



SINCE 1977



PICTURE INDEX

YH TOOLING ENTERPRISE CO., LTD

INTRODUCTION

P. 04

UFO FAMILY

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

CB3



P. 18

SAW BLADES

Side Milling Cutter
Disc Milling Cutter

SB / SBL
CE / CW / CEL / CWL
CB / CDL / CDR
SC / SCL / STL / ST



P. 134

SPOT DRILL
CENTER DRILL

13
TU / TU1



P. 204

COUNTER BORE

14
CBK / HBM / CBI



P. 228

CHAMFER

15
CI / HCI / C / MC



P. 248

MILLING CUTTERS

XD / XV / MO



P. 273

APPENDIX

MATERIAL GROUP

P. 290

Series No.

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, Y.T. 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 manufacturer 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 $\phi 4.0$ - $\phi 110$ mm. It's approved by Taiwan, China and UN patents.
- 2013 The smallest indexable thread mill and taps are announced, min $\phi 8.0$ mm 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
- 2017 German company "Yih Troun Cutting Tools GmbH" Set up.

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 Ringer Metal Industry Innovation Award

2012 Indexable Countersink - Global Patent
 2012 Honorary member of Taiwan Machinery Association
 2014 Ringer Technology Innovation Awards, Indexable Tap - Global Patent
 2015 - 2016 Top 1000 D&B SME Award



Indexable Tap

Indexable Tap

Spot Drill



Customer Base

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.

COUNTRIES ISSUING FOR PATENT CERTIFICATION



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 0.01mm and bear economical efficiency.



Applications

There are total 4 applications:

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



4 in 1
Insert



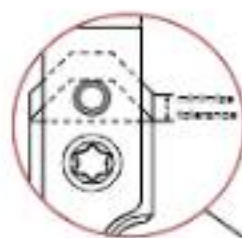
Center
Drill



Spot
Drill

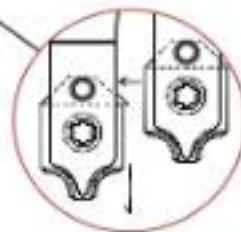


Corner
Rounding



1 / Precise
positioning

2 / Flexible
Replacement



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.



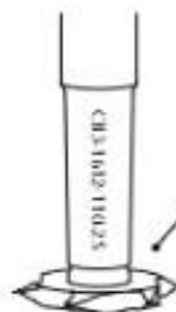
1 / Excellent chip evacuation



2 / High stability & Low cutting forces



3 / Same insert can make different pitches of thread.



TECHNICAL GUIDE

Code Keys

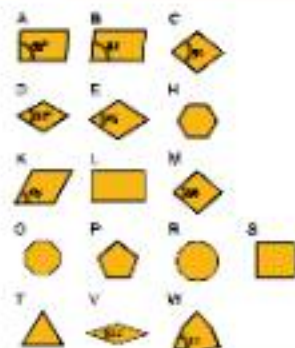
Insert-Metric series, extract from the international standard. Dimension is theory measurement. The normal size and tolerance of type code which on following list are different. Each insert actual tolerance please reference to insert list.

S	E	K	R	12	03	AF	T	N	ME12	6H
1	2	3	4	5	6	7	8	9	10	11

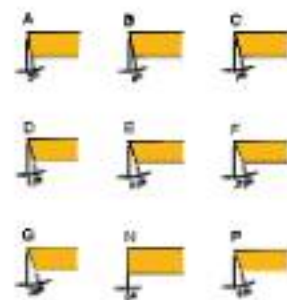
Code Keys

2. Tolerances												
Tol. Class	Tolerance 4/-mm			For d, dimension mm								
	 m	 AE	 d	3.175	4.76	6.35	9.525	12.7	15.875	19.05	25.4	31.75
A	0.008	0.008	0.008	*	*	*	*	*	*	*	*	*
B	0.008	0.008	0.008	*	*	*	*	*	*	*	*	*
C	0.008	0.008	0.013	*	*	*	*	*	*	*	*	*
D	0.008	0.10	0.008	*	*	*	*	*	*	*	*	*
E	0.013	0.008	0.013	*	*	*	*	*	*	*	*	*
J	0.008	0.008	0.08	*	*	*	*					
	0.008	0.008	0.08					*				
	0.008	0.008	0.10						*	*		
	0.008	0.008	0.10								*	
	0.008	0.008	0.18									*
K	0.013	0.008	0.08	*	*	*	*					
	0.013	0.008	0.08					*				
	0.013	0.008	0.10						*	*		
	0.013	0.008	0.10								*	
	0.013	0.008	0.18									*
M	0.08	0.10	0.08	*	*	*	*					
	0.10	0.10	0.08					*				
	0.15	0.10	0.10						*	*		
	0.18	0.10	0.10								*	
	0.20	0.10	0.18									*
U	0.10	0.10	0.08	*	*	*	*					
	0.20	0.10	0.10					*				
	0.27	0.10	0.18						*	*		
	0.38	0.10	0.28								*	*

1. Shape



2. Side Clearance Angle



0 = Special

Inserts Code Keys

4. Type

6. Thickness

01=1.25 mm 06=4.75 mm
 11=1.50 mm 08=5.00 mm
 02=2.25 mm 09=5.25 mm
 03=3.15 mm 07=7.50 mm
 13=3.97 mm 05=3.00 mm
 09=2.52 mm

8. Cutting edge designation

7. Thickness

1st letter: A=25°, B=30°, C=15°, F=35°, P=30°
 D-Special

2nd letter: A=3°, B=5°, C=7°, D=15°, E=20°, F=25°, G=20°, H=11°
 D-Special

3rd letter: 10°=round inserts, 00=sharp, 01=0.1mm, 02=0.2mm, 03=0.3mm, 05=0.5mm, 12=1.2mm, etc.
 Tolerance version

9. Direction of cutting

R: Right-rotated
 L: Left-rotated
 N: Neutral (R and L-rotated)

10. Internal designation

Machining conditions:
 E - Easy
 M - Medium
 D - Difficult

11. For TAP only

Tolerance: 6H - 8H

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.

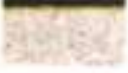
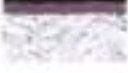
With CVD-technique layers of titanium carbide (TiC), titanium nitride (TiN), titanium carbonitride (Ti(C,N)) and alumina (Al₂O₃) can be made. CVD-coated grades are suitable for wear resistance in demanding applications with high feed rates and intermediate to high cutting speed.

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.

	Grades	P Steel					M Stainless Steel					K Cast iron					N Non Ferrous Metal					S Heat resistant super alloys					H Hardened steel				
		100	010	P20	P30	P40	P50	M10	M20	M30	M40	K10	K20	K30	K40	N10	N20	N30	N40	S10	S20	S30	S40	S50	S60	S70	S80	S90	S100	S110	S120
PVD	0100																														
	0200																														
	0300																														
	0400																														
	0500																														

Insert Grades

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

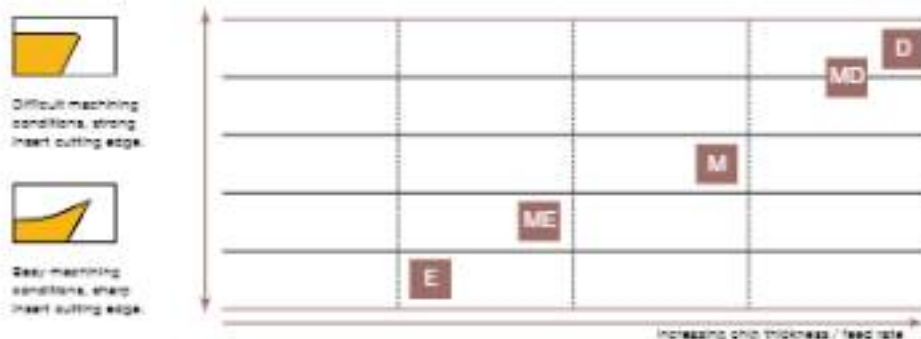
Uncoated Grades

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

Insert Geometries

Designation system

The Y.T. 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-MD	Negative and 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

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, Taper Pipe Reamer, Radius, Double Corner, Concave Radius, Chamfer, Dovetail, Circclip, Back Boring, Gear Machining. The holders are available in different diameters and lengths.



Video

Patent No.
M530197

Patent No.
ZL 201620538204.5

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



Design Of UFO Family

Shank

1. High precision pre-hardened steel HRC(60) 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 more than 400 different inserts

Shank



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 assures the strength of the shaft.

Multi Application

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

Center Positioning

Higher fitting accuracy with taper design enhance cutting speed and insert tool life.



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 to improve the tool life of the insert.

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 and improve the tool life of the insert.
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 tool life of insert.

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

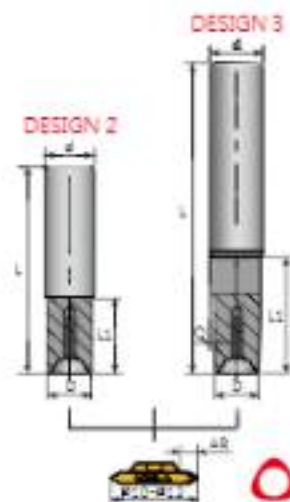


Particularly suitable for:

- Big depth of cut or full cutting
- Poor machining condition (vibration)
- Difficult materials

PRODUCT SPECIFICATIONS

UFO Family Common Toolholders



CB3

• HSS Shank

Order code	Dimensions (mm)					Design		Insert	Screw	Key
	$\varnothing$	$\varnothing$	L	L1	$\varnothing$					
CB3-080-80-12	8.0	8	80	12	-	2	0.01	$\varnothing 12$ $\varnothing 11$ $\varnothing 12$ $\varnothing 12$	C03012	T08P
CB3-080-80-12	7.5	8	80				0.04			
CB3-100-100-12	8.5	10	100	20	1"	2	0.08			
CB3-100-100-12	7.5	10	100	20						

CB3W

• Carbide Shank

Order code	Dimensions (mm)					Design		Insert	Screw	Key
	$\varnothing$	$\varnothing$	L	L1	$\varnothing$					
CB3W-080-80-12	7.5	8	80	12	-	2	0.08	$\varnothing 12$ $\varnothing 11$ $\varnothing 12$ $\varnothing 12$	C03012	T08P
CB3W-100-100-12	7.5	10	100	20	1"	2	2.1			

* For Max. AR, please refer to insert specification page.



UFO Family Common Toolholders



CB3 • HSS Shank

Order code	Dimensions(mm)					Design	Insert	Screw	Key
	d	d1	L	L1	d1				
CB3-0808-85-18	7.5	8	85	10	-	2	0.02	Ø12	T03P
CB3-1010-90-18	9.5	10	90	10	-	2	0.08	Ø12	
CB3-1208-110-18	7.5	12	110	20	1*	2	0.02	Ø10	
CB3-1210-120-18	9.5	12	120	20	1*	2	0.02	Ø11	

CB3W • Carbide Shank

Order code	Dimensions(mm)					Design	Insert	Screw	Key
	d	d1	L	L1	d1				
CB3W-1010-90-18	9.5	10	90	10	-	2	0.3	Ø12	T03P
CB3W-1208-110-18	7.5	12	110	20	1*	2	0.8	Ø10	
CB3W-1210-120-18	9.5	12	120	20	1*	2	0.8	Ø11	

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

UFO Family Common Toolholders



CB3 • HSS Shank

Order code	Dimensions(mm)					Design	Insert	Screw	Key
	d	d1	L	L1	d1				
CB3-1010-90-20	9.5	10	90	12	-	2	0.12	Ø12	T10P
CB3-1010-100-20		100	12	-	2	0.12	Ø18		
CB3-1210-90-20		90	20	2.2*	2	0.17	Ø18		
CB3-1210-120-20		120	20	1.7*		0.20	Ø21		
CB3-1812-180-20	11.5	18	180	20	2.4*	2	0.28	Ø22	T10P
CB3-1818-120-20	15.5	18	120	20	-	2	0.3		

CB3W • Carbide Shank

Order code	Dimensions(mm)					Design	Insert	Screw	Key
	d	d1	L	L1	d1				
CB3W-1010-100-20	9.5	10	100	12	-	2	0.6	Ø18	T10P
CB3W-1210-180-20	11.5	12	180	20	-	2	0.7	Ø22	

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



UFO Family Common Toolholders



CB3 • HSS Shank

Order code	Dimensions(mm)					Design		Insert	Screw	Key
	Ø	d	L	L1	Ø					
CB3-1012-80-25	11.8	10	80	10	-	1	-	# 22 # 23 # 25 # 26 # 27	GB6017	712P
CB3-1212-90-25		12	90	12	-	2	0.13			
CB3-1212-110-35			110	-	0.15					
CB3-1815-110-35		18		25	4.3"	0.22				
CB3-1815-150-35			25	2.6"	0.25					
CB3-2020-150-35	19.8	20	20	-	2	0.32				

CB3W • Carbide Shank

Order code	Dimensions(mm)					Design	HSS	Insert	Screw	Key
	D	d	L	L1	d					
CB3W-1212-110-35	11.8	12	110	12	-	2	0.6	#22 #23 #25 #26 #27	GB6014	712P
CB3W-1818-150-35	18.8	18	150	20	-	2	0.7			

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

UFO Family Common Toolholders



CB3 • HSS Shank

Order code	Dimensions(mm)					Design		Insert	Screw	Key
	Ø	Ø	L	L1	Ø					
CB3-1015-80-30	18.8	10	80	10	-	1	-	#22 #23 #25 #26 #27	GB6018	720P
CB3-1818-120-30		18	120	18		2	0.17			
CB3-1818-150-30					0.21					
CB3-2018-150-30		20	150	68	2.0"	2	0.26			
CB3-2018-180-30				70	2.0"		0.27			
CB3-2020-180-30	19.8		180	20	-	2	0.45			

CB3W • Carbide Shank

Order code	Dimensions(mm)					Design	HSS	Insert	Screw	Key
	D	d	L	L1	d					
CB3W-1818-150-30	18.8	18	150	18	-	2	0.8	#22, #23 #25, #26 #27, #28	GB6018	720P
CB3W-2018-180-30		20	180	20	2.0"	2	1.0			

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



UFO Family Common Toolholders

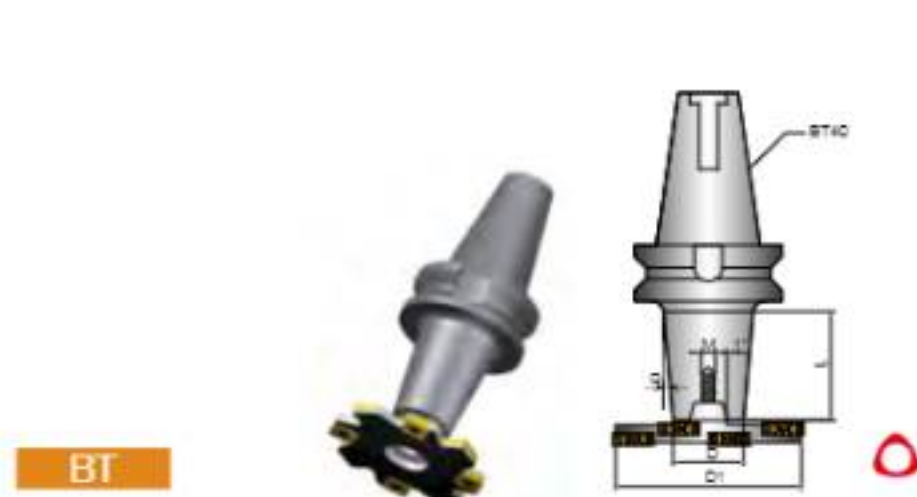


CB3

Order code	Dimensions(mm)						Design		Insert	Screw	Key
	d	d1	L	L1	d2	d3					
CB3-2525-110	25.8	25	110	15	-	-	1	0.2	R90 + R90	M10000	-
CB3-2525-170			170		-	-		0.8			
CB3-25	25.0	-	60	-	12	-	2	0.2			
CB3-2525-110	25.8	25	110	40	-	10	3	0.8			
CB3-2525-170			170	70	-	6		0.8			

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

Taper Polygon BT Arbor



BT

Order code	Dimensions(mm)					Screw	Key	
	D	D1	L	d				
BT30-CB3-10-20	10	18-20	20	2	0.8	CG3212	T12P	
BT30-CB3-12-25	12	22-25	25		0.85	CG4014	T15P	
BT10-CB3-15-25					1.0			
BT30-CB3-15-20	15	25-30	30		1.5	CG3215	T20P	 
BT30-CB3-15-30					2.0			
BT30-CB3-25-30	25	30-35	35		2.0	M10030	-	



UFO T-SLOT CUTTER



Features

Available in materials



Cost
200~300%
DOWN

Variety of
Machines
CNC Milling machine

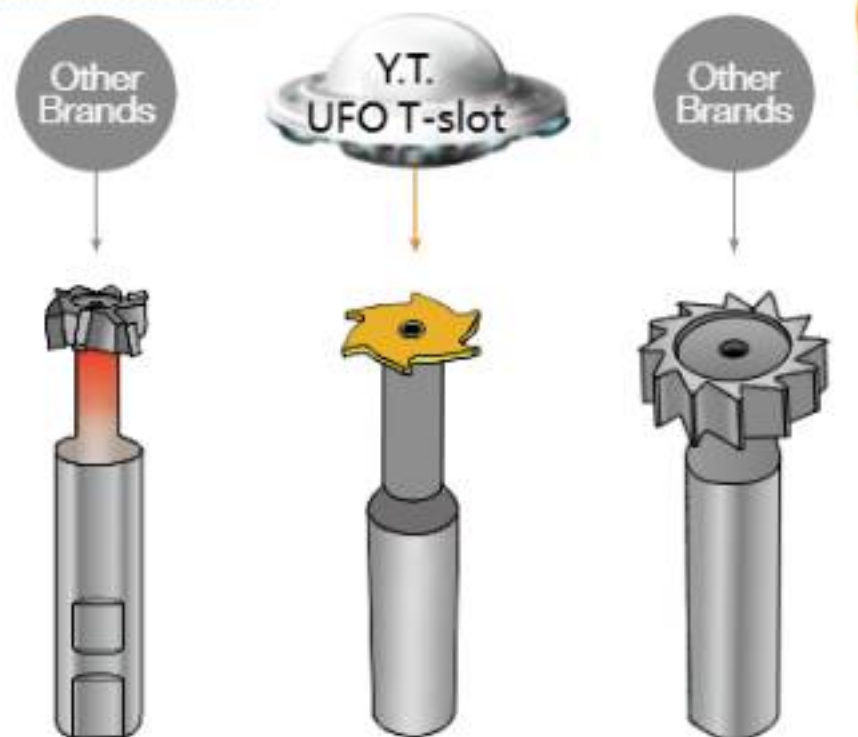
Efficiency
400%
UP

Durability
300%
UP

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



Carbide brazed

1. Welding carbides on the cutter under high temperature will degrade the tool-holder hardness.
2. Insufficient hardness.

Toolholders Grade:HSS
Hardness up to HRC 58°

1. One tool-holder can fit in 400 different types of inserts.
2. Insert has patented geometry design.
3. Most suitable for high speed cutting.

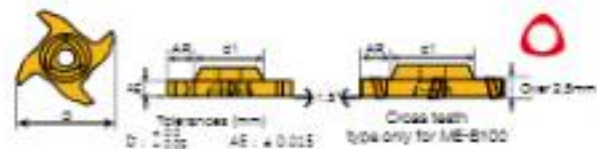
Toolholders Grade:HSS

1. Insufficient hardness.
2. Hard to regrind.
3. Not suitable for high speed cutting.



UFO T-slot Insert

- Toolholders P. 23
- Cutting Data P. 125 - 126



Dimensions in mm			
D	A1	AR	Max. AR
10	5.0	0.5-0.8	1.0
		0.7-0.9	
		0.9-1.0	
		1.1-1.2	
		1.3-1.5	
		1.6-1.8	
		1.7-1.8	
		1.9-2.0	
		2.2-2.5	
		3.0	

Inserts:	Part No.	Grades											
		Cermet					Metal matrix		Uncoated				
		BN18	CBN1	CBN2	P10	P100	CD15	CD16	PC10	CD			
 4 flute inserts	270610-0.5-6												
	270610-0.6-6												
	270610-0.7-6												
	270610-0.8-6												
	270610-0.9-6												
	270610-1.0-6												
	270610-1.1-6												
	270610-1.2-6												
	270610-1.3-6												
	270610-1.4-6												
	270610-1.5-6												
	270610-1.6-6												
	270610-1.7-6												
	270610-1.8-6												
	270610-1.9-6												
	270610-2.0-6												
	270610-2.2-6												
	270610-2.5-6												
	270610-3.0-6												
 4 flute inserts	270610-0.5-M6												
	270610-0.6-M6												
	270610-0.7-M6												
	270610-0.8-M6												
	270610-0.9-M6												
	270610-1.0-M6												
	270610-1.1-M6												
	270610-1.2-M6												
	270610-1.3-M6												
	270610-1.4-M6												
	270610-1.5-M6												
	270610-1.6-M6												
	270610-1.7-M6												
	270610-1.8-M6												
	270610-1.9-M6												
	270610-2.0-M6												
	270610-2.2-M6												
	270610-2.5-M6												
	270610-3.0-M6												

M.O.Q: 12PCS

The product will be produced when the order is confirmed.

M.Q. Q: 12PCS
The product will be produced when the order is confirmed.

- 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., 270610-0.5-6, K10

UFO T-slot Insert

- Toolholders P. 23
- Cutting Data P. 125 - 126



Dimensions in mm			
D	A1	AR	Max. AR
10	5.0	0.5-0.8	2.0
		0.7-0.9	
		0.9-1.0	
		1.1-1.2	
		1.3-1.5	
		1.6-1.8	
		1.7-1.8	
		1.9-2.0	
		2.2-2.5	
		3.0	

Inserts	Part No.	Grades											
		Cermet					Metal matrix		Uncoated				
		BN 18	CBN1	CBN2	P10	P100	CD 15	CD 20	PC 10	CD	CB		
 4 flute inserts	270611-0.5-6												
	270611-0.6-6												
	270611-0.7-6												
	270611-0.8-6												
	270611-0.9-6												
	270611-1.0-6												
	270611-1.1-6												
	270611-1.2-6												
	270611-1.3-6												
	270611-1.4-6												
	270611-1.5-6												
	270611-1.6-6												
	270611-1.7-6												
	270611-1.8-6												
	270611-1.9-6												
	270611-2.0-6												
	270611-2.2-6												
	270611-2.5-6												
	270611-3.0-6												
 4 flute inserts	270611-0.5-M6	①											
	270611-0.6-M6	②											
	270611-0.7-M6	③											
	270611-0.8-M6	④											
	270611-0.9-M6	⑤											
	270611-1.0-M6	⑥											
	270611-1.1-M6	⑦											
	270611-1.2-M6	⑧											
	270611-1.3-M6	⑨											
	270611-1.4-M6	⑩											
	270611-1.5-M6	⑪											
	270611-1.6-M6	⑫											
	270611-1.7-M6	⑬											
	270611-1.8-M6	⑭											
	270611-1.9-M6	⑮											
	270611-2.0-M6	⑯											
	270611-2.2-M6	⑰											
	270611-2.5-M6	⑱											
	270611-3.0-M6	⑲											

M.O.Q: 12PCS

The product will be produced when the order is confirmed.

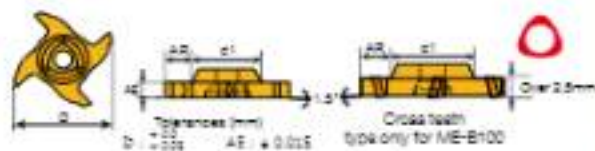
M.Q. Q: 12PCS
The product will be produced when the order is confirmed.

