Insert

MM / INCH standard size dimensions- DIN373

4 In 1 Counter Bore Insert

MM large size dimensions- DIN373



Inserts	Order code	Grades						Corresponding shank
		C125	Carbide	B350	F20	C350	F30	
26-0803-E				◎		CE25		QE
26-0803-M			◎			CE60		K10
26-0835-E			◎			CE25		QE
26-0835-M			◎			CE60		K10
26-1004-E				◎		C125		QE
26-1004-M			◎			C125		QE
26-1205-E				◎		C125		QE
26-1205-M			◎			C125		QE
26-1206-E				◎		C125		QE
26-1206-M			◎			C125		QE
26-1607-E				◎		C125		QE
26-1607-M			◎			C125		QE
26-1608-E				◎		C125		QE
26-1608-M			◎			C125		QE
26-2010-E				◎		C125		QE
26-2010-M			◎			C125		QE
26-2012-E				◎		C125		QE
26-2012-M			◎			C125		QE

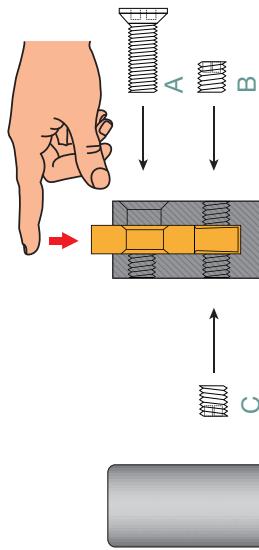
Inserts	Order code	Grades						Corresponding shank
		C125	Carbide	B350	F20	C350	F30	
26-0803-E				◎		CE25		QE
26-0803-M			◎			CE60		K10
26-1004-E				◎		CE25		QE
26-1004-M			◎			CE60		K10
26-1205-E				◎		CE25		QE
26-1205-M			◎			CE60		K10
26-1206-E				◎		CE25		QE
26-1206-M			◎			CE60		K10
26-1607-E				◎		CE25		QE
26-1607-M			◎			CE60		K10
26-1608-E				◎		CE25		QE
26-1608-M			◎			CE60		K10
26-2010-E				◎		CE25		QE
26-2010-M			◎			CE60		K10
26-2012-E				◎		CE25		QE
26-2012-M			◎			CE60		K10



- Steel | Stainless Steel | Steel/Stainless Steel | Steel/Cast Iron | Cast Iron | Aluminum | Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, ie.: 26-0803-E, F20

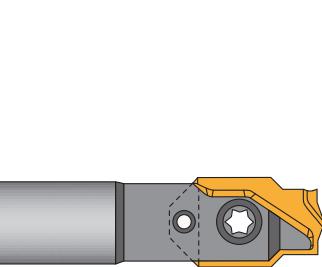
4 In 1 Punch Counter Bore Inserts

How to Fit Insert - Screw A.B.C.



Screwing the Insert

- Step 1: • Put the insert into the slot of shank and press it with the finger
• Fully tighten the screw A first
- Step 2: Half tighten the screw B on one side
- Step 3: Half tighten the screw C on other side
- Step 4: Fully tighten the screw B again
- Step 5: Fully tighten the screw C again

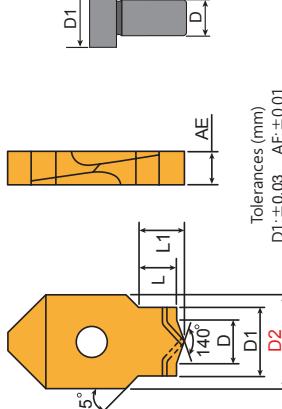


Standard spare parts

Insert dimension D2 (mm)	Screw A	Screw B/C	Key
8	C02506	S025025	T08P
10	C03007	S02503	L013
12	C03008	S0304	T09P
16	C03510	S0404	T10P
20	C04012	S0506	T15P

Dimensions in mm						
D	D1	D2	L	L1	AE	M
5.0	8	10	5	-	2.5	M5.0
5.5	8	10	6	-	2.5	M5.5
6.0	10	12	6	-	3.0	M6.0
6.5	10	12	7.0	-	3.0	M6.5
7.0	11	13	7.0	-	3.0	M7.0
7.5	11	13	8.0	-	3.0	M7.5
8.0	13	16	9.0	14	3.0	M8.0
8.5	13	16	10	15	3.0	M9.0
9.0	14	16	11	16	3.5	M10
9.5	14	16	12	17	3.5	M11
10.0	14	16	13	19	3.5	M12
10.5	14	16	14	19	3.5	M13
11.0	14	16	15	19	3.5	M14

Tolerances (mm)	Grades						
	Carbide	Metal cermet	Unloaded	Corresponding shank			
D1: ±0.03 AE: ±0.01	C125	C1350	C1460	C1460	C1460	C1460	C1460
27-1005-M					14-1004-80		
27-10055-M					14-1004-100		
27-1206-M						10	C03007
27-12065-M						12	C03008
27-1207-M						16	C03510
27-12075-M						20	C04012
27-1608-M							
27-1609-M							
27-1610-M							
27-2011-M							
27-2012-M							
27-2014-M							



Inserts	Order code	Carbide	Metal cermet	Unloaded	Corresponding shank	Grades	Key
27-1005-M							
27-10055-M							
27-1206-M							
27-12065-M							
27-1207-M							
27-12075-M							
27-1608-M							
27-1609-M							
27-1610-M							
27-2011-M							
27-2012-M							
27-2014-M							

- Steel ■ Stainless Steel ■ Steel/Stainless Steel ■ Cast Iron ■ Aluminum ■ Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 27-1005-M, C350

Recommended Cutting Data And Insert Grade

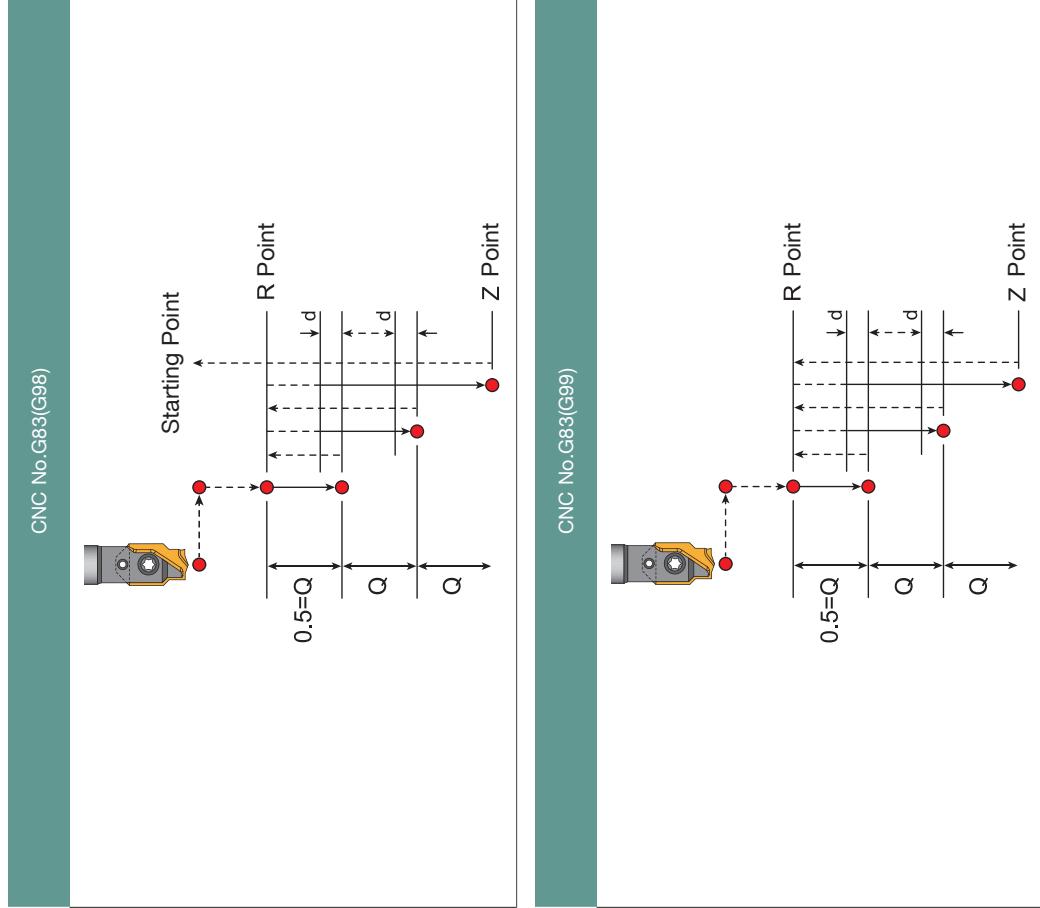
Recommended cutting speed, Vc(m/min), Feed, fz(mm/tooth).The effective no. of teeth is calculated with 1 flute.

Material group	Cutting Speed Vc(m/min)	Feed,Fz (mm/tooth)				Grades	
		140°		(D2) 8	(D2) 10	(D2) 12	
1-2	50-70	0.06 0.08	0.06 0.08	0.07 0.09	0.07 0.09	B350/C350	-
3	50-70	0.06 0.08	0.06 0.08	0.07 0.09	0.07 0.09	B350/C350	-
4-5-6	45-60	0.05 0.07	0.05 0.08	0.06 0.08	0.06 0.08	B350/C350	-
7	25-30	0.04 0.06	0.04 0.06	0.05 0.07	0.05 0.07	B350	-
8-9	35-45	0.06 0.08	0.06 0.08	0.07 0.09	0.07 0.09	B350	-
10-11	35-40	0.05 0.07	0.05 0.07	0.06 0.08	0.06 0.08	B350	-
12-13	70-90	0.12 0.15	0.12 0.15	0.13 0.16	0.13 0.16	F30	-
14-15	60-80	0.11 0.14	0.11 0.14	0.12 0.15	0.12 0.15	F30	-
16-18	100-150	0.10 0.13	0.10 0.13	0.11 0.14	0.11 0.14	-	F20

- While using for spot drill, RPM and FEED can be increased to 50%.

4 In 1 Counter Bore Program Description

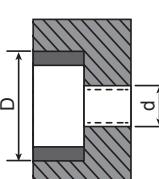
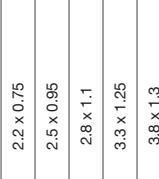
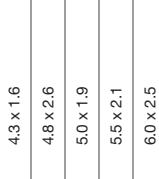
Peck drilling (CNC No.G83)



- The G83 cycle or peck drilling is for deep drilling or milling with chip breaking. The retracts in this cycle clear the hole of chips and cut off any long stringers (which are common when drilling in aluminum). This cycle takes a Q number which represents a "delta" increment along the Z-axis.
- Program: G83 X_ Y_ Z_ A_R_L_Q_. It is an error if: The Q negative or zero. Peck drilling is not necessary in cast iron machining.

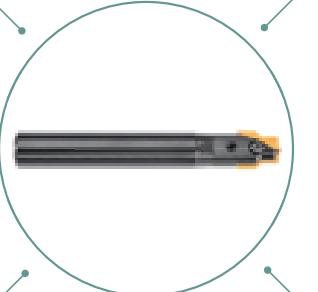
Bolt counter bore dimensions (DIN 373 - ISO 4205)

Machines And Tools Application
Suitable for various kinds of machines

Screw Dimensions	Standard (D x d)	Large (D x d)	Screw (D x d)
Dimension			
M1.0	2.1 x 1.1	2.2 x 1.2	2.2 x 0.75
M1.2	2.4 x 1.3	2.5 x 1.4	2.5 x 0.95
M14	2.7 x 1.5	2.8 x 1.6	2.8 x 1.1
M1.5-M1.6	3.2 x 1.7	3.3 x 1.8	3.3 x 1.25
M1.7	3.7 x 1.8	3.8 x 1.9	3.8 x 1.3
M2.0	4.2 x 2.2	4.3 x 2.4	4.3 x 1.6
M2.2	4.6 x 2.4	4.8 x 2.6	4.8 x 2.6
M2.3	5.0 x 2.7	5.2 x 2.9	5.0 x 1.9
M2.5-N2.6	5.4 x 2.8	5.5 x 3.0	5.5 x 2.1
M3.0	5.8 x 3.2	6.0 x 3.4	6.0 x 2.5
M3.5	6.3 x 3.7	6.5 x 3.9	6.5 x 2.9
M4.0	7.4 x 4.3	8.0 x 4.5	8.0 x 3.3
M5.0	9.3 x 5.3	10.0 x 5.5	10.0 x 4.2
M6.0	10.4 x 6.4	11.0 x 6.6	11.0 x 5.0
M8.0	13.5 x 8.4	15.0 x 9.0	15.0 x 6.8
M10	16.5 x 10.5	18.0 x 11	18.0 x 8.5
M12	19.0 x 13	20.0 x 14	20.0 x 10.2
M14	24.0 x 15	24.0 x 16	-
M16	26.0 x 17	26.0 x 18	-



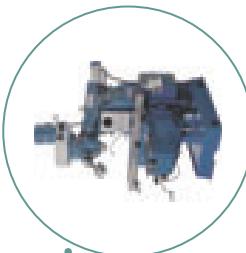
B. Milling machine



A. Drill machine



C. Radial drilling machine



D. Milling machine

Counterbore

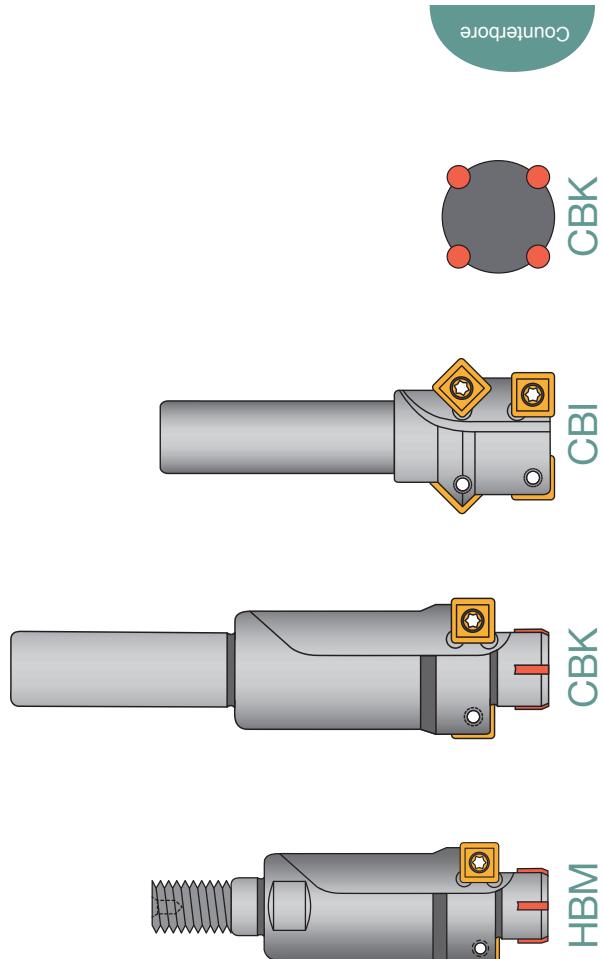
INDEXABLE COUNTER BORE

Product Design

CBK

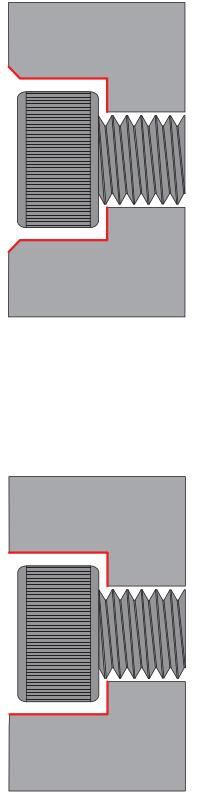
Counter bore tools application for bolts, nuts & screws

* Patent No. ZL 012 23413.3



better cutter toollife
with patented carbide strip

Screw M8~M36



counterbore + chamfer

counterbore

Features

- Available in materials P K M S H
- Cost 300~500% DOWN
- Combination type is available max. 300mm
- Variety of Machines Milling / Drilling / Radial drilling
- Efficiency 300% UP
- Durability 300% UP



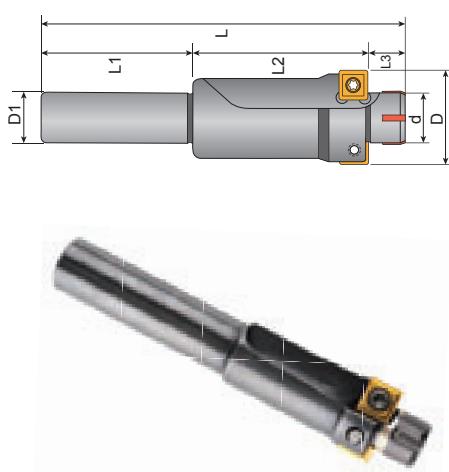
PRODUCT SPECIFICATIONS

Counterbore Combi Cutters

- Insert P. 249
- Cutting Data P. 249

Counterbore Toolholders

- Insert P. 249
- Cutting Data P. 249



CBK

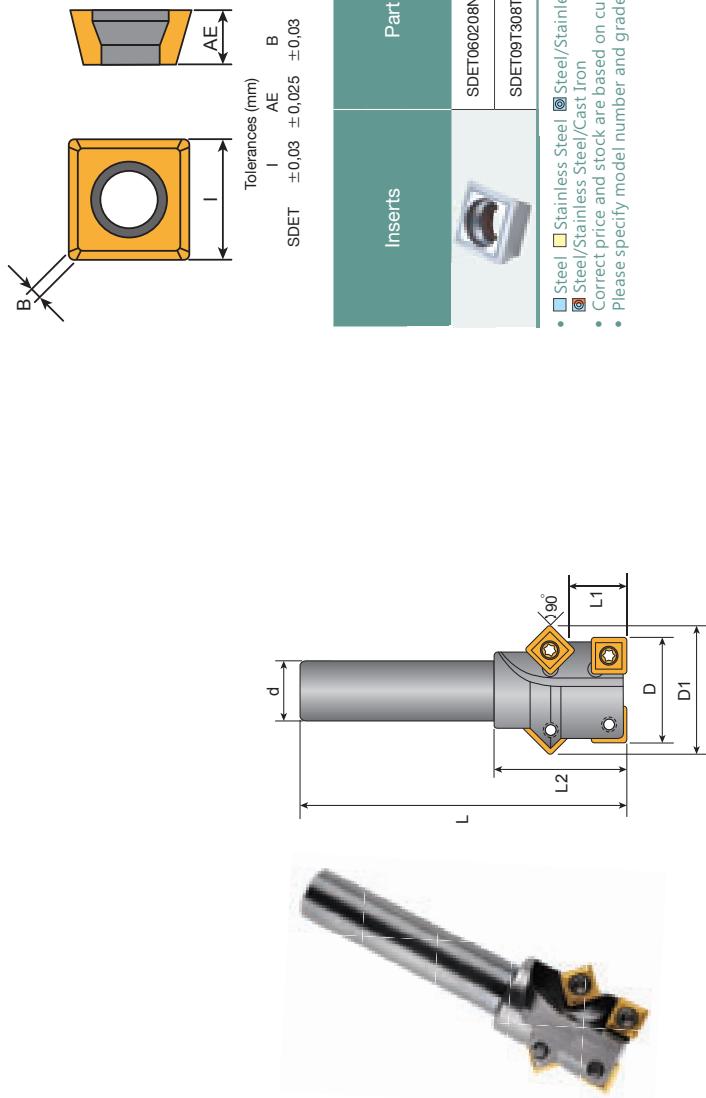
Order code	Dimensions(mm)						MAX RPM ○ /KG	Insert	Screw	Key	
	D	d	D1	L	L1	L2					
CBK-08	14	8.4					0.2	25000	SDET 060208	C025045	
CBK-08S	15	8.9	10	70	30	32				T08P	
CBK-10	18	10.9									
CBK-10S	20	13.4									
CBK-12	22	13.4									
CBK-12S	24	14.9	80	35	37	8	2	0.3	22000	C04007	
CBK-14	25	15.4									
CBK-14S	26	17.4									
CBK-16	27	17.4									
CBK-16S								0.35	17000	SDET 09T	T15P
										C04008	