- 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., 270611-0.5-6, K10



UFO T-slot Insert

- Toolholders P. 23
- Cutting Data P. 125 - 126



Dimensions in mm			
d1	d2	AE	Max. AE
12	6.0	0.5-0.8	2.0
		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	

Inserts	Part No.	Grades										 	
		Cermet						Metal ceramic		Uncoated			
		Y10	Y20	Y30	Y40	Y50	Y60	Y70	Y80	Y90	Y100		
 4 flute inserts	270812-0.5-6												
	270812-0.7-6												
	270812-0.9-6												
	270812-1.1-6												
	270812-1.3-6												
	270812-1.5-6												
	270812-1.7-6												
	270812-1.9-6												
	270812-2.1-6												
	270812-2.3-6												
	270812-2.5-6												
	270812-2.7-6												
	270812-2.9-6												
	270812-3.1-6												
	270812-3.3-6												
	270812-3.5-6												
 4 flute inserts	270812-0.5-10												
	270812-0.7-10												
	270812-0.9-10												
	270812-1.1-10												
	270812-1.3-10												
	270812-1.5-10												
	270812-1.7-10												
	270812-1.9-10												
	270812-2.1-10												
	270812-2.3-10												
	270812-2.5-10												
	270812-2.7-10												
	270812-2.9-10												
	270812-3.1-10												
	270812-3.3-10												
	270812-3.5-10												

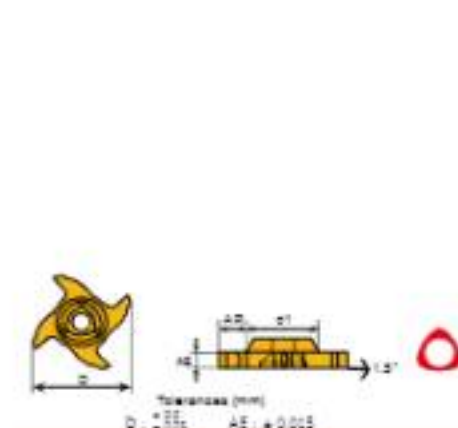
 	
Inserts 2 PCS / Box	



- 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. 270812-0.5-6, K10

UFO T-slot Insert

- Toolholders P. 24
- Cutting Data P. 125 - 126



Dimensions in mm			
d1	d2	AE	Max. AE
12	7.0	0.5-0.8	2.0
		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	

Inserts	Part No.	Grades										
		Cermet						Metal ceramic		Uncoated		
		Y10	Y20	Y30	Y40	Y50	Y60	Y70	Y80	Y90	Y100	
 4 flute inserts	270812-0.5-6											
	270812-0.6-6											
	270812-0.7-6											
	270812-0.8-6											
	270812-0.9-6											
	270812-1.0-6											
	270812-1.1-6											
	270812-1.2-6											
	270812-1.3-6											
	270812-1.4-6											
	270812-1.5-6											
	270812-1.6-6											
	270812-1.7-6											
	270812-1.8-6											
	270812-1.9-6											
	270812-2.0-6											
270812-2.1-6												
270812-2.2-6												
270812-2.3-6												
270812-2.4-6												
270812-2.5-6												
270812-2.6-6												
270812-2.7-6												
270812-2.8-6												
270812-2.9-6												
270812-3.0-6												
270812-3.1-6												
270812-3.2-6												
270812-3.3-6												
270812-3.4-6												
270812-3.5-6												
270812-3.6-6												
270812-3.7-6												
270812-3.8-6												
270812-3.9-6												
270812-4.0-6												

M.O.Q: 12PCS

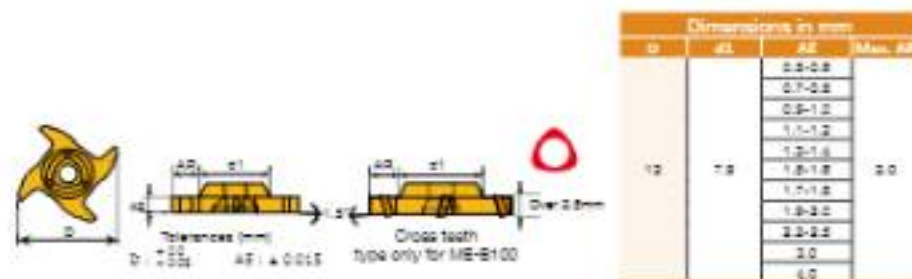
The product will be produced when the order is confirmed.

- M.D.C. 12PCS
- The product will be produced when the order is confirmed.

- 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. 270812-0.5-6, K10

UFO T-slot Insert

- Toolholders P. 24
- Cutting Data P. 125 - 126



Dimensions in mm			
D	d1	d2	Max. d2
12	7.5	0.5-0.8	2.0
		0.7-0.8	
		0.8-1.0	
		1.1-1.2	
		1.2-1.5	
		1.5-1.8	
		1.7-1.8	
		1.8-2.0	
		2.2-2.5	
		3.0	
		4.0	

Inserts	Part No.	Grades										
		Cermet					Metal carbide		Uncoated			
		CBN	CB8	CB6	P10	P10	CBN	CB8	P10	CB		
	270812-0.5-ME	●										
	270812-0.5-ME	●										
	270812-0.7-ME	●										
	270812-0.8-ME	●										
	270812-0.9-ME	●										
	270812-1.0-ME	●										
	270812-1.1-ME	●										
	270812-1.2-ME	●										
	270812-1.3-ME	●										
	270812-1.4-ME	●										
	270812-1.5-ME	●										
	270812-1.6-ME	●										
	270812-1.7-ME	●										
	270812-1.8-ME	●										
	270812-1.9-ME	●										
	270812-2.0-ME	●										
	270812-2.2-ME	●										
	270812-2.5-ME	●										
	270812-3.0-ME	●										
	270812-4.0-ME	●										

4 flute inserts

M.O.Q: 12PCS
*The product will be produced when the order is confirmed.

• M.O.Q: 12PCS
• The product will be produced when the order is confirmed.

- ☐ 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. 270812-0.5-ME, 8100

UFO T-slot Insert

- Toolholders P. 24
- Cutting Data P. 125 - 126



Dimensions in mm			
D	d1	d2	Max. d2
14	7.5	0.5-0.8	2.5
		0.7-0.8	
		0.8-1.0	
		1.1-1.2	
		1.2-1.5	
		1.5-1.8	
		1.7-1.8	
		1.8-2.0	
		2.2-2.5	
		3.0	
		4.0	

Inserts	Part No.	Grades										
		Cermet					Metal carbide		Uncoated			
		CBN	CB8	CB6	P10	P30	CBN	CB8	P10	CB		
 4 flute inserts	270814-0.5-E											
	270814-0.5-E											
	270814-0.7-E											
	270814-0.8-E											
	270814-0.9-E											
	270814-1.0-E											
	270814-1.1-E											
	270814-1.2-E											
	270814-1.3-E											
	270814-1.4-E											
	270814-1.5-E											
	270814-1.6-E											
	270814-1.7-E											
	270814-1.8-E											
	270814-1.9-E											
	270814-2.0-E											
	270814-2.2-E											
	270814-2.5-E											
	270814-3.0-E											
	270814-4.0-E											

M.O.Q: 12PCS

The product will be produced when the order is confirmed.

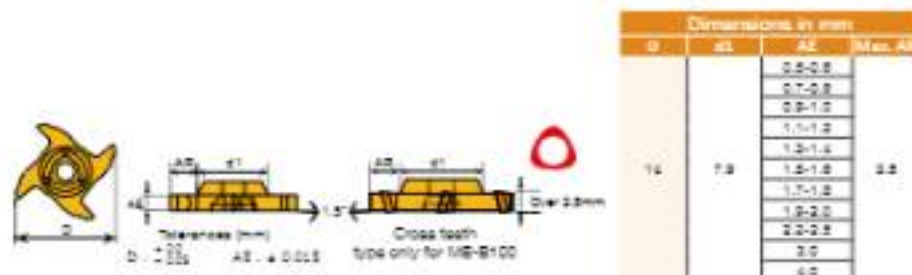
• M.O.Q: 12PCS
• The product will be produced when the order is confirmed.

- ☐ 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. 270814-0.5-E, 8100



UFO T-slot Insert

- Toolholders P. 24
- Cutting Data P. 125 - 126



Inserts	Part No.	Grades										
		Cermet					Metal cement		Uncoated			
		CBN	CBN	CBN	PCD	PCD	CBN	CBN	CBN	CBN	CBN	
 4 Flute inserts	270814-0.5-ME	●										
	270814-0.5-ME	●										
	270814-0.7-ME	●										
	270814-0.8-ME	●										
	270814-0.9-ME	●										
	270814-1.0-ME	●										
	270814-1.1-ME	●										
	270814-1.2-ME	●										
	270814-1.3-ME	●										
	270814-1.4-ME	●										
	270814-1.5-ME	●										
	270814-1.6-ME	●										
	270814-1.7-ME	●										
	270814-1.8-ME	●										
	270814-1.9-ME	●										
	270814-2.0-ME	●										
	270814-2.1-ME	●										
	270814-2.2-ME	●										
	270814-2.3-ME	●										
	270814-2.4-ME	●										
270814-2.5-ME	●											
270814-2.6-ME	●											
270814-2.7-ME	●											
270814-2.8-ME	●											
270814-2.9-ME	●											
270814-3.0-ME	●											
270814-3.1-ME	●											

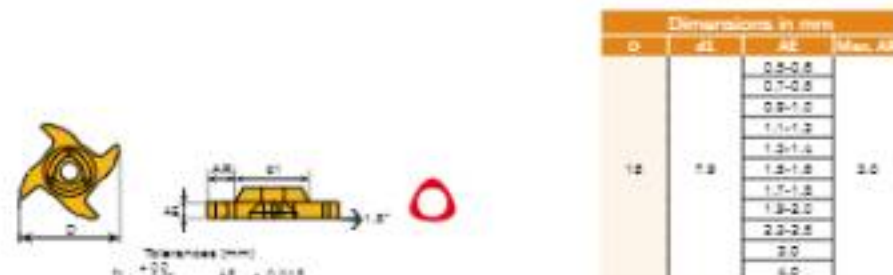
- M.O.Q: 12PCS

- The product will be produced when the order is confirmed.

- 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.: 270814-0.5-ME, K10

UFO T-slot Insert

- Toolholders P. 24
- Cutting Data P. 125 - 126



Inserts	Part No .	Grades										
		Cermet					Metal cement		Uncoated			
		CBN	CBN	CBN	P 90	P 90	CBN	CBN	CBN	CBN	CB	
 4 flute inserts	270815-0.5-E											
	270815-0.5-E											
	270815-0.7-E											
	270815-0.8-E											
	270815-0.9-E											
	270815-1.0-E											
	270815-1.1-E											
	270815-1.2-E											
	270815-1.3-E											
	270815-1.4-E											
	270815-1.5-E											
	270815-1.6-E											
	270815-1.8-E											
	270815-1.8-E											
	270815-1.7-E											
	270815-1.9-E											
	270815-1.9-E											
	270815-2.0-E											
	270815-2.2-E											
	270815-2.3-E											
270815-2.5-E												
270815-3.0-E												
270815-4.0-E												

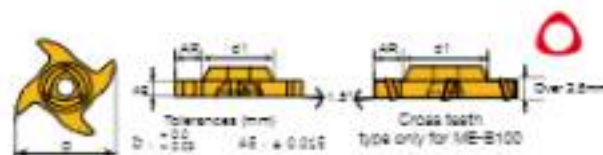


Inserts 2 PCS / Box

- 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.: 270815-0.5-E, K10

UFO T-slot Insert

- Toolholders P. 24
- Cutting Data P. 125 - 126



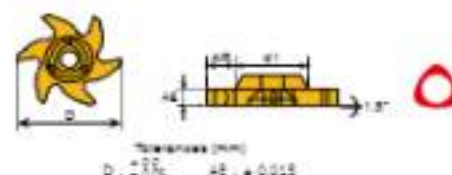
Dimensions in mm			
D	d1	d2	Max. d3
15	7.0	0.5-0.8	2.0
		0.7-0.8	
		0.8-1.0	
		1.0-1.2	
		1.2-1.5	
		1.5-1.8	
		1.8-2.0	
		2.0-2.5	
		2.5-3.0	
		3.0-4.0	

Inserts	Part No.	Grades										
		Cermet					Metal matrix		Uncoated			
		B10	C80	C80	P80	P80	C80	C80	K10	CE		
 4 Flute inserts	ST0815-0.5-ME	①										
	ST0815-0.8-ME	①										
	ST0815-0.7-ME	①										
	ST0815-0.8-ME	①										
	ST0815-0.8-ME	①										
	ST0815-1.0-ME	①										
	ST0815-1.1-ME	①										
	ST0815-1.2-ME	①										
	ST0815-1.3-ME	①										
	ST0815-1.5-ME	①										
	ST0815-1.8-ME	①										
	ST0815-1.8-ME	①										
	ST0815-1.7-ME	①										
	ST0815-1.8-ME	①										
	ST0815-1.9-ME	①										
	ST0815-2.0-ME	①										
	ST0815-2.0-ME	①										
	ST0815-2.0-ME	①										
 Inserts 2 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.: ST0815-0.5-ME, B100

UFO T-slot Insert

- Toolholders P. 25
- Cutting Data P. 125 - 126



Dimensions in mm			
D	d1	d2	Max. d3
15	7.0	0.5-0.8	2.0
		0.7-0.8	
		0.8-1.0	
		1.0-1.2	
		1.2-1.5	
		1.5-1.8	
		1.8-2.0	
		2.0-2.5	
		2.5-3.0	
		3.0-4.0	

Inserts	Part No.	Grades										
		Cermet					Metal Matrix		Uncoated			
		B10	C80	C80	P80	P80	C80	C80	K10	CE		
 6 Flute Inserts	ST1015-0.5-E											
	ST1015-0.5-E											
	ST1015-0.7-E											
	ST1015-0.8-E											
	ST1015-0.8-E											
	ST1015-1.0-E											
	ST1015-1.1-E											
	ST1015-1.2-E											
	ST1015-1.3-E											
	ST1015-1.4-E											
	ST1015-1.5-E											
	ST1015-1.8-E											
	ST1015-1.7-E											
	ST1015-1.9-E											
	ST1015-2.0-E											
	ST1015-2.3-E											
	ST1015-2.5-E											
	ST1015-2.0-E											
	ST1015-2.3-E											
	ST1015-2.5-E											
	ST1015-2.5-E											
ST1015-2.5-E												
ST1015-3.0-E												
ST1015-3.0-E												

• M.O.Q: 12PCS

• The product will be produced when the order is confirmed.

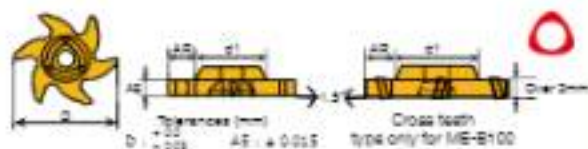
- Steel Stainless Steel Steel/Stainless Steel Cast Iron Aluminum Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: ST1015-0.5-E, K100

- M.O.Q: 12PCS
- The product will be produced when the order is confirmed.



UFO T-slot Insert

- Toolholders P. 25
- Cutting Data P. 125 - 126



Dimensions in mm			
D	e1	AE	Max. L
10	2.5	0.5-0.8	2.5
		0.7-0.9	
		0.9-1.0	
		1.0-1.2	
		1.2-1.4	
		1.5-1.8	
		1.7-1.9	
		1.9-2.0	
		2.0-2.2	
		2.2-2.5	

Inserts	Part No.	Grades										
		Carbide					Metal ceramic		Cemented			
		CBN	CBN	CBN	PCB	PCB	CBN	CBN	CBN	CBN	CBN	
 8 flute inserts	2T1018-0.5-M8	0										
	2T1018-0.5-M8	0										
	2T1018-0.7-M8	0										
	2T1018-0.9-M8	0										
	2T1018-0.9-M8	0										
	2T1018-1.1-M8	0										
	2T1018-1.3-M8	0										
	2T1018-1.3-M8	0										
	2T1018-1.5-M8	0										
	2T1018-1.5-M8	0										
	2T1018-1.7-M8	0										
	2T1018-1.7-M8	0										
	2T1018-1.9-M8	0										
	2T1018-1.9-M8	0										
	2T1018-2.1-M8	0										
	2T1018-2.1-M8	0										
	2T1018-2.3-M8	0										
	2T1018-2.3-M8	0										
	2T1018-2.5-M8	0										
	2T1018-2.5-M8	0										
2T1018-2.5-M8	0											
2T1018-3.0-M8	0											
2T1018-4.0-M8	0											
2T1018-4.5-M8	0											
2T1018-6.0-M8	0											
2T1018-8.0-M8	0											
2T1018-8.0-M8	0											

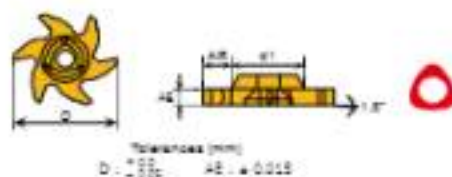
* M.O.Q.: 12PCS

* The product will be produced when the order is confirmed.

- ☐ 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. ST301B-0.3-ME 6100

UFO T-slot Insert

- Toolholders P. 25
- Cutting Data P. 125 - 126



Dimensions in mm			
D	AE	AE	Max. A3
10	2.2	0.0-0.8	6.0
		0.7-0.9	
		0.9-1.0	
		1.1-1.2	
		1.3-1.6	
		1.8-1.8	
		1.7-1.8	
		1.9-2.0	
		2.3-2.5	
		3.0-4.0	
5.0			
6.0			
8.0			

Inserts	Part No.	Grades										
		Carbon					Stainless		Aluminum			
		0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	
 6 flute inserts	271019-0.5-G											
	271019-0.5-G											
	271019-0.7-G											
	271019-0.9-G											
	271019-0.9-G											
	271019-1.0-G											
	271019-1.1-G											
	271019-1.2-G											
	271019-1.3-G											
	271019-1.4-G											
	271019-1.5-G											
	271019-1.6-G											
	271019-1.7-G											
	271019-1.8-G											
	271019-1.9-G											
	271019-2.0-G											
	271019-2.2-G											
	271019-2.5-G											
	271019-3.0-G											
	271019-3.5-G											
271019-4.0-G												
271019-4.5-G												
271019-5.0-G												
271019-6.0-G												
271019-8.0-G												
271019-10-G												


6 flute inserts

M.O.Q: 12PCS

The product will be produced when the order is confirmed.

- ☐ 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-A, K10

UFO T-slot Insert

- Toolholders P. 25
- Cutting Data P. 125 - 126



Dimensions in mm			
D	d1	AE	Max. AE
10	5.5	0.5-0.8	6.0
		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	
		2.2-2.3	
		2.5-2.6	
		3.0	
		3.5	
		4.0	

Inserts	Part No.	Grades										
		Cermet						Metal Inserts		Ground		
		B100	C80	C90	P10	P15	P20	CT10	CT15	CT20	CT25	
 6 Flute Inserts	2T1019-0.5-1/8	●										
	2T1019-0.5-1/8	●										
	2T1019-0.7-1/8	●										
	2T1019-0.9-1/8	●										
	2T1019-0.9-1/8	●										
	2T1019-1.0-1/8	●										
	2T1019-1.1-1/8	●										
	2T1019-1.2-1/8	●										
	2T1019-1.3-1/8	●										
	2T1019-1.4-1/8	●										
	2T1019-1.5-1/8	●										
	2T1019-1.6-1/8	●										
	2T1019-1.7-1/8	●										
	2T1019-1.8-1/8	●										
	2T1019-1.9-1/8	●										
	2T1019-2.0-1/8	●										
	2T1019-2.3-1/8	●										
	2T1019-2.5-1/8	●										
	2T1019-2.5-1/8	●										
	2T1019-3.0-1/8	●										
	2T1019-4.0-1/8	●										
	2T1019-4.5-1/8	●										
	2T1019-5.0-1/8	●										
	2T1019-6.0-1/8	●										
	2T1019-8.0-1/8	●										
2T1019-8.0-1/8	●											

+ M.C.O.: 12PCS
+ The product will be produced when the order is confirmed.

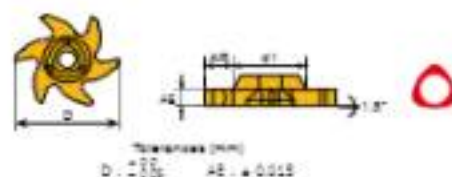
- Steel Stainless Steel Steel/Stainless Steel Cast Iron Aluminum Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron

* Correct price and stock are based on current situation

* Please specify model number and grade of insert, i.e.: 2T1019-0.5-1/8-ME-B100

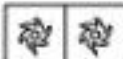
UFO T-slot Insert

- Toolholders P. 25
- Cutting Data P. 125 - 126



Dimensions in mm			
D	d1	AE	Max. AE
20	9.9	0.5-0.8	6.0
		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	
		2.2-2.3	
		2.5-2.6	
		3.0	
		3.5	
		4.0	

Inserts	Part No.	Grades										
		Cermet						Metal carbide		Uncoated		
		B100	C80	C90	P10	P15	CT10	CT15	CT20	CT25		
 6 Flute inserts	2T1020-0.5-6											
	2T1020-0.5-6											
	2T1020-0.7-6											
	2T1020-0.9-6											
	2T1020-0.9-6											
	2T1020-1.0-6											
	2T1020-1.1-6											
	2T1020-1.2-6											
	2T1020-1.3-6											
	2T1020-1.4-6											
	2T1020-1.5-6											
	2T1020-1.6-6											
	2T1020-1.7-6											
	2T1020-1.8-6											
	2T1020-1.9-6											
	2T1020-2.0-6											
	2T1020-2.3-6											
	2T1020-2.5-6											
	2T1020-2.5-6											
	2T1020-3.0-6											
	2T1020-3.5-6											
	2T1020-4.0-6											
	2T1020-4.5-6											
	2T1020-5.0-6											
	2T1020-6.0-6											
2T1020-8.0-6												
2T1020-8.0-6												


Inserts 2 PCS / Box

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

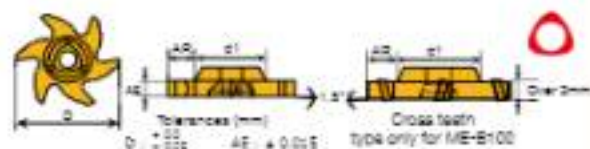
* Correct price and stock are based on current situation

* Please specify model number and grade of insert, i.e.: 2T1020-0.5-6-K30



UFO T-slot Insert

- Toolholders P. 25
- Cutting Data P. 125 - 126



Dimensions in mm			
D	d1	AE	Max. AE
20	9.9	0.5-0.8	0.5
		0.7-0.8	
		0.8-1.0	
		1.1-1.2	
		1.3-1.4	
		1.5-1.6	
		1.7-1.8	
		1.9-2.0	
		2.2-2.8	
		3.0-4.0	
		5.0	
		6.0	

Inserts	Part No.	Grades										
		Cermet						Metal matrix		Uncoated		
		B100	C800	C200	P10	P15	C100	C150	AL-S	CS		
	2T1225-0.5-ME	●										
	2T1225-0.5-ME	●										
	2T1225-0.7-ME	●										
	2T1225-0.8-ME	●										
	2T1225-0.9-ME	●										
	2T1225-1.0-ME	●										
	2T1225-1.1-ME	●										
	2T1225-1.2-ME	●										
	2T1225-1.3-ME	●										
	2T1225-1.4-ME	●										
	2T1225-1.5-ME	●										
	2T1225-1.6-ME	●										
	2T1225-1.7-ME	●										
	2T1225-1.8-ME	●										
	2T1225-1.9-ME	●										
	2T1225-2.0-ME	●										
	2T1225-2.5-ME	●										
	2T1225-3.0-ME	●										
	2T1225-3.5-ME	●										
	2T1225-4.0-ME	●										
	2T1225-4.5-ME	●										
	2T1225-5.0-ME	●										
	2T1225-6.0-ME	●										
	2T1225-8.0-ME	●										
2T1225-8.0-ME	●											

6 flute inserts

Inserts 2 PCS / Box

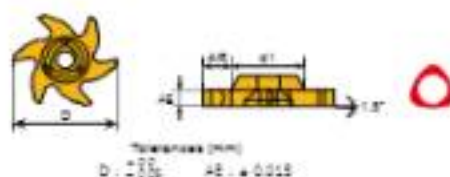


Inserts 2 PCS / Box

- ☐ 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.: 2T1225-0.5-ME, B100

UFO T-slot Insert

- Toolholders P. 26
- Cutting Data P. 125 - 126



Dimensions in mm			
D	d1	AE	Max. AE
22	12	0.5-0.8	0.5
		0.7-0.8	
		0.8-1.0	
		1.1-1.2	
		1.3-1.4	
		1.5-1.6	
		1.7-1.8	
		1.9-2.0	
		2.2-2.8	
		3.0-4.0	
		5.0	
		6.0	

Inserts	Part No.	Grades										
		Cermet						Metal matrix		Uncoated		
		B100	C800	C800	P10	P10	C100	C100	Al-S	CS		
	2T1223-0.5-E											
	2T1223-0.5-E											
	2T1223-0.7-E											
	2T1223-0.8-E											
	2T1223-0.9-E											
	2T1223-1.0-E											
	2T1223-1.1-E											
	2T1223-1.2-E											
	2T1223-1.3-E											
	2T1223-1.4-E											
	2T1223-1.5-E											
	2T1223-1.6-E											
	2T1223-1.7-E											
	2T1223-1.8-E											
	2T1223-1.9-E											
	2T1223-2.0-E											
	2T1223-2.5-E											
	2T1223-3.0-E											
	2T1223-3.5-E											
	2T1223-4.0-E											
	2T1223-4.5-E											
	2T1223-5.0-E											
	2T1223-6.0-E											
	2T1223-8.0-E											
2T1223-8.0-E												

6 flute inserts

M.O.Q: 12PCS
The product will be produced when the order is confirmed.