Order code	Dimensions(mm)						MAX RPM ○ /KG	Insert	Screw	Key	
	D	d	L	L1	L2	M					
HBM-16	26	17.4	48			40	2	0.5	17000		C04008
HBM-18	29	19.4	53	8		45					
HBM-20	33	21.9	56			48					
HBM-22	36	23.4	60			50					
HBM-24	40	25.9				53	16	3	0.7	15000	
HBM-30	50	32.9	62	10		52			0.9	12000	
HBM-36	58	38.8							1.0	10000	

Counterbore + Chamfer Toolholders

- Insert P. 249
- Cutter Data P. 249

SDET / SEHT Inserts



CBI

DIN 974-1

Order code	Dimensions(mm)					Zc [m^3/min]	MAX RPM	Insert	Screw	Key	Cutting Speed Vc(m/min)			Data Reference
	D	d	D1	L	L1						M8 - M12	M14 - M36	M	ME
CBl-08	15	10	20.0	65	9	0.2	25000	SDET 060208	T08P		0.06	0.10	B100	B100
CBl-10	18	12.0	22.0	11	11	0.3	22000		C02506		0.10	0.15	C250	B100
CBl-12	20	14.0	23.8	13	13						0.06	0.08	B100	B100
CBl-14	24	12	31.4	70	15	0.35	17000		C04007		0.10	0.12	C250	B100
CBl-16	26	16.5	33.4	16.5	33	2	0.4	16000	C04008		0.06	0.08	B100	B100
CBl-18	29	16	35.4	80	19.5				T15P		0.10	0.10	C250	B100
CBl-20	33	16	37.4	21	21						0.06	0.06	B100	B100
CBl-22	36	20	40.4	90	23.5	0.5	15000	SDET09T			0.08	0.08	C250	B100
CBl-24	40	20	44.4	25	43				C04011		0.12	0.10	F30	F30
CBl-30	50	25	53.4	100	34	0.6	14000				0.08	0.10	F30	F30
CBl-36	58	38	61.4	110	38	0.6					0.10	0.15		

Recommended Cutting Data and Insert Selection

Inserts	Part No .	Grades			Metal cermet	Uncoated	Data Reference
		Carbide	CE250	CE60			
SDET060208N-ME	SDET060208N-ME	◎				K _{0.0}	
SDET09T308TN-M	SDET09T308TN-M	◎				K _{0.0}	

• Legend: Steel (light blue), Stainless Steel (yellow), Steel/Stainless Steel (grey), Cast Iron (green), Aluminum (orange), Steel/Cast Iron (red).

 • Correct price and stock are based on current situation.

 • Please specify model number and grade of insert, i.e.: SDET060208N-ME, B100

CHAMFER KING SERIES

Features Description

The indexable countersink with carbide insert can be used in all kinds of machines, include drilling machine, electric hand tool...etc. The patented unique design "carbide strip" enhance the cutter toollife. Available from dia.4-110mm.



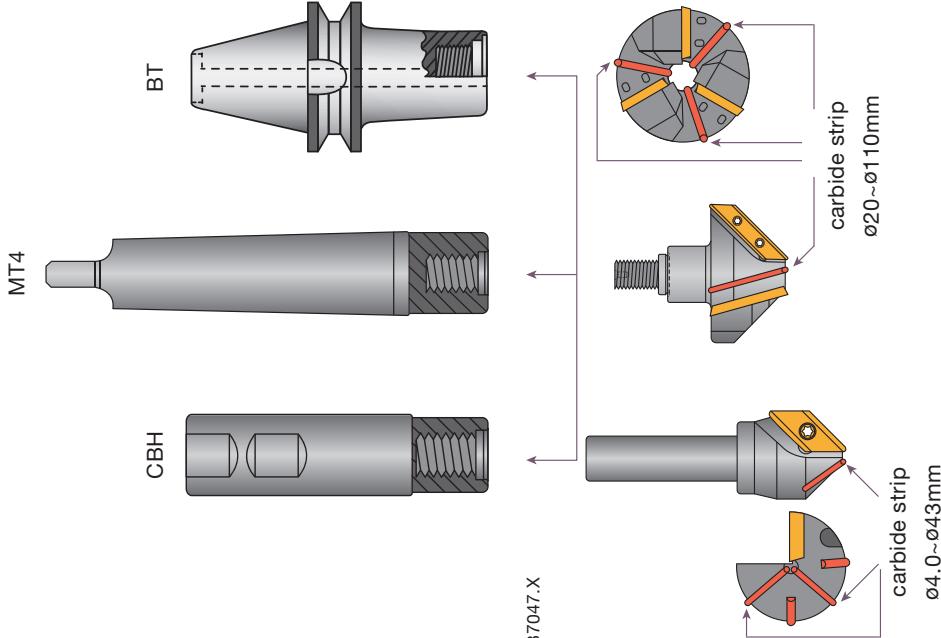
Video

INDEXABLE CHAMFER KING

Product Design

CUTTING.
RANGE
 $\varnothing 4.0 \sim \varnothing 110$ mm

Patent No. M4442206
Patent No. ZL 2012 2 0187047.X
PCT Priority No.
PCT/CN2012/001022



Chamfer



Carbide Strip Cutter With Carbide Insert:

- Special design for unstable drilling machine and electric hand tool. Lower RPM is required.
- Carbide strip supports better tool life.
- Carbide insert has a better tool life. It's economic with 2 cutting edges, one insert grade for all materials.
- Patented carbide strip cutter design has an excellent chamfering surface.



Features

- Available in materials P K M N S H
- Cost DOWN 300~500%
- Combination type is available max. 300mm
- Variety of Machines Milling / drilling / lathe / electric hand tool
- Durability UP 500~1000%

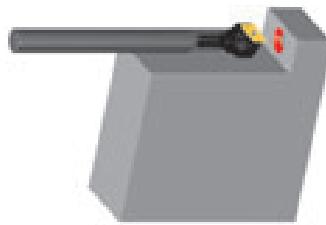
Geometries Application

Applicable Machine And Tools



Standard chamfer with 90°

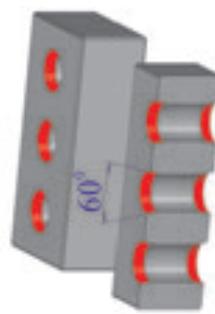
- Excellent Design
- No burrs.



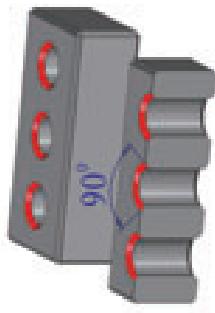
Chamfer cutter with longer shank



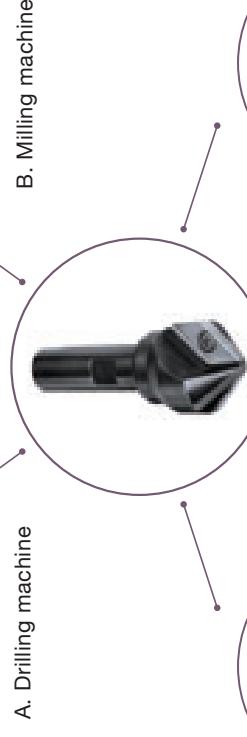
PIN



Chamfer with 60° used for deburring before "pin". 60° chamfer is easier than 90° or 120° to locate the pin.

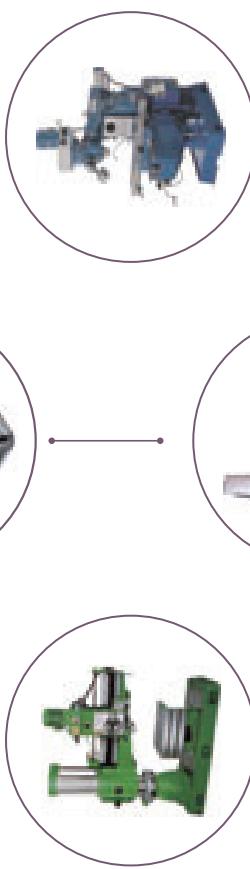


Chamfer with 120° used for tap holes, which reduce the loss of threads.

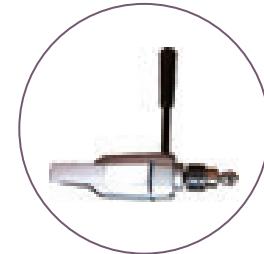


A. Drilling machine

B. Milling machine



C. Radial drilling machine



D. Electric Hand Tool



E. Conventional milling machine

Chamfer

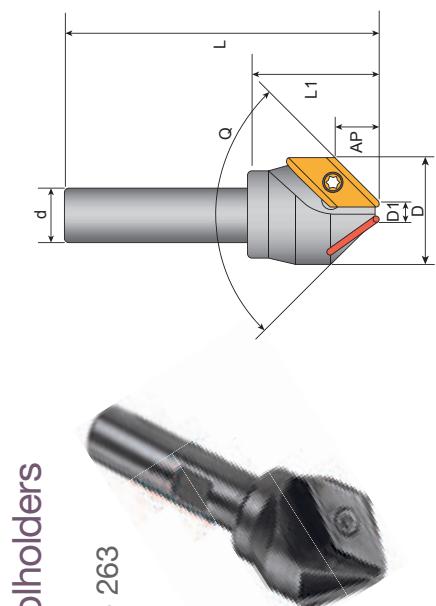
PRODUCT SPECIFICATIONS

Chamfer King Toolholders

- Combi holders P. 259 - 260
- Insert P. 261
- Cutting Data P. 262 - 263

Chamfer King Toolholders

- Insert P. 261
- Cutting Data P. 262 - 263



C1

• 60°

Order code	Dimensions(mm)					Q		MAX RPM	Insert	Screw	Key
	D1	D	d	L	AP						
Cl-12-90°	4	10	60	3	14	0.1		45000	ADGT060204	C01804	T06P
Cl-12-90° L	5.5	22	65	8	27	0.15		35000	ADGT120308	C03506	T10P
Cl-22-90°	15	36	12	78	10	0.2		25000	XDGT190408	C04011	T15P
Cl-36-90°	15	36	12	78	10	0.3		25000	XDGT190408	C04011	T15P

• 60°

Order code	Dimensions(mm)					Q		MAX RPM	Insert	Screw	Key
	D1	D	d	L	AP						
HCI-17-60°	7	17	10	65	8.5	27		7	17	12	37
HCI-31-60°	15.5	31	12	78	13	35		15.5	31	16	45

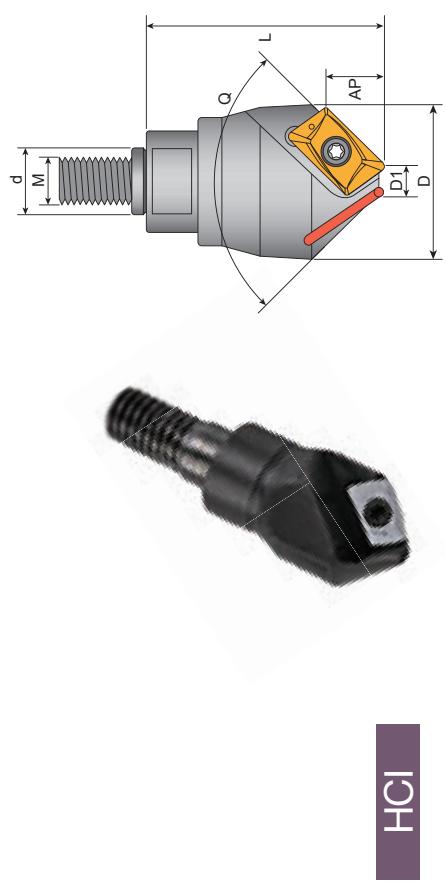
• 90°

Order code	Dimensions(mm)					Q		MAX RPM	Insert	Screw	Key
	D1	D	d	L	AP						
HCI-12-90°	4	10	24	3		4		45000	ADGT060204	C01803	T06P
HCI-22-90°	5.5	22	12	37	8	5.5		35000	ADGT120308	C03506	T10P

• 90°

Order code	Dimensions(mm)					Q		MAX RPM	Insert	Screw	Key
	D1	D	d	L	AP						
HCI-17-60°	7	17	12	37	5	7		35000	XDGT120308	C03506	T10P
HCI-31-60°	15.5	31	16	45	8	15.5		25000	XDGT190408	C04011	T15P

• 90°



HCI

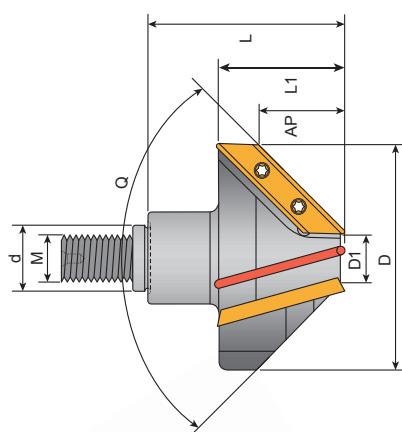
Order code	Dimensions(mm)					Q		MAX RPM	Insert	Screw	Key
	D1	D	d	L	AP						
HCI-17-60°	7	17	12	37	5	7		35000	XDGT120308	C03506	T10P
HCI-31-60°	15.5	31	16	45	8	15.5		25000	XDGT190408	C04011	T15P

• 120°

Order code	Dimensions(mm)					Q		MAX RPM	Insert	Screw	Key
	D1	D	d	L	AP						
HCI-26-120°	7	26	12	37	5	7		35000	XDGT120308	C03506	T10P
HCI-39-120°	11	39	16	45	8	11		25000	XDGT190408	C04011	T15P

Chamfer King Toolholders

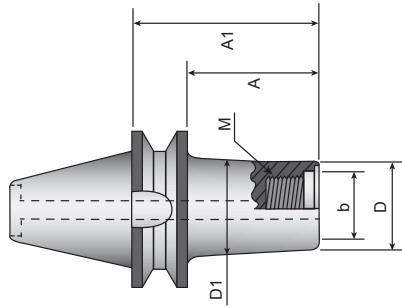
- Combi holders P. 259 - 260
- Insert P. 261
- Cutting Data P. 262 - 263



• 90°

Order code	Dimensions(mm)						Insert	Screw	Key	
	D1	D	d	L	AP	L1	M	Q	MAX RPM	/KG
HCl-76-90°	20	76	30	65	28	41	16	90°	1.5	13700
HCl-110-90°	55	110	55	110	2.5	10900	XDGIT400408	C04011	T15P	

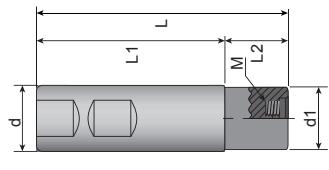
BT Arbor (Screw Type)



Order code	Dimensions(mm)				A1	b	D1	M
	D	A	A1	b				
BT40-2380A	23	53	78	14	28			M12
BT40-23120A		93	118	31				
BT40-3080A	30	93	78	22	35			M16
BT40-30120A		93	118	38				
BT40-4080A	40	53	78	28	45			M18
BT40-40120A		93	118	48				
BT50-2380A	23	42	77	14	28			M12
BT50-23120A		82	117	31				
BT50-3080A	30	42	77	22	35			M16
BT50-30120A		82	117	38				
BT50-4080A	40	42	77	28	45			M18
BT50-40120A		82	117	48				
BT50-5080A	50	42	77		55			
BT50-50120A		82	117	36	58			M25
BT50-50160A	122	157		61				

Chamfer King Combi Toolholders

Chamfer King Inserts

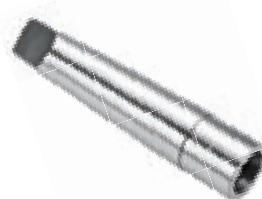
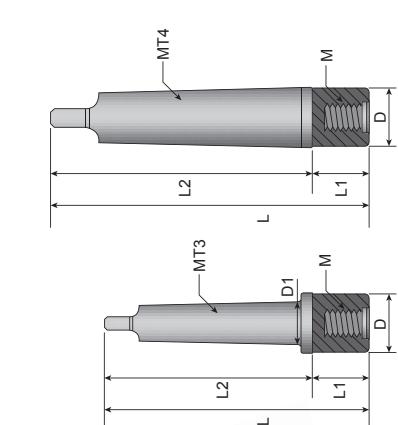


CBH

Order code	Dimensions(mm)					
	d	d1	L1	L2	M	M
CBH-1009-100	10	9	60		80	
CBH-1211-120	12	11	80	20	100	M6
CBH-1211-140			100		120	
CBH-1616-100		16	-		70	
CBH-1615-120	16	15	70	20	90	M8
CBH-1615-150		95	25		120	
CBH-3232-120		32	-		80	
CBH-3230-140			80	20	100	M16
CBH-3230-200	32	30	130	30	160	
CBH-3230-240			170		200	
CBH-3230-300			210	50	260	

Inserts	Part No .	Grades					
		Coated	Cermet	Uncoated	B100	C200	C250
XDG120308TR-ME-C	★				K10	CE60	CE25
XDG190408TR-ME	★						
XDG400408TR-ME	★						

* All Materials



MTH

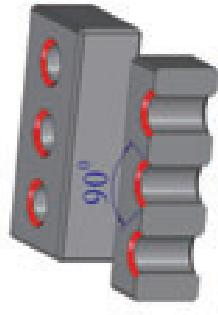
Order code	Dimensions(mm)					
	D	D1	L	L1	L2	M
MTH-3	30	23.83	140	40	100	M16
MTH-4	31.6	-	165		125	M16

Inserts	Part No .	Grades					
		Coated	Cermet	Uncoated	B100	C200	C250
ADGT060204TR-ME-C	★				K10	CE60	CE25
ADGT060204TR-ME	★						

* All Materials

TECHNICAL GUIDE

Technical Guide



- Cutting data table for chamfering in hole

Material group										Material group
Dia. of Hole (ϕ/mm)	Steel			Cast iron			Aluminum			Material group
	Harden steel	Stainless steel	Steel	Harden steel	Stainless steel	Cast iron	Aluminum			
123.456	7	89.10.11	12.13.14.15	16.17.18	19.20.21.22	19.20.21.22	Vc:15mm/min Fz:0.1mm/tooth	Vc:50mm/min Fz:0.15mm/tooth	Vc:15mm/min Fz:0.1mm/tooth	16.17.18
RPM rev/min	Feed mm/min 1 Tooth	Feed mm/min 3 Teeth	RPM rev/min	Feed mm/min 1 Tooth	Feed mm/min 3 Teeth	RPM rev/min	Feed mm/min 1 Tooth	Feed mm/min 3 Teeth	RPM rev/min	
5~7	106	-	796	96	-	2654	386	-	796	80
8~10	708	71	-	531	64	-	1769	265	-	531
11~13	531	53	-	398	48	-	1327	199	-	398
14~16	425	42	-	318	38	-	1062	159	-	318
17~19	354	35	-	265	32	-	885	133	-	265
20~22	303	30	91	227	27	82	758	114	341	227
23~25	265	27	80	199	24	72	663	100	299	199
26~28	236	24	71	177	21	64	590	88	265	177
29~31	212	21	64	159	19	57	531	80	239	159
32~34	193	19	58	145	17	52	483	72	217	145
35~37	177	18	53	133	16	48	442	66	199	133
38~40	163	16	49	122	15	44	408	61	184	122
41~43	152	-	45	114	-	41	379	-	171	114
44~46	142	-	42	106	-	38	354	-	159	106
47~49	133	-	40	100	-	36	332	-	149	100
50~52	125	-	37	94	-	34	312	-	141	94
53~55	118	-	35	88	-	32	295	-	133	88
56~58	112	-	34	84	-	30	279	-	126	84
	110	58	-	17	43	-	17	43	-	145
										65
										43
										-

Chamfer

Dia. of Hole (ϕ/mm)	Steel			Cast iron			Aluminum			Material group
	Vc:20 mm/min Fz:0.1 mm/tooth	Vc:20 mm/min Fz:0.1 mm/tooth	Vc:20 mm/min Fz:0.1 mm/tooth	Vc:15 mm/min Fz:0.12 mm/tooth	Vc:15 mm/min Fz:0.15 mm/tooth	Vc:50 mm/min Fz:0.15 mm/tooth	Vc:50 mm/min Fz:0.15 mm/tooth	Vc:50 mm/min Fz:0.15 mm/tooth	Vc:20 mm/min Fz:0.1 mm/tooth	19.20.21.22
59~61	106	-	-	32	80	-	29	265	-	119
62~64	101	-	-	30	76	-	27	253	-	114
65~67	97	-	-	29	72	-	26	241	-	109
68~70	92	-	-	28	69	-	25	231	-	104
71~73	88	-	-	27	66	-	24	221	-	100
74~76	85	-	-	25	64	-	23	212	-	96
77~79	82	-	-	24	61	-	204	-	-	92
80~82	79	-	-	24	59	-	197	-	-	59
83~85	76	-	-	23	57	-	190	-	-	85
86~88	73	-	-	22	55	-	183	-	-	82
89~91	71	-	-	21	53	-	177	-	-	80
92~94	68	-	-	21	51	-	171	-	-	77
95~97	66	-	-	20	50	-	166	-	-	75
98~100	64	-	-	19	48	-	161	-	-	72
101~103	62	-	-	19	47	-	156	-	-	70
104~106	61	-	-	18	45	-	152	-	-	68
107~109	59	-	-	18	44	-	147	-	-	66
110	58	-	-	17	43	-	145	-	-	65
										43
										-

DOVETAIL & CHAMFER MILLING CUTTERS SERIES

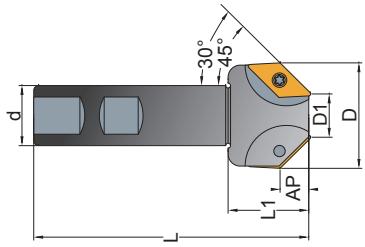
Chamfer Milling Cutter

- Insert P. 279
- Cutting Data P. 279 - 280



Features

- Available in materials P K M S H N
- Cost DOWN 100~300% UP
- Variety of Machines CNC Milling machine
- Efficiency 300% UP
- Durability 300% UP



C

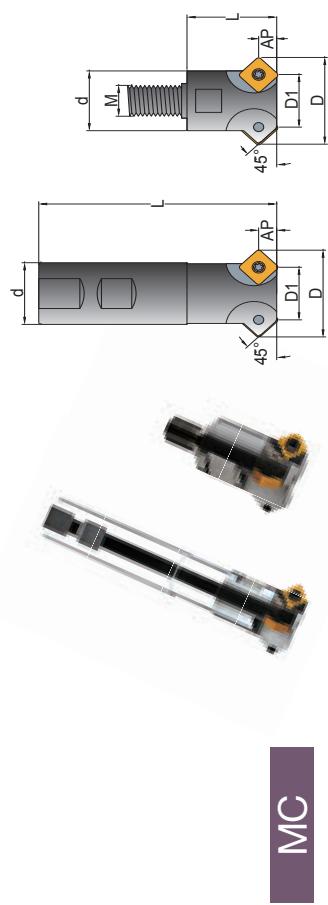
Order code	Dimensions(mm)					KG	MAX RPM	Insert	Screw	Key
	D	D1	d	L	AP					
C-1124-30°	24	10	20	80	10	30	0.3	35000	XDGTT1203	T10P
C-1633-30°	30	16	25	95	14	35	0.5	25000	XDGTT1904	C04011
C-2260-30°	60	22	32	120	33	55	3	8500	XDGTT4004	T15P
C-1128-45°	28	10	20	80	8	30	2	35000	XDGTT1203	T10P
C-1740-45°	40	17	25	95	11	35	0.5	25000	XDGTT1904	C04011
C-1770-45°	70	17	32	120	28	50	3	8500	XDGTT4004	T15P

Chamfer

Product Application

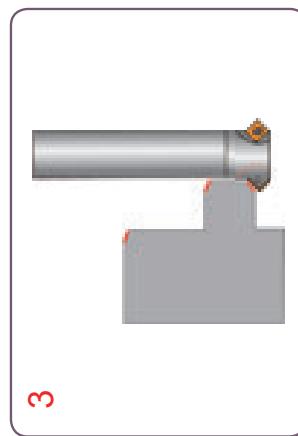
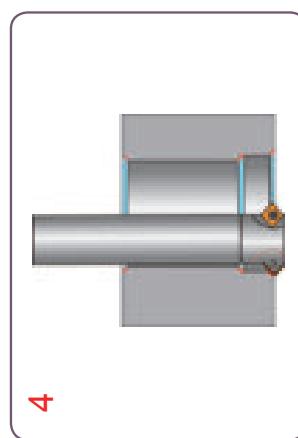
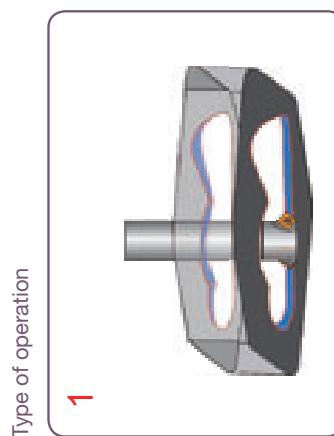
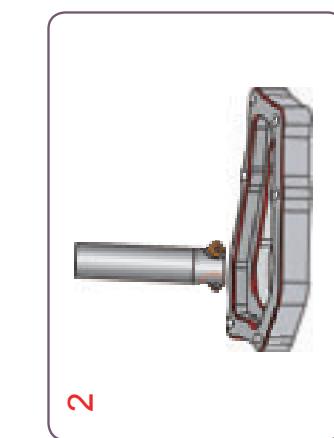
Two-Side Chamfer Milling Cutter

- Insert P. 268
- Cutting Data P. 268
- Combi Toolholders P. 288 - 291



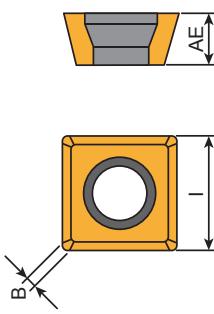
Chamfer

Order code	Dimensions(mm)					$\frac{\text{kg}}{\text{MAX RPM}}$	Insert	Screw	Key
	D	d	L	AP	M				
MC-1218	18	11	12	90	-	2	0.15	35000	SD-06
MC-1625	25	19	16	100	-	3	0.25	25000	C025045 T08P
MC-2032	32	22	20	6	-	2	0.45	17000	SD-09
MC-3245	45	32	32	110	-	3	0.7	14000	SE-13T3 C04011 T15P
HMC-18	18	11	11	20	6	2	0.15	35000	SD-06
HMC-25	25	19	15	30	8	3	0.2	25000	C025045 T08P
HMC-32	32	22	19	6	10	2	0.3	17000	SD-09
HMC-45	45	32	31	40	6	16	3	0.5	14000 SE-13T3 C03508 T10P



CORNER ROUNDING CUTTER-390 SYSTEM

SDET / SEHT Inserts



Size	Dimensions in mm		
	I	AE	B
0602	6.0	2.3	1.0
09T3	9.0	3.97	1.2
13T3	13.4	3.97	1.5

Inserts	Part No .	Recom. feed fz mm/tooth	Grades		Insert
			Carbide	Metal cermet	
SDET	SDET060208N-ME	0.08-0.20	B100	C200	
	SDET09T308TN-M	0.08-0.18	C250/B100	F20	
	SDET09T308TN-ME	0.08-0.18	C250/B100	F30	
	SEHT13T3AFTN-M	0.08-0.15	C250/B100	CE25	
	SEHT13T3AFTN-ME	0.06-0.13	C250/B100	CE60	
		0.06-0.12	C250/B100	K10	
		0.08-0.18	C250/B100	Q10	
		0.08-0.15	-	-	
		0.07-0.13	-	-	
		0.06-0.12	-	-	
		0.10-0.22	-	-	
		0.10-0.22	-	-	
		0.10-0.15	-	-	
		0.10-0.15	-	-	
		0.05-0.20	-	-	
		0.05-0.20	-	-	
		0.06-0.10	-	-	
		0.06-0.15	-	-	
		0.05-0.08	-	-	
		0.05-0.08	-	-	
		0.06-0.10	-	-	
		0.05-0.06	-	-	

• Steel ■ Stainless Steel ☐ Steel/Stainless Steel ☐ Cast Iron ☐ Aluminum ☐ Steel/Cast Iron

• Correct price and stock are based on current situation

• Please specify model number and grade of insert, i.e.: SDET060208N-ME, B100

Recommended Insert Grade

Material Group No.	Recom. feed fz mm/tooth	SDET... M SEHT... M	SDET... ME SEHT... ME	Insert	Patent No.	PCT Priority No.
1	0.08-0.20	C250/B100	B100	-	-	-
2	0.08-0.18	C250/B100	B100	-	-	-
3	0.08-0.18	C250/B100	B100	-	-	-
4	0.08-0.15	C250/B100	B100	-	-	-
5	0.06-0.13	C250/B100	B100	-	-	-
6	0.06-0.12	C250/B100	B100	-	-	-
7	0.08-0.18	C250/B100	B100	-	M473882 M474588 M473881	Patent No. 20131045307.2 201320772697.5
8	0.08-0.15	-	B100	-	-	-
9	0.07-0.13	-	B100	-	-	-
10	0.06-0.12	-	B100	-	-	-
11	0.10-0.22	-	B100	-	-	-
12	0.10-0.22	-	F30	-	-	-
13	0.10-0.15	-	F30	-	-	-
14	0.10-0.15	-	F30	-	-	-
15	0.05-0.20	-	F30	-	-	-
16	0.05-0.20	-	-	-	-	-
17	0.06-0.10	-	-	-	-	-
18	0.06-0.15	-	-	-	-	-
19	0.05-0.08	-	-	-	-	-
20	0.05-0.08	-	-	-	-	-
21	0.06-0.10	-	-	-	-	-
22	0.05-0.06	-	-	-	-	-

Features

- Available in materials P M N S H
- Cost 300~500% DOWN
- Variety of Machines Milling
- Efficiency 300% UP
- Durability 300% UP



PCT/CN2013/086393



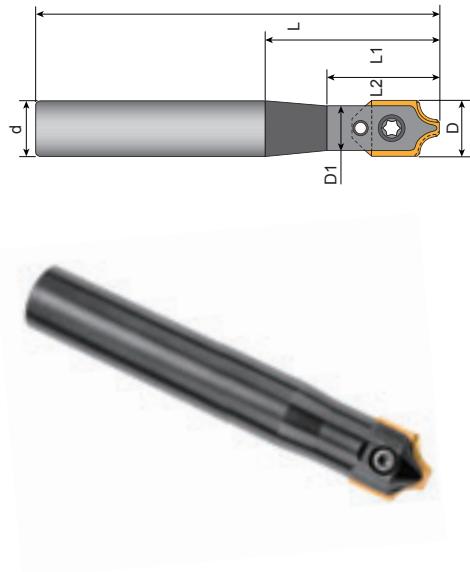
Patent No.
M473882
M474588
M473881

Product Design

390
SYSTEM

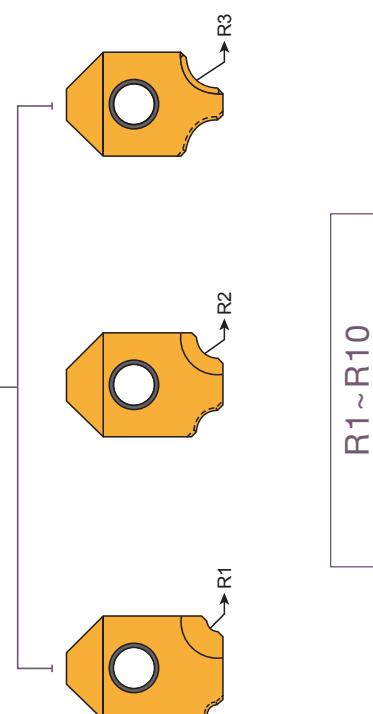
Indexable Corner Rounding Toolholders (Milling)

- Insert P. 272
- Cutting Data P. 274



15

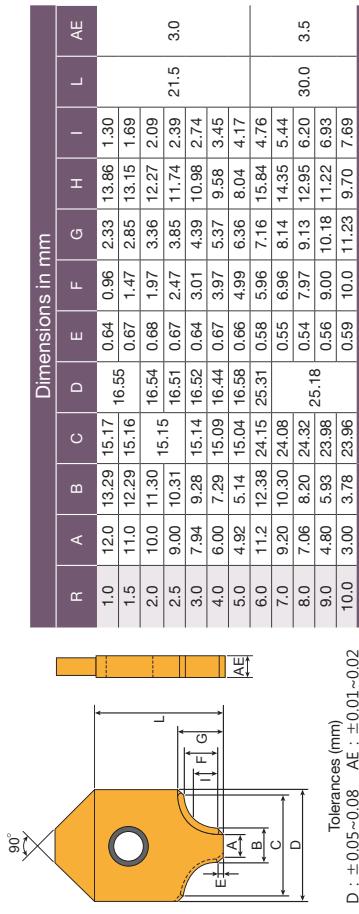
Order code	Dimensions(mm)					$\frac{\text{O}}{\text{KG}}$	Insert	Screw	Key
	D	D1	d	L	L1				
15-1616-100-R1-3				100		0.26		R1-3	
15-1616-130-R1-3	16	14	16	130	30	0.29			C03510 S0404
15-1616-100-R4-5				100		0.26		R4-5	T10P L02
15-1616-130-R4-5				130		0.29			
15-2525-110-R6-8				110		0.50		R6-8	C04017 S0508
15-2525-140-R6-8	25	22	25	35	30	0.65			T15P L025
15-2525-110-R9-10				110		0.50		R9-10	
15-2525-140-R9-10				140		0.65			



R1 ~ R10

25 Carbide Inserts

How to Fit Insert - Screw A.B.C.



Inserts	Part No .	Grades			
		Carbide	Metal cermet	Uncoated	
		C20	C350	C25	C10
25-1603-R1.0-E				CE26	
25-1603-R1.5-E					
25-1603-R2.0-E					
25-1603-R2.5-E					
25-1603-R3.0-E					
25-1603-R4.0-E					
25-1603-R5.0-E					
25-2503-R6.0-E					
25-2503-R7.0-E					
25-2503-R8.0-E					
25-2503-R9.0-E					
25-2503-R10-E					
25-1603-R1.0-ME				②	
25-1603-R1.5-ME				②	
25-1603-R2.0-ME				②	
25-1603-R2.5-ME				②	
25-1603-R3.0-ME				②	
25-1603-R4.0-ME				②	
25-1603-R5.0-ME				②	
25-2503-R6.0-ME				②	
25-2503-R7.0-ME				②	
25-2503-R8.0-ME				②	
25-2503-R9.0-ME				②	
25-2503-R10-ME				②	



Standard spare parts

Insert dimension (D mm)	Screw A	Screw B/C	Key	Key
16	C03510	S0404	T10P	L02
25	C04017	S0508	T15P	L05

- Steel ■ Stainless Steel ▲ Steel/Stainless Steel ■ Cast Iron ■ Aluminum ■ Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 25-1603-R1.0-E, F20

Recommended Cutting Data And Insert Grade

DOVETAIL MILLING CUTTERS SERIES



Material group No.	Recom. feed fz mm/tooth $a_e/D_c = 10\%$	Geometry	
		ME	E
1	0.10-0.12	C350	-
2	0.10-0.12	C350	-
3	0.08-0.12	C350	-
4	0.07-0.10	C350	-
5	0.07-0.10	C350	-
6	0.06-0.08	C350	-
7	0.05-0.06	C350	-
8	0.10-0.12	C350	-
9	0.10-0.12	C350	-
10	0.08-0.10	C350	-
11	0.08-0.10	C350	-
12	0.12-0.15	C350	-
13	0.12-0.15	C350	-
14	0.10-0.12	C350	-
15	0.10-0.12	C350	-
16	0.08-0.10	-	F20
17	0.08-0.10	-	F20
18	0.08-0.10	-	F20

- Corner Rounder recommend cutting speed, Vc (m/min), Feed,fz(mm/ tooth) in CHAMFERING process. The effective no. of teeth is calculated with 2 flutes.