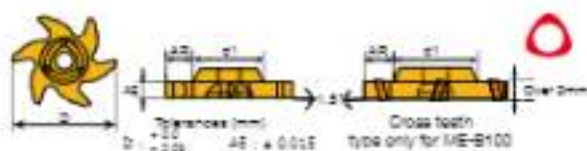
- M.O.Q. 12PCS
- The product will be produced when the order is confirmed.

- ☐ 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.: 2T1223-0.5-E, K10



UFO T-slot Insert

- Toolholders P. 26
- Cutting Data P. 125 - 126



Dimensions in mm			
D	d1	d2	Max. d3
20	12	0.5-0.8	5.0
		0.7-0.8	
		0.8-1.0	
		1.1-1.2	
		1.3-1.4	
		1.5-1.6	
		1.7-1.8	
		1.9-2.0	
		2.2-2.5	
		2.5-3.0	
		3.0	
		3.0	

Inserts	Part No.	Grades										
		Cermet					Metal ceramic		Coated			
		BT10	CBN	CBN	PS	PS	CBN	CBN	K10	CB		
 8 Flute Inserts	ST1222-0.5-ME	●										
	ST1222-0.5-ME	●										
	ST1222-0.7-ME	●										
	ST1222-0.8-ME	●										
	ST1222-0.9-ME	●										
	ST1222-1.0-ME	●										
	ST1222-1.1-ME	●										
	ST1222-1.2-ME	●										
	ST1222-1.3-ME	●										
	ST1222-1.4-ME	●										
	ST1222-1.5-ME	●										
	ST1222-1.6-ME	●										
	ST1222-1.7-ME	●										
	ST1222-1.8-ME	●										
	ST1222-1.9-ME	●										
	ST1222-2.0-ME	●										
	ST1222-2.2-ME	●										
	ST1222-2.5-ME	●										
	ST1222-3.0-ME	●										
	ST1222-3.5-ME	●										
ST1222-4.0-ME	●											
ST1222-4.5-ME	●											
ST1222-5.0-ME	●											
ST1222-6.0-ME	●											
ST1222-8.0-ME	●											
ST1222-8.0-ME	●											

• M.O.Q.: 12PCS

• The product will be produced when the order is confirmed.

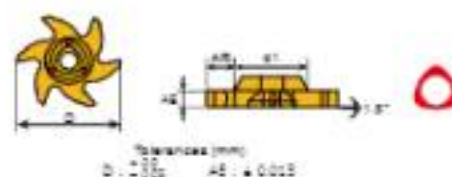
6 Flute Inserts

• M.Q.Q. 12PCS
• The product will be produced when the order is confirmed.

- 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. ie: ST1222-0.5-ME, K10

UFO T-slot Insert

- Toolholders P. 26
- Cutting Data P. 125 - 126



Dimensions in mm			
D	d1	d2	Max. d3
20	12	0.5-0.8	5.0
		0.7-0.8	
		0.8-1.0	
		1.1-1.2	
		1.3-1.4	
		1.5-1.6	
		1.7-1.8	
		1.9-2.0	
		2.2-2.5	
		2.5-3.0	
		3.0	
		3.0	

Inserts	Part No.	Grades										
		Cermet					Steel/cermet		Coated			
		BT10	CBN	CBN	PS	PS	CBN	CBN	K10	CB		
 6 flute inserts	ST1224-0.5-E											
	ST1224-0.5-E											
	ST1224-0.7-E											
	ST1224-0.8-E											
	ST1224-0.9-E											
	ST1224-1.0-E											
	ST1224-1.1-E											
	ST1224-1.2-E											
	ST1224-1.3-E											
	ST1224-1.4-E											
	ST1224-1.5-E											
	ST1224-1.6-E											
	ST1224-1.7-E											
	ST1224-1.8-E											
	ST1224-1.9-E											
	ST1224-2.0-E											
	ST1224-2.2-E											
	ST1224-2.5-E											
	ST1224-3.0-E											
	ST1224-3.5-E											
ST1224-4.0-E												
ST1224-4.5-E												
ST1224-5.0-E												
ST1224-6.0-E												
ST1224-8.0-E												

• M.O.Q: 12PCS

• The product will be produced when the order is confirmed.

6 Flute Inserts

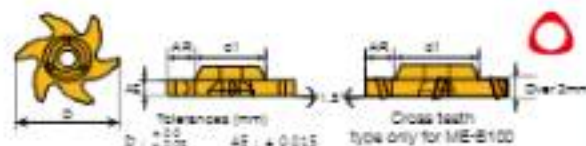
• M.Q.Q. 12PCS
• The product will be produced when the order is confirmed.

- 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. ie: ST1224-0.5-E, K10



UFO T-slot Insert

- Toolholders P. 26
- Cutting Data P. 125 - 126



Demonstrations in mm			
D	d1	d2	Max. d3
24	12	0.5-0.8	2.5
		0.7-0.8	
		0.8-1.0	
		1.0-1.2	
		1.2-1.4	
		1.4-1.8	
		1.8-1.8	
		1.9-2.0	
		2.2-2.5	
		2.5-3.0	
		3.0	
		3.0	
		3.0	

Inserts	Part No .	Grades										
		DIN5480					Austenitic		Inconel			
		1180	1200	1201	1202	1203	1204	1205	1206	1207	1208	
 8 flute inserts	271226-0.5-M6	1										
	271226-0.6-M6	2										
	271226-0.7-M6	3										
	271226-0.8-M6	4										
	271226-0.9-M6	5										
	271226-1.0-M6	6										
	271226-1.1-M6	7										
	271226-1.2-M6	8										
	271226-1.3-M6	9										
	271226-1.4-M6	10										
	271226-1.5-M6	11										
	271226-1.6-M6	12										
	271226-1.7-M6	13										
	271226-1.8-M6	14										
	271226-1.9-M6	15										
	271226-2.0-M6	16										
	271226-2.1-M6	17										
	271226-2.2-M6	18										
	271226-2.3-M6	19										
	271226-2.4-M6	20										
	271226-2.5-M6	21										
	271226-2.6-M6	22										
	271226-2.7-M6	23										
	271226-2.8-M6	24										
	271226-2.9-M6	25										
	271226-3.0-M6	26										

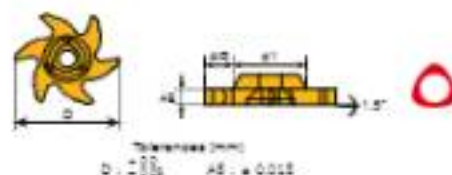
* M.O.Q: 12PCS

* The product will be produced when the order is confirmed.

- * 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.: ST1124-G1-ME #100

UFO T-slot Insert

- Toolholders P. 26
- Cutting Data P. 125 - 126



Dimensions in mm			
D	d1	d2	Max. A1
25	12	0.5-0.8	5.0
		0.7-0.8	
		0.8-1.0	
		1.0-1.2	
		1.2-1.4	
		1.5-1.8	
		1.7-1.8	
		1.9-2.0	
		2.2-2.5	
		2.5-4.0	
5.0			
6.0			
8.0			

Inserts	Part No.:	Graphics										
		Certificate						Market Segment		Dimension		
		0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	
 6 Flute Inserts	271225-0.5-G											
	271225-0.6-G											
	271225-0.7-G											
	271225-0.8-G											
	271225-0.9-G											
	271225-1.0-G											
	271225-1.1-G											
	271225-1.2-G											
	271225-1.3-G											
	271225-1.4-G											
	271225-1.5-G											
	271225-1.6-G											
	271225-1.7-G											
	271225-1.8-G											
	271225-1.9-G											
	271225-2.0-G											
	271225-2.2-G											
	271225-2.5-G											
	271225-3.0-G											
	271225-3.5-G											
271225-4.0-G												
271225-4.5-G												
271225-5.0-G												
271225-6.0-G												
271225-8.0-G												
271225-10-G												



6 Flute Inserts

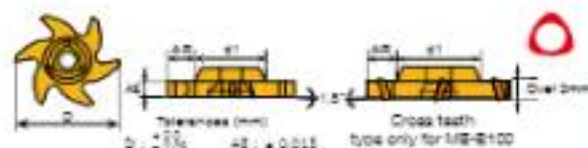


Inserts 2 PCS / Box

- * Steel □ Stainless Steel ■ Steel/Stainless Steel ■ Cast iron □ Aluminum □ Steel/Cast iron
■ Steel/Stainless Steel/Cast iron

UFO T-slot Insert

- Toolholders P. 26
- Cutting Data P. 125 - 126



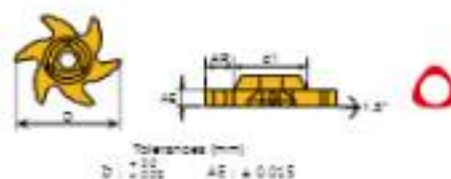
Dimensions in mm			
D	d1	AE	Max. AE
25	12	0.5-0.8	5.0
		0.7-0.8	
		0.8-1.0	
		1.0-1.2	
		1.2-1.4	
		1.4-1.6	
		1.6-1.8	
		1.8-2.0	
		2.0-2.2	
		2.2-2.4	
		2.4-2.6	
		2.6-2.8	
		2.8-3.0	

Inserts	Part No.	Grades										
		Cermet						Metal Inserts		Uncoated		
		B10	C80	C80	F8	F8	C80	C80	A15	C8		
 6 Flute Inserts	271225-0.5-ME	●										  Inserts 2 PCS / Box
	271225-0.8-ME	●										
	271225-0.7-ME	●										
	271225-0.9-ME	●										
	271225-0.5-ME	●										
	271225-1.0-ME	●										
	271225-1.1-ME	●										
	271225-1.2-ME	●										
	271225-1.3-ME	●										
	271225-1.4-ME	●										
	271225-1.5-ME	●										
	271225-1.6-ME	●										
	271225-1.7-ME	●										
	271225-1.8-ME	●										
	271225-1.9-ME	●										
	271225-2.0-ME	●										
	271225-2.1-ME	●										
	271225-2.2-ME	●										
	271225-2.3-ME	●										
	271225-2.4-ME	●										
	271225-2.5-ME	●										
	271225-2.6-ME	●										
	271225-2.7-ME	●										
	271225-2.8-ME	●										
	271225-2.9-ME	●										
	271225-3.0-ME	●										

- ☐ 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.: 271225-0.5-ME, K10

UFO T-slot Insert

- Toolholders P. 27
- Cutting Data P. 125 - 126



Dimensions in mm			
D	d1	AE	Max. AE
25	12.7	0.5-0.8	5.0
		0.8-1.0	
		1.0-1.2	
		1.2-1.4	
		1.4-1.6	
		1.6-1.8	
		1.8-2.0	
		2.0-2.2	
		2.2-2.4	
		2.4-2.6	
		2.6-2.8	
		2.8-3.0	

Inserts:	Part No .	Grades										
		Cermet						Uncoated		Uncoated		
		B10	C80	C80	F8	F8	C80	C80	C80	C8	C8	
	271225-0.5-E											
	271225-0.8-E											
	271225-1.0-E											
	271225-1.1-E											
	271225-1.2-E											
	271225-1.3-E											
	271225-1.4-E											
	271225-1.5-E											
	271225-1.6-E											
	271225-1.7-E											
	271225-1.8-E											
	271225-1.9-E											
	271225-2.0-E											
	271225-2.2-E											
	271225-2.3-E											
	271225-2.5-E											
	271225-3.0-E											
	271225-3.5-E											
	271225-4.0-E											
	271225-4.2-E											
	271225-4.5-E											
	271225-5.0-E											

M.O.Q: 12PCS

The product will be produced when the order is confirmed.

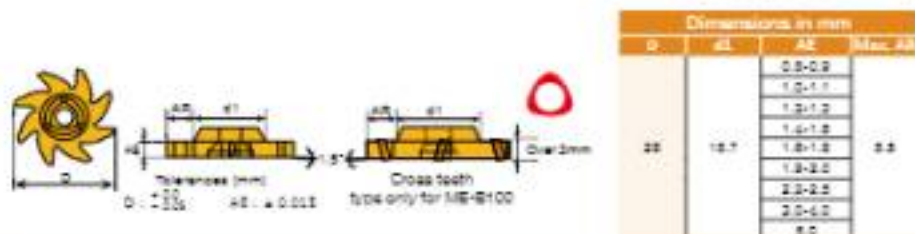
- ☐ Steel ☐ Stainless Steel ☐ Steel/Stainless Steel ☐ Cast Iron ☐ Aluminum ☐ Steel/Cast Iron
- ☐ Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 271225-0.5-E, K10

• M.O.Q: 12PCS
• The product will be produced when the order is confirmed.



UFO T-slot Insert

- Toolholders P. 27
- Cutting Data P. 125 - 126



Dimensions in mm			
D	4L	4T	Max. 4L
2.5	12.7	2.5	2.5
		0.5-0.9	
		1.0-1.1	
		1.2-1.3	
		1.4-1.5	
		1.6-1.8	
		1.9-2.0	
		2.1-2.3	
		2.4-2.6	
		2.7-3.0	

Inserts	Part No.	Grades										
		Cermet						Index		Uncoated		
		CB10	CB20	CB30	P30	P30	CB10	CB30	CB10	CB10		
	2T1828-0.5-ME	●										
	2T1828-0.8-ME	●										
	2T1828-1.0-ME	●										
	2T1828-1.1-ME	●										
	2T1828-1.2-ME	●										
	2T1828-1.3-ME	●										
	2T1828-1.4-ME	●										
	2T1828-1.5-ME	●										
	2T1828-1.6-ME	●										
	2T1828-1.7-ME	●										
	2T1828-1.8-ME	●										
	2T1828-1.9-ME	●										
	2T1828-2.0-ME	●										
	2T1828-2.2-ME	●										
	2T1828-2.5-ME	●										
	2T1828-3.0-ME	●										
	2T1828-3.5-ME	●										
	2T1828-4.0-ME	●										
	2T1828-4.5-ME	●										
	2T1828-5.0-ME	●										

8 flute inserts

M.O.Q: 12PCS
The product will be produced when the order is confirmed.

• M.O.Q: 12PCS
• The product will be produced when the order is confirmed.

- 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. ex: 2T1828-0.5-ME B100

UFO T-slot Insert

- Toolholders P. 27
- Cutting Data P. 125 - 126



Dimensions in mm			
D	4L	4T	Max. 4L
2.5	12.7	2.5	2.5
		0.5-0.9	
		1.0-1.1	
		1.2-1.3	
		1.4-1.5	
		1.6-1.8	
		1.9-2.0	
		2.1-2.3	
		2.4-2.6	
		2.7-3.0	

Inserts	Part No.	Grades										
		Cermet						Index		Uncoated		
		CB10	CB20	CB30	CB40	CB50	CB60	CB70	CB80	CB90	CB100	
	2T1828-0.5-E											
	2T1828-0.8-E											
	2T1828-1.0-E											
	2T1828-1.1-E											
	2T1828-1.2-E											
	2T1828-1.3-E											
	2T1828-1.4-E											
	2T1828-1.5-E											
	2T1828-1.6-E											
	2T1828-1.7-E											
	2T1828-1.8-E											
	2T1828-1.9-E											
	2T1828-2.0-E											
	2T1828-2.2-E											
	2T1828-2.5-E											
	2T1828-3.0-E											
	2T1828-3.5-E											
	2T1828-4.0-E											
	2T1828-4.5-E											
	2T1828-5.0-E											

M.O.Q: 12PCS

The product will be produced when the order is confirmed.

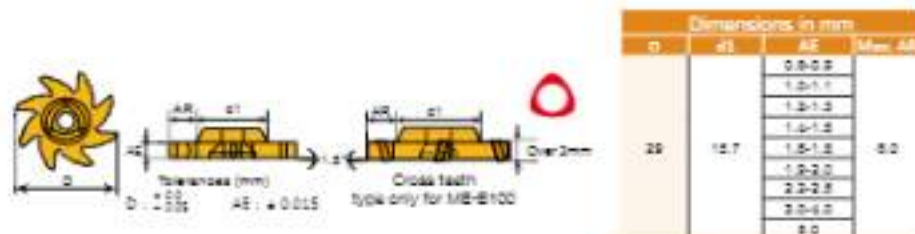
• M.O.Q: 12PCS
• The product will be produced when the order is confirmed.

- 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. ex: 2T1828-0.5-E B100



UFO T-slot Insert

- Toolholders P. 27
- Cutting Data P. 125 - 126



Dimensions in mm			
$\varnothing$	$\varnothing_1$	$\varnothing_2$	Max. $\varnothing_3$
20	15.7	0.8-0.9	0.0
		1.0-1.1	
		1.2-1.3	
		1.4-1.5	
		1.6-1.8	
		1.9-2.0	
		2.1-2.3	
		2.4-2.6	
		2.7-3.0	

Inserts	Part No	Grades										
		Cermet					Metal		Uncoated			
		CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN	
	2T1625-0.8-H/E	0										
	2T1625-0.9-H/E	0										
	2T1625-1.0-H/E	0										
	2T1625-1.1-H/E	0										
	2T1625-1.2-H/E	0										
	2T1625-1.3-H/E	0										
	2T1625-1.4-H/E	0										
	2T1625-1.5-H/E	0										
	2T1625-1.6-H/E	0										
	2T1625-1.7-H/E	0										
	2T1625-1.8-H/E	0										
	2T1625-1.9-H/E	0										
	2T1625-2.0-H/E	0										
	2T1625-2.1-H/E	0										
	2T1625-2.2-H/E	0										
	2T1625-2.3-H/E	0										
	2T1625-2.4-H/E	0										
	2T1625-2.5-H/E	0										
	2T1625-2.6-H/E	0										
	2T1625-2.7-H/E	0										
	2T1625-2.8-H/E	0										
	2T1625-2.9-H/E	0										
	2T1625-3.0-H/E	0										

8 flute inserts

M.O.Q: 12PCS
The product will be produced when the order is confirmed.

• M.O.Q: 12PCS
• The product will be produced when the order is confirmed.

- Steel Stainless Steel Steel/Stainless Steel Cast Iron Aluminum Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Contact price and stock are based on current situation
- Please specify model number and grade of insert, i.e. 2T1625-0.8-H/E, K300

UFO T-slot Insert

- Toolholders P. 27
- Cutting Data P. 125 - 126



Dimensions in mm			
$\varnothing$	$\varnothing_1$	$\varnothing_2$	Max. $\varnothing_3$
20	15.7	0.8-0.9	0.0
		1.0-1.1	
		1.2-1.3	
		1.4-1.5	
		1.6-1.8	
		1.9-2.0	
		2.1-2.3	
		2.4-2.6	
		2.7-3.0	

Inserts	Part No .	Grades											
		Cermet					Metal		Uncoated				
		CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN		
	2T1625-0.8-H												
	2T1625-0.9-H												
	2T1625-1.0-H												
	2T1625-1.1-H												
	2T1625-1.2-H												
	2T1625-1.3-H												
	2T1625-1.4-H												
	2T1625-1.5-H												
	2T1625-1.6-H												
	2T1625-1.7-H												
	2T1625-1.8-H												
	2T1625-1.9-H												
	2T1625-1.9-H												
	2T1625-2.0-H												
	2T1625-2.0-H												
	2T1625-2.2-H												
	2T1625-2.5-H												
	2T1625-3.0-H												
	2T1625-3.0-H												
	2T1625-4.0-H												
	2T1625-4.0-H												
	2T1625-4.5-H												
	2T1625-6.0-H												



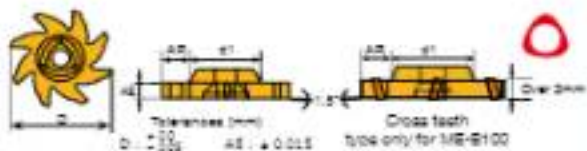
Inserts 2 PCS / Box

Inserts 2 PCS / Box

- Steel Stainless Steel Steel/Stainless Steel Cast Iron Aluminum Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Contact price and stock are based on current situation
- Please specify model number and grade of insert, i.e. 2T1625-0.8-H/E, K300

UFO T-slot Insert

- Toolholders P. 27
- Cutting Data P. 125 - 126



Dimensions in mm			
D	d1	d2	Max. d3
20	18.7	0.8-0.9	0.8
		1.0-1.1	
		1.2-1.3	
		1.4-1.5	
		1.6-1.8	
		1.8-2.0	
		2.2-2.5	
		2.5-3.0	

Inserts	Part No.	Grades										
		Carbide					Stainless Steel			Aluminum		
		BT 10	CBN	CBN	PAI	PAI	CBN	CBN	BT 10	CB		
	2T1820-0.8-ME											 Inserts 2 PCS / Box
	2T1820-0.9-ME											
	2T1820-1.0-ME											
	2T1820-1.1-ME											
	2T1820-1.2-ME											
	2T1820-1.3-ME											
	2T1820-1.4-ME											
	2T1820-1.5-ME											
	2T1820-1.6-ME											
	2T1820-1.7-ME											
	2T1820-1.8-ME											
	2T1820-1.9-ME											
	2T1820-2.0-ME											
	2T1820-2.2-ME											
	2T1820-2.5-ME											
	2T1820-3.0-ME											
	2T1820-4.0-ME											
	2T1820-4.5-ME											
	2T1820-5.0-ME											

Inserts 2 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, ex.: 2T1820-0.8-ME, BT10.