Material group No.	Grades			
	C250	C350	CE60	F20
1	-	0.07	0.10	0.14
2	-	207	186	167
3	-	186	167	150
4	-	167	150	135
5	-	150	135	120
6	-	135	120	109
7	-	120	108	97
8	-	48	43	-
9	-	110	96	85
10	-	96	85	74
11	-	85	74	64
12	-	74	64	56
13	-	170	145	125
14	-	155	125	115
15	-	110	90	82
16	-	110	90	-
17	-	-	-	1080
18	-	-	-	950
				900
				770
				770

Features



Video

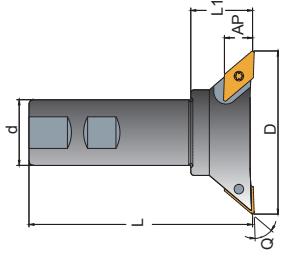
- Durability **300% UP**
- Efficiency **300% UP**
- Variety of Machines CNC Milling machine
- Cost **100~300% DOWN**
- Available in materials P K M N S H

Product Application

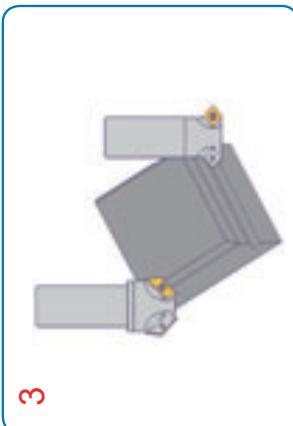
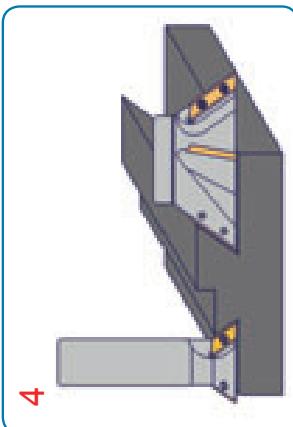
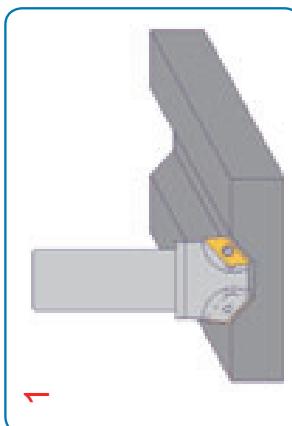
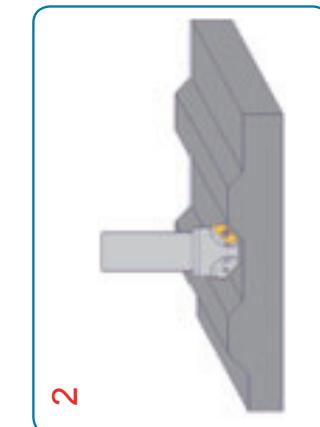
PRODUCT SPECIFICATIONS

Dovetails

- Insert P. 279
- Cutting Data P. 279 - 280



XD



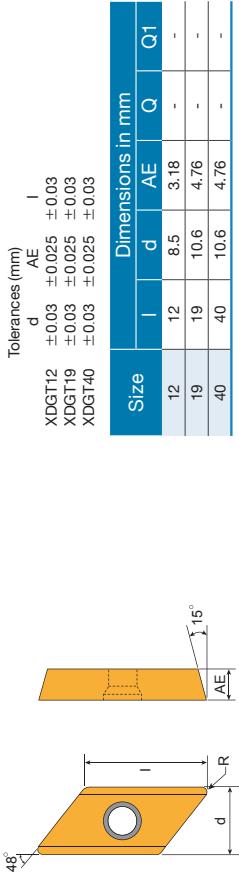
Type of operation

Order code	Dimensions(mm)					MAX RPM ◎ KG	Insert	Screw	Key
	D	d	Q	L	AP				
XD2040-50			50		10				
XD2040-55	40	20	55	100	10.5		2	0.5	17000
XD2040-60			60		11				
XD3260-50			50		14				
XD3260-55	60		55	15	30		3	0.9	
XD3260-60			60		16				
XD3280-50			32	50	110		14		
XD3280-55			80	55	15		4	1.2	6500
XD3280-60				60	16				

Dovetail Milling Cutter

- Insert P. 279
- Cutting Data P. 279 - 280

Recommended Insert Grade



Size	Dimensions in mm					
	l	d	AP	Q	Q1	Uncoated
12	12	8.5	3.18	-	-	
19	19	10.6	4.76	-	-	
40	40	10.6	4.76	-	-	

Legend:

- Steel (White)
- Stainless Steel (Yellow)
- Steel/Stainless Steel/Cast Iron (Grey)
- Cast Iron (Dark Grey)
- Aluminum (Light Green)
- Steel/Cast Iron (Orange)

- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: XDG120308R-E, F20

XDGT Insert Grade Selection

Inserts	Part No .	Grades					
		C200	C250	F20	C25	C60	K10
XDGT120308R-E							
XDGT120308R-ME				◎			
XDGT120308TR-M		◎					
XDGT190408R-E							
XDGT190408R-ME				◎			
XDGT190408TR-M		◎					
XDGT4040408R-E							
XDGT4040408R-ME				◎			
XDGT4040408TR-M		◎					

Data reference

Order code	Dimensions(mm)						MAX RPM /KG	Insert	Recom. feed fz mm/ tooth	XDGT ... M	XDGT ... ME	XDGT ... E
	D	D1	d	L	AP	Q						
XV120-50-25.4			31	50				1	0.08-0.25	C250/B100	B100	-
XV120-55-25.4		25.4	33	55				2	0.08-0.25	C250/B100	B100	-
XV120-60-25.4	120	60	35	60	4	1.2	6000	XDGT 400408 C04011 T15P	0.08-0.25	C250/B100	B100	-
XV120-50-27			31	50	55			7	0.08-0.15	C250/B100	B100	-
XV120-55-27			33	55	27			8	0.08-0.15	-	B100	-
XV120-60-27			35	60				9	0.07-0.15	-	B100	-
								10	0.06-0.15	-	B100	-
								11	0.10-0.15	-	B100	-
								12	0.10-0.25	-	F30	-
								13	0.10-0.25	-	F30	-
								14	0.10-0.20	-	B100	-
								15	0.05-0.20	-	B100	-
								16	0.05-0.25	-	F20	-
								17	0.06-0.25	-	F20	-
								18	0.06-0.25	-	F20	-
								19	0.05-0.08	-	B100	-
								20	0.05-0.08	-	B100	-
								21	0.06-0.08	-	B100	-
								22	0.05-0.08	-	B100	-

Recommended Cutting Data

- Recommended Cutting speed, Vc(m/min)

Material group No.	Data reference						
	B100	C250	F20	CE60	CE	K10	F30
0.08	0.15	0.20	0.08	0.15	0.20	0.08	0.15
Feed fz (mm/tooth)							
Cutting SPEED, Vc (m/min)							
1	240	190	170	192	152	136	-
2	210	165	145	168	132	116	-
3	170	148	125	136	118	100	-
4	155	130	105	124	104	84	-
5	135	115	-	108	92	-	-
6	115	90	-	92	72	-	-
7	40	35	-	32	28	-	-
8	108	89	79	-	-	-	-
9	92	76	66	-	-	-	-
10	76	60	54	-	-	-	-
11	54	45	-	-	-	-	-
12	-	-	-	-	-	-	170
13	-	-	-	-	-	-	145
14	-	-	-	-	-	-	125
15	-	-	-	-	-	-	115
16	-	-	-	1080	900	780	-
17	-	-	-	950	900	770	-
18	-	-	-	1080	900	780	-
19	50	40	-	40	32	-	-
20	35	30	-	28	24	-	-
21	50	40	-	40	32	-	-
22	50	40	-	40	32	-	-

ALUMINIUM ALLOY FACE MILLING CUTTER

- Cutting Data

- Type Of Insert

Operations	Ae/Dc	Recom. feed fz mm/tooth	Speed factor	Data reference	
				Style	Length of insert edge mm
Full engagement	100%	0.02	0.12	1.00	120308
	5%	0.06	0.34	1.60	190408
Side milling	10%	0.04	0.14	1.50	-
	25%	0.03	0.09	1.30	-
Average chip thickness	-	0.01	0.08	-	-

Features

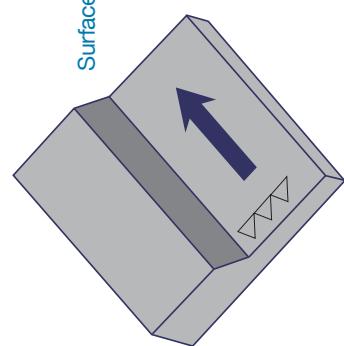
- Durability **150% UP**
- Efficiency **150% UP**
- Variety of Machines CNC Milling machine
- Available in materials 
- Cost **150% DOWN**

Product Design

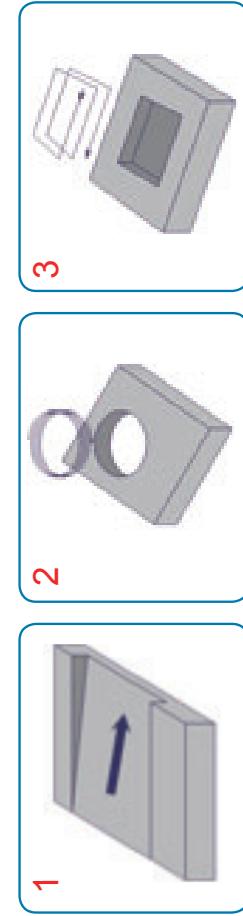
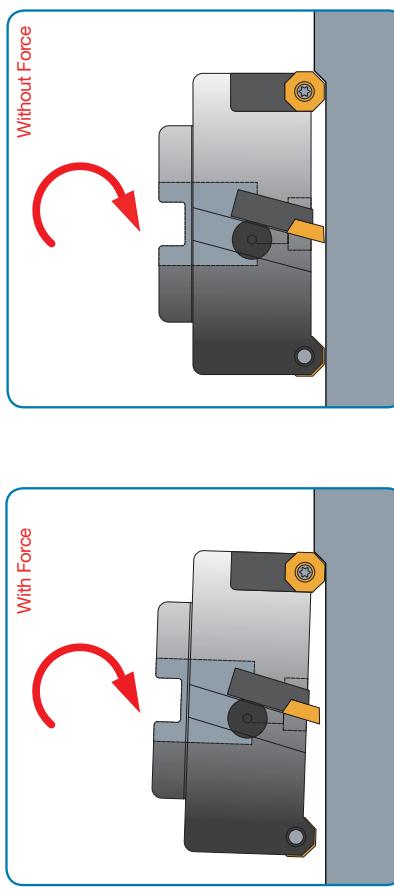
Features Description

Clamping By
A Wedge
Centre-Lock
Clamping

The Insert Are Held In Position By A Wedge And A Screw
Which Clamps The Wedge (Example Shows Milling Cutter
With Cassette)



The Suggestion For The Octagon Milling Tool



Milling Cutters

PRODUCT SPECIFICATIONS

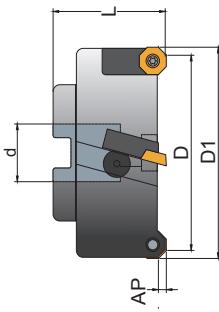
Insert - ODGT

Aluminium Alloy Face Milling Cutters

- Insert P. 285
 - Cutting Data P. 285 - 286



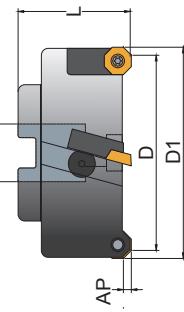
MO



PRODUCT SPECIFICATIONS

Aluminium Alloy Face Milling Cutters

- Insert P. 285
 - Cutting Data P. 285 - 286



MO

Steel [Light Blue] • Steel/Stainless Steel [Yellow] • Cast Iron [Orange] • Aluminum [Green] • Steel/Cast Iron [Dark Blue]

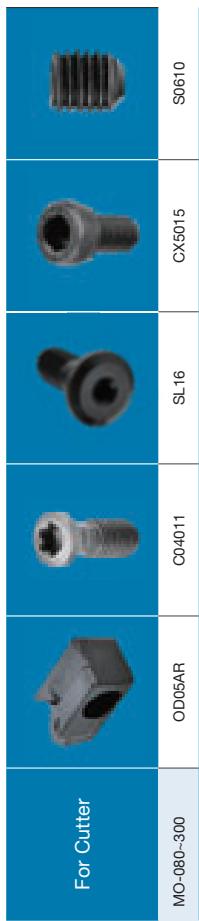
- Correct price and stock are based on current situation

- Please specify model number and grade of insert, ie.: ODGT050408N

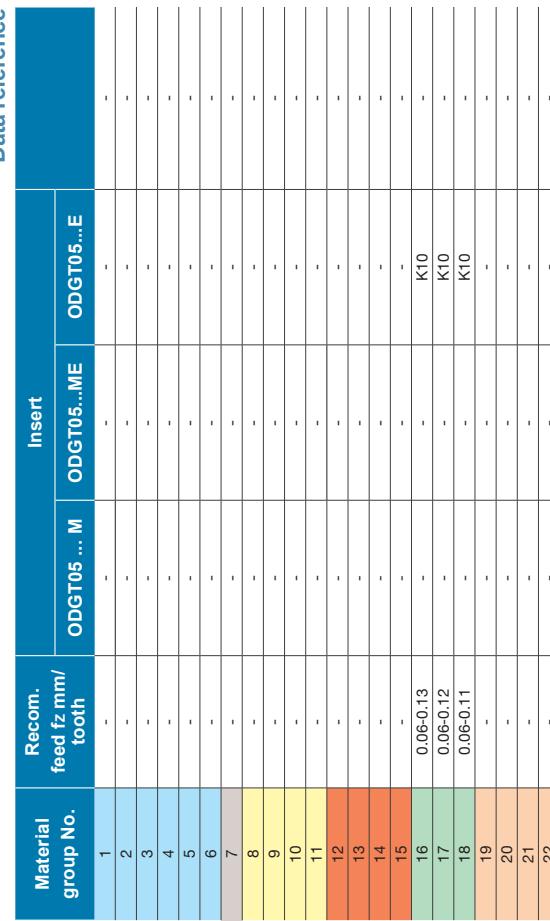
卷之三

Standard Spare Parts

- 1 -



Recommended Instert Grade



Data reference

Milling Cutters

Recommended Cutting Data

COMBIMASTER TOOLHOLDERS

- Recommended Cutting speed, Vc(m/min)

Data reference

Material group No.	Grades				
	B100	C250	F20	CE60	CE
	Feed fz. (mm/tooth)				
1	-	-	-	-	-
2	-	-	-	-	-
3	-	-	-	-	-
4	-	-	-	-	-
5	-	-	-	-	-
6	-	-	-	-	-
7	-	-	-	-	-
8	-	-	-	-	-
9	-	-	-	-	-
10	-	-	-	-	-
11	-	-	-	-	-
12	-	-	-	-	-
13	-	-	-	-	-
14	-	-	-	-	-
15	-	-	-	-	-
16	-	-	-	-	-
17	-	-	-	-	-
18	-	-	-	-	-
19	-	-	-	-	-
20	-	-	-	-	-
21	-	-	-	-	-
22	-	-	-	-	-



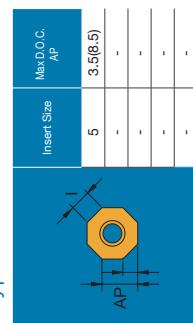
Features

- Surface Finish

Data reference

Type Of Insert	Feed mm / Rev <=	Ra um
ODGT050408	1.5	<1.5

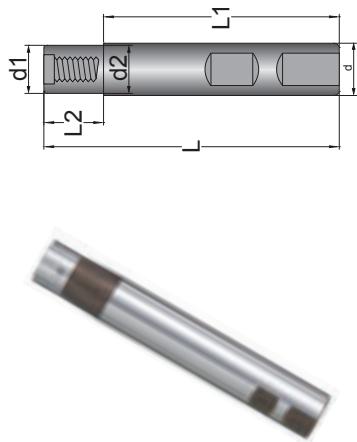
- Type Of Insert



- Durability **150% UP**
- Efficiency **150% UP**
- Variety of Machines CNC Milling machine
- Cost **150% DOWN**
- Maximum Run Out At 3xD Is 5µm

PRODUCT SPECIFICATIONS

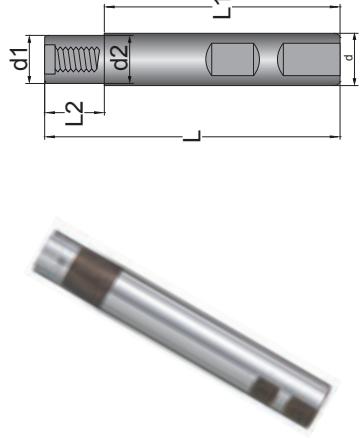
CombiMaster Toolholders



CBH

Order code	Dimensions(mm)					
	d	d1	d2	L1	L2	M
CBH-1010-80	10.0	10	10	-	-	M6
CBH-1009-100	9	9	60	20	80	
CBH-1212-80	12	12	-	-	60	
CBH-1211-100	12.0	11	11	60	80	
CBH-1211-120	15	15	80	20	100	
CBH-1211-140	16	16	100	20	120	
CBH-1616-100	16.0	15	70	20	90	M8
CBH-1615-120	16.0	15	95	25	120	
CBH-1615-150	16.0	15	50.8	49	49	M25

CombiMaster Toolholders



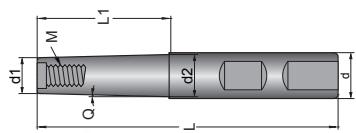
CBH

Order code	Dimensions(mm)					
	d	d1	d2	L1	L2	M
CBH-2020-100		20	20	-	-	70
CBH-2019-120	20	19	19	70	20	90
CBH-2019-160				95	25	120
CBH-2523-130				70	20	90
CBH-2523-170		23	23	100	100	130
CBH-2523-210	25			140	30	170
CBH-2523-240				170		200
CBH-2525-110	25	25	-	-	-	70
CBH-3232-120		32	32	-	-	80
CBH-3230-140				80	20	100
CBH-3230-200	32	30	30	130	30	160
CBH-3230-240				170		200
CBH-3230-300				210	50	260
CBH-4240-220	42	40	40	130	20	150
CBH-50.849-215				170	30	200
CBH-50.849-265						M25

Milling Cutters

Combimaster Toolholders

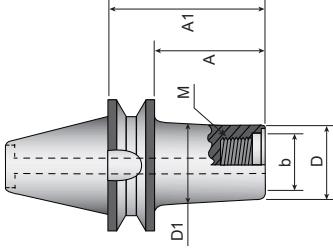
Face Milling Arbor



CBH

Order code	Dimensions(mm)					
	d	d_1	d_2	L_1	M	Q
CBH-1209-120	12	9	11.9	40	100	M6
CBH-1611-120	16	11	15.5	60	130	
CBH-1611-150						2.5°
CBH-2015-160	20	15	19.5	70	150	M8
CBH-2015-180						2°
CBH-2015-230	25	19	24	70	150	M10
CBH-2519-180						
CBH-2519-220	28	23	31.5	90	190	M12
CBH-3223-200						2°
CBH-3223-240	32	30	39	75	160	
CBH-3230-240						2.5°
CBH-3230-280						
CBH-4232-280	42	32	41.5	110	240	M16
CBH-4232-340						2°
CBH-4232-410						

Dimensions(mm)



BT

Order code	Dimensions(mm)					
	D	A	A_1	b	D_1	M
BT40-2380A	23		53	78	28	M12
BT40-23120A			93	118	31	
BT40-3080A	30		53	78	35	M16
BT40-30120A			93	118	38	
BT40-4080A	40		53	78	45	M18
BT40-40120A			93	118	48	
BT50-2380A	23		42	77	28	M12
BT50-23120A			82	117	31	
BT50-3080A	30		42	77	35	M16
BT50-30120A			82	117	38	
BT50-4080A	40		42	77	45	M18
BT50-40120A			82	117	48	
BT50-5080A			42	77	55	
BT50-50120A	50		82	117	58	M25
BT50-50160A			122	157	61	

Dimensions(mm)



Features Description

In the following appendix you can find the trouble shooting solutions, material classification groups and choose the proper grade inserts, and cutting calculation data.