UFO T-SLOT CUTTER



Patent No. : ME33048
Patent No. : ZL 2016 2 130057.8

Features

Available in materials



Cost
200~300%
DOWN

Variety of
Machines
CNC Milling Machine

Efficiency
400%
UP

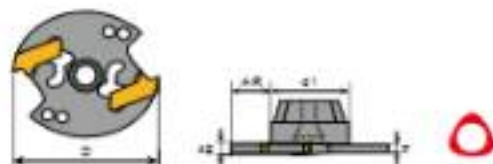
Durability
300%
UP



UFO T-slot Cutter

- Toolholders P. 27
- Insert P. 187 - 194
- Cutting Data P. 127 - 128

3T



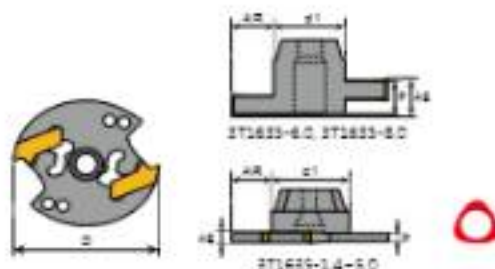
Order code	Dimensions(mm)							MAX RPM	Insert LENG	Key
	D	d1	AR	d2	P					
2T1822-1.4	22	18	7.5	1.4	1.2	2	0.05	8000	1414	150, 10-30
2T1822-1.6				1.6	1.2				1418	
2T1822-1.8				1.8	1.2				1818	
2T1822-1.8				1.8	1.8				1818	
2T1822-2.0				2.0	1.75				2020	
2T1822-2.0				2.0	2.25				2020	
2T1822-2.0				2.0	2.7				2020	
2T1822-2.0				2.0	3.25				2020	
2T1822-2.0				2.0	3.7				2020	
2T1822-2.0				2.0	4.2				2020	
2T1822-2.0				2.0	4.7				2020	
2T1822-2.0				2.0	5.2				2020	

-Key 150, 10-30 is not included

UFO T-slot Cutter

- Toolholders P. 27
- Insert P. 187 - 194
- Cutting Data P. 127 - 128

3T



Order code	Dimensions(mm)							MAX RPM	Insert LENG	Key
	D	d1	AR	d2	P					
2T1825-1.4	25	18	9.0	1.4	1.2	2	0.05	8000	1414	150, 10-30
2T1825-1.6				1.6	1.2				1418	
2T1825-1.8				1.8	1.2				1818	
2T1825-1.8				1.8	1.8				1818	
2T1825-2.0				2.0	1.75				2020	
2T1825-2.0				2.0	2.25				2020	
2T1825-2.0				2.0	2.7				2020	
2T1825-2.0				2.0	3.25				2020	
2T1825-2.0				2.0	3.7				2020	
2T1825-2.0				2.0	4.2				2020	
2T1825-2.0				2.0	4.7				2020	
2T1825-2.0				2.0	5.2				2020	

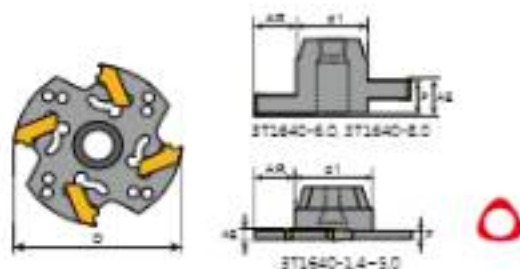
-Key 150, 10-30 is not included



UFO T-slot Cutter

- Toolholders P. 27
- Insert P. 187 - 194
- Cutting Data P. 127 - 128

3T



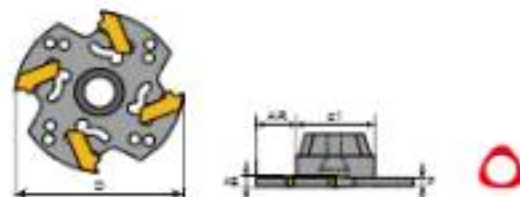
Order code	Dimensions(mm)							MAX RPM	Insert LENG	Key
	D	R1	AR	AE	P					
3T1640-1.4	40	16	11.8	1.4	1.2			7800	1614	180, 10-30
3T1640-1.5				1.5	1.2				1615	
3T1640-1.6				1.6	1.2				1616	
3T1640-1.8				1.8	1.2				1618	
3T1640-2.0				2.0	1.78				2020	
3T1640-2.2				2.2	2.25				2022	
3T1640-2.5				2.5	2.7				2025	
3T1640-3.0				3.0	3.7				3030	
3T1640-4.0				4.0	5.7				4040	
3T1640-5.0				5.0	6.8				5050	
3T1640-6.0				6.0	8.8				6060	
3T1640-8.0				8.0	11.8				8080	
3T1640-10.0				10.0	14.8				10100	
3T1640-12.0				12.0	17.8				12120	
3T1640-14.0				14.0	20.8				14140	
3T1640-16.0				16.0	23.8				16160	

-Key 180, 10-30 is not included

UFO T-slot Cutter

- Toolholders P. 28
- Insert P. 187 - 194
- Cutting Data P. 127 - 128

3T



Order code	Dimensions(mm)							MAX RPM	Insert LENG	Key
	D	R1	AR	AE	P					
3T2880-1.4	80	28	12	1.4	1.2			7000	1614	180, 10-30
3T2880-1.5				1.5	1.2				1615	
3T2880-1.6				1.6	1.2				1616	
3T2880-1.8				1.8	1.2				1618	
3T2880-2.0				2.0	1.78				2020	
3T2880-2.2				2.2	2.25				2022	
3T2880-2.5				2.5	2.7				2025	
3T2880-3.0				3.0	3.7				3030	
3T2880-4.0				4.0	5.7				4040	
3T2880-5.0				5.0	6.8				5050	
3T2880-6.0				6.0	8.8				6060	
3T2880-8.0				8.0	11.8				8080	
3T2880-10.0				10.0	14.8				10100	
3T2880-12.0				12.0	17.8				12120	
3T2880-14.0				14.0	20.8				14140	
3T2880-16.0				16.0	23.8				16160	

-Key 180, 10-30 is not included



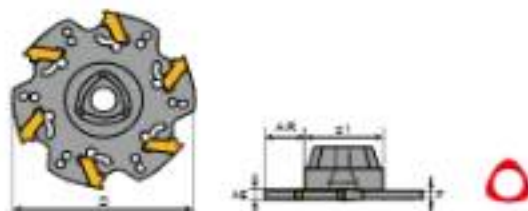
UFO T-slot Cutter

- Toolholders P. 28
- Insert P. 187 - 194
- Cutting Data P. 127 - 128

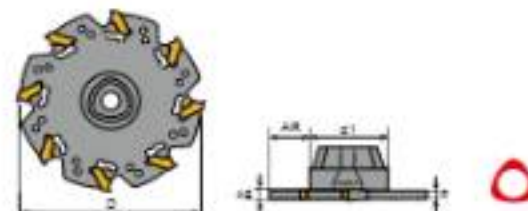
UFO T-slot Cutter

- Toolholders P. 28
- Insert P. 187 - 194
- Cutting Data P. 127 - 128

3T



3T



Order code	Dimensions(mm)							MAX RPM	Insert LNGT	Key	
	D	d1	AR	AG	P						
2T2550-1.4	30	25	17	1.4 1.5	1.2	8	0.02	6500	1414 1418	150/10-20	
2T2550-1.6				1.6	1.4				1416		
2T2550-1.8				1.8	1.5				1418		
2T2550-2.0				2.0 2.2 2.5	1.78				2020 2022 2025		
2T2550-2.2				2.2 2.7 3.0	2.25				2025 2027 2030		
2T2550-2.5				2.5 3.0 3.5	2.7				2030 2032 2035		
2T2550-3.0				3.0 3.2 3.5	3.7	0.08			2040 2042 2045		
2T2550-3.2				3.2 3.5 4.0	3.7				2045 2048 2050		
2T2550-4.0				4.0 4.2 4.5	4.5				2050 2052 2055		
2T2550-5.0				5.0 5.2 5.5	4.5				2060 2062 2065		

-Key 150/10-30 is not included

Order code	Dimensions(mm)							MAX RPM	Insert LNGT	Key
	D	d1	AR	AG	P					
2T2550-1.4	30	25	27	1.4 1.5	1.2	8	0.02	6500	1414 1418	150/10-30
2T2550-1.5				1.5	1.4				1416	
2T2550-1.6				1.6	1.5				1418	
2T2550-2.0				2.0 2.2 2.5	1.78				2020 2022 2025	
2T2550-2.2				2.2 2.7 3.0	2.25				2025 2027 2030	
2T2550-3.0				3.0 3.2 3.5	3.7				2030 2032 2035	
2T2550-4.0				4.0 4.2 4.5	4.7		0.08		2040 2042 2045	
2T2550-5.0				5.0 5.2 5.5	5.5		2050 2052 2055			

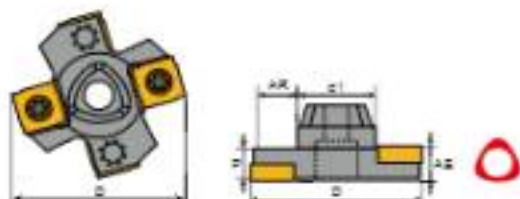
-Key 150/10-30 is not included



UFO T-slot Cutter

- Toolholders P. 28
- Insert P. 195 - 197
- Cutting Data P. 129 - 130

3TS

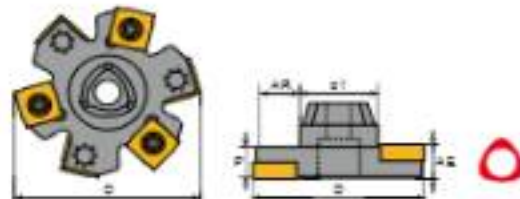


Order code	Dimensions(mm)						Zc		MAX RPM	Insert SNICK SNOW	Screw	Key
	D	φ1	AR	AC	φ							
2TS2850-4.0	80	38	12	4	3.4		2		17000	1102	T9284	905-79
2TS2850-5.0				5	4.3					1102	T9284	905-79
2TS2850-6.0				6	5					1202	T945	905-715
2TS2850-7.0				7	6					1204	T945	
2TS2850-8.0				8	7					12045	T947	
2TS2850-10				10	9					1208	T948	
2TS2850-12				12	11					1207	T9411	
							0.20					

UFO T-slot Cutter

- Toolholders P. 28
- Insert P. 195 - 197
- Cutting Data P. 129 - 130

3TS



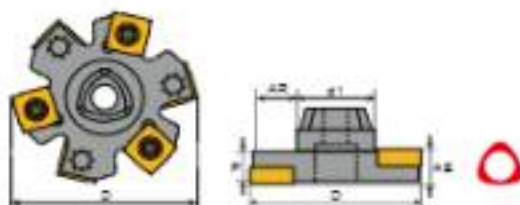
Order code	Dimensions(mm)						Zc		MAX RPM	Insert SNICK SNOW	Screw	Key
	D	φ1	AR	AC	φ							
2TS2850-4.0	80	38	17	4	3.4		2		18000	1102	T9284	905-79
2TS2850-5.0				5	4.3					1102	T9284	905-79
2TS2850-6.0				6	5					1202	T945	905-715
2TS2850-7.0				7	6					1204	T945	
2TS2850-8.0				8	7					12045	T947	
2TS2850-10				10	9					1208	T948	
2TS2850-12				12	11					1207	T9411	
							0.2					



UFO T-slot Cutter

- Toolholders P. 28
- Insert P. 195 - 197
- Cutting Data P. 129 - 130

3TS

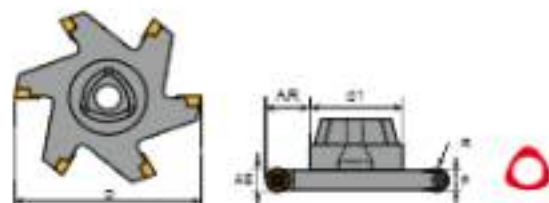


Order code	Dimensions(mm)						Z ₀		MAX RPM	Insert SNGX SNGW	Screw	Key
	D	d1	AR	AG	P							
3TS2550-6.0	50	22	27	6	2.6		4	0.3	14000	1102	T9254	908-T9
3TS2550-8.0				8	4.3					1103	T9255	908-T9
3TS2550-8.0				8	8					1202	T9416	908-T18
3TS2550-7.0				7	6					1204	T9416	
3TS2550-6.0				8	7					1204B	T9417	
3TS2550-10				10	9					1205	T9416	
3TS2550-12				12	11		2	0.3		1207	T9411	

UFO T-slot Cutter

- Toolholders P. 28

3T

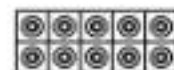


Order code	Dimensions(mm)								MAX RPM	Insert RDKW RDKT RPKT	Screw	Key
	D	d1	AR	AG	P	H						
3T2550-R4	50	22	27	17	8	6.2		0.30	12000	0802	002508	T08F
3T2550-R4	50			27	8	6.2			12000			
3T2550-R2	50			17	10	6.0			12000	1073	003008	T08F
3T2550-R2	50			27	10	6.0			12000			
3T2550-R6	50			17	12	10		0.50	8800	1204	003508	T18F
3T2550-R6	50			27	12	10			9000			

RDKT / RDKW / RPKT Insert



Tolerances (mm)
D: +0.04 D: +0.05



Inserts 10 PCS / Box

Dimensions in mm			
SIZE	D	d1	H
0802	2.18	8	4
1073	2.97	10	5
1204	4.7	12	8

Inserts	Part No.	Grades							
		Cermet				Steel/Aluminum			
		CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN
	RDKW 0802MDT-MQ	●	●	●	●	●	●	●	●
	RDKT 1073MDT-MQ	●	●	●	●	●	●	●	●
	RPKT 1204MDT-MQ	●	●	●	●	●	●	●	●

- 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, ex: RDKW 0802MDT-MQ 8200



UFO THREAD MILLING



Features

Available in
materials

Cost
200~300%
DOWN

Variety of
Machines
O/C Milling machine

Efficiency
400%
UP

Durability
300%
UP



Patent No.
10366923



Patent No.
ZL 2010 2 0112933.7

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.



UFO





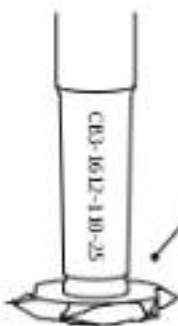
1 / Excellent chip evacuation



2 / High stability & Low cutting forces



3 / Same insert can make different pitches of thread.



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 (4-6 teeth).

New

UFO thread mill is excellent in chip evacuation minimizes the problem of chip twinning 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

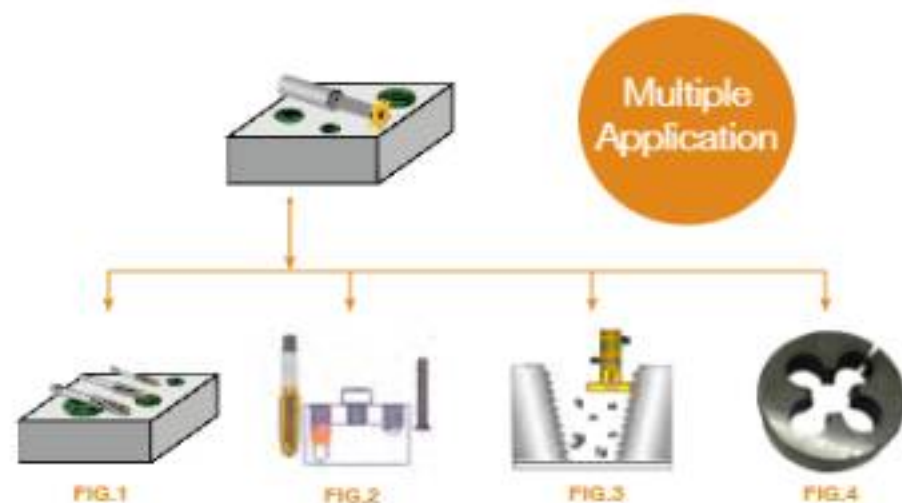
UFO thread milling can achieve full-bottom threading in a blind hole without any extra drill depth required. It's also easy to adjust the thread tolerance by programme and achieves better tolerance.

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

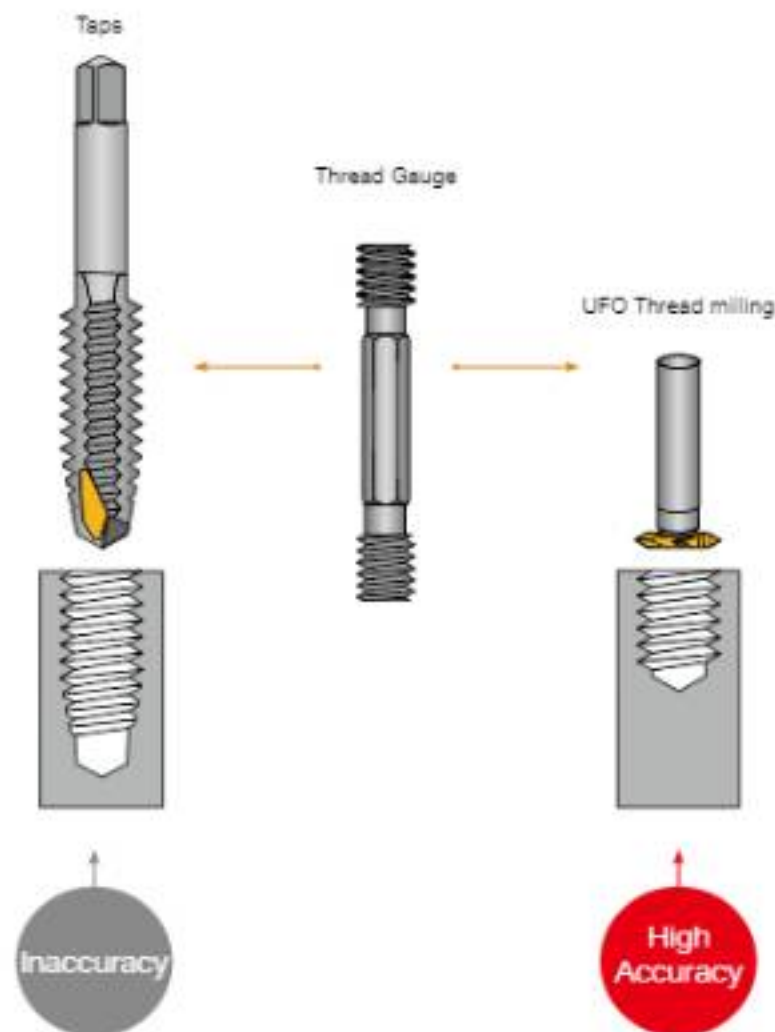
Same UFO thread milling insert is available for both external and internal threads.



Patent No.
M399263

Patent No.
ZL 2010 2 0112933.7

Advantages Of UFO Thread Milling



Solid Carbide Thread Milling (Single Pitch)-Partial Profile

• Cutting Data P. 131



Order Number	Pitch Range		D	H	T	d	L
	MM	TPH					
AT0195-80	0.25-0.5	72-42	1.95	5.0	3	3	50
AT0215-80	0.5-0.8	48-32	2.15	7.7	3	3	50
AT0215-80	0.8-0.8	48-32	2.15	10	3	6	50
AT0400-80	0.8-1.0	48-24	4.0	12	3	6	50
AT0470-80	0.8-1.25	48-20	6.7	15	3	8	50
AT0600-80	0.8-1.25	48-20	8.0	18	3	8	50
AT0800-80	0.75-1.5	32-18	8.0	24	3	8	50
AT1000-80	1.0-2.5	24-12	10	30	6	10	50

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

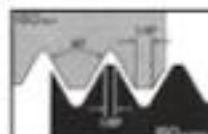
• Cutting Data P. 131



Thread Length Up To 20

Order Number	Thread Size	Pitch	D	H	T	d	L
BT0210-80	M2.0 X 0.5	0.5	2.6	5.4	3	6	50
BT0215-80	M2.5 X 0.5	0.5	3.75	7.4	3	6	50
BT0215-80	M4 X 0.7	0.7	3.15	8.8	3	8	50
BT0400-80	M5 X 0.8	0.8	6.0	12.0	3	8	50
BT0470-80	M6 X 1.0	1.0	6.75	13.0	3	8	50
BT0600-80	M8 X 1.25	1.25	8.5	17.3	3	8	50
BT0700-80	M10 X 1.5	1.5	7.9	22.0	3	8	50
BT0800-80	M12 X 1.75	1.75	9.5	25.5	3	10	50

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



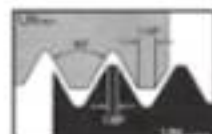
Thread Length Up To 20

Order Number	Thread Size	Pitch	D	H	T	d	L
BTU0210-80	M2.0 X 0.5	0.5	2.6	5.3	3	6	50
BTU0215-80	M4.0 X 0.7	0.7	3.15	12.4	3	8	50
BTU0400-80	M5 X 0.8	0.8	6.0	13.5	3	8	50
BTU0470-80	M6 X 1.0	1.0	6.75	19.0	3	8	50
BTU0600-80	M8 X 1.25	1.25	8.5	24.3	3	8	50
BTU0700-80	M10 X 1.5	1.5	7.9	21.0	3	8	50
BTU0800-80	M12 X 1.75	1.75	9.5	25.5	3	10	50



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

• Cutting Data P. 131



Thread Length Up To 20

Order code	UNC	UNF	Pitch	D	H	T	d	L
UT004-80	No. 8 - 40 UNC	No. 8 - 40 UNF	40	2.48	7.1	3	4	80
UT006-80	-	No. 6 - 32 UNF	32	2.31	6.5	3	4	80
UT008-80	No. 8 - 32 UNC	-	32	2.37	7.3	3	4	80
UT009-80	No. 8 - 32 UNF	No. 10 - 32 UNF	32	2.33	10.7	3	8	80
UT010-80	-	1/8 - 28 UNF	28	8.2	14	3	8	80
UT015-80	No. 10 - 24 UNC	-	24	2.55	10.4	3	8	80
UT016-80	-	5/16 - 24 UNF	24	8.83	18.7	3	8	80
UT018-80	1/8 - 20 UNC	7/16 - 20 UNF	20	6.88	13.7	3	8	80
UT019-80	-	7/16 - 20 UNF	20	7.98	24	3	8	80
UT100-80	5/16 - 18 UNC	-	18	8.93	18.5	3	8	80
UT101-80	3/8 - 16 UNC	-	16	8.8	21	3	8	80
UT102-80	7/16 - 16 UNF	-	16	7.98	22.5	3	8	80
UT103-80	1/2 - 12 UNC	-	12	9.2	27	3	10	80

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



Thread Length Up To 30

Order code	UNC	UNF	Pitch	D	H	T	d	L
UT004-80	No. 8 - 40 UNC	No. 8 - 40 UNF	40	2.48	6.9	3	4	80
UT006-80	No. 8 - 32 UNC	-	32	2.37	10.7	3	4	80
UT009-80	No. 8 - 32 UNF	No. 10 - 32 UNF	32	2.33	10.7	3	8	80
UT010-80	-	1/8 - 28 UNF	28	8.2	19.3	3	8	80
UT015-80	-	5/16 - 24 UNF	24	8.83	24.3	3	8	80
UT016-80	1/2 - 20 UNF	7/16 - 20 UNF	20	6.88	19.4	3	8	80

UFO Thread Milling Insert(Full Profile)

- Toolholders P. 23
- Cutting Data P. 132 - 133

External / Internal



UFO



Tolerances (mm)
D: ± 0.015 A2: ± 0.005



Inserts 2 pcs / box

Dimensions in mm

D	d1	A2	Pitch mm	Pitch Up to	Angle	Minimum chip thickness
12	8.8	2.1	1.0-1.5	15-10	80°	18.80 / 0.88
		2.2	1.75-2.5	-	80°	14.00 -

Inserts	Part No.	Grades										 80° 		
		Cermet					Metal normal						Uncoated	
		CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN		CBN	
 55° BSW/BSF	ST1-0512-80-15-10TR-E											 80° Defined by: 8.2-10.7-14.0 20° Defined by: 8.2-10.7-14.0 20° Defined by: 8.2-10.7-14.0 Tolerance class: 80-100 class 2, BSF-medium class		
	ST1-0512-80-15-10TR-UB													
 60° ISO Metric(M,NF)	ST1-0512-80-1.5-1.5-E											 80° Defined by: 8.2-10.7-14.0 20° Defined by: 8.2-10.7-14.0 20° Defined by: 8.2-10.7-14.0 Tolerance class: 80-100 class 2, BSF-medium class		
	ST1-0512-80-1.75-2.5-E													
	ST1-0512-80-1.5-1.5-UB													
	ST1-0512-80-1.75-2.5-UB													

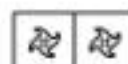
- Steel ☐ Stainless Steel ☐ Steel/Stainless Steel ☐ Cast Iron ☐ Aluminum ☐ Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation.
- Please specify model number and grade of insert, i.e.: ST1-0512-80-15-10TR-E F30
- Full Profile insert is not in standard stock needs to be ordered



UFO Thread Milling Insert(Full Profile)

- Toolholders P. 24
- Cutting Data P. 132 - 133

External / Internal



Inserts 2 pcs / box

Dimensions in mm							
D	d1	d2	Width mm	Width Lpt	Angle	Maximum Feed mm	Maximum Depth mm
16	7.5	6.0	1.0-1.5	1.1-1.5	55°	17.00	0.7
		6.0	1.75-2.0	-	50°	17.00	-

Tolerances (mm)
D : ± 0.015 d1 : ± 0.015 d2 : ± 0.015

Inserts	Part No.	Grades												
		Cermet					Metal ceramic						Uncoated	
		GC10	GC15	GC20	GC25	GC30	GC35	GC40	GC45	GC50	GC55			
 55° BSW/BSF	271-0515-55-11-57P1-5											 55° Defined by: JIS B 6346, ISO 5458/1999 55° Defined by: JIS B 6346 Tolerance class: 55°- Medium class J, 55°-medium class		
	271-0515-55-11-57P1-105													
 60° ISO Metric(M, MF)	271-0515-60-1.0-1.5-5											 60° Defined by: JIS B 6346 Tolerance class: 60°- Medium class J, 60°-medium class		
	271-0515-60-1.75-2.0-5													
	271-0515-60-1.0-1.5-105													
	271-0515-60-1.75-2.0-105													

- 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. 271-0515-55-11-57P1-5, R20
- Full Profile insert is not in standard stock, it needs to be ordered

UFO Thread Milling Insert(Full Profile)

- Toolholders P. 25
- Cutting Data P. 132 - 133

External / Internal



Inserts 2 pcs / box

Dimensions in mm							
D	d1	d2	Width mm	Width Lpt	Angle	Maximum Feed mm	Maximum Depth mm
20	9.5	6.0	1.0-1.5	1.1-1.5	55°	22.00	0.8
		6.0	1.75-2.0	-	50°	22.00	-

Tolerances (mm)
D : ± 0.015 d1 : ± 0.015 d2 : ± 0.015

Inserts	Part No.	Grades										 	
		Cermet					Metal ceramic						Uncoated
		GC10	GC15	GC20	GC25	GC30	GC35	GC40	GC45	GC50	GC55		
 55° BSW/BSF	271-1020-55-11-57P1-5											 55° Surface for S.S. 20+Cr12, S.S. 440, S.S.2020+Cr12, S.S. 2715+Cr12 To ensure proper Adhesion Use grade GC 50P+Cr12+AlN	
	271-1020-55-11-57P1-105												
 60° ISO Metric(M,MF)	271-1020-60-1.0-1.5-5											 Surface for AGO (Cr+AlN) To ensure strong Adhesion	
	271-1020-60-1.75-2.0-5												
	271-1020-60-1.0-1.5-105												
	271-1020-60-1.75-2.0-105												

- 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. 271-1020-55-11-57P1-5, R20
- Full Profile insert is not in standard stock, it needs to be ordered



UFO Thread Milling Insert(Full Profile)

- Toolholders P. 26
- Cutting Data P. 132 - 133

External / Internal



Inserts 2 pcs / box

Dimensions in mm						
D	d1	d2	Pitch mm	Pitch t.p.d	Angle	Minimum hole diameter
25	12	4.5	-	11±0.5	55°	20.50
		2.1	1.0-1.5	-	60°	21.00
		4.0	1.75-2.0	-	-	-

Tolerances (mm)
D: ± 0.05 AE: ± 0.015

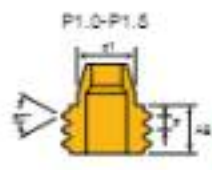
Inserts	Part No.	Grades										 
		Carbide					Metal cement		Uncoated			
		YB 80	YB 30	YB 20	YB 10	YB 5	YB 15	YB 10	YB 5	YB 15	YB 10	
 55° BSW/BSF	271-1225-55-11-STR-E											 55° BSW by: S.S. 5-100 T.N. 500 40000-1000 55° BSW by: S.S. 575-100 T.N. 500 40000-1000 55° BSW by: S.S. 575-100 T.N. 500 40000-1000 55° BSW by: S.S. 575-100 T.N. 500 40000-1000
	271-1225-55-11-STR-M/E											
 60° ISO Metric(M,MF)	271-1225-55-1.0-1.8-E											 60° ISO Metric(M,MF) by: S.S. 5-100 T.N. 500 40000-1000 60° ISO Metric(M,MF) by: S.S. 575-100 T.N. 500 40000-1000 60° ISO Metric(M,MF) by: S.S. 575-100 T.N. 500 40000-1000
	271-1225-55-1.75-2.5-E											
	271-1225-55-1.0-1.8-M/E											
	271-1225-55-1.75-2.5-M/E											

- 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. 271-1225-55-11-STR-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. 132 - 133

ISO



Dimensions in mm						
D	d1	d2	Pitch mm	Pitch t.p.d	Angle	Minimum hole diameter
10	5.5	4.0	1.0	-	60°	12.00
		4.5	1.25	-	-	-
		5.0	1.5	-	-	-

Tolerances (mm)
D: ± 0.05 AE: ± 0.015

Inserts	Part No.	Grades										 	
		Carbide					Metal cement		Uncoated				
		YB05	YB10	YB15	YB20	YB30	YB40	YB50	YB60	YB70	YB80	YB90	
 ISO Metric(M,MF)	270610-ISO1.0-E											 Driven by ISO 1181-10 Tolerance analysis	
	270610-ISO1.25-E												
	270610-ISO1.5-E												
	270610-ISO1.0-M/E	1										• M.O.Q: 12PCS • The product will be produced when the order confirmed.	
	270610-ISO1.25-M/E	2											
	270610-ISO1.5-M/E	3											

- 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. 270610-ISO1.0-E, F20

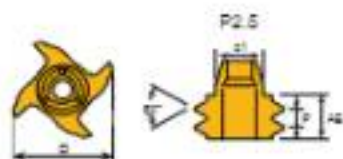
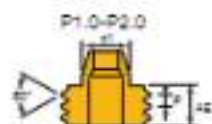
- M.O.Q: 12PCS
- The product will be produced when the order is confirmed.



UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 23
- Cutting Data P. 132 - 133

ISO



Tolerances (mm)
D: ± 0.005 AE: ± 0.015

Dimensions in mm						
D	d1	AE	Pitch mm	Pitch Lead	Angle	Minimum hole diameter
12	8.5	4.0	1.0	-	60°	14.00
		4.5	1.25	-		
		5.0	1.5	-		
		7.0	2.0	-		
		8.0	2.5	-		

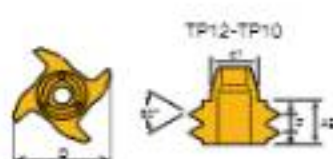
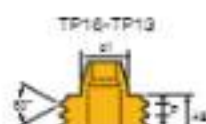
Inserts	Part No.	Grades										 
		Cermet					Metal cermet		Uncoated			
		CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN	
 ISO Metric (M, MF)	270812-ISO1.0-E											 Drill bit: 7583 021 01 Turnable & straighten
	270812-ISO1.25-E											
	270812-ISO1.5-E											
	270812-ISO2.0-E											
	270812-ISO2.5-E											

- 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.: 370812-ISO1.0-E #20

UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 23
- Cutting Data P. 132 - 133

ISO



Tolerances (mm)
D: ± 0.005 AE: ± 0.015

Dimensions in mm						
D	d1	AE	Pitch mm	Pitch Lead	Angle	Minimum hole diameter
12	8.5	7.5	-	18	60°	14.00/0.85
		8.0	-	16		
		8.5	-	12		
		9.0	-	12		
		9.5	-	11		

Inserts	Part No.	Grades											
		Cermet					Metal cermet		Uncoated				
		CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN		
 UNC/UNF	370812-UNC1.0-E											 Contact: Ross Chiu Tel: 604-293-9941	
	370812-UNC1.25-E												
	370812-UNC1.5-E												
	370812-UNC1.8-E												
	370812-UNC2.0-E												
	370812-UNC1.0-ME											 Inserts 2 PCS / Box	
	370812-UNC1.25-ME												
	370812-UNC1.5-ME												
	370812-UNC1.8-ME												
370812-UNC2.0-ME													

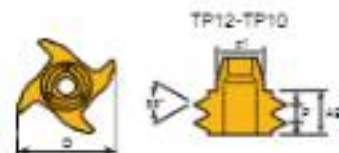
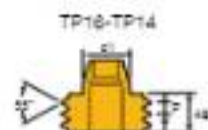
- Steel Stainless Steel Steel/Stainless Steel Cast Iron Aluminum Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 370812-UNC1.0-E #20



UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 23
- Cutting Data P. 132 - 133

BSW



Tolerances (mm)
D: ± 0.025 W: ± 0.015

Dimensions in mm						
D	W	W2	W3	W4	Angle	Minimum hole diameter
12	8.2	3.8	+	1.0	55°	12.21
		5.0	+	1.0		
		5.0	+	1.0		
		5.0	+	1.0		
		5.0	-	1.0		
						0.02



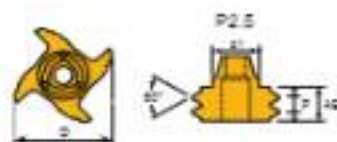
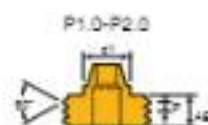
Inserts	Part No.	Grades									
		Cermet					Metal		Uncoated		
		CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN
	270812-BSW10-E										
	270812-BSW10-E										
	270812-BSW10-E										
	270812-BSW10-E										
	270812-BSW10-E										
	270812-BSW10-ME										
	270812-BSW10-ME										
	270812-BSW10-ME										
	270812-BSW10-ME										
	270812-BSW10-ME										
Inserts 2 PCS / Box											

- 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.: 270812-BSW10-E, F20

UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 24
- Cutting Data P. 132 - 133

ISO



Tolerances (mm)
D: ± 0.025 W: ± 0.015

Dimensions in mm						
D	W	AE	Pitch mm	Pitch g.p	Angle	Minimum length mm
12	7.8	6.0	7.0	-	60°	17.20
		6.8	7.75	-		
		7.5	8.5	-		
		8.0	9.0	-		
		8.5	9.5	-		



Inserts	Part No.	Grades									
		Cermet					Metal		Uncoated		
		CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN	CBN
	270812-ISO1.0-E										
	270812-ISO1.25-E										
	270812-ISO1.5-E										
	270812-ISO2.0-E										
	270812-ISO2.5-E										
	270812-ISO1.0-ME										
	270812-ISO1.25-ME										
	270812-ISO1.5-ME										
	270812-ISO2.0-ME										
	270812-ISO2.5-ME										
Inserts 2 PCS / Box											

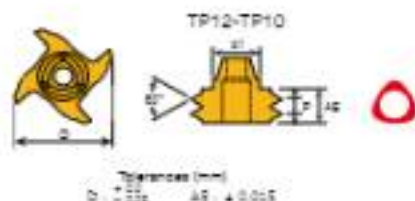
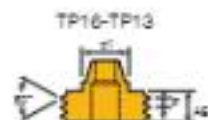
- Steel Stainless Steel Cast Iron Aluminum Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 270812-ISO1.0-E, F20



UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 24
- Cutting Data P. 132 - 133

UNC



Dimensions in mm						
D	d1	AS	Pitch mm	Pitch Lead	Angle	Maximum diameter
18	7.0	8.8	-	18	60°	17.78 0.7
		9.0	-	18		
		9.5	-	12		
		9.0	-	12		
		9.5	-	11		
		9.0	-	10		

Tolerances (mm)
D: +0.025
AS: +0.025

Inserts	Part No.	Grades										 
		Cermet					Metal Cermet		Uncoated			
		B100	C800	C805	P10	P15	C800	C805	K10	C5		
 UNC/UNF	270815-UNC18-S											 Contact us: 0202 221 1111 Sales@msc.sg/zh
	270815-UNC16-S											
	270815-UNC13-S											
	270815-UNC12-S											
	270815-UNC11-S											
	270815-UNC10-S											
	270815-UNC18-M											  Inserts 2 PCS / Box
	270815-UNC16-M											
	270815-UNC13-M											
	270815-UNC12-M											
	270815-UNC11-M											
270815-UNC10-M												

Defined by ISO 228-1:2013



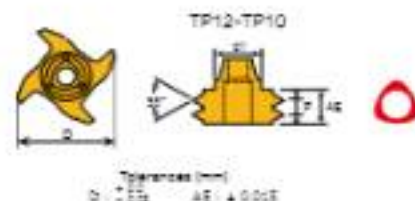
Inserts 2 PCS / Box

- 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.: 270815-UNC18-S, F20

UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 24
- Cutting Data P. 132 - 133

BSW

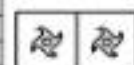


Dimensions in mm						
D	d1	AS	Pitch mm	Pitch Lead	Angle	Maximum diameter
18	7.0	8.8	-	18	55°	18.00 0.71
		9.0	-	18		
		9.5	-	12		
		9.0	-	12		
		9.5	-	11		
		9.0	-	10		

Tolerances (mm)
D: +0.025
AS: +0.025

Inserts	Part No.	Grades											
		Cermet					Metal cermet		Uncoated				
		B100	C800	C800	P10	P10	C800	C800	K10	C8			
 BSW/BSF	270815-BSW18-S											 SST Certified: S 240 1998 C 120 2000 1998 SST Certified: S 240 1998 Tool steel class SGT ISO 5010 class A, SST medium class	
	270815-BSW16-S												
	270815-BSW13-S												
	270815-BSW12-S												
	270815-BSW11-S												
	270815-BSW10-S												
	270815-BSW18-M											 Inserts 2 PCS / Box	
	270815-BSW16-M												
	270815-BSW13-M												
	270815-BSW12-M												
	270815-BSW11-M												
	270815-BSW10-M												

BSW/BSF
S: 2.0mm
M: 2.5mm
L: 3.0mm
T: 4.0mm
U: 5.0mm
V: 6.0mm
W: 7.0mm
X: 8.0mm
Y: 9.0mm
Z: 10.0mm



Inserts 2 PCS / Box

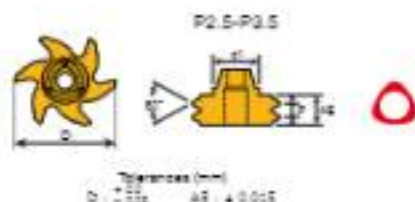
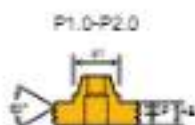
- Steel Stainless Steel Steel/Stainless Steel Cast Iron Aluminum Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 270815-BSW18-S, F20



UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 25
- Cutting Data P. 132 - 133

ISO



Dimensions in mm						
D	A1	A2	Pitch mm	Pitch 1 µm	Angle	Maximum flank wear (mm)
20	0.0	4.0	1.0	-	60°	0.05
		5.5	1.25	-		
		6.5	1.5	-		
		7.0	2.0	-		
		8.0	2.5	-		
		9.0	3.0	-		

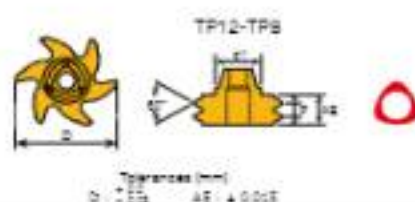
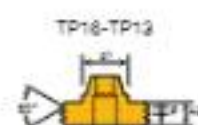
Inserts	Part No.	Grades											
		Cermet					Metal ceramic		Uncoated				
		CBN	CBN	CBN	P10	P15	CC20	CCM	CC15	CC	CC		
 ISO Metric (M,MP)	2T1020-ISO1.0-E											 Defined by Root Dia. to Tolerance classification	
	2T1020-ISO1.25-E												
	2T1020-ISO1.5-E												
	2T1020-ISO2.0-E												
	2T1020-ISO2.5-E												
	2T1020-ISO3.0-E												
	2T1020-ISO3.5-E											 	
	2T1020-ISO1.0-ME	●											
	2T1020-ISO1.25-ME	●											
	2T1020-ISO1.5-ME	●											
	2T1020-ISO2.0-ME	●											
	2T1020-ISO2.5-ME	●											
	2T1020-ISO3.0-ME	●											
	2T1020-ISO3.5-ME	●											
Inserts 2 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.: 2T1020-ISO1.0-E #20

UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 25
- Cutting Data P. 132 - 133

ISO



Dimensions in mm						
D	A1	A2	Pitch mm	Pitch 1 µm	Angle	Maximum flank wear (mm)
20	0.0	5.5	-	18	60°	0.05
		6.0	-	14		
		6.5	-	12		
		7.0	-	10		
		7.5	-	8		
		8.0	-	8		

Inserts	Part No.	Grades										 	
		Cermet					Metal ceramic		Uncoated				
		CBN	CBN	CBN	P10	P15	CC20	CCM	CC15	CC	CC		
 UNC/UNF	2T1020-UNC18-E											 Delivered by: RSG (24-48) Reconditioned by: RSG	
	2T1020-UNC14-E												
	2T1020-UNC12-E												
	2T1020-UNC10-E												
	2T1020-UNC11-E												
	2T1020-UNC10-E											 	
	2T1020-UNC8-E												
	2T1020-UNC6-E												
	2T1020-UNC18-ME	●											
	2T1020-UNC14-ME	●											
	2T1020-UNC12-ME	●											
	2T1020-UNC11-ME	●											
	2T1020-UNC10-ME	●											
	2T1020-UNC8-ME	●											
2T1020-UNC6-ME	●												
Inserts 2 PCS / Box													

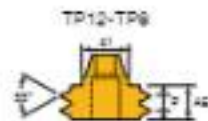
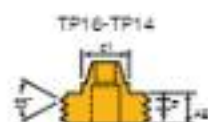
- Steel Stainless Steel Steel/Stainless Steel Cast Iron Aluminum Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: 2T1020-UNC18-E #20



UFO Thread Milling Insert (Multi-Pitch)

- Toolholders P. 25
- Cutting Data P. 132 - 133

BSW



Tolerances (mm)
D: ± 0.005 AE: ± 0.005



Dimensions in mm							
D	d1	AE	Flank mm	Flank L ₁ mm	Angle	Minimum chip thickness mm	Maximum chip thickness mm
20	9.8	5.5	-	15	55°	0.05	0.8
		6.0	-	15			
		6.0	-	12			
		6.0	-	11			
		6.0	-	10			
		6.5	-	8			
		7.5	-	5			

Inserts	Part No.	Grades											
		Cermet					Metal matrix		Uncoated				
		CBN	CBN	CBN	P/B	P/B	CBN	CBN	CBN	CBN	CBN		
 BSW/BSF	2T1020-BSW18-S											 BSW/BSF	
	2T1020-BSW14-S												
	2T1020-BSW12-S												
	2T1020-BSW11-S												
	2T1020-BSW10-S												
	2T1020-BSW9-S												
	2T1020-BSW8-S											 BSW/BSF	
	2T1020-BSW18-MS												
	2T1020-BSW16-MS												
	2T1020-BSW12-MS												
	2T1020-BSW11-MS												
	2T1020-BSW10-MS												
	2T1020-BSW9-MS												
	2T1020-BSW8-MS												



BSW defined by
9.5411105
On size, accuracy class
BSF defined by
9.5411105
Tolerance class 8mm
Medium
class 2, BSF-medium class



Inserts 2 PCS / Box

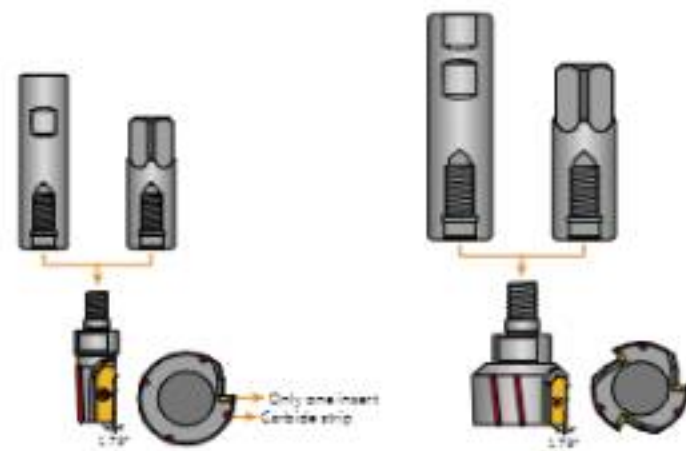
- Steel Stainless Steel Steel/Stainless Steel Cast Iron Aluminum Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, ex: 2T1020-BSW18-S, P20

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 8 different types

RC & NPT
3/8, 1/2, 3/4, 1"

Can use 6 different types

RC & NPT
1 1/4, 1 1/2, 2"

Patent No. 14442206

Patent No. ZL 2012 2 0187047.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 ($\frac{3}{8}$ " - 2")
- Combi holders see P. 96
- Insert details and cutting data see P. 97



TA-RC

Order code	Dimensions(mm)							Insert	Screw	Key
	D	D1	M	L	L1					
TA-RC- $\frac{3}{8}$ "	14.10	13.34	M14	42	28	-	1	TA-2804	002807	710P
TA-RC- $\frac{1}{2}$ "	17.25	16.18								
TA-RC- $\frac{3}{4}$ "	22.25	21.82								
TA-RC-1"	28.70	28.34	M18				67			
TA-RC-1 $\frac{1}{4}$ "	33.37	33.80								
TA-RC-1 $\frac{1}{2}$ "	44.25	43.48								
TA-RC-2"	58.25	57.20								

Indexable taper pipe reamer

- Used for Tapered pipe thread RC (BSPT)-Taper 1:16
- Common Insert TA ($\frac{3}{8}$ " - 2")
- Combi holders see P. 96
- Insert details and cutting data see P. 97



TA-NPT

Order code	Dimensions(mm)							Insert	Screw	Key
	D	D1	M	L	L1					
TA-NPT- $\frac{3}{8}$ "	14.22	13.46	M14	42	28	-	1	TA-2804	002807	710P
TA-NPT- $\frac{1}{2}$ "	17.32	16.18								
TA-NPT- $\frac{3}{4}$ "	22.25	21.81								
TA-NPT-1"	28.48	28.72	M18							
TA-NPT-1 $\frac{1}{4}$ "	33.32	33.45								
TA-NPT-1 $\frac{1}{2}$ "	44.22	43.22								
TA-NPT-2"	58.25	57.59		47						



Exclusive extendable holders - JIS/DIN/CBH

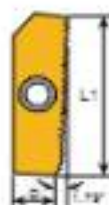


Extendable Holder

Order code	Dimensions(mm)				
	D	L	M		
JIS-2020-60	20	60	M14	-	12
DN-2020-60					10
GB-H-2020-100		70			-
JIS-2020-78	22	78	M16		28
DN-2020-78					26
GB-H-2020-150		90			-

Reamer insert for taper pipe thread 1:16

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



TA-3704-B

0.007 46 0.01, 0.025

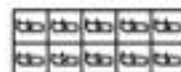


image 10 not / box

1000

LF	D	AE
24.05	8	2.20

Inserts	Part No.	Grade							
		Cermet						Uncoated	
		CBN-01	CBN-02	CBN-03	CBN-04	CBN-05	CBN-06	PB	ID
	TA-2001-M								
	TA-2001-L								

TA
PDA



- ☐ 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. ex.: TA-2554-M, B-00

Recommended Cutting Data And Insert Grade

- Selecting suitable insert grades table for taper pipe reamer

Material group No.	Cutting speed V _m (m/min)	Recom. feed F _a (mm/ tooth)		Grades		
		1/4 - 1"	1 1/4 - 2"	M	E	ME
1-2	18-20	0.1 0.2	0.1 0.2	#100	-	-
3	18-20	0.1 0.2	0.1 0.2	#100	-	-
4-5-6	10-18	0.1 0.2	0.1 0.2	#100	-	-
7	8-12	0.08 0.10	0.08 0.10	#100	+	-
8-11	8-12	0.1 0.2	0.1 0.2	#100	+	-
12-13	20-30	0.2 0.4	0.2 0.4	-	+	#20
14-15	20-30	0.2 0.4	0.2 0.4	-	+	#20

TECHNICAL GUIDE

Thread Infeed Depth Recommendation

Number of passes and infeed depths
The below recommended data is for steel

External ISO - metric threads

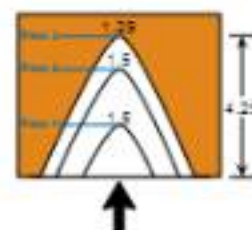
Pitch(mm)	6.0	5.5	5.0	4.5	4.0	3.5	3.0	2.5	2.0	1.75	1.5	1.25	1.0	0.80	0.75	0.50
Total depth (mm)	3.52	3.52	3.19	2.87	2.52	2.22	1.92	1.60	1.28	1.12	0.92	0.81	0.68	0.52	0.48	0.48
Pass 1 (mm)	1.60	1.60	1.20	1.00	0.80	0.72	0.60	0.50	0.40	0.35	0.28	0.25	0.20	0.16	0.16	0.16
Pass 2 (mm)	1.20	1.20	1.10	1.07	1.0	0.92	-	-	-	-	-	-	-	-	-	-
Pass 3 (mm)	1.02	0.82	0.79	-	-	-	-	-	-	-	-	-	-	-	-	-

Internal 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 depth (mm)	3.52	3.52	3.19	2.87	2.52	2.22	1.78	1.48	1.17	1.02	0.88	0.78	0.60	0.48	0.48	0.31
Pass 1 (mm)	1.60	1.60	1.20	1.00	0.80	0.72	0.60	0.50	0.40	0.35	0.28	0.25	0.20	0.16	0.16	0.16
Pass 2 (mm)	1.20	1.10	1.20	1.15	1.0	0.92	0.78	-	-	-	-	-	-	-	-	-
Pass 3 (mm)	0.82	0.82	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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 depth (mm)	4.29	3.82	3.66	2.96	2.50	2.17	1.92	1.78	1.58	1.45	1.20	1.12	1.01	0.96	0.92	0.72	0.69
Pass 1 (mm)	1.60	1.60	1.60	1.60	1.40	1.20	1.10	1.08	0.98	0.88	0.78	0.70	0.60	0.58	0.58	0.48	0.48
Pass 2 (mm)	1.60	1.20	1.20	1.28	1.10	0.97	0.82	-	-	-	-	-	-	-	-	-	-
Pass 3 (mm)	1.29	1.02	0.74	-	-	-	-	-	-	-	-	-	-	-	-	-	-



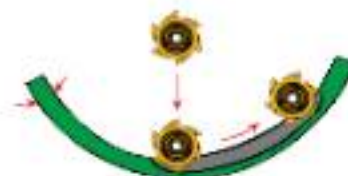
Example of thread infeed method

- 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.