- RELEVANT INFORMATION

APPENDIX



Troubleshooting

Problem	Possible cause	Solution
Flank wear	1. Cutting speed too high 2. Feed rate too low 3. chip is too thin 4. Insufficient coolant	1. Reduce cutting speed/use coated insert 2. Increase feed rate 3. Increase coolant flow rate
Chipping of cutting edge	1. Chip is too thick 2. Vibration	1. Reduce feed rate or Increases RPM 2. Use the tangential arc method 3. Check stability, minimize tool overhang 4. Increase number of infeed passes 5. Use a full-profile insert 6. Check toolholder run-out or insert mounting tolerance
Material build up on the cutting edge		1. Unsuitable carbide grade 2. Cutting zone temperature is too low 3. Very sticky material, such as low-carbon steel, stain less steels, and aluminum
Excessive wear causing short tool life		1. Vibration 2. Re-cutting of chips 3. Burr formation on component 4. Poor surface finish 5. Heat generation 6. Excessive noise

Problem	Possible cause	Solution
Vibration	Vibration	1. Weak fixturing 2. Tool overhang too long 3. Feed rate is too high 4. Choose a tool with fewer teeth 5. Increase number of infeed passes 6. Use up-milling in finishing

Material Classification Group

• Steel

mat. group No.	W.-Nr	EN	EN-Nr	Workpiece materials into material groups				AFNOR	JIS	Workpiece materials into material groups			
				DIN	BS	AISI/ASTM	UNS			Condition	Misc. Brands	Structure	Form
1	1.1133	G 28 Mn6	1.1165	20 Mn5	120 M 19	20M 5	SMnC 420	G 22 Mn 3	1022; 1518	G10220			
	1.1165	C 10	1.0301	30 Mn5	120 M 36	045 M 10	SMn 1 H; SCMn 2	C 10	1330	G13300			
	1.0301	C22+N	1.0402	C 15	045 M 15	080 M 15	AF 34 C 10; XC 10	C 15; C 16	1015	G10100			
	1.0401	C25+N	1.0406	C 22	050 A 20	050 A 20	AF 37 C 12; XC 18	C 20; C 21	1023	G10170			
	1.0402	C 10E	1.0466	C 25	070 M 26	070 M 26	AF 50 C 30	C 25	1025	G10200			
	1.0466	C 15R	1.1121	Ck 10	040 A 10	040 A 10	XC 10	C 10	1010	G10100			
	1.1121	C 22E	1.1141	Ck 15	080 M 15	080 M 15	XC 15; XC 18	S 15 C; S 15 CK	1015	G10170			
	1.1141	S235JR	1.1151	Ck 22	040 A 22	040 A 22	XC 25; XC 18	S 22 C; S 20 CK	1022				
	1.1151	S235JRG2	1.0037	Ck 25	060 A 25	E24-2	XC 25	S 25 C	1025	G10250			
	1.0037	S275JG3	1.0116	E24-3; E 24-4	4360-40 C	E 28-2	Fe 360 B	STKM 12 C					
2	1.0044	S275JG3	1.0144	E 24-2	4360-43 C	E 28-3; E 28-4	Fe 360 D FF	SM 41 B	1311	A 573 Gr. 38			
	1.0144	10 S 20	1.0721	10 S 20	10 S 20	10 SPD 20	Fe 430 B FN	SM 41 C	1412; 1313	A 573 Gr. 40			
	1.0722	15 SMn13	1.0723	15 SMn13	1.0725	10 F 1	Fe 430 D FF	CF 10 S 20	1412; 1414	A 573 Gr. 70			
	1.0726	35 S 20	1.0727	46 S 20	1.0727	10 PDF 2	CF 10 Spb 20	1108	1110; 1108				
	1.0727	46 S 20	60 S 20	60 S 20	35 M 4	210 A 15	1922						
	60 S 20	60 S 20	60 S 20	60 S 20	45 M 4	212 M 36	1957						
	1.0715	11 SMn30	1.0715	9 SMn28	9 SMn28	60 MF 4	1973						
	1.0715	11 Smn37	1.0736	9 SMn36	9 SMn36	220 M 07	CF 9 S 22						
	1.0736	11 SmnPb30	1.0737	9 SMnPb28	9 SMnPb28	230 M 07	CF 9 Smn28	1912					
	1.0737	11 SMnPb37	1.0737	9 SMnPb36	9 SMnPb36	240 M 07	CF 9 SmnPb28	1914					
3	1.5622	G 28 Mn6+QT	1.1165	14 Ni 6	1503-245-420	16 N 6	CF 9 SmnPb36	1926					
	1.1167	1.5423	36 Mn 5	16 Mo 5	150 M 36	40 M 5	SB 450 M	14 Ni 6	12 L 13	G12134			
	1.1157	1.0528	40 Mn 4	40 Mn 4	150 M 36	35 M 5	SMn 438 (H); SCmN 3	16 Mo 5	12 L 14	G12144			
	1.0528	C35+N	1.0501	C 30	080 A 30	080 A 30	SB 450 M	C 30	1108	G12144			
	1.0501	C40+N	1.0511	C 40	060 A 35	060 A 35	SMn 438 (H); SCmN 3	C 35	1146	G11460			
	1.0503	E 335	1.0503	C 45	080 M 40	080 M 40	AF 55 C 35	C 40	1146	G11460			
	1.0540	C50+N	1.0540	C 50	080 M 46	080 M 46	AF 60 C 40	C 45	1212	G12120			
	1.0578	C 30E	1.1178	Ck 30	060 A 30	060 A 30	AF 65 C 45	C 50	1213	G12130			
	1.1178	C 35E	1.1181	Ck 35	080 M 36	080 M 36	AF 70 C 50	C 50	1215	G12150			
	1.1181	C 40E	1.1186	Ck 40	080 M 40	080 M 40	AF 75 C 55	C 55	12 L 13	G12134			
4	1.1206	C 50E	1.1206	Ck 50	070 M 55	070 M 55	AF 80 C 60	C 60	12 L 14	G12144			
	1.1203	C 55E	1.1203	Ck 55	070 M 55	070 M 55	AF 85 C 65	C 65	1335	G13350			
	1.0570	S355JR	1.0570	St 52-3	4360-50 C	E 36-3; E 36-4	AF 90 C 70	SM 50 VA	1335	G13350			
	1.0535	E 360	1.0070	St 70-2	A 70-2	Z 17 N 5	SB 450 M	Fe 890	1055	G10350			
	1.5680	12 Ni 19	12 Ni 19	13 Cr 2	13 Cr 2	15 CD 3.5	SC 415 (H)	14 CrMo 4 5	2055	A 182-F1; F12			
	1.7012	13 CrMo 4 5	1.7335	13 CrMo 4 4	1501-620 Gr. 27	14 NC 11	SC 415 (H)	16 NiCr 11	2216				
	1.7735	14 NiCr 14	1.5752	14 NiCr 14	15 Cr 3	523 M 15	SC 415 (H)	16 NiCr 11	3415				
	1.5732	14 NiCr 14	1.5752	14 NiCr 14	14 Mol 6.3	12 CD 4	SNC 22	3310; 9314	3310; 9314				
	1.5752	1.7262	1.5919	15 CrMo 5 9	15 CrMo 5 9	16 NC 6	SCR 415	5015	5015				
	1.5919	16 Mo 3	1.5415	15 Mo 3	1501-240	15 D 3	12 CrMo 4	16 CrNi 4	4320				
4	1.2735	1.7311	1.5415	15 NiCr 14	16 CrMo 44	10 NC 12	16 Mo 3	16 CrNi 4	2912	A 204 Gr. A			
	1.7311	16 MnCr 5	1.7311	16 MnCr 5	1501-620 Gr. 27	15 CD 4.5	16 Mo 3	16 CrMo 4 5	2216	P6			
	1.7311	16 MnCr 5	1.7311	16 MnCr 5	1527 M 17	16 MC 5	16 MnCr 5	16 MnCr 5	2511	A 387 Gr. 12 Cl.2			
	1.7139	16 MnCr 5	1.7139	16 MnCr 5	16 MnCr 5	20 NC 6	SCM 421	18 NiCrMo 7	5115	G51170			
	1.5920	17 CrNiMo 6	1.6887	1.6587	16 CrNi 6	18 NC 6	SMnC 420 (H)	20 MnCr 4	5120				
	1.6887	17 CrNiMo 6	1.7311	1.6587	18 CrNiMo 6	18 NC 6	SMnC 21H	20 MnCr 4	5120				
	1.7147	20 CrMo 5	1.7264	1.7264	16 CrMo 4	18 CD 4	SC 420H	20 MnCr 5	5120				
	1.7147	20 MnCr 5	1.7147	1.7147	1.7147	20 MC 5	SC 420H	20 MnCr 5	5120				
	1.7149	20 MnCr 5	1.7323	1.7323	1.7323	20 MoCr 4	SC 420H	20 MoCr 4	5120				
	1.7323	1.2162	1.2162	1.2162	20 MoCr 4	20 MoCr 4	SC 420H	20 MoCr 4	5120				

- Steel

mat. group No.	Workpiece materials into material groups						JIS
	W.-Nr	EN	EN-Nr	DIN	BS	AFNOR	
1.6523	20 NiCrMoS 2.2	1.6526	21 NiCrMo 2	805 M 20	20 NCD 2	SNCM 220 (H)	
1.7271	25 CrMo 4	1.7218	23 CrMoB 3.3	1717 CDS 110	25 CD 4 S	SOM 420; SCM 430	
1.7218			25 CrMo 4				
1.7325			25 MoCr 4				
1.7326	28 Cr4	1.7030	25 MoCrS 4	530 A 30			
1.7030			28 Cr 4				
1.6513			28 NiCrMo4				
1.7707			30 CrMoV 9	823 M 30	30 CND 8	SNC 836	
1.6580			30 CrNiMo 8		32 CND 12		
1.8519	31 CrMoV 9	1.8519	31 CrNiMo 9	653 M 31	30 NC 11	SCR 430 (H)	
1.5755			31 NiCr 14			SCM 432;	
1.7020			32 Cr 2	722 M 24	30 CD 12	SCCM 433	
1.7361	34 Cr 4	1.7033	32 CrMo 12	530 A 32	32 C 4		
1.7220	34 CrMo 4	1.7220	34 Cr 4	722 M 24	35 CD 4		
1.2330			34 CrMo 4	708 A 37	34 CD 4		
1.5864			35 CrMo 4	708 A 37			
1.6511	36CrNiMo4+TA		35 NiCr 18				
1.5736			36 CrNiMo 4	816 M 40	40 NCD 3		
1.5710			36 NiCr 10	640 A 35	35 NC 11		
1.7034			36 NiCr 6	530 A 36	35 NC 6		
1.5122			37 Cr 4	530 A 36	38 C 4		
1.7035			37 MnSi 4				
1.7003	38 Cr2	1.7003	38 Cr 2		38 C 2		
1.5120			38 MnSi 4				
1.8523			39 CrMoV 13.9	897 M 39			
1.2311			40 CrMnMoS 8.6	40 CMD 85	SCR 440 (H)		
1.2312			40 CrMnNiMo 8	40 CND 8	SCM 440		
1.2738			41 Cr4	530 M 40	42 C 4		
1.7035	41 Cr 4	1.7035	41 CrMo 4	708 M 40	42 CD 4 TS		
1.7223			42 Cr 4	530 A 40	42 C 4 TS		
1.7045			42 CrMo 4	708 M 40	42 CD 4		
1.7225	42 CrMo 4	1.7225	42 CrV 6				
4			42 MnV 7				
1.7561			43 CrMo 4				
1.5223			44 Cr 2				
1.3563			46 Cr 2				
1.3561			46 MnSi 4				
1.7006			48 CrMo 4				
1.5121			50 CrMo 4				
1.3565			50 CrV 4	708 A 47	50 CV 4		
1.7228			50 MnSi 4	735 A 50			
1.8159	50 CrV 4	1.8159	50 MnSi 4				
1.5131	50 MnSi4	1.5131	53 MnSi 4				
1.5141			55 Cr3	527 A 60	55 C 3		
1.7006			55 Si7	250 A 53	55 S 7		
1.7176	55 Cr 3	1.7176	58 SiCr 8				
1.0904	55 SiCr7	1.7100	60 SiCr 7				
1.7228			62 SiMnCr4		60 SC 7		
1.0961			C 45W		Y3 42		
1.2101			C 55W		SK7		
1.1820			C 60	080 A 62	CC 55		
1.0601	C60+N	1.0601	C 60W		Y3 55		
1.1740			C 67W				
1.1744			C 70W1				
1.1520			C 70W2				
1.1620			C 75W				
1.1750			C 80W1	BW 1A			
1.1525			C 80W2	BW 1 B			
1.1625			C 85W				
1.1830			Ck 45				
1.1191	C 45E	1.1191	Ck 45				
1.1221	C 60E	1.1221	Ck 60				
1.1221			Ck 67				
1.1231	C 67S	1.1231	Ck 67				
1.1248	C 75S	1.1248	Ck 67				
1.8159			GS-50 CrV 4	060 A 78	XC 75		
1.0060	E 335	1.0060	GS-50 CrV 4				
1.0060			St 60-2	4360-SSE; SSC	A 60-2		

• Steel

- Steel

mat. group No .	W.-Nr	EN	EN-Nr	Workpiece materials into material groups				JIS
				DIN	BS	AFNOR		
4	1.4006	X12 Cr 13	1.4006	X 10 Cr 13	410 S 21	Z 12 C 13	SUS 410	
	1.41724	X 10 CrAl 13	1.41724	X 10 CrAl 13	BH 12	Z 10 C 13	SUS 405	
	1.4762	X 10 CrAl 24	1.4762	X 10 CrAl 24		Z 10 CrAl 24	SUH 442	
	1.44006	X 12 Cr 13	1.4006	X 12 Cr 13	410 S 21	Z 10 CF 17	SUS 410	
	1.4104	X 14 CrMoS 17	1.4104	X 12 CrMoS 17	411 S 29	Z 12 CF 13	SUS 416	
	1.44005	X 12 Cr 13	1.4005	X 12 Cr 13	416 S 21	Z 12 C 13	SUS 410 J 1	
	1.44024	X 12 Cr 13	1.4024	X 15 Cr 13	420 S 29	Z 12 C 13		
	1.4521	X 2 CrMoTi 18 2	1.4521	X 2 CrMoTi 18 2				
	1.4521	X 2 CrMoTi 18 2	1.4521	X 2 CrMoTi 18 2				
	1.44033	X 2 CrNi 13	1.4003	X 2 CrNi 12				
5	1.4313	X 3 CrNiMo 13 3	1.4313	X 5 CrNi 13 4	425 C 11	Z 5 CN 13 4	SCS 5	
	1.4512	X 5 CrTi 12	1.4512	X 5 CrTi 12	408 S 19	Z 6 CT 12	SUH 409	
	1.44016	X 6 Cr 13	1.40016	X 6 Cr 13	403 S 17	Z 6 C 12	SUS 403	
	1.44002	X 6 CrAl 13	1.4002	X 6 CrAl 13	430 S 15	Z 8 C 17	SUS 430	
	1.2341	X 6 CrMo 4	1.2341	X 6 CrMo 4	405 S 17	Z 6 CA 13	SUS 405	
	1.4510	X 6 CrTi 17	1.4510	X 6 CrTi 17		Z 8 CT 17	SUS 430 LX	
	1.4511	X 3 CrNb 17	1.4511	X 8 CrNb 17		Z 8 CrNb 17	SUS 430 LX	
	1.7380	10 CrMo 9 10	1.7380	10 CrMo 9 10	1501-622 Gr. 31; 45	10 CD 9, 10	SUJ 2	
	1.3505	100 Cr 6	1.3505	100 Cr 6	534 A 99	100 C 6	SKS 3	
	1.2510				BO 1	Y 105 V	SKS 43	
5	1.2833	105 WCr 6	1.2419	105 WCr 6	BW 2	105 WC 13	SKS 31	
	1.2210	107 CrV 3	1.2210	115 CrV 3		100 C 3		
	1.2516				BF 1	110 WC 20		
	1.7735	14 CrMoV 6 9	1.7735	14 CrMoV 6 9		20 CDV 5.07		
	1.5860				14 NiCr 18			
	1.7709				21 CrMoV 5 7			
	1.6746	34 CrAl 6	1.8504	32 NiCrMo 14 5	830 M 31	35 NCD 14		
	1.8504				34 CrAl 16	905 M 31	30 CAD 6, 12	
	1.8507	34 CrAlNi 7	1.8550	34 CrAlMo 5		34 CRND 7		
	1.8506				34 CrAlNi 7			
5	1.6582	34 CrNiMo 6	1.6582	34 CrNiMo 6	817 M 40	35 NCD 6	SNCM 447	
	1.6546				40 NiCrMo 22	40 NCD 2	SNCM 240	
	1.6865				40 NiCrMo 6	311-Type 7	SNCM 439	
	1.8509	41 CrAlMo 7 10	1.8509	41 CrAlMo 7	905 M 39	311-Type 6	SACM 645	
	1.2542				45 WCv 7	40 CAD 6, 12		
	1.2271				50 NiCr 13	BS 1		
	1.8161				58 CrV 4			
	1.2826				60 MnSiCr 4			
	1.2550				60 WCv 7			
	1.2703				67 SiCr 5			
5	1.1273				90 CrSi 5			
	1.2842	90 MnCrV 8	1.2842	90 MnCrV 8	BO 2	90 MV 8		
	1.1545	C 105U	1.1545	C 105W 1		Y 1105		
	1.1645				C 105 W 2	Y 1105	SK 3	
	1.1654				C 110 W	Y 120	SK 2	
	1.1663				C 135 W	Y 120	SK 1	
	1.1673				C 135 W	Y 120	SUP 4	
	1.1274	C 100S	1.1274	C 101	060 A 96			
	1.2887							
	1.2982							
5	1.2606							
	1.4749	X 18 CrN 28	1.4749	X 18 CrN 28		Z 18 C 25		
	1.2764							
	1.4021	X 20 Cr 13	1.4021	X 20 Cr 13				
	1.4835	X 20 CrMoW 12 1	1.4935	X 20 CrMoW 12 1				
	1.4057	X 20 CrNi 17 2	1.4057	X 20 CrNi 17 2				
	1.4923	X 22 CrMoV 12 1	1.4923	X 22 CrMoV 12 1				
	1.4028	X 30 Cr 13	1.4028	X 30 Cr 13				
	1.4749	X 38 CrNiMo 16	1.4749	X 38 CrNiMo 16				
	1.4418	X 39 CrNiMo 16 5	1.4418	X 39 CrNiMo 16 5				
5	1.4031	X 39 Cr 13	1.4031	X 40 Cr 13				
	1.2764							
	1.4021							
	1.4835							
	1.4057							
	1.4923							
	1.4028							
	1.4749							
	1.4418							
	1.4031							

Workpiece materials into material groups							
UNI	SS	AISI/ASTM	UNS	Condition	Misc. Brands	Structure	Form
X 12 Cr 13 X 10 CrAl 12 X 16 Cr 26	2302	410; CA-15 405 446	S41000 S40500 S44600			Martensite Ferrite	
X 10 Cr-S 17 X 12 Cr-S 13	2302 2383 2380	410 S 430 F 416	S41000 S43020 S41600			Martensite Martensite Martensite	
X 6 CrNi 13 04 X 6 CrTi 12 X 6 Cr 13 X 8 Cr 17 X 6 CrAl 13	2326 2385 2301 2320 2318	444 309 409 L 403 430 405	S40977 S41500 S40900 S41008 S43000 S40500		F6NM	Ferrite Martensite Ferrite Ferrite Ferrite	
X 6 CrTi 17 X 6 CrNb 17	2326 2218 2258 2140	430 Ti 430 Nb	S43036			Ferrite Ferrite	
12 CrMo 9 10 100 Cr 6 95 MnWCr 5 KU 102 V 2 KU 107 WCr 5 KU 107 CrV 3 KU 110 W 4 KU	2218 2258 2140 102 V 2 KU 107 WCr 5 KU 107 CrV 3 KU 110 W 4 KU	A 182-F22 52100 O1 W 210 L2	J 21890 G51986 T31501 T 72302 T61202				
34 CrAlMo 7		A 355 Cl. D	K 23545 K 22440 K 23745				
35 NiCrMo 6 (Kw) 40 NiCrMo 2 (KB)	2541	4340 8740 4340	G87400 A 355 Cl. A S1				
41 CrAlMo 7 45 WCnV 8 KU	2940 2710		K 24065 T41901				
55 WCnV 8 KU							
90 MnVCr 8 KU C 100 KU C 100 KU	1880	O2 W 110	T31502				
C 120 KU C 140 KU	W 112 1870		W 112 1095		G10950		
X 20 Cr 13 X 16 CrNi 16 X 22 CrMoV 12 1 X 30 Cr 13 X 38 CrMo 16 1 KU X 40 Cr 14	2322 2303 2321-03 2317 2304 2387 2304, 2314 420 431 420 422 420	446 O2 W 110 W 112 1095 446 420 431 420 422	S44600 S42000 S42200 S43100 J91153 S40280				

Steel

• Steel

Workpiece materials into material groups							
UNI	SS	AISI/ASTM	UNS	Condition	Misc. Brands	Structure	Form
X 45 CrNiW 18.9 X 42 NiCrMo 15.7	[2304]	-SAF HNV 3 6F7 440 A SAE HNV 6 440 B	S44002 S65006 S44003	sol. treated		Martensite Martensite Martensite PH Martensite	
X 80 CrSiNi 20 X CrTi 12	2327	6F2 L6	T61206				
HS 10-4-3-10							
HS 18-0-1 HS 18-1-2-10	T15 T1 T5	T12015 T12001 T12005					
HS 18-1-1-5 HS 2-9-1-8	T4	T12004 T11342 T11301 T11307 T11333					
HS 1-8-1 HS 2-9-2	M42 H41; M1 M7 M33;M34						
HS 3-3-2 HS 6-5-2 HS 6-5-2-5 HS 6-5-3	M2 M35 M3 M3 M41 A2 440 C D2	T11302 T11323 T11323 T11341 T30102 S44004 T30402					
HS 7-4-2-5 X 105 CrMoV 5 1 KU X 155 CrVMo 12 1 KU							
X 100 CrMoV 5 1 KU X 186 CrMoW 12 1 KU	2260						
X 210 Cr 13 KU X 215 CrW 12 1 KU	2310	18 MAR 300 D3	T30403 K 93120				
X 30 CrV 5 3 KU X 30 CrWCr 9 3 KU	2312		T20821				
30 CrMoV 12 12 KU X 37 CrMoV 5 1 KU	H21		T20810 T20811				
X 40 CrMo 5 1 1 KU	H10 H11 H13		T20813				
Hardened steel	2183	A128 Grade A					
Stainless steel							
X 10 CrNi 18 09 X 12 CrNi 17 07	2346 (2331)	303 301	S30300 S30100			Austenite Austenite	
X 6 CrNiNb 18 11 X 6 CrNiNb 18 11	2331	302	S30200			Austenite	
X 5 CrNiNb 18 11 X 5 CrNi 18 10 KW	2333	348	S34800			Austenite	
X 7 CrNi 18 10 X 6 CrNiNb 18 11	2333	304; 304 H 308; 305	S30400 S30480 S30500 S34700			Austenite Austenite Austenite Austenite	
X 6 CrNiNb 17 13	2361 2337	318 321; 321 H	S31008 S32100 S34700			Austenite Austenite Austenite	
X 3 CrNiMo 18 11 X 2 CrNiMo 17 12	2352 2348 2353	309 304 L 316 L	S30403 S31603 S31603			Austenite Austenite Austenite	
X 2 CrNiMo 17 13 X 2 CrNiMo 18 16	2367	317 L	S31703			Austenite	

• Stainless steel

mat. group No.	W.-Nr	EN	DIN	BS	AFNOR	JIS	Workpiece materials into material groups					
							EN-Nr	Grade	Grade	Grade	Grade	Grade
9	1.4311	X 2 CrNiN 18 10	1.43211	X 2 CrNiN 19 11	304 S 62	Z 22 CN 18-10 Az	SUS 304 LN	304 LN	316 CF8	Austenite	Austenite	Austenite
	1.4436	X 5 CrNiMo 17 13 3	1.4436	X 5 CrNiMo 17 13 3	316 S 33	Z 26 CND 18-12.03	SUS 316	316	316 Cb	Austenite	Austenite	Austenite
	1.4580	X 5 CrNiNb 19 10	1.4508	X 6 CrNiNb 18 9	304 C 15	Z 26 CN 18-10M	SUS 13	2343	2338	Austenite	Austenite	Austenite
	1.4571	X 6 CrNiNb 17 12 2	1.4580	X 6 CrNiNb 17 12 2	318 S 17	Z 26 CND 17-12	SUS 316 Ti	2350	2350	Austenite	Austenite	Austenite
	10	X 6 CrNiMoTi 17 12 2	1.4571	X 6 CrNiMoTi 17 12 2	320 S 31	Z 26 CNDT 17-12	SUS 316 Ti	2343	2343	Austenite	Austenite	Austenite
11	1.4401	X 15 CrNiSi 25 20	1.4841	X 15 CrNiSi 25 20	314 S 35	Z 16 CNS 25 20	SUS 310	314 S 25	316 S 31	254 SMO	Super austenite	Super austenite
	1.4547	X 1 CrNiMo 17 12 2	1.4401	X 5 CrNiMo 18 10	316 S 35	Z 13 CND 17-11.1	SUS 316	316	316	PH	Austenite	Austenite
	1.4876	X 1 CrNiMoCuN 31 27 4	1.4563	X 1 CrNiMoCuN 31 27 4	X CrNiMoN 20 18 7	X CrNiMoN 20 18 7	NCF 800	N08800	N08800	Sol. treated	254 SMO	Super austenite
	1.4864	X 12 NiCrSi 35 16	1.4864	X 12 NiCrSi 36 16	X CrNiMoCuN 31 27 4	Z 10 NC 32 21	Incoloy 800	N08330	N08330	N08330	PH	Austenite
	1.4507	X 2 CrNiMoON 25 7 4	1.4507	X 2 CrNiMoON 25 7 4	X CrNiMoCuN 25 6 3	Z 10 NC 33 16	Z 20 NCS 33 16	F22750	F22750	F22750	Super duplex	Super duplex
12	1.4501	X 2 CrNiMoCuN 25 6 3	1.4501	X 2 CrNiMoCuN 25 7 4	X CrNiMoCuN 25 7 4	Z 10 NC 32 21	Z 23 CHD 25.07 Az	X 2 CrNiMoN 25 7 4	2328	330	F 53	Super duplex
	1.4406	X 2 CrNiMon 17 11 2	1.4406	X 2 CrNiMon 17 11 2	X CrNiMon 17 11 2	Z 11 NC 32 21	Z 23 CHD 25.06 Az	X 2 CrNiMoN 25 7 4	2328	255	F 55	Super duplex
	1.4429	X 2 CrNiMon 17 13 3	1.4429	X 2 CrNiMon 17 13 3	X CrNiMon 17 13 3	Z 11 NC 32 21	Z 23 CHD 17-12 Az	X 2 CrNiMoN 25 7 4	2328	316	316 LN	Super duplex
	1.4462	X 2 CrNiMon 17 13 5	1.4462	X 2 CrNiMon 17 13 5	X CrNiMon 17 13 3	Z 11 NC 32 21	Z 23 CHD 17.13 Az	X 2 CrNiMoN 25 7 4	2328	316 LN	316 LN	Super duplex
	1.4462	X 2 CrNiMon 22 5 3	1.4462	X 2 CrNiMon 22 5 3	X CrNiMon 22 5 3	Z 11 NC 32 21	Z 23 CHD 18.1405Az	X 2 CrNiMoN 25 7 4	2328	318	318	Super duplex
13	1.4539	X 2 CrNiMon 25 22 8	1.4539	X 2 CrNiMon 25 22 8	X 2 CrNiMon 25 22 7	Z 11 NC 32 21	Z 22 CHD 22.05 Az	X 2 CrNiMoN 22 5	2327	-	-	Super austenite
	1.4536	X 2 CrNiN 23 4	1.4536	X 2 CrNiN 23 4	X 2 CrNiN 23 4	Z 11 NC 32 21	Z 22 CHD 22.05 Az	X 2 CrNiMoN 22 5	2327	-	-	Super austenite
	1.4539	X 2 NiCrMoCu 25 20 5	1.4539	X 2 NiCrMoCu 25 20 5	X 2 NiCrMoCu 25 20 5	Z 11 NC 32 21	Z 22 CHD 22.05 Az	X 2 CrNiMoN 22 5	2327	-	-	Super austenite
	1.4540	X 4 CrNiCuNb 16 4	1.4540	X 4 CrNiCuNb 16 4	X 4 CrNiCuNb 16 4	Z 11 NC 32 21	Z 22 CHD 22.05 Az	X 2 CrNiMoN 22 5	2327	-	-	Super austenite
	1.4460	X 3 CrNiMo 27 5 2	1.4460	X 3 CrNiMo 27 5 2	X 4 CrNiMo 27 5 2	Z 11 NC 32 21	Z 22 CHD 22.05 Az	X 2 CrNiMoN 22 5	2327	-	-	Super austenite
14	1.4542	X 5 CrNiCuNb 16 4	1.4542	X 5 CrNiCuNb 16 4	X 5 CrNiCuNb 17 4	Z 11 NC 32 21	Z 22 CHD 22.05 Az	X 2 CrNiMoN 22 5	2327	-	-	Super austenite
	0.6100	EN-GJL-100	0.6100	GG-10	Grade 100	F110 D	FC100	G10	01 10-00	A18 20 B	F11401	GCI
	0.6150	EN-GJL-150	0.6150	GG-15	Grade 150	F115 D	FC150	G15	01 15-00	A48 25 B	F11601	GCI
	0.7033	EN-GJL-350-22	0.7033	GG-35.3	Grade 350/22	F350/22	FCD 350-22L	GS 400-12	07 17-15	GS 400-12	F32800	DCL
	0.7040	EN-GJL-400-15	0.7040	GG-40	Grade 400/12	F400/12	FCD 400-18L	GS 42/17	07 17-12	GS 42/17	F32800	DCL
15	0.7043	EN-GJL-400-18	0.7043	GG-40.3	Grade 400/18	F400/18	FCD 400-18L	B 35-12	08 15-00	A47 32510	F22200	Martenste
	0.7600	EN-GJMB-350-10	0.7600	GG-35.10	Grade 350-10	F350/10	FCD 350-10	P 45-06	08 52-00	A220 45008	F23130	Martenste
	0.7600	EN-GJMB-450-6	0.7600	GG-45.6	Grade 450-6	F450/6	FCD 450-6	P 55-04	08 54-00	A220 60004	F24130	Martenste
	0.6200	EN-GJMB-550-4	0.6200	GG-55.4	Grade 550-4	F550/4	FCD 550-4	G20	01 20-00	A48 30 B	F12101	GCI
	0.6250	EN-GJL-200	0.6250	GG-20	Grade 200	F200	FCD 200	G25	01 25-00	A48 35 B	F12401	GCI
16	0.7050	EN-GJL-250	0.7050	GG-25	Grade 250	F250	FCD 250	G30	07 27-00	A536 80-56-56	F33800	DCL
	0.7060	EN-GJL-300-7	0.7060	GG-30	Grade 300	F300	FCD 300	G35	07 32-03	A48 36 Type D-2	F34100	Austenite
	0.7660	EN-GJSA-XNiCr20-2	0.7660	GG-60	Grade 60	F600/3	FCD 600-3	G60	07 32-03	A48 36 Type D-2B	F43001	Austenite
	0.7661	EN-GJSA-XNiCr20-3	0.7661	GG-61	Grade 61	F610/2	FCD 610	G61	07 72-00	-	F41002	Austenite
	0.7652	EN-GJLA-XNiMn 13-7	0.7652	GG-62	Grade 62	F620/2	FCD 620	G62	05 23-00	A436 Type 2	F41003	Austenite
17	0.6660	EN-GJLA-XNiCr 20-2	0.6660	GG-63	Grade 63	F630/2	FCD 630	G63	08 56-00	A420 7616	F24830	Martenste
	0.6661	EN-GJLA-XNiCr 20-3	0.6661	GG-64	Grade 64	F640/2	FCD 640	G64	01 30-00	A48 45 B	F13101	GCI
	0.6300	EN-GJL-300	0.6300	GG-30	Grade 300	F300	FCD 300	G30	07 37-01	A536 100-70-03	F34800	Martenste
	0.6655	EN-GJL-700-2	0.6655	GG-70	Grade 700/2	F700-2	FCD 700-2	G70	01 35-00	A48 50 B	F13502	GCI
	0.6655	EN-GJLA-XNiCr 15-6-2	0.6655	GG-L-NiCr 15-6.2	Grade F1	F1	FCD 800-2	G80	01 40-00	A536 120-90-02	F36200	Martenste
18	0.6655	EN-GJLA-XNiCr 15-6-3	0.6655	GG-L-NiCr 15-6.3	Grade P 690/2	P 690/2	PCMP70-02	G70	07 37-01	A439 Type D-2B	F43006	Austenite
	0.6657	EN-GJMB-700-2	0.6657	GG-70	Grade GTS-70-02	GTS-70/02	PCMP60-03	G60	08 62-00	A436 Type 1b	F41001	Martenste
	0.6935	EN-GJL-350	0.6935	GG-35	Grade 350	F350	FC 350	G35	01 35-00	A48 50 B	F14102	GCI
	0.6040	-	0.6040	GG-40	Grade 400	F400	FCD 800-2	G80	01 40-00	A536 120-90-02	F36200	Martenste
	0.7670	EN-GJSA-XNiI22	0.7670	GGG-Ni 22	Grade F690/2	F690/2	PCMP70-02	G70	01 35-00	A439 Type D-5	F43006	Austenite
19	0.7683	EN-GJSA-XNiI35	0.7683	GGG-Ni 35	Grade S3	S3	FCD 800-2	G80	01 35-00	A436 Type D-3A	F43004	Austenite
	0.7677	-	0.7677	GGG-NiC 30.1	Grade S3M	S3M	FCD 800-2	G80	01 35-00	A436 Type D-3B	F43003	Austenite
	0.7676	EN-GJSA-XNiCr 30-3	0.7676	GGG-NiC 30.3	Grade S3M	S3M	FCD 800-2	G80	01 35-00	A436 Type D-3C	F43003	Austenite
	0.7683	EN-GJSA-XNiCr 35-3	0.7683	GGG-NiC 35.3	Grade S3M	S3M	FCD 800-2	G80	01 35-00	A436 Type D-3D	F43003	Austenite
	0.7673	EN-GJSA-XNiM 23-4	0.7673	GGG-NiM 23.4	Grade S3M	S3M	FCD 800-2	G80	01 35-00	A436 Type D-3E	F43003	Austenite
20	0.7665	EN-GJSA-XNiCr 20-5	0.7665	GGG-NiC 20.5	Grade S3M	S3M	FCD 800-2	G80	01 35-00	A436 Type D-3F	F43003	Austenite
	0.6678	EN-GJSA-XNiCr 30-3	0.6678	GGG-NiC 30.5	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3G	F43003	Austenite
	0.6667	EN-GJSA-XNiCr 20-5	0.6667	GGG-NiC 20.5	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3H	F43003	Austenite
	0.6680	-	0.6680	GGG-NiC 20.5	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3I	F43003	Austenite
	0.6680	-	0.6680	GGG-NiC 20.5	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3J	F43003	Austenite
21	0.6677	EN-GJSA-XNiCr 20-5	0.6677	GGG-NiC 20.5	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3K	F43003	Austenite
	0.6676	EN-GJSA-XNiCr 30-3	0.6676	GGG-NiC 30.3	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3L	F43003	Austenite
	0.6667	EN-GJSA-XNiCr 20-5	0.6667	GGG-NiC 20.5	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3M	F43003	Austenite
	0.6667	EN-GJSA-XNiCr 20-5	0.6667	GGG-NiC 20.5	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3N	F43003	Austenite
	0.6667	-	0.6667	GGG-NiC 20.5	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3O	F43003	Austenite
22	0.6667	EN-GJSA-XNiCr 20-5	0.6667	GGG-NiC 20.5	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3P	F43003	Austenite
	0.6667	EN-GJSA-XNiCr 20-5	0.6667	GGG-NiC 20.5	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3Q	F43003	Austenite
	0.6667	EN-GJSA-XNiCr 20-5	0.6667	GGG-NiC 20.5	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3R	F43003	Austenite
	0.6667	EN-GJSA-XNiCr 20-5	0.6667	GGG-NiC 20.5	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3S	F43003	Austenite
	0.6667	-	0.6667	GGG-NiC 20.5	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3T	F43003	Austenite
23	0.6667	EN-GJSA-XNiCr 20-5	0.6667	GGG-NiC 20.5	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3U	F43003	Austenite
	0.6667	EN-GJSA-XNiCr 20-5	0.6667	GGG-NiC 20.5	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3V	F43003	Austenite
	0.6667	EN-GJSA-XNiCr 20-5	0.6667	GGG-NiC 20.5	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3W	F43003	Austenite
	0.6667	EN-GJSA-XNiCr 20-5	0.6667	GGG-NiC 20.5	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3X	F43003	Austenite
	0.6667	-	0.6667	GGG-NiC 20.5	Grade F3	F3	FCD 800-2	G80	01 35-00	A436 Type D-3Y	F43003	Austenite
24	0.6667	EN-GJSA-XNiCr 20-5	0.6667	GGG-NiC								

Non-Ferrous metal

- Non-Ferrous metal

mat. group No .	Workpiece materials into material groups						JIS
	W- Nr	EN	EN-Nr	DIN	BS	AFNOR	
16	3.0205	AW-1200	A199	1C/1200	1B/1050A	A-4/1200	A1200 (A1050)
	3.0255	AW-1050A	A199.5	A199.5	1A	A-5/1050A	
	3.0275	AW-1070	A199.7	A199.7	1A	A-7/1070	
	3.1305	AW-2011	A1CuBiPb	A1Cu2.5Mn0.5	2L69	A-U2G	A1080
	3.1655	AW-2024	A1CuMg1	A1CuBiPb	FC/1/2011	A-U5pbBi/2011	A2011
	3.1325	AW-2014	A1CuSiMn	A1CuMg2	H14	A-U4G/2024	A2017
	3.1255	AW-5005A	AlMg1	A1CuSiMn	H14	A-U4G/2024	
	3.3315	AW-6061	AlMg1SiCu	AlMg1	H20	A-G1.5	
	3.3316	AW-5454	AlMg2.5	AlMg1SiCu	(N4)	(6061)	A6061
	3.3523	AW-5454	AlMg2.5	AlMg2.5	N51/5454	A-G2.5/5052	A5052
17	3.3537	AW-5251	AlMg2.7Mn	AlMg2.7Mn	N4/5251	A-G2.5/5052	A5454
	3.3525	AW-5049	AlMg2Mn0.3	AlMg2Mn0.3	(H9)(6060)	A-G2M	
	3.3527	AW-5754	AlMg2Mn0.8	AlMg2Mn0.8	(H10)	A-G2Mn0.8	A6063
	3.3535	AW-5083	AlMg4.5	AlMg4.5	H30/6082	A-G3M	
	3.3545	AW-5086	AlMg4.5Mn	AlMg4.5Mn	N31	A-SGPb	
	3.3206	AW-6080	AlMgSi0.5	AlMgSi0.5	N8/5083	A-G4bIC-5086	
	3.3210	AW-6063	AlMgSi0.7	AlMgSi0.7	(N5/6)	A-G5b6060	
	3.2315	AW-6082	AlMgSi1	AlMgSi1	(H10)	A-G5bIC/6061	
	3.0615	AW-3105	AlMn0.5Mg0.5	AlMn0.5Mg0.5	N3/3103	A-SGM0.7/6082	
	3.0525	AW-3005	AlMn0.5Mg0.5	AlMn0.5Mg0.5	N3/3103	A-MG0.5/3005	
18	3.0515	AW-3103	AlMn1	AlMn1	A-M/13003	A-M/13003	A3003
	3.0517	AW-3003	AlMn1Cu	AlMn1Cu	A-M/16/3004	-	
	3.0526	AW-3004	AlMn1Mg1	AlMn1Mg1	A-ZSG/7020	-	
	3.4335	AW-0202	AlZn4.5Mg1	AlZn4.5Mg1	A-ZAGU/7075	-	
	3.4345	AW-7075	AlCu4Ti	AlCu4Ti	2L9/92	A-U5GT	
	3.1841	AC-21100	AlCu4Tm	AlCu4Tm	2L9/92	A-G3T	
	3.1371	AC-21000	AlMg3	AlMg3			
	3.3541	AC-51100	AlZn4.5Mg1	AlZn4.5Mg1			
	3.3241	AC-51400	AlMg5(Si)	AlMg5(Si)			
	3.3261	AC-51400	AlMg6	AlMg6			
19	3.3555	AC-51200	AlS19Mg	AlS19Mg	LM5	A-S10G	
	3.3292	AC-51200	AlS10Mg(Fe)	AlS10Mg(Fe)	LM9	A-S7G	
	3.2381	AC-34300	AlS10Mg	AlS10Mg	LM25	-	
	3.2341	AC-42000	AlS16Mg	AlS16Mg			
	3.5662	MC-21230	MG-P-63	MG-P-63			
	3.5612	MC-21110	MG-P-61	MG-P-61			
	3.5812	MC-21120	MG-P-61	MG-P-61			
	3.5812	MB-65110	MGSe32Zn2	MGSe32Zn2			
	3.5103	AC-43200	AlSi10Mg(Cu)	AlSi10Mg(Cu)			
	3.2383	AC-44200	AlSi12	AlSi12			
17	3.2382	AC-46100	AlSi12Cu2(Fe)	AlSi12Cu2(Fe)	LM9	CuAg0.1	CuAg0.1
		AC-47100	AlSi17Cu5	AlSi17Cu5		AB1	CuAg0.1
18	2.1203	CW004A	CuAg0.1	CuAg0.1	CuAg0.1	CuAg0.1	CuAg0.1
	2.0940.01	CW013A	CuAg0.1	CuAg0.1	CuAg0.1	CuAg0.1	CuAg0.1
19	2.0975.01	CC331G	CuAg0.1	CuAg0.1	CuAg0.1	CuAg0.1	CuAg0.1
	2.0975.01	CC333G	CuAg0.1	CuAg0.1	CuAg0.1	CuAg0.1	CuAg0.1