Technical Guide

Internal Thread

1



Plunging is Not Recommended

2



Ramping is The Best Choice

Best Recommended

UFO

External Thread

1



Plunging is Not Recommended

2



Ramping is The Best Choice

Best 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 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.

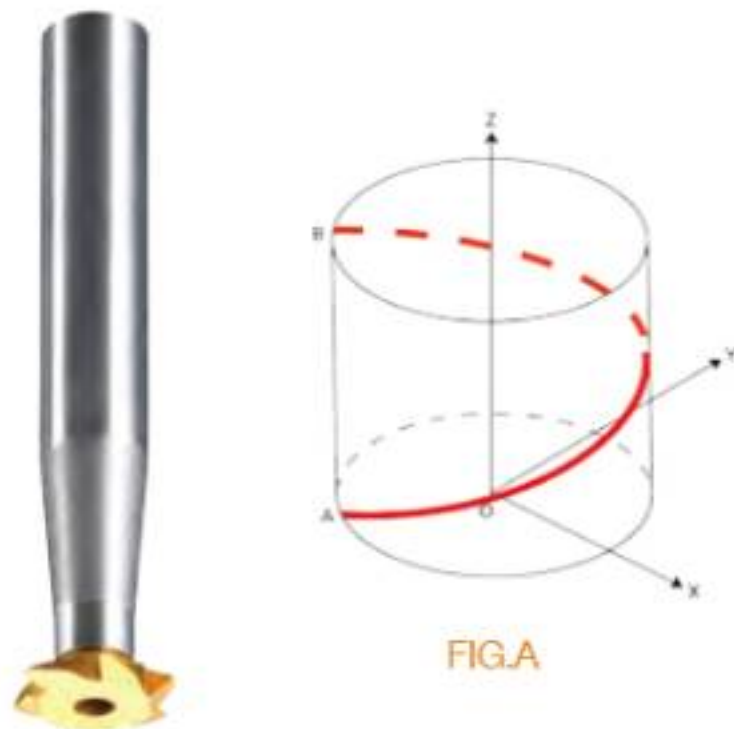
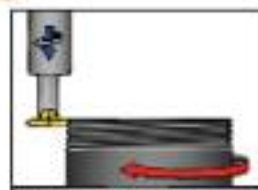


FIG.A

Thread Milling Methods

External

FIG.1



Right Hand Thread-Comb Milling

Best Recommended

FIG.2



Left Hand Thread-Comb Milling

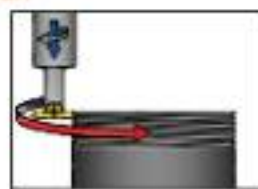
Best Recommended

FIG.3



Right Hand Thread-Conventional Milling

FIG.4



Left Hand Thread-Conventional Milling

Internal

FIG.1



Right Hand Thread-Comb Milling

Best Recommended

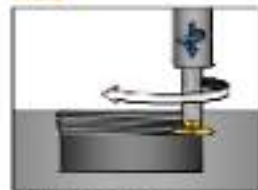
FIG.2



Left Hand Thread-Comb Milling

Best Recommended

FIG.3



Right Hand Thread-Conventional Milling

FIG.4



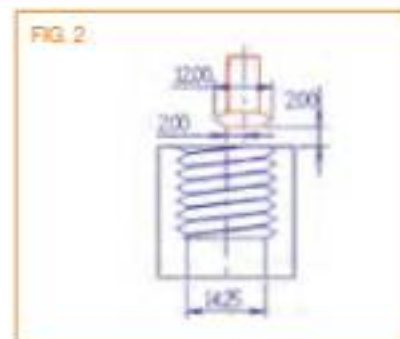
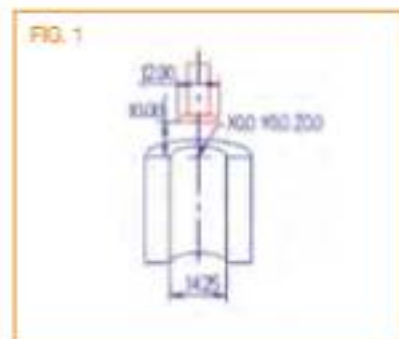
Left Hand Thread-Conventional Milling



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
- Thread / M16x2.0P
- CNC programme / Fanuc / Mitsubishi



Fanuc

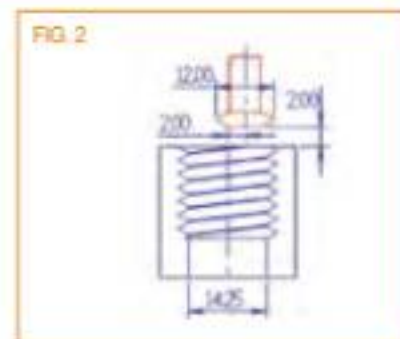
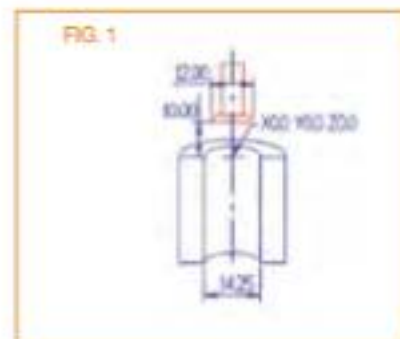
```
G90 G0 G54 X0.0 Y0.0
G43 Z10.0 H1 S3978 M3 (On centerline of workpiece Fig1)
M7
G00 Z1.0 (Move to the starting point Fig 2)
G01 Z-6.0 F200
G41 D1 (Cutter compensation)
G91 G03 X2.0 Y0.0 R2.0 F150
G03I-2.0 Z2.0 F630 (Thread milling)
G03I-2.0 Z2.0
G03I-2.0 Z2.0
G03I-2.0 Z2.0
G03I-2.0 Z2.0
G90 G01 X0.0 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 X0 figure)
```

Exact cutting data
see page 131-133

Internal Thread Milling Example Cnc Code

Method 2: Reset the starting point(0) and (I)figure

- Insert code / 3T1-0612-60-1.0-2.5
- Milling / Climb milling / Internal thread
- Thread / M16x2.0P
- 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 Z1.0 (Move to the starting point Fig 2)
G01 Z-6.0 F200
G91 G03 X2.0 Y0.0 R2.0 F150
G03 I-2.0 Z2.0 F630 (Thread milling)
G03 I-2.0 Z2.0
G03 I-2.0 Z2.0
G03 I-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 X0 figure)
```

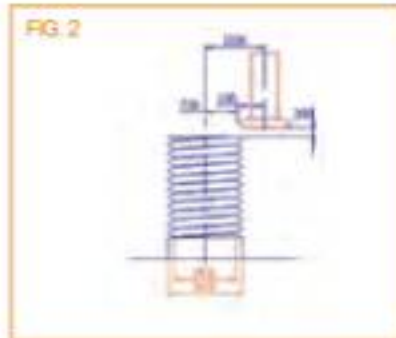
Exact cutting data
see page 131-133



External Thread Milling Example Cnc Code

Method 1/Tool offset-outer compensation

- Insert code / 3T1-0612-60-1.0-2.5
- Milling / Climb milling / External thread
- Thread / M16x2.0P
- CNC programme / Fanuc/Mitsubishi



Fanuc

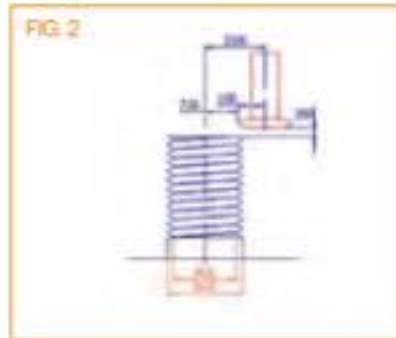
```
G90 G0 G54 X0.0 Y0.0
G43 Z10.0 H1 S3978 M3 (On centerline of workplace Fig 1)
M7
G00 X13.0 Y0.0 (Move to the starting point Fig 2)
G41 D? (outer compensation)
G01 Z2.0 F200
G91 G02 I-13.0 Z-2.0 F630 (Thread milling)
G02 I-13.0 Z-2.0
G02 I-13.0 Z-2.0
G02 I-13.0 Z-2.0
G90 G01 X16.0 (Move out from workplace, ready to retract)
G90 G00 Z50.0 M9 (Retract the tool)
G40 (Cancel trim)
M30 (Programme finish, check the quality of thread, modify 2.0 figure)
```

Exact cutting data
see page 131-133

External Thread Milling Example Cnc Code

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

- Insert code / 3T1-0612-60-1.0-2.5
- Milling / Climb milling / External thread
- Thread / M16x2.0P
- CNC programme / Fanuc / Mitsubishi



Fanuc

```
G90 G0 G54 X0.0 Y0.0
G43 Z10.0 H1 S3978 M3 (On centerline of workplace Fig 1)
M7
G00 X13.0 Y0.0 (Move to the contour starting point Fig 2)
G01 Z2.0 F200
G91 G02 I-13.0 Z-2.0 F630 (Thread milling)
G02 I-13.0 Z-2.0
G02 I-13.0 Z-2.0
G02 I-13.0 Z-2.0
G90 G01 X16.0 (Move out from workplace, ready to retract)
G90 G00 Z50.0 M9 (Retract the tool)
M30 (Programme finish, check the quality of thread, modify 2.0 figure)
```

Exact cutting data
see page 131-133



Recommended Preparatory Drill Diameter

Size	Maximum drill diameter		
	404	504	604
M4.5 x 4.00	40.25	40.85	40.75
M4.5 x 4.00	41.06	41.46	41.27
M4.5 x 3.00	42.08	42.18	42.25
M4.5 x 3.00	43.07	43.12	43.21
M4.5 x 1.50	43.36	43.81	43.87
M4.5 x 1.30	44.08	44.18	44.15
M4.5 x 1.50	44.58	44.81	44.87
M4.5 x 5.00	45.05	45.16	45.25
M4.5 x 6.00	44.04	44.14	44.27
M4.5 x 3.00	45.06	45.16	45.25
M4.5 x 2.00	45.07	45.13	45.21
M4.5 x 1.50	45.58	45.81	45.87
M4.5 x 1.00	47.08	47.15	47.18
M5.0 x 5.00	45.03	45.14	45.25
M5.0 x 3.00	47.06	47.15	47.25
M5.0 x 2.00	48.07	48.13	48.21
M5.0 x 1.50	48.58	48.81	48.87
M5.0 x 1.00	49.10	49.15	49.18
M5.2 x 2.00	47.00	47.10	47.20
M5.2 x 4.00	48.00	48.10	48.20
M5.2 x 3.00	49.00	49.10	49.20
M5.2 x 2.00	50.00	50.10	50.20
M5.2 x 1.50	50.00	50.80	50.80
M5.2 x 6.00	51.00	51.10	51.20
M5.2 x 2.00	52.00	52.10	52.20
M5.2 x 3.00	53.00	53.10	53.20
M5.2 x 1.50	53.00	53.80	53.80
M5.2 x 5.00	54.00	54.10	54.20
M5.2 x 2.00	55.00	55.10	55.20
M5.2 x 3.00	56.00	56.10	56.20
M5.2 x 1.50	56.00	56.80	56.80
M5.2 x 6.00	57.00	57.10	57.20
M5.2 x 2.00	58.00	58.10	58.20
M5.2 x 3.00	59.00	59.10	59.20
M5.2 x 1.50	59.00	59.80	59.80
M5.2 x 2.00	60.00	60.10	60.20

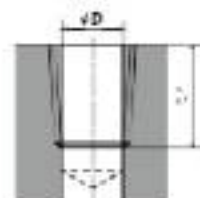
Size	Maximum drill diameter		
	4H	5H	6H
M63 ± 1.50	60.3	60.6	60.6
M64 ± 0.00	60	60.7	60.3
M64 ± 0.00	60	60.7	60.3
M64 ± 0.00	61	61.0	61.2
M64 ± 0.00	62	62.0	62.2
M64 ± 1.50	62.5	62.8	62.8
M65 ± 0.00	61	61.7	61.2
M65 ± 0.00	62	62.7	62.2
M65 ± 0.00	62	62.7	62.2
M65 ± 1.50	62.5	62.8	62.8
M65 ± 0.00	62	62.7	62.2
M65 ± 0.00	64	64.7	64.2
M65 ± 0.00	65	65.7	65.2
M65 ± 0.00	66	66.7	66.2
M65 ± 1.50	66.5	66.8	66.8
M70 ± 0.00	66	66.7	66.2
M70 ± 0.00	68	68.7	68.2
M70 ± 0.00	67	67.7	67.2
M70 ± 0.00	68	68.7	68.2
M72 ± 0.00	68	68.7	68.2
M72 ± 0.00	68	68.7	68.2
M72 ± 0.00	70	70.7	70.2
M75 ± 0.00	71	71.7	71.2
M75 ± 0.00	72	72.7	72.2
M75 ± 0.00	72	72.7	72.2
M76 ± 0.00	74	74.7	74.2
M80 ± 0.00	74	74.7	74.2
M80 ± 0.00	76	76.7	76.2
M80 ± 0.00	77	77.7	77.2
M80 ± 0.00	78	78.7	78.2
M85 ± 0.00	78	78.7	78.2
M85 ± 0.00	81	81.7	81.2
M85 ± 0.00	82	82.7	82.2
M85 ± 0.00	82	82.7	82.2
M90 ± 0.00	84	84.7	84.2
M90 ± 0.00	86	86.7	86.2
M90 ± 0.00	88	88.7	88.2
M90 ± 0.00	89	89.7	89.2
M95 ± 0.00	91	91.7	91.2
M95 ± 0.00	92	92.7	92.2
M100 ± 0.00	94	94.7	94.2
M100 ± 0.00	96	96.7	96.2
M100 ± 0.00	96	96.7	96.2

RC (BSPT)

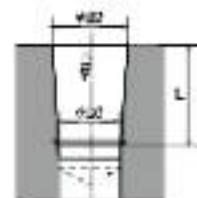
Recommended Thread Dia / T.p.i / Minimum Bore Dia

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

1. Cylindrical drilling without reamer



2. Conical drilling with reamer to form taper thread



Specimen	σ^*	σ^*	σ^*
no.	MPa	MPa	MPa
1	100	100	100
2	100	100	100
3	100	100	100
4	100	100	100
5	100	100	100
6	100	100	100
7	100	100	100
8	100	100	100
9	100	100	100
10	100	100	100

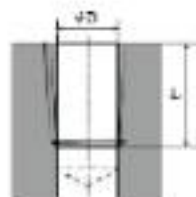
North side D	P Top 7" Depth	J-01	J-02	L
Re	1/8"	22	21	7.22
	1/8"	22	21	7.22
	1/4"	19	12.75	11.22
	3/8"	19	12.25	12.22
	1/2"	14	17.7	12.22
	3/4"	14	22.1	12.72
	1"	17	22.1	12.22
	1 1/4"	17	21.2	21.22
	1 1/2"	17	22.2	21.22
	2"	17	22.22	22.22

NPT

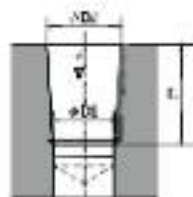
Recommended Thread Dia / T.p.i / Minimum Bore Dia

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

1. Cylindrical drilling without reamer



2. Cylindrical drilling with reamer to form taper thread



Item size D	P T.p.i / Bore	ϕD	L
NPT 1/16"	27	0.12	0.3
1/8"	27	0.2	0.3
1/4"	18	0.5	12.18
3/8"	18	0.63	13.48
1/2"	14	0.75	18.3
5/8"	14	0.93	18.3
1"	11.43	1.25	18.3
1 1/8"	11.43	1.5	20.08
1 1/2"	11.43	1.75	20.08
2"	11.43	2.25	20.08

Item size D	P T.p.i / Bore	ϕD	ϕD	L
NPT 1/16"	27	0.12	0.28	0.3
1/8"	27	0.2	0.74	0.3
1/4"	18	0.5	11.28	12.18
3/8"	18	0.63	14.88	13.48
1/2"	14	0.75	18.38	18.3
5/8"	14	0.93	22.87	18.3
1"	11.43	1.25	28.87	18.3
1 1/8"	11.43	1.5	33.88	20.08
1 1/2"	11.43	1.75	34.88	20.08
2"	11.43	2.25	38.88	20.08

UFO RADIUS DOUBLE CORNER CONCAVE RADIUS CHAMFER DOVETAIL CIRCLIP



Video



Features

Available in
materials



Cost
200~300%
DOWN

Variety of
Machines
CNC milling machine

Efficiency
400%
UP

Durability
300%
UP





UFO Radius Cutter

Y.T. has R0.5 to R3.0 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.

UFO Double Chamfer

Up and down chamfering is available in same insert. Different angle and radius are available:

- 45° chamfer: min. insert dia. is 9.8mm with 4 teeth
- Radius: R0.5~R2.0, min. insert dia. is 9.8mm with 4 teeth.



UFO Dovetail Cutter

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

UFO Circlip Cutter

Standard circlip insert with width: 1.1~4.15 mm

UFO Radius Insert

- Toolholders P. 26
- Cutting Data P. 125 - 126



Tolerances (mm)
D: ± 0.05 4F: $+0.01 \sim +0.02$



Dimensions in mm				
D	d1	d2	R	Min. d3
20	9.8	1.0	0.8	
		1.2	0.12	
		2.0	1.0	
		2.5	1.2	
		3.0	2.0	
		4.0	3.0	

Inserts	Part No.	Grades										 
		Cermet					Tool Steel		Uncoated			
		GC100	GC200	GC250	GC300	GC400	GC500	GC600	GC700	GC800		
 6 Flute Inserts	2T1020-R0.5-E											  Inserts 2 PCS / Box
	2T1020-R0.75-E											
	2T1020-R1.0-E											
	2T1020-R1.25-E											
	2T1020-R1.5-E											
	2T1020-R2.0-E											
	2T1020-R2.5-E											
	2T1020-R3.0-E											
	2T1020-R0.5-ME											
	2T1020-R0.75-ME											
	2T1020-R1.0-ME											
	2T1020-R1.25-ME											
	2T1020-R1.5-ME											
	2T1020-R2.0-ME											
2T1020-R2.5-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. Ex: 2T1020-R0.5-E F20

UFO Double Corner Radius Insert

- Toolholders P. 23, P. 25
- Cutting Data P. 125 - 126



Dimensions in mm				
D	d1	A2	S	Max. AR
9.2	6.5	3.0	0.8	1.0
		4.0	1.2	
		5.0	0.8	
		4.0	1.0	1.5
11.2	8.0	3.0	1.2	
		4.0	1.0	
		5.0	0.8	
		4.0	0.75	1.5
13.2	9.5	4.0	1.0	
		5.0	1.25	
		6.0	1.0	
		5.0	0.8	1.5



Tolerances (mm)
D: ± 0.02 A2: $+0.01+0.02$

Inserts	Part No.	Grades											
		Cermet					Metal ceramic		Uncoated				
		GC10	GC20	GC30	GC40	GC50	GC60	GC70	GC80	GC90	GC100		
 6 flute inserts	2T0810-0CR0.5-E												
	2T0812-0CR0.5-E												
	2T0812-0CR1.0-E												
	2T0812-0CR1.5-E												
	2T1020-0CR0.5-E												
	2T1020-0CR0.75-E												
	2T1020-0CR1.0-E												
	2T1020-0CR1.25-E												
	2T1020-0CR1.5-E												
	2T1020-0CR2.0-E												
	2T0810-0CR0.5-1/2	③											
	2T0812-0CR0.5-1/2	③											
	2T0812-0CR1.0-1/2	③											
	2T0812-0CR1.5-1/2	③											
	2T1020-0CR0.5-1/2	③											
	2T1020-0CR0.75-1/2	③											
	2T1020-0CR1.0-1/2	③											
	2T1020-0CR1.25-1/2	③											
	2T1020-0CR1.5-1/2	③											
2T1020-0CR2.0-1/2	③												


6 flute inserts



Inserts 2 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.: 2T0810-0CR0.5-E, F20

UFO Chamfer Insert

- Toolholders P. 23 - 24
- Cutting Data P. 125 - 126



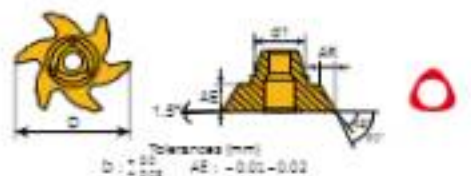
Tolerances (mm)
D: ± 0.02 A2: $+0.01+0.02$

Dimensions in mm			
D	d1	A2	Max. AR
10	8.5	3	0.5
12	9.5	3.0	
12	7.5	3.0	1.0

Inserts	Part No.	Grades											
		Cermet					Metal ceramic		Uncoated				
		GC10	GC20	GC30	GC40	GC50	GC60	GC70	GC80	GC90	GC100		
 4 flute inserts	2T0810-0-05-E											 Inserts 2 PCS / Box	
	2T0812-0-05-E												
	2T0812-0-05-E												
	2T0810-0-05-1/2	③											
	2T0812-0-05-1/2	③											
	2T0812-0-05-1/2	③											

UFO Dovetail Insert

- Toolholders P. 25
- Cutting Data P. P. 125 - 126



Tolerances (mm)
D: ± 0.02 A2: $+0.01+0.02$

Dimensions in mm				
D	d1	A2	Angle	Max. AR
20	9.5	3.0	45	2.0
			60	2.0

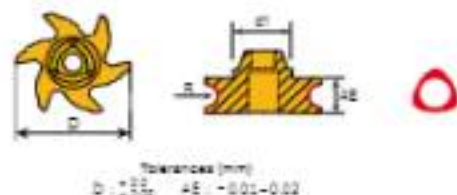
Inserts:	Part No.:	Grades										 
		Cermet					Metal ceramic		Uncoated			
		GC10	GC20	GC30	GC40	GC50	GC60	GC70	GC80	GC90	GC	
	2T1020-05-E											 Inserts 2 PCS / Box
	2T1020-60-E											
	2T1020-05-1/2	③										
	2T1020-60-1/2	③										

- 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.: 2T1020-05-E, F20



UFO Concave Radius Insert

- Toolholders P. 25
- Cutting Data P. 125 - 126



Tolerances (mm)
D : $\begin{smallmatrix} +0.02 \\ -0.01 \end{smallmatrix}$ A5 : $-0.01-0.02$

Dimensions in mm			
D	d1	A5	B
20	9.9	4.8	1.0
		5.0	1.25
		5.5	1.5
		6.0	2.0

Inserts	Part No.	Grades										 
		Cubic					Metal ceramic		Uncoated			
		B100	C100	C101	F10	F10	C100	C100	B10	C10	C10	
 6 Flute inserts	2T1020-CR1.0-E											  Inserts 2 PCS / Box
	2T1020-CR1.25-E											
	2T1020-CR1.5-E											
	2T1020-CR2.0-E											
	2T1020-CR1.0-ME											
	2T1020-CR1.25-ME											
	2T1020-CR1.5-ME											
	2T1020-CR2.0-ME											

- ☐ 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.: 2T1020-CR1.0-E, F20

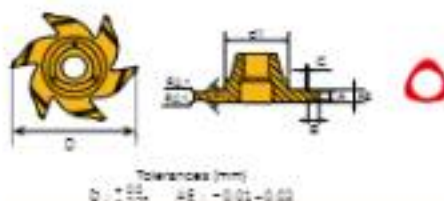
UFO Circlip Insert

- Toolholders P. 25
- Cutting Data P. 125 - 126



DIN471

DIN472



Tolerances (mm)
D : $\begin{smallmatrix} +0.02 \\ -0.01 \end{smallmatrix}$ A5 : $-0.01-0.02$

Dimensions in mm						
D	d1	A5	CA	B	C	A5
20	10	1.20	1.1	0.5	0.1	2.2
		1.45	1.2	0.55		
		1.71	1.5	1.0		
		1.98	1.85	1.25		
		2.25	2.15	1.5	0.2	3
		2.55	2.55	1.75		
		2.85	2.75	1.75		
		3.25	3.15	2.0		

Inserts	Part No .	Grades										 	
		Castable						Metal Inserts		Uncoated			
		B 100	C100	C101	F10	F10	C100	C101	F10	C100			
 6 flute inserts	03T1020-1.1-E												
	03T1020-1.2-E												
	03T1020-1.5-E												
	03T1020-1.85-E												
	03T1020-2.15-E												
	03T1020-2.55-E												
	03T1020-3.15-E												
	03T1020-4.15-E												
	03T1020-1.1-ME	1											
	03T1020-1.2-ME	2											
	03T1020-1.5-ME	3											
	03T1020-1.85-ME	4											
03T1020-2.15-ME	5												
03T1020-2.55-ME	6												
03T1020-3.15-ME	7												
03T1020-4.15-ME	8												


6 flute inserts



Inserts 2 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.: 03T1020-1.1-E, K10



UFO BACK BORING



Features

Available in
materials



Cost
200~300%
DOWN

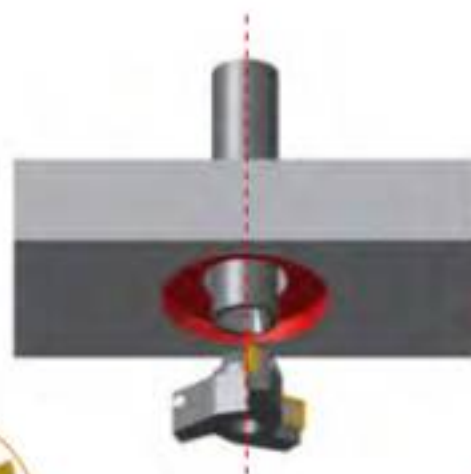
Variety of
Machines
CNC Milling machine
Drilling M/C

Efficiency
400%
UP

Durability
300%
UP

UFO
A Type
Back Boring
Cutter

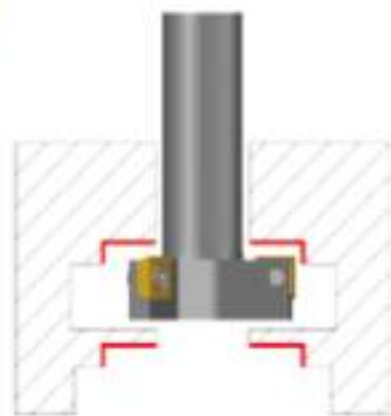
UFO



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



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



UFO
B Type
Back Boring
Cutter

UFO

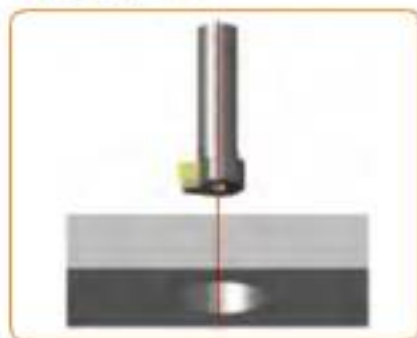


PRODUCT SPECIFICATIONS

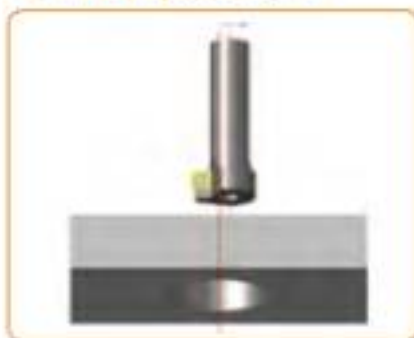
UFO Back Boring Cutter - A Type

- Toolholders P. 25
- Insert P. 124
- Cutting Data P. 124

1. Centerline



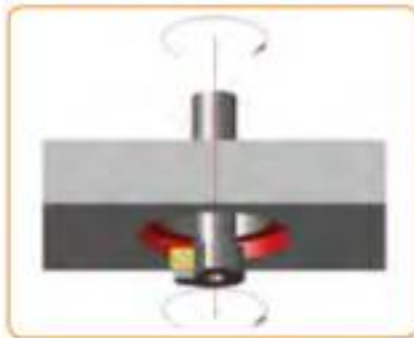
2. Tool displacement



3. Machining

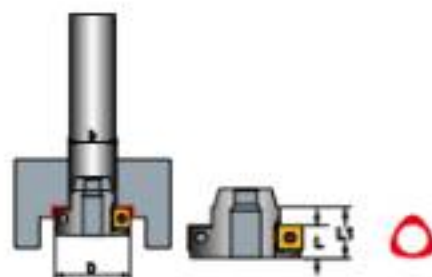


4. Back to center line



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

B3T

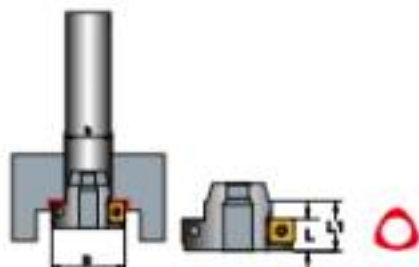


Order code		Dimensions(mm)					2C		MAX RPM	Insert SDJET	Screw	Key					
Shank	Cutter	φ	φ	L	L1												
C03-1010-80-30 C03-1010-100-30	03T-1010	10.4	10	8	14	1	0.2	14000	D602	C03008	T03F						
	03T-1010.5		10.5														
	03T-1010		10														
	03T-1010.5		10.5														
	03T-1020		20			2											
	03T-1020.5		20.5														
	03T-1021		21														
	03T-1021.5		21.5														
	03T-1022		22														



UFO Back Boring Cutter - A Type

- Toolholders P. 26 - 27
- Insert P. 124
- Cutting Data P. 124

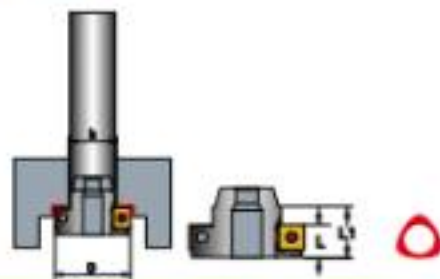


B3T

Order code		Dimensions(mm)					ZC		MAX RPM	Insert CODE	Screw	Key
Shank	Cutter	Φ	D	L	L1							
083-1212-90-25 083-1212-110-25	027-1223	12.4	23	8	14			0.25	12000	0802	002008	705P
	027-1224		24									
	027-1225		25									
	027-1226		26									
	027-1227		27									
	027-1228		28									
	027-1229		29									
	027-1230		30									
083-1818-120-30 083-1818-150-30	027-1821	18.4	21	12	17	2	1	0.27	12000	0872	004008	715P
	027-1822		22									
	027-1823		23									
	027-1824		24									
	027-1825		25									
	027-1826		26									
	027-1827		27									
	027-1828		28									
	027-1829		29									
	027-1830		30									
	027-1831		31									
	027-1832		32									

UFO Back Boring Cutter - A Type

- Toolholders P. 28
- Insert P. 124
- Cutting Data P. 124



B3T

Order code		Dimensions(mm)					ZC		MAX RPM	Insert CODE	Screw	Key
Shank	Cutter	Φ	D	L	L1							
083-2525-110 083-2525-170	027-2511	25.4	21	12	17	2	1	0.27	10000	0872	004011	715P
	027-2512		22									
	027-2513		23									
	027-2514		24									
	027-2515		25									
	027-2516		26									
	027-2517		27									
	027-2518		28									
	027-2519		29									
	027-2520		30									
	027-2521		31									
	027-2522		32									
	027-2523		33									
	027-2524		34									
	027-2525		35									
	027-2526		36									
	027-2527		37									
	027-2528		38									
	027-2529		39									
	027-2530		40									



Recommended Insert Grade

• UFO Back Boring Cutter Insert Grade Selection

Material group No.	Recom. feed fz mm/tooth	Insert		
		SOFT_ME	SOFT_E	
1	0.05-0.08	P10	-	-
2	0.05-0.07	P10	-	-
3	0.05-0.08	P10	-	-
4	0.05-0.08	P10	-	-
5	0.05-0.08	P10	-	-
6	0.05-0.08	P10	-	-
7	0.05-0.08	P10	-	-
8	0.05-0.08	P10	-	-
9	0.05-0.08	P10	-	-
10	0.05-0.08	P10	-	-
11	0.05-0.08	P10	-	-
12	0.05-0.08	P10	-	-
13	0.05-0.08	P10	-	-
14	0.05-0.08	P10	-	-
15	0.05-0.08	P10	-	-
16	0.05-0.08	P10	-	-
17	0.05-0.08	P10	-	-
18	0.05-0.08	P10	-	-
19	0.05-0.08	P10	-	-
20	0.05-0.08	P10	-	-
21	0.05-0.08	P10	-	-
22	0.05-0.08	P10	-	-

Recommended Cutting Data - UFO Back Boring Cutter

• Recommended Cutting speed, Vc(m/min)

Material group No.	Grades						
	B10	C80	P20	CE60	CE	K10	P30
	Feed, fz (mm/tooth)						
	0.04 0.06 0.08					0.06 0.10 0.15	0.08 0.12 0.15
Cutting speed, Vc (m/min)							
1	25 30 35	-	-	-	-	-	-
2	25 30 35	-	-	-	-	-	-
3	25 30 35	-	-	-	-	-	-
4	25 30 35	-	-	-	-	-	-
5	25 30 35	-	-	-	-	-	-
6	25 30 35	-	-	-	-	-	-
7	25 30 35	-	-	-	-	-	-
8	25 30 35	-	-	-	-	-	-
9	25 30 35	-	-	-	-	-	-
10	25 30 35	-	-	-	-	-	-
11	25 30 35	-	-	-	-	-	-
12	25 30 35	-	-	-	-	-	-
13	25 30 35	-	-	-	-	-	-
14	25 30 35	-	-	-	-	-	-
15	25 30 35	-	-	-	-	-	-
16	25 30 35	-	-	-	-	-	-
17	25 30 35	-	-	-	-	-	-
18	25 30 35	-	-	-	-	-	-
19	25 30 35	-	-	-	-	-	-
20	25 30 35	-	-	-	-	-	-
21	25 30 35	-	-	-	-	-	-
22	25 30 35	-	-	-	-	-	-



Tolerances (+/- mm)

0.02 0.03



Inserts 10 PCS / Box

Size	Dimensions in mm		
	I	S	B
080	8.0	8.5	1.0
090	9.0	9.5	1.0

Inserts	Part No.	Grades							
		Carbide				Steel cement		Uncoated	
		P10	C80	P20	P30	CE60	CE	K10	Q
	SOFT06000H-108								
	SOFT06000H-110								

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, eg: SOFT06000H-108, P10

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



Data Reference

• UFO T-slot Cutter Insert Grade Selection

Material group No.	Recom. feed fz mm/tooth aw/Dc = 10%	Grades			
		MC	E		
1	-	P100	-	-	-
2	-	P100	-	-	-
3	-	P100	-	-	-
4	-	P100	-	-	-
5	-	P100	-	-	-
6	-	P100	-	-	-
7	-	P100	-	-	-
8	-	P100	-	-	-
9	-	P100	-	-	-
10	-	P100	-	-	-
11	-	P100	-	-	-
12	-	P100	-	-	-
13	-	P100	-	-	-
14	-	P100	-	-	-
15	-	P100	-	-	-
16	-	P100	-	-	-
17	-	P100	-	-	-
18	-	P100	-	-	-
19	-	P100	-	-	-
20	-	P100	-	-	-
21	-	P100	-	-	-
22	-	P100	-	-	-

• Cutting Data - Side Milling

Data Reference

Operations	Ae / Dc	Recom. feed fz mm/tooth			Speed Factor
Radial feed	-	0.05	0.10	0.14	0.65
Side milling	25%	0.21	0.44	0.68	1.20
	50%	0.14	0.28	0.41	1.10
	100%	0.10	0.20	0.30	1.00
	200%	0.07	0.14	0.21	0.90
	300%	0.06	0.12	0.18	0.88
Average Chip Thickness mm	-	0.03	0.06	0.09	-



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



• Recommended Cutting speed, V_c (m/min)

Data Reference

Material group No.	Grades					
	B100	C360	F20	CE60	CE	K10
	Cutting speed, v_c (m/min)					
1	170 181 190	-	-	-	-	-
2	140 158 112	-	-	-	-	-
3	128 112 102	-	-	-	-	-
4	112 102 91	-	-	-	-	-
5	101 91 81	-	-	-	-	-
6	91 - -	-	-	-	-	-
7	60 - -	-	-	-	-	-
8	180 - 70	-	-	-	-	-
9	180 - 70	-	-	-	-	-
10	80 - 80	-	-	-	-	-
11	80 - 80	-	-	-	-	-
12	-	-	120 120 110	-	-	-
13	-	-	120 110 100	-	-	-
14	-	-	90 80 70	-	-	-
15	-	-	80 80 -	-	-	-
16	-	-	-	-	1180 880 880	-
17	-	-	-	-	950 780 700	-
18	-	-	-	-	-	-
19	-	-	-	-	-	-
20	80 68 -	-	-	-	-	-
21	38 60 -	-	-	-	-	-
22	80 68 -	-	-	-	-	-

• Feed f_z (mm/tooth)

Data Reference

Material group No.	Feed f_z					
	1 2 3 4	5 6	7 8 10 11	12 13 14 15	16 17	20 21 22
0.8-0.7 mm	0.03-0.03	0.03-0.03	0.03-0.03	0.03-0.04	0.03-0.08	0.01-0.018
0.8-1.0 mm	0.03-0.03	0.03-0.03	0.03-0.03	0.03-0.04	0.03-0.08	0.01-0.02
1.1-1.3 mm	0.038-0.04	0.018-0.04	0.018-0.04	0.03-0.08	0.03-0.08	0.018-0.038
1.4-1.8 mm	0.025-0.04	0.03-0.03	0.03-0.04	0.025-0.08	0.03-0.07	0.03-0.03
1.7-2.2 mm	0.03-0.08	0.03-0.04	0.03-0.08	0.03-0.07	0.03-0.08	0.03-0.038
2.5-3.0 mm	0.03-0.08	0.03-0.048	0.03-0.08	0.03-0.08	0.04-0.10	0.038-0.04
2.8-4.0 mm	0.03-0.08	0.03-0.048	0.03-0.08	0.03-0.08	0.04-0.10	0.038-0.04
4.3-6.0 mm	0.04-0.07	0.03-0.08	0.04-0.07	0.05-0.10	0.05-0.10	0.038-0.08

Recommended Insert Grade - UFO T-slot Cutter



Data Reference

• UFO T-slot Cutter Insert Grade Selection

Material group No.	Rough. feed f_z mm/tooth ap/Dc = 10%	Grades			
		LNQT EE	LNQT M	LNQT ME	
1	0.04-0.12	-	Q100	Q100	-
2	0.04-0.10	-	Q100	Q100	-
3	0.04-0.10	-	Q100	Q100	-
4	0.04-0.10	-	Q100	Q100	-
5	0.04-0.08	-	Q100	Q100	-
6	0.04-0.07	-	Q100	Q100	-
7	0.03-0.08	-	-	Q100	-
8	0.04-0.12	-	-	Q100	-
9	0.04-0.10	-	-	Q100	-
10	0.04-0.08	-	-	Q100	-
11	0.04-0.08	-	-	Q100	-
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	0.08-0.12	F20	-	-	-
17	0.08-0.12	F20	-	-	-
20	0.08-0.08	-	-	Q100	-
21	0.04-0.08	-	-	Q100	-
22	0.04-0.07	-	-	Q100	-

• Cutting Data - Side Milling

Data Reference

Operations	A_e / D_c	Rough. feed f_z mm/tooth			Speed Factor
Side Milling	-	0.08	0.10	0.14	0.88
	25%	0.21	0.66	0.88	1.20
	50%	0.14	0.38	0.61	1.10
	100%	0.10	0.20	0.20	1.00
Side Milling	20%	0.07	0.14	0.21	0.90
	30%	0.06	0.12	0.18	0.88
	Average Chip Thickness mm	-	0.03	0.08	0.08



Recommended Cutting Data - UFO T-slot Cutter



* Recommended Cutting speed, Vc(m/min)

Data Reference

Material group No.	Grades					
	B100	C050	F20	C080	CE	K10
	Cutting speed, v_c (m/min)					
1	255 230 200	-	-	-	-	-
2	200 180 160	-	-	-	-	-
3	180 160 140	-	-	-	-	-
4	160 140 120	-	-	-	-	-
5	140 120 110	-	-	-	-	-
6	120 110 100	-	-	-	-	-
7	-	-	-	-	-	-
8	180 - 70	-	-	-	-	-
9	160 - 70	-	-	-	-	-
10	80 - 80	-	-	-	-	-
11	80 - 80	-	-	-	-	-
12	-	-	140 110 100	-	-	-
13	-	-	120 100 90	-	-	-
14	-	-	110 90 80	-	-	-
15	-	-	80 80 -	-	-	-
16	-	-	110 90 80	-	-	-
17	-	-	80 80 80	-	-	-
20	80 65 -	-	-	-	-	-
21	80 65 -	-	-	-	-	-
22	80 65 -	-	-	-	-	-

* Feed fz (mm/tooth)

Data Reference

Material group No.	Feed fz					
	1 2 3 4	5 6	7 8 10 11	12 13 14 15	16 17	20 21 22
	Material group No.					
1.5-1.7 mm	0.02-0.03	0.015-0.025	0.02-0.03	0.02-0.04	0.02-0.04	0.015-0.025
1.8-2.2 mm	0.02-0.03	0.02-0.04	0.02-0.03	0.02-0.04	0.02-0.04	0.02-0.03
2.3-2.8 mm	0.02-0.03	0.02-0.03	0.02-0.03	0.02-0.03	0.02-0.10	0.02-0.04
2.9-3.5 mm	0.02-0.03	0.02-0.03	0.02-0.03	0.02-0.10	0.02-0.10	0.02-0.03
3.6-4.5 mm	0.02-0.03	0.02-0.03	0.02-0.03	0.02-0.10	0.02-0.10	0.02-0.03
4.6-5.5 mm	0.02-0.03	0.02-0.03	0.02-0.03	0.02-0.10	0.02-0.10	0.02-0.03
5.6-6.5 mm	0.02-0.10	0.02-0.03	0.02-0.07	0.02-0.12	0.02-0.17	0.02-0.03

Recommended Insert Grade - UFO T-slot Cutter



* UFO T-slot Cutter Insert Grade Selection

Data Reference

Material group No.	Recom. feed fz mm/tooth	Insert			
		SNCK_M	SNCK_MC	SNCK_FF	
1	0.14-0.20	C050 W100	W100	-	-
2	0.14-0.20	C050 W100	W100	-	-
3	0.14-0.20	C050 W100	W100	-	-
4	0.14-0.20	C050 W100	W100	-	-
5	0.14-0.20	C050 W100	W100	-	-
6	0.10-0.18	C050 W100	W100	-	-
7	0.10-0.12	C050 W100	W100	-	-
8	0.14-0.20	-	W100	-	-
9	0.14-0.20	-	W100	-	-
10	0.14-0.20	-	W100	-	-
11	0.10-0.12	-	W100	-	-
12	0.14-0.20	-	F20	-	-
13	0.14-0.20	-	F20	-	-
14	0.14-0.20	-	F20	-	-
15	0.10-0.18	-	F20	-	-
16	0.18-0.20	-	-	F20	-
17	0.18-0.20	-	-	F20	-
18	0.18-0.20	-	-	F20	-
19	0.14-0.20	-	W100	-	-
20	0.14-0.18	-	W100	-	-
21	0.10-0.12	-	W100	-	-
22	0.14-0.20	-	W100	-	-

* Cutting Data - Side Milling

Data Reference

Operations	Ae / Dc	Recom. feed fz mm/tooth			Speed Factor
Serial Infeed	-	0.08	0.10	0.14	0.88
	2%	0.21	0.24	0.35	1.20
	8%	0.14	0.20	0.31	1.10
Side milling	10%	0.10	0.20	0.20	1.00
	20%	0.07	0.16	0.21	0.90
	30%	0.06	0.12	0.18	0.85
Average Chip Thickness mm	-	0.02	0.08	0.08	-



Recommended Cutting Data - UFO T-slot Cutter



* Recommended Cutting speed, Vc(m/min)

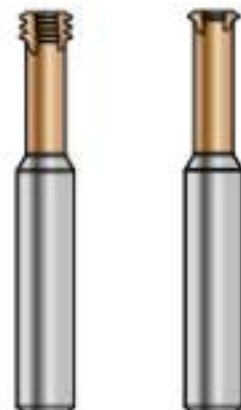
Data Reference

Material group No.	grades						
	B105	C255	F20	CE65	CE	K10	F30
	Feed fz(mm/tooth)						
	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, Vc (m/min)							
1	180 180 180	180 140 120	-	-	-	-	-
2	180 180 120	140 120 110	-	-	-	-	-
3	120 120 120	120 110 100	-	-	-	-	-
4	120 120 110	110 100 90	-	-	-	-	-
5	120 110 90	100 90 70	-	-	-	-	-
6	90 70 -	70 60 -	-	-	-	-	-
7	-	-	-	-	-	-	-
8	110 70 -	-	-	-	-	-	-
9	90 90 -	-	-	-	-	-	-
10	90 80 -	-	-	-	-	-	-
11	80 40 -	-	-	-	-	-	-
12	-	-	-	-	-	-	140 110 100
13	-	-	-	-	-	-	120 100 90
14	-	-	-	-	-	-	110 90 90
15	-	-	-	-	-	-	90 80 -
16	-	-	110 90 90	-	-	-	-
17	-	-	90 70 70	-	-	-	-
18	-	-	90 70 70	-	-	-	-
19	20 40 -	-	-	-	-	-	-
20	20 40 -	-	-	-	-	-	-
21	40 20 -	-	-	-	-	-	-
22	20 40 -	-	-	-	-	-	-

Recommended Cutting Data - Solid Thread Milling

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

Material group No.	Cutting speed, Vc(m/min)		
1	200	200	200
2	200	180	180
3	180	160	160
4	180	140	120
5	160	120	110
6	120	110	100
7	60	-	-
8	180	-	80
9	180	-	80
10	80	-	80
11	80	-	80
12	120	110	100
13	120	100	90
14	100	90	80
15	90	70	-
16	110	90	90
17	90	70	70
18	90	70	70
19	-	-	-
20	80	40	-
21	20	40	-
22	80	40	-



* Feed fz (mm/tooth)

Data Reference

Pitch mm	Feed fz						
	Material group No.						
	1 2 3 4	5 6	7 8 10 11	12 13 14 15	16 17	20 21 22	
1.0-1.5	0.04-0.05	0.03-0.05	0.04-0.05	0.04-0.07	0.05-0.08	0.03-0.04	
1.75-2.5	0.05-0.07	0.04-0.08	0.05-0.07	0.05-0.08	0.05-0.09	0.04-0.05	
3.0-4.0	0.05-0.0.8	0.05-0.07	0.05-0.08	0.05-0.09	0.07-0.1	0.05-0.08	
5.0-6.0	0.05-0.08	0.05-0.07	0.05-0.08	0.05-0.09	0.07-0.1	0.05-0.08	



Recommended Insert Grade - UFO Thread Milling Cutter



* UFO Thread Milling Cutter Insert Grade Selection

Data Reference

Material group No.	Recom. feed fz mm/tooth a _{ap} /D ₀ = 10%	Grades			
		MC	E		
1	-	W100	-	-	-
2	-	W100	-	-	-
3	-	W100	-	-	-
4	-	W100	-	-	-
5	-	W100	-	-	-
6	-	W100	-	-	-
7	-	W100	-	-	-
8	-	W100	-	-	-
9	-	W100	-	-	-
10	-	W100	-	-	-
11	-	W100	-	-	-
12	-	P20	-	-	-
13	-	P20	-	-	-
14	-	P20	-	-	-
15	-	P20	-	-	-
16	-	-	W10	-	-
17	-	-	W10	-	-
18	-	-	W10	-	-
19	-	W100	-	-	-
20	-	W100	-	-	-
21	-	W100	-	-	-
22	-	W100	-	-	-

* Feed fz (mm/tooth)

Data Reference

Pitch mm	Feed fz					
	Material group No.					
	1 2 3 4	5 6	7 8 9 10 11	12 13 14 15	16 17	20 21 22
1.0-1.5	0.04-0.06	0.03-0.05	0.04-0.06	0.04-0.07	0.03-0.05	0.03-0.04
1.75-2.5	0.05-0.07	0.04-0.06	0.05-0.07	0.05-0.08	0.04-0.06	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
5.0-6.0	0.08-0.09	0.07-0.09	0.08-0.09	0.08-0.09	0.07-0.1	0.05-0.06

Recommended Cutting Data - UFO Thread Milling Cutter



* Recommended Cutting speed, Vc(m/min)

Data Reference

Material group No.	Grades						
	B100	C350	F20	CE80	CE	K10	F30
Cutting speed, v _c (m/min)							
1	255 220 200	-	-	-	-	-	-
2	200 180 160	-	-	-	-	-	-
3	180 160 145	-	-	-	-	-	-
4	160 145 130	-	-	-	-	-	-
5	145 130 118	-	-	-	-	-	-
6	130 117 108	-	-	-	-	-	-
7	90 -	-	-	-	-	-	-
8	160 - 90	-	-	-	-	-	-
9	180 - 90	-	-	-	-	-	-
10	90 - 90	-	-	-	-	-	-
11	90 - 90	-	-	-	-	-	-
12	-	-	125 110 100	-	-	-	-
13	-	-	125 100 95	-	-	-	-
14	-	-	100 85 80	-	-	-	-
15	-	-	90 75 -	-	-	-	-
16	-	-	-	-	-	1180 950 850	-
17	-	-	-	-	-	950 780 700	-
18	-	-	-	-	-	950 780 700	-
19	-	-	-	-	-	-	-
20	90 45 -	-	-	-	-	-	-
21	75 40 -	-	-	-	-	-	-
22	90 45 -	-	-	-	-	-	-

UFO Gear Milling Cutter - Applications



SAW BLADES SERIES

The Safest Saw

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



Video



SAW BLADES



Video

Features

Available in
materials



Cost
200~300%
DOWN

Variety of
Machines
CNC Milling machine

Efficiency
300~500%
UP

Durability
300%
UP

Traditional And New

"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. : M538849



Patent No. : ZL 2016 2 1300067.8



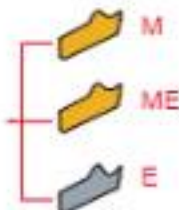
Old

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.

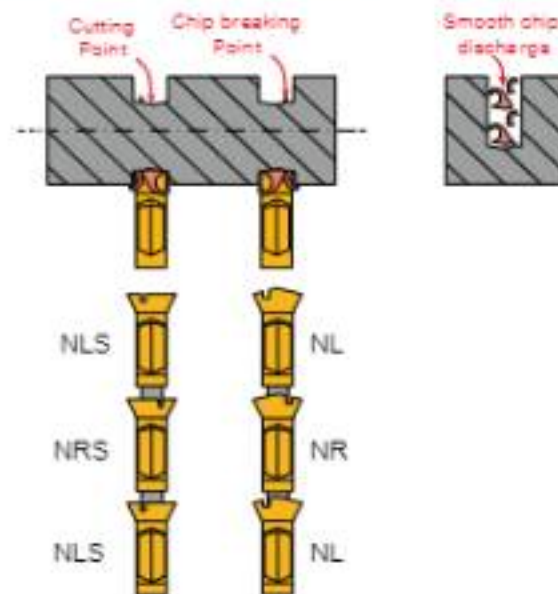


Multipurpose Saw Blades Applications



Chips evacuation with different chip breaker position.

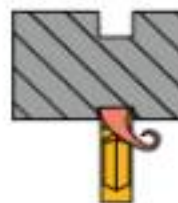
Y.T. Patent Chip Breaker System



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.

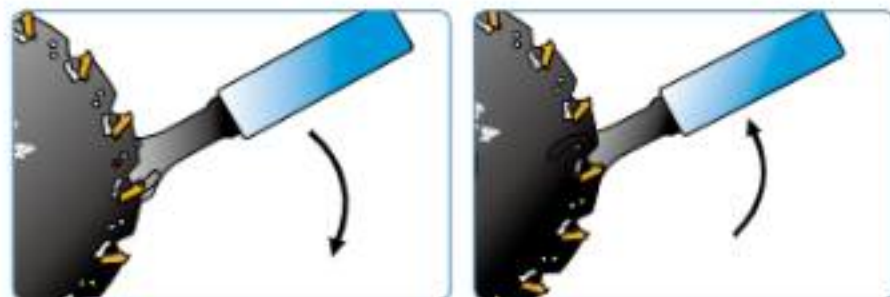
Other Brands



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



Insert fit on

Insert fit off

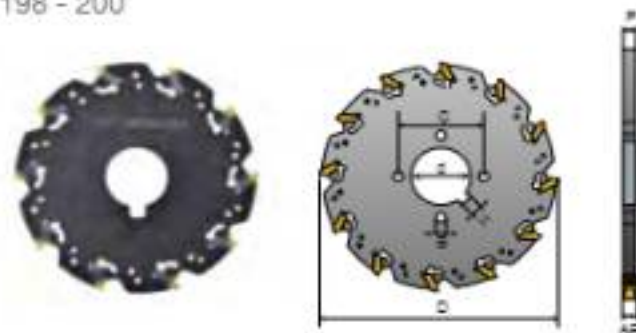


Using marker pen (oil-based) on each surface of insert for helping smoothly fit the insert into blade

PRODUCT SPECIFICATIONS

Saw Blades

- Insert P. 187 - 194
- Cutting Data P. 198 - 200



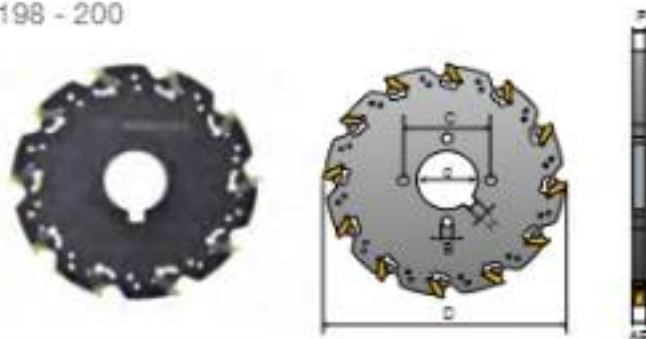
SB

Order code	Dimensions(mm)						D	H	kg	MAX RPM	Insert LNGET	Key
	D	AB	P	g	d	g						
SB080-1.4-12	80			12			4			12000		
SB080-1.4-12.7	80			12.7					0.1			
SB080-1.4-18	80			18			5			11000		
SB080-1.4-18.875	80			18.875								
SB080-1.4-22	80			22			5			8000		
SB080-1.4-25.4	80	1.4	1.2	25.4			5	0.25	0.15		1414	150, 10-20
SB100-1.4-22	100	1.6		22			10			8000	1418	
SB100-1.4-25.4	100			25.4				7				
SB125-1.4-22	125			22			12	0.25	0.2	8000		
SB125-1.4-25.4	125			25.4								
SB125-1.4-32	125			32				8				

* Key 150, 10-20 is not included

Saw Blades

- Insert P. 187 - 194
- Cutting Data P. 198 - 200



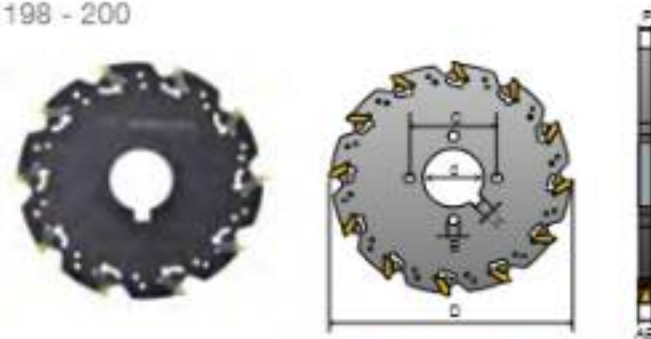
SB

Order code	Dimensions(mm)									MAX RPM	Insert LENG	Key
	D	AC	F	W	C	E						
SB000-1.5-12	50	1.5	1.4	12	-	-	4	0.1	12000	18/8	150-10-30	
SB000-1.5-12.7				12.7								
SB000-1.5-15	53			15			6	0.1	11000			
SB000-1.5-15.875				15.875								
SB000-1.5-20	50			20			8	0.25	8000			
SB000-1.5-25.4				25.4								
SB100-1.5-20	100			20	-	-	10	0.25	6000			
SB100-1.5-25.4				25.4								
SB100-1.5-27	27			7			0.2	8000				
SB125-1.5-20	125			20			12	0.2	6000			
SB125-1.5-25.4				25.4								
SB125-1.5-32				32								8
SB150-1.5-25.4	150			25.4			10	0.25	4000			
SB150-1.5-32				32								
SB150-1.5-40				40								

*Key 150-10-30 is not included

Saw Blades

- Insert P. 187 - 194
- Cutting Data P. 198 - 200



SB

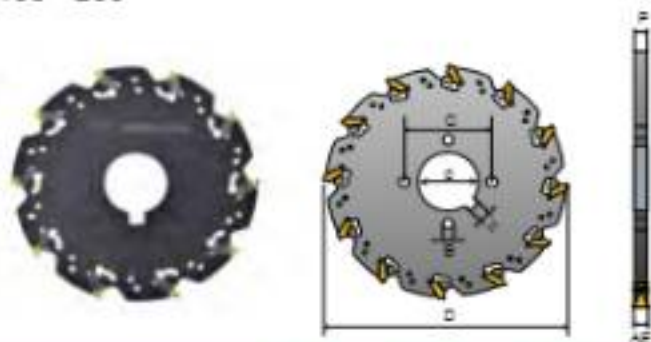
Order code	Dimensions(mm)							H		MAX. RPM	Insert LENG	Key
	D	A5	F	d	C	E						
SB000-1.5-12	50	1.5	1.5	12	-	-	4	-	0.1	12000	18/8	150-10-30
SB000-1.5-12.7				12.7								
SB000-1.5-15	53			15			6	0.1	11000			
SB000-1.5-15.875				15.875								
SB000-1.5-20	50			20			8	0.25	8000			
SB000-1.5-25.4				25.4								
SB100-1.5-20	100			20	-	-	10	0.25	6000			
SB100-1.5-25.4				25.4								
SB100-1.5-27	27			7			0.2	8000				
SB125-1.5-20	125			20			12	0.2	6000			
SB125-1.5-25.4				25.4								
SB125-1.5-32	32			8			0.25	4000				
SB150-1.5-25.4	150			25.4			15	0.25	4000			
SB150-1.5-32				32								
SB150-1.5-40				40								

*Key 150-10-30 is not included

Saw Blades

- Insert P. 187 - 194
- Cutting Data P. 198 - 200

SB



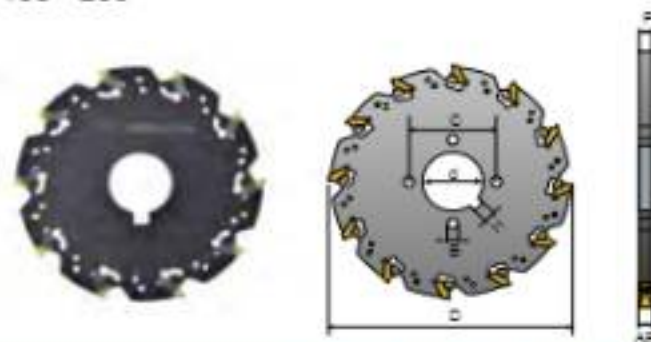
Order code	Dimensions(mm)							H		MAX RPM	Insert LNKT	Key		
	D	AE	P	a	b	c								
SB080-Q-13	80	2.0	1.75	13	-	-	6	12000	2020	180, 10-30				
SB080-Q-12.7				12.7			-							
SB080-Q-18				18			8							
SB080-Q-18.875				18.875			-							
SB080-Q-22	80			22			8	8000						
SB080-Q-25.4				25.4			8.35							
SB100-Q-22	100			22	-	-	-	8000	2020	180, 10-30				
SB100-Q-25.4				25.4			10							
SB100-Q-27				27			7							
SB125-Q-22	125			22			-	5000						
SB125-Q-25.4				25.4			12							
SB125-Q-32				32			8							
SB150-Q-25.4	150			25.4			8	4000						
SB150-Q-32				32			8							
SB150-Q-40				40			10							

*Key 180, 10-30 is not included

Saw Blades

- Insert P. 187 - 194
- Cutting Data P. 198 - 200

SB



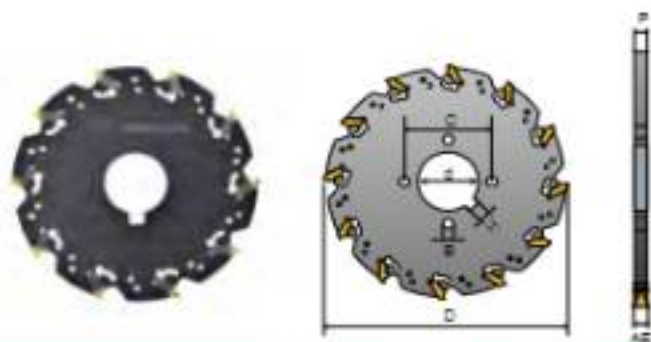
Order code	Dimensions(mm)							H		MAX RPM	Insert LNKT	Key				
	D	AE	P	a	b	c										
SB200-Q-25.4	200	2.0	1.75	25.4	-	-	20	0.25	0.5	2000	2020	180, 10-30				
SB200M-Q-25.4				25.4	-	-	25									
SB200-Q-32				32	80	11	20	0								
SB200M-Q-32				32	80		25									
SB200-Q-40				40	90		20	10								
SB200M-Q-40				40	90		25									
SB250-Q-25.4				250	2.5	1.75	25.4	-	-	25			0.25	0.7	2500	2020
SB250M-Q-25.4							25.4	-	-	30			0			2020
SB250-Q-32							32	80	11	25			0			2020
SB250M-Q-32							32	80		30			10			
SB250-Q-40							40	90		25			10			
SB250M-Q-40							40	90		30			10			
SB300-Q-32	300	-	-				32	80	11	25	0	0.5	2000	2020		
SB300M-Q-32							32	80		30	0			2020		
SB080-Q.5-12	80	2.5	2.25				12	-	-	6	-	0.1	12000	2020	180, 10-30	
SB080-Q.5-12.7		2.7					12.7	-	-	6	-			2020		
SB080-Q.5-13.7		3.0		13.7	-	-	6	-	2020							

*Key 180, 10-30 is not included

Saw Blades

- Insert P. 187 - 194
- Cutting Data P. 198 - 200

SB



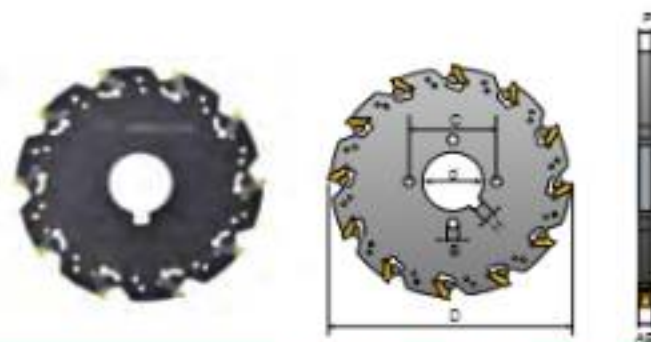
Order code	Dimensions(mm)						H	MAX RPM	Insert LENG	Key
	D	AC	P	d	C	B				
SB083-2.5-18	83			18			5	0.7	11000	
SB083-2.5-18.875				18.875						
SB090-2.5-25	90			25			5	0.25	8000	
SB090-2.5-25.4				25.4						
SB100-2.5-32	100			32			10	0.18	8000	
SB100-2.5-32.4				32.4						
SB100-2.5-27		2.8		27			7			2628
SB125-2.5-32				32						
SB125-2.5-32.4	125	2.0	0.25	32.4			12	0.2	8000	2630
SB125-2.5-32				32						
SB180-2.5-25.4	180			25.4			18	0.25	6000	
SB180-2.5-32				32						
SB180-2.5-40				40			12			
SB200-2.5-25.4				25.4			20	0.25	0.8	2000
SB200M-2.5-25.4	200			25.4						

*Key 180-10-30 is not included

Saw Blades

- Insert P. 187 - 194
- Cutting Data P. 198 - 200

SB

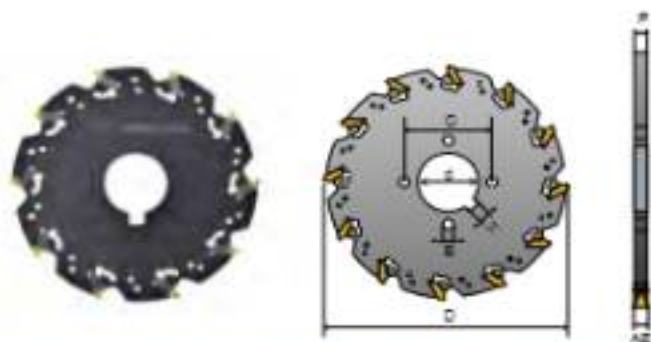


Order code	Dimensions(mm)						H	MAX RPM	Insert LENG	Key
	D	AC	P	d	C	B				
SB200-2.5-32	200			32	83	11	8	0.8	3200	
SB200M-2.5-32				32						
SB200-2.5-40				40	90		10			
SB200M-2.5-40				40						
SB225-2.5-25.4				25.4	-	-	8.25			
SB225M-2.5-25.4				25.4						
SB250-2.5-32	250	2.8	0.25	32	80	11	8	0.7	2800	2638
SB250M-2.5-32				32						
SB250-2.5-40		3.0		40	90		10			2630
SB250M-2.5-40				40						
SB300-2.5-25.4				25.4	-	-	8.25	1.2	2200	
SB300M-2.5-25.4				25.4						
SB300-2.5-32	300			32	80	11	8			
SB300M-2.5-32				32						
SB300-2.5-40				40	90		10			
SB300M-2.5-40				40						

*Key 180-10-30 is not included

Saw Blades

- Insert P. 187 - 194
- Cutting Data P. 198 - 200



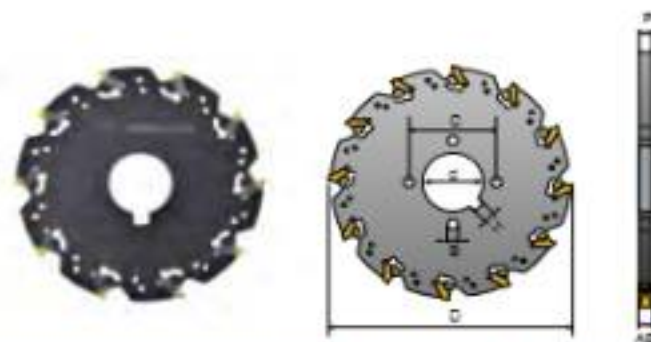
SB

Order code	Dimensions(mm)						H	MAX RPM	Insert LGTH	Key
	D	AS	P	H	C	B				
SB020-3-13	20			13			4	12000		
SB020-3-12.7	20			12.7			4	12000		
SB020-3-16	20			16			4	11000		
SB020-3-15.875	20			15.875			4	11000		
SB020-3-22	20			22			4	8000		
SB020-3-25.4	20			25.4			4	8000		
SB100-3-22	100	2.2		22			10	8000	3000	
SB100-3-25.4	100	2.2		25.4			10	8000	3000	
SB100-3-27	100	2.2	2.7	27			10	8000	3000	180, 10-20
SB125-3-22	125	2.8		22			12	8000	3000	
SB125-3-25.4	125	2.8		25.4			12	8000	3000	
SB125-3-28	125	2.8		28			12	8000	3000	
SB150-3-25.4	150			25.4			15	6000		
SB150-3-32	150			32			15	6000		
SB150-3-40	150			40			15	6000		
SB200-3-25.4	200			25.4			20	3200		
SB200M-3-25.4	200			25.4			20	3200		

*Key 180, 10-20 is not included

Saw Blades

- Insert P. 187 - 194
- Cutting Data P. 198 - 200



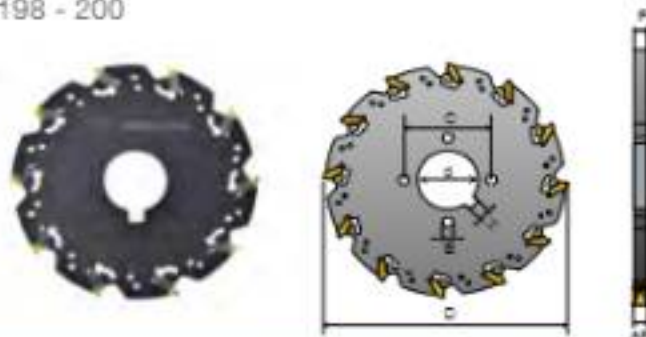
SB

Order code	Dimensions(mm)						H	MAX RPM	Insert LGTH	Key
	D	AS	P	H	C	B				
SB200-3-32	200			32	50		20	3200		
SB200M-3-32	200			32	50		20	3200		
SB200-3-40	200			40	50		20	3200		
SB200M-3-40	200			40	50		20	3200		
SB250-3-25.4	250	2.2		25.4			25	2800	3000	
SB250M-3-25.4	250	2.2		25.4			25	2800	3000	
SB250-3-32	250	2.2		32	50		25	2800	3000	
SB250M-3-32	250	2.2		32	50		25	2800	3000	
SB250-3-40	250	2.2		40	50		25	2800	3000	
SB250M-3-40	250	2.2		40	50		25	2800	3000	
SB300-3-25.4	300			25.4			30	2200		
SB300M-3-25.4	300			25.4			30	2200		
SB300-3-32	300			32	50		30	2200		
SB300M-3-32	300			32	50		30	2200		
SB300-3-40	300			40	50		30	2200		
SB300M-3-40	300			40	50		30	2200		

*Key 180, 10-20 is not included

Saw Blades

- Insert P. 187 - 194
- Cutting