Workpiece materials into material groups							
UNI	SS	AISI/ASTM	UNS	Condition	Misc. Brands	Structure	Form
4010	AA1200						
4007	AA1050A						
4005	AA1070A						
4004	AA1080A						
4355	AA2117						
	AA2011						
	AA2017A						
	AA2024						
	AA2014						
4338	AA5005A						
4106	AA5050B						
4355	AA6061						
4120	AA5052						
	AA5454						
	AA5251						
4115	AA5049						
4125	AA5754						
	AA5082						
4140	AA5083						
	AA5086						
4103	AA5060						
4104, 4107	AA6005						
4212	AA6082						
	AA6012						
	AA3105						
4054	AA3105						
	AA3103						
	AA3003						
	AA3004						
4425	AA7020						
	AA7022						
	AA7075						
4337	AA2040						
	AA5140						
	5056A						
4163							
	B85						
	B26						
4245	A13600						
4251	A13560						
	A380						
	359.2						
	4418						
4633	A231B						
	AM60A						
	AZ61A						
	AZ80A						
	A281A						
	A291A/B						
	M1A						
	B80						
	B80						
	A413.2						
	A684.0						
	B390.0						
5015	C11600						
5030	C95200						
5710	CA952						
5716	CA955						

• Non-Ferrous metal

mat. group No.	W.- Nr	EN	Workpiece materials into material groups				JIS
			EN-Nr	DIN	BS	AFNOR	
18	2.0966	CW307G	CuAl10NiFe4	CuAl10NiFe4	Ca104	CuAl10Ni	C6301
	2.0978	CW308G	CuAl11NiFe6	CuAl11NiFe6			
	2.0916	CW300G	CuAl5As	CuAl5As			
	2.0918		CuAl8Fe3	CuAl8Fe3			
	2.1292	CW107C	CuFe2P	CuFe2P			
	2.1310	CW109C	CuNi1Si	CuNi1Si			
	2.0853		CuNi10Fe1Mn	CuNi10Fe1Mn			
	2.0872		CuNi12Zn30Pb1	CuNi12Zn30Pb1	CZ102	CuNi10Fe1Mn	C6140
	2.0780	CW406J	CuNi18Zn19Pb1	CuNi18Zn19Pb1			
	2.0790	CW408J	CuNi18Zn19Pb1	CuNi18Zn19Pb1			
	2.0740	CW409J	CuNi18Zn20	CuNi18Zn20	Ns106	CuNi18Zn19Pb1	5667
	2.0742	CW410J	CuNi18Zn27	CuNi18Zn27	Ns107	CuNi18Zn20	C7451
	2.0830		CuNi25	CuNi25	CN105	CuNi25	C76300
	2.0835		CuNi30Fe2Mn2	CuNi30Fe2Mn2			C76300
	2.0883	CW354H	CuNi30FeMn	CuNi30FeMn			C76300
	2.0882	CW112C	CuNi30Mn1Fe	CuNi30Mn1Fe	CN107	CuNi30Mn1Fe	C76300
	2.0857		CuNi35Si	CuNi35Si			C76300
	2.0842		CuNi44Mn1	CuNi44Mn1			C76300
	2.0875	CW351H	CuNi5Fe1Mn	CuNi5Fe1Mn			C76300
	2.1176	CW352H	CuNi9Sn2	CuNi9Sn2	LB2	CuNi9Sn2	C76300
	2.1160	CW113C	CuPb1P	CuPb1P			C76300
	2.1183	CC496K-GZ	CuPb1P	CuPb1P			C76300
	2.1189		CuPb2Sn	CuPb2Sn	CT1	CuSn10	C76300
	2.1050	CC480K	CuSn10	CuSn10	PB2	CuSn12	C76300
	2.1087	CC483K	CuSn12Zn	CuSn12Zn	PB101	CuSn14	C76300
	2.1051	CC450K	CuSn4	CuSn4	PB103	CuSn4p	C76300
	2.1020	CW452K	CuSn6	CuSn6	CuSn6	CuSn6	C76300
	2.1080		CuSn6Zn6	CuSn6Zn6			C76300
	2.1090	CC493K-GZ	CuSn7	CuSn7			C76300
	2.1030	CW453K	CuSn8	CuSn8	PB104	CuSn8P	C76300
	2.0230	CW501L	CuZn10	CuZn10	CZ101	CuZn10	C5210
	2.0240	CW502L	CuZn15	CuZn15	CZ102	CuZn15	C2200
	2.0250	CW503L	CuZn20	CuZn20	CZ103	CuZn20	C2300
	2.0460	CW702R	CuZn20Al2	CuZn20Al2	CZ110	CuZn22Al2	C2400
	2.0261	CW504L	CuZn28	CuZn28	CZ105	CuZn28	C2400
	2.0470	CW706R	CuZn28Sn1	CuZn28Sn1	CZ106	CuZn28Sn1	C2400
	2.0265	CW505L	CuZn30	CuZn30	CZ107	CuZn30	C2400
	2.0490	CW708R	CuZn31Si1	CuZn31Si1	HTB1	CuZn30AlFeMn	C2400
	2.0280	CW506L	CuZn33	CuZn33			C2400
	2.0592	CC765S	CuZn35Ni2	CuZn35Ni2			C2400
	2.0540	CW710R	CuZn38	CuZn38	CZ108	CuZn36	C2400
	2.0351	CW601N	CuZn38Pb1.5	CuZn38Pb1.5	CZ131	CuZn38Pb2	C2400
	2.0375	CW602N	CuZn38Pb3	CuZn38Pb3	CZ124	CuZn38Pb3	C2400
	2.0321	CW508L	CuZn37	CuZn37	CZ108	CuZn37	C2400
	2.0332	CW604N	CuZn37Pb0.5	CuZn37Pb0.5	CZ118	(CuZn38Pb1.5)	C2400
	2.0371	CW607N	CuZn38Pb1.5	CuZn38Pb1.5	CZ119	(CuZn38Pb2)	C2400
	2.0350	CW717R	CuZn38Sn1	CuZn38Sn1			C2400
	2.0255	CW715R	CuZn38SnAl	CuZn38SnAl			C2400
	2.0372	CW610N	CuZn39AlFeMn	CuZn39AlFeMn	CZ123	CuZn39Pb0.8	C34200
	2.0380	CW612N	CuZn39Pb0.5	CuZn39Pb0.5	CZ128	CuZn39Pb0.5	C34200
	2.0401	CW614N	CuZn39Pb2	CuZn39Pb2	CZ121	CuZn39Pb2	C34200
	2.0360	CW509	CuZn39Pb3	CuZn39Pb3	CZ109	CuZn39Pb3	C34200
	2.0350	CW713R	CuZn40	CuZn40	CZ109	CuZn40	C34200

• Non-Ferrous metal

mat. group No.	W.- Nr	EN	Workpiece materials into material groups				Form
			UNI	SS	AISI/ASTM	UNS	
			CuAl10NiFe4	CuAl10NiFe4	Ca104	CuAl10Ni	C62730
			CuAl11NiFe6	CuAl11NiFe6			C60800
			CuAl5As	CuAl5As			C18400
			CuAl8Fe3	CuAl8Fe3			C19400
			CuCr	CuCr			C70600
			CuNi1.5Si	CuNi1.5Si			C79300
			CuNi10Fe1Mn	CuNi10Fe1Mn			C76300
			CuNi12Zn30Pb1	CuNi12Zn30Pb1	CZ102	CuNi10Fe1Mn	C76300
			CuNi18Zn19Pb1	CuNi18Zn19Pb1			C75200
			CuNi18Zn19Pb1	CuNi18Zn19Pb1			C77000
			CuNi18Zn20	CuNi18Zn20			C71300
			CuNi18Zn27	CuNi18Zn27			C71580
			CuNi25	CuNi25			
			CuNi30Fe2Mn2	CuNi30Fe2Mn2			
			CuNi30Mn1Fe	CuNi30Mn1Fe			
			CuNi35Si	CuNi35Si			
			CuNi44Mn	CuNi44Mn			
			CuNi5Fe1Mn	CuNi5Fe1Mn			
			CuSn10Pb10	CuSn10Pb10			
			CuSn10	CuSn10	5640	CA937	
			CuSn12	CuSn12			
			CuSn14	CuSn14			
			CuSn4p	CuSn4p			
			CuSn6	CuSn6	5443	CA907	
			CuSn6Zn6	CuSn6Zn6	5458		
			CuSn7	CuSn7	5485		
			CuSn14	CuSn14	5475		
			CuSn14p	CuSn14p			
			CuSn6	CuSn6	5428		
			CuSn6	CuSn6			
			CuSn6Zn6	CuSn6Zn6			
			CuSn7	CuSn7			
			CuSn12	CuSn12			
			CuSn14	CuSn14			
			CuSn14p	CuSn14p			
			CuSn6	CuSn6			
			CuSn6Zn6	CuSn6Zn6			
			CuSn7	CuSn7			
			CuSn12	CuSn12			
			CuSn14	CuSn14			
			CuSn14p	CuSn14p			
			CuSn6	CuSn6			
			CuSn6Zn6	CuSn6Zn6			
			CuSn7	CuSn7			
			CuSn12	CuSn12			
			CuSn14	CuSn14			
			CuSn14p	CuSn14p			
			CuSn6	CuSn6			
			CuSn6Zn6	CuSn6Zn6			
			CuSn7	CuSn7			
			CuSn12	CuSn12			
			CuSn14	CuSn14			
			CuSn14p	CuSn14p			
			CuSn6	CuSn6			
			CuSn6Zn6	CuSn6Zn6			
			CuSn7	CuSn7			
			CuSn12	CuSn12			
			CuSn14	CuSn14			
			CuSn14p	CuSn14p			
			CuSn6	CuSn6			
			CuSn6Zn6	CuSn6Zn6			
			CuSn7	CuSn7			
			CuSn12	CuSn12			
			CuSn14	CuSn14			
			CuSn14p	CuSn14p			
			CuSn6	CuSn6			
			CuSn6Zn6	CuSn6Zn6			
			CuSn7	CuSn7			
			CuSn12	CuSn12			
			CuSn14	CuSn14			
			CuSn14p	CuSn14p			
			CuSn6	CuSn6			
			CuSn6Zn6	CuSn6Zn6			
			CuSn7	CuSn7			
			CuSn12	CuSn12			
			CuSn14	CuSn14			
			CuSn14p	CuSn14p			
			CuSn6	CuSn6			
			CuSn6Zn6	CuSn6Zn6			
			CuSn7	CuSn7			
			CuSn12	CuSn12			
			CuSn14	CuSn14			
			CuSn14p	CuSn14p			
			CuSn6	CuSn6			
			CuSn6Zn6	CuSn6Zn6			
			CuSn7	CuSn7			
			CuSn12	CuSn12			
			CuSn14	CuSn14			
			CuSn14p	CuSn14p			
			CuSn6	CuSn6			
			CuSn6Zn6	CuSn6Zn6			
			CuSn7	CuSn7			
			CuSn12	CuSn12			
			CuSn14	CuSn14			
			CuSn14p	CuSn14p			
			CuSn6	CuSn6			
			CuSn6Zn6	CuSn6Zn6			
			CuSn7	CuSn7			
			CuSn12	CuSn12			
			CuSn14	CuSn14			
			CuSn14p	CuSn14p			
			CuSn6	CuSn6			
			CuSn6Zn6	CuSn6Zn6			
			CuSn7	CuSn7			
			CuSn12	CuSn12			
			CuSn14	CuSn14			
			CuSn14p	CuSn14p			
			CuSn6	CuSn6			
			CuSn6Zn6	CuSn6Zn6			
			CuSn7	CuSn7			
			CuSn12	CuSn12			
			CuSn14	CuSn14			
			CuSn14p	CuSn14p			
			CuSn6	CuSn6			
			CuSn6Zn6	CuSn6Zn6			
			CuSn7	CuSn7			
			CuSn12	CuSn12			
			CuSn14	CuSn14			
			CuSn14p	CuSn14p			
			CuSn6	CuSn6		</td	

- Non-Ferrous metal

mat. group No .	W.- Nr	EN	EN-Nr	Workpiece materials into material groups				JIS
				DIN	BS	AFNOR		
18	2.0572 2.0580 2.0402 2.0410 2.0220	CW723R CW720F CW612N CW622N CW500L	CuZn40Mn1 CuZn40Mn1Pb CuZn40Pb2 CuZn44Pb2 CuZn5	CuZn40Mn1 CuZn40Mn1Pb CZ136 CZ120 CZ104 CZ125	CuZn39Pb2	C2100		
19	x2NiCrAlT3220		1.4876					
20								
21				NiMo30 NiMo30	2.4810 2.4810 2.4602	NiMo16Cr15W NiMo16Cr16Ti	2.4819 2.4610 2.4619	NiCr21Fe18Mo9

Wardrobe malfunctions: how social norms

Workpiece materials into material groups							
UNI	SS	AISI/ASTM	UNS	Condition	Misc.Brands	Structure	Form
5168 5272	C37800 C68700 C21000				AMPCO 15 AMPCO 18 AMPCO 18-136 AMPCO 18-22 AMPCO 18-23 AMPCO 21 AMPCO 22 AMPCO 25 AMPCO 26 AMPCO 45 AMPCO 483 AMPCO 642 AMPCO 673 AMPCO 674 AMPCO 8 AMPCO 863 AMPCO M4	cast	
				Precip.hardened heat treated	A286 AM350 AM355 Custom 455 Discaloy Incoloy 800 Incoloy 801 Incoloy 909 Lapellay M-308 N-155 N-155		
					Air Resist 13 FSX-414 H531 Haynes 188 Haynes 188 Haynes 25 Mar-M-302 Mar-M-509 MP159 MP35N Stellite 21 Stellite 30 Stellite 31 W152 W162	bar,forge,ring tube	
					R30195		
					N10665 N10002 N10002 N10276 N06455 N06007 N06985 N10003 N10003 N06635 N10004 N06002	Astrolloy GTD222 Hastelloy B-2 Hastelloy C Hastelloy C Hastelloy C-226 Hastelloy C-4 Hastelloy G Hastelloy G-3 Hastelloy N Hastelloy N Hastelloy S Hastelloy W Hastelloy X	all forms plate cast all forms all forms

Heat resistant super alloys / Titanium alloys

mat. group No .	Workpiece materials into material groups						JS
	W.- Nr	EN	EN-Nr	DIN	BS	AFNOR	
2.4816	NiCr15Fe						
2.4851	NiCr22Mo9Nb						
2.4856	NiCr22Mo9Nb						
2.4856	NiCr22Mo9Nb						
2.4856	NiFe38Cr16Nb						
2.4668	NiCr19Fe19Nb5Mo3						
2.4668	NiCr19Fe19Nb5Mo3						
2.4668	NiCr19Fe19Nb5Mo3						
2.4669	NiCr20TiAl						
2.4669	NiCr19Co18Mo4Ti3Al3						
2.4634	NiCr20Co13Mo4Ti3Al						
2.4636	NiCr20Co13Mo4Ti3Al						
2.4650	NiCr20Co13Mo4Ti3Al						
2.4631	NiCr19Co18Mo4Ti3Al3						
2.4632	TiCu2						
2.4662	Ti10Fe2Al3						
ppm							
2.4654	TiAl5Si2.5						
2.4654	TiAl5Si2.5						
3.7024	TiAl5Si2.5						
3.7024	TiAl5Si2.5						
3.7124	TiAl6V4						
3.7164	TiAl6V4						
3.7164	TiAl6V4						
3.7164	TiAl6V4						
3.7164	TiAl6V4						
22							

- Heat resistant super alloys / Titanium alloys

Workpiece materials into material groups							
UNI	SS	AISI/ASTM	UNS	Condition	Misc.Brands	Structure	Form
			N06600 N06601 N06625 N06625 N06625 N09706	Inconel 600 Inconel 601 Inconel 625 Inconel 625 Inconel 625 Inconel 706			IN 100 all forms bar,forge,ring tube cast
			N07713 N07718 N07718 N07718	Inconel 713 Inconel 713LC Inconel 718 Inconel 718			bar,forge,ring bar,forge,ring tube cast
			N07750 N07750	Sol.treated precip.hardened	Inconel 901 Inconel X-750 Inconel X-750		all forms
			N02205		Nickel 201 Nimonic 101 Nimonic 105 Nimonic 115 Nimonic 263 Nimonic 80A Nimonic 81 Nimonic 86 Nimonic 90 Nimonic 901 René 95 TD Nickel		
			N07263 N07080		Mar-M-200 Mar-M-247 Mod IN 100 Mod IN 792		
			N07090 N09901		Udimet 500 Udimet 520 Udimet 700 Udimet 720 Waspalloy Waspalloy		
			N03260 N07500				bar, forge cast
			N07001 N07001				
					Ti (pure) Ti (pure) (grid 1-4) Ti 10V-2Fe-3Al Ti 15Mo-3Nb-3Al-0.2Si Ti 17 Ti 2Cu Ti 3Al-2.5V Ti 5Al-2.5Sn Ti 5Al-2.5Sn Ti 6Al-2.5Sn	Ti (α) Ti (β) Ti (β) Ti ($\alpha + \beta$)	pure - tube pure - plate, bar, forge
							tube bar, forge
			AMS 4900, -01, -21 AMS 4986 ASTM Grade 21 AMS 4995	R58210 R58500	annealed		
			AMS 4943 AMS 4943 AMS 4910	R56320 R54520 ELI	annealed		
			AMS 4909 AMS 4910	R54521 R54520	annealed		
			AMS 4919 AMS 4919	R54620 R54621	annealed precip.hardened		
			AMS 4981 AMS 4981	R56260 R56260	annealed precip.hardened		
			AMS 4920 AMS 4920, Grd 5	R56400 R56400	annealed annealed		
			AMS 4981 AMS 4920	R56401 R56400	ELI precip.hardened		

Insert Screw Dimensions And Torque Values

Cutting Data Calculation

Screw	Th	Nm	ISO Size	Key
C01804	M1.8(4h)	0.5	6IP	T06P
C025045	M2.5(4h)	1.2	8IP	T08P
C02506	M2.5(4h)	1.2	8IP	T08P
C03006	M3.0(4h)	2.0	9IP	T09P
C03007	M3.0(4h)	2.0	9IP	T09P
C03008	M3.0(4h)	2.0	9IP	T09P
C03010	M3.0(4h)	2.0	9IP	T09P
C03012	M3.0(4h)	2.0	9IP	T09P
C03505	M3.5(4h)	3.0	10IP	T10P
C03506	M3.5(4h)	3.0	10IP	T10P
C03507	M3.5(4h)	3.0	10IP	T10P
C03508	M3.5(4h)	3.5	15IP	T15P
C03510	M3.5(4h)	3.0	10IP	T10P
C03511	M3.5(4h)	3.0	10IP	T10P
C03512	M3.5(4h)	3.0	10IP	T10P
C03513	M3.5(4h)	3.0	10IP	T10P
C04011	M4.0(4h)	4.0	15IP	T15P
C04013	M4.0(4h)	4.0	15IP	T15P
C04014	M4.0(4h)	4.0	15IP	T15P
C04016	M4.0(4h)	4.0	15IP	T15P
C04017	M4.0(4h)	4.0	15IP	T15P
C04511	M4.5(4h)	5.0	20IP	T20P
C05013	M5.0(4h)	6.0	20IP	T20P

- Nomenclature and formulae

RPM	Metal removal rate
$n = \frac{v_c \cdot 1000}{\pi \cdot D}$ (rev/min)	$Q = \frac{a_e \cdot a_p \cdot v_f}{1000} \text{ (cm}^3/\text{min)}$
Cutting speed	Cutting speed and RPM for copying
$v_c = \frac{n \cdot \pi \cdot D}{1000}$ (mm/min)	$v_c = \frac{v_c \cdot 1000}{\pi \cdot D_w}$ (mm/min)
Feed speed	Feed speed and RPM
$v_f = n \cdot z \cdot f_z$ (mm/min)	$v_f = n \cdot z_c \cdot f_z$ (mm/min)
$v_f = n \cdot z_c \cdot f_z$ (mm/min)	$D_w = 2 \cdot \sqrt{a_p \cdot (D - a_p)}$ (RPM)
Feed per revolution	Feed speed in tapping
$f = z \cdot f_z$ (mm/rev)	$v_f = n \cdot \text{pitch}$ (mm/min)
$f = z \cdot f_z$ (mm/rev)	

a_e = Width of cut mm/radial depth of cut
 a_p = Depth of cut mm/axial depth of cut
 D = Cutter diameter
 f = Feed per revolution
 f_z = Feed per tooth
 z_c = Effective No. of teeth for calculation of feed speed or feed per rev (see below)
 n = RPM
 Q = Material removal rate
 v_c = Cutting speed
 v_f = Feed speed
 z = No of teeth

Effective No. of teeth (Z_c)

The effective No. of teeth (Z_c) is used to calculate the feed speed (v_f) and the feed per revolution (f). For most of the cutters the effective No. of teeth (Z_c) is equal to the No. of teeth in the cutter (z), but for some of the cutters Z_c is less than z .

Especially in spot drill, the K need to be calculated with 1 flute in centering process and 2 flutes in chamfering process.

- Always apply solid lubricant paste to screw prior to use.

TECHNICAL GUIDE

Standard Keyway And Pin Hole Figures

FIG.1

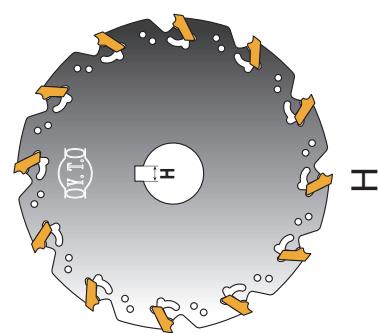


FIG.2

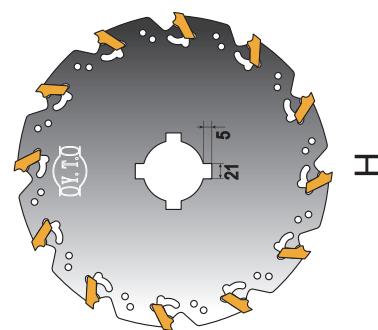
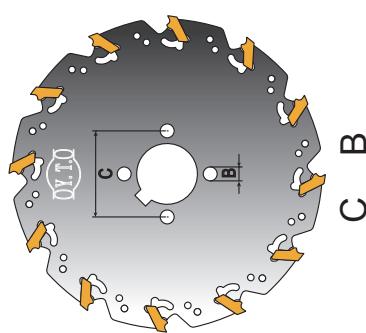
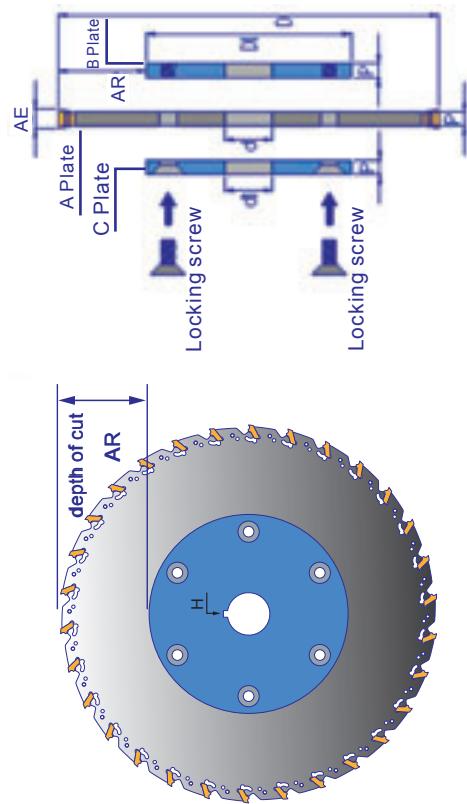


FIG.3



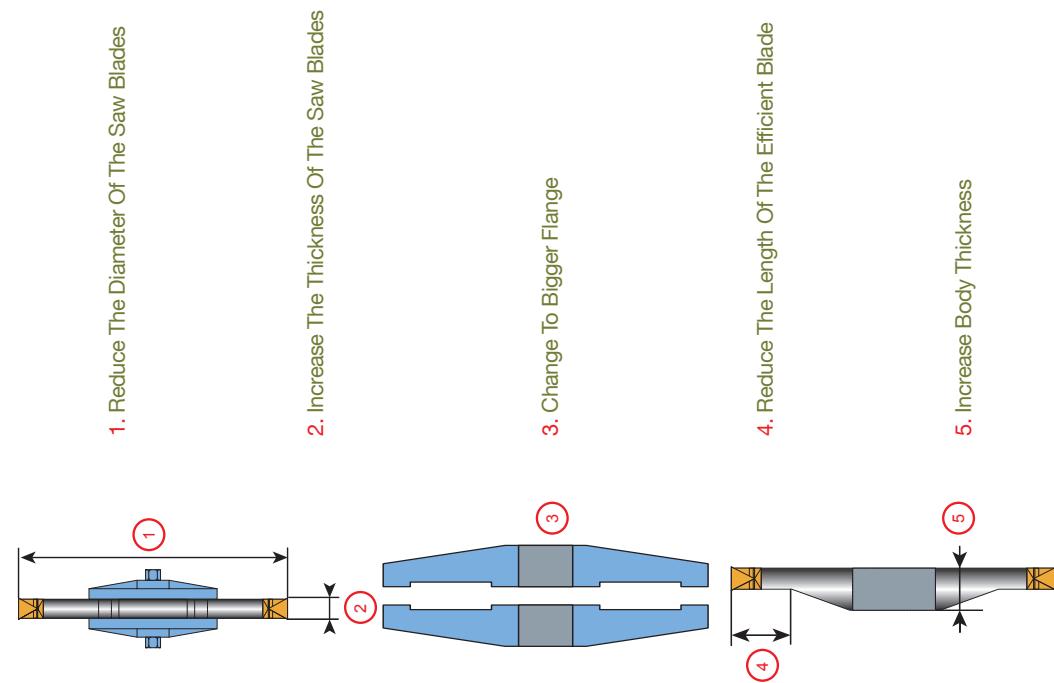
Vibrations Solution



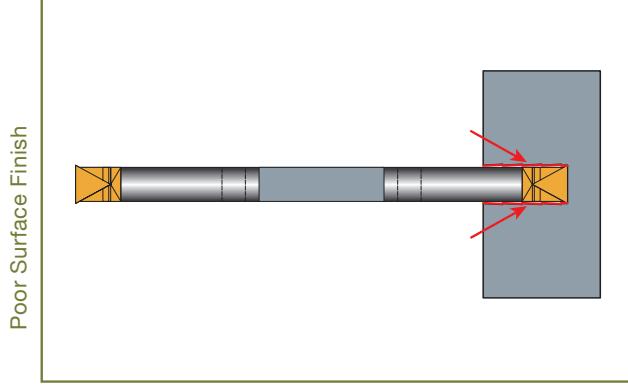
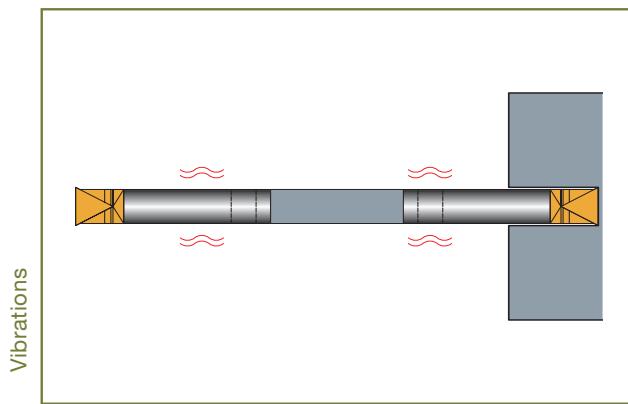
Trouble Shooting

The Strategy For Vibrations And Unstable Machining

Trouble Shooting



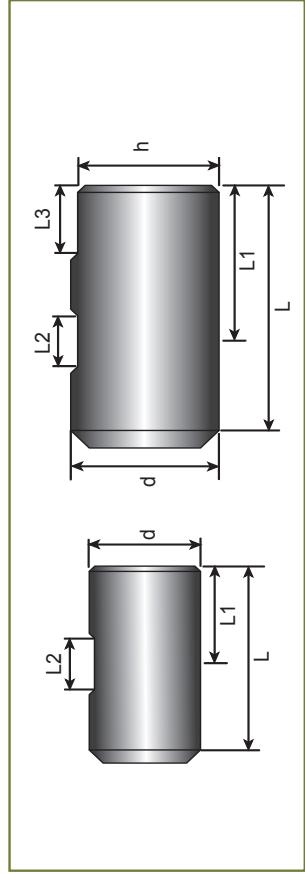
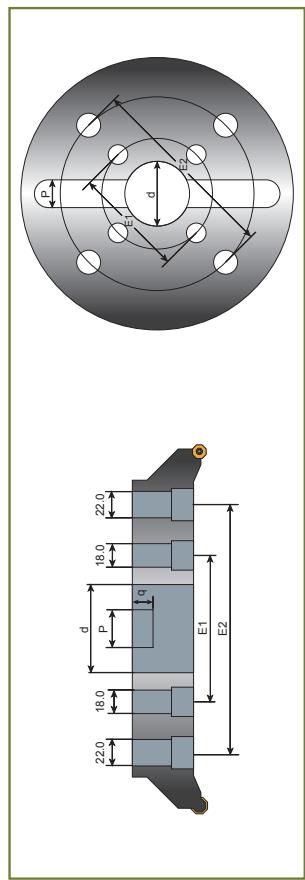
Attention :
 1. Please Follow The Trouble Shooting Above In Order To Obtain Better Cutting Surfaces
 2. Must Conform To THE Speed Factor



- Improve The Stability Of Cutter And Workpiece
- Minimize Tool Overhang
- Reduce The Feed Rate
- Increase The Cutting Speed
- Use A Coolant
- Use Wiper Insert
- Improve The Stability Of Cutter And Workpiece
- Change Cutter Positioning
- Minimize Tool Overhang
- Reduce The Cutting Speed
- Increase The Feed Rate
- Reduce The Depth Of Cut

Technical Guide

Technical Guide



Dimensions Of Mounting Metric Size

Dimensions In mm				
d	p	q	E1	E2
16	8.7	7	-	-
22	10.7	7.5	-	-
27	12.7	8	-	-
32	14.7	9	-	-
40	16.7	10	-	-
60	26	15	101.6	-
60	26	15	101.6	177.8

Dimensions Of Mounting Metric Size

Dimensions In mm					
d	L	L1	L2	L3	h
6	36	18	4.2	-	-
8	36	18	5.5	-	-
10	40	20	7	-	-
12	45	22.5	8	-	-
16	48	24	10	-	14.2
20	50	25	11	-	18.2
25	56	32	12	17	23
32	60	36	14	19	30
40	70	40	14	19	38

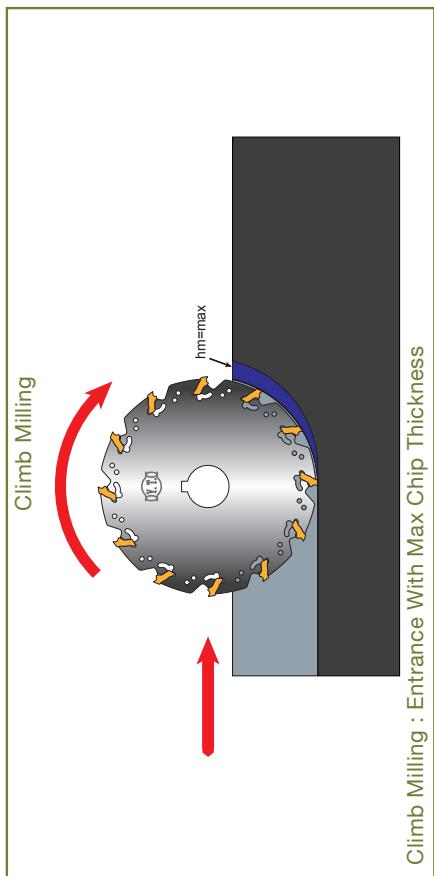
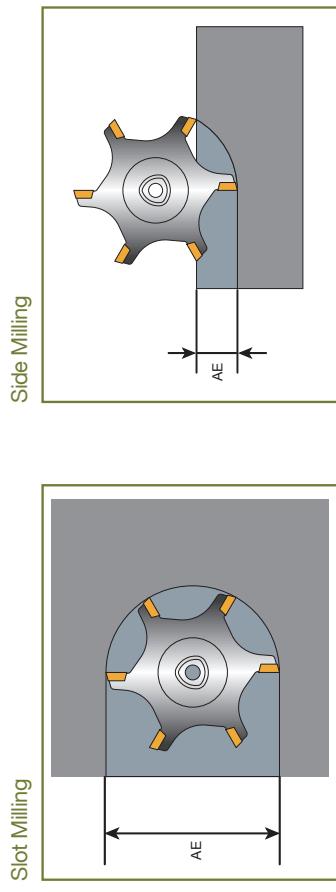
Dimensions In mm

Dimensions In mm				
d	p	q	E1	E2
25.4	10.3	7	-	-
31.75	13	9	-	-
38.1	16.2	11	-	-
50.8	19.3	12	-	-
47.65	25.7	15	101.6	-
47.65	25.7	15	101.6	177.8

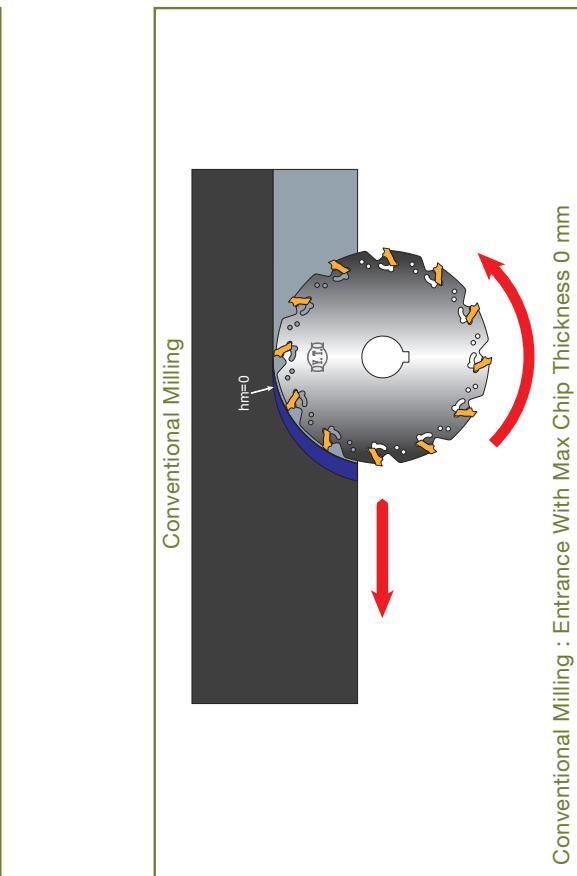
Dimensions Of Mounting Inch Size

Climb & Conventional Milling

Cutting Data



Climb Milling : Entrance With Max Chip Thickness



Conventional Milling : Entrance With Max Chip Thickness 0 mm

This Table Can Be Used For Cutters With Cutting Edge Angle = 90°

A_E / D %	Feed Per Tooth / mm (f_z)	Width Of Cut Up To And Including $D / 2$								Speed factor				
		0.03	0.06	0.08	0.10	0.15	0.20	0.25	0.30	0.40	0.50	0.60	1.00	
2 (0.02)	-	-	-	-	0.02	0.03	0.04	0.04	0.06	0.07	0.08	0.11	0.14	1.8
3 (0.03)	-	-	-	-	0.02	0.03	0.04	0.05	0.07	0.09	0.10	0.14	0.17	1.7
5 (0.05)	-	-	0.02	0.02	0.03	0.04	0.06	0.07	0.09	0.11	0.13	0.18	0.22	1.6
10 (0.10)	-	0.02	0.02	0.03	0.05	0.06	0.08	0.09	0.12	0.16	0.19	0.25	0.31	1.5
15 (0.15)	0.011	0.02	0.03	0.04	0.06	0.08	0.09	0.11	0.15	0.19	0.23	0.30	-	1.4
20 (0.20)	0.013	0.03	0.03	0.04	0.06	0.09	0.11	0.13	0.17	0.22	0.26	-	-	1.35
30 (0.30)	0.016	0.03	0.04	0.05	0.08	0.10	0.13	0.16	0.21	0.26	0.31	-	-	1.3
40 (0.40)	0.018	0.04	0.05	0.06	0.09	0.12	0.15	0.18	0.23	0.29	-	-	-	1.25
50 (0.50)	0.02	0.04	0.05	0.06	0.10	0.13	0.16	0.19	0.25	0.32	-	-	-	1.2
100 (1.0)	0.02	0.04	0.05	0.06	0.10	0.13	0.16	0.19	0.25	0.32	-	-	-	1.0

A_E / D %	Feed Per Tooth / mm (f_z)	Average Chip Thickness mm (hm)								Speed factor
		0.03	0.06	0.08	0.10	0.15	0.20	0.25	0.30	
2 (0.02)	1.25	-	-	-	-	-	-	-	-	
3 (0.03)	1.5	-	-	-	-	-	-	-	-	
5 (0.05)	2.0	-	-	-	-	-	-	-	-	
10 (0.10)	3.0	-	-	-	-	-	-	-	-	

Instead Of Using The Table Above For Calculating hm And fz The Following Formulae Could Be Used If $(A_E / D) < 30\%$

$$hm = f_z \cdot \sqrt{\frac{A_E}{D}}$$

$$f_z = hm \cdot \sqrt{\frac{D}{A_E}}$$

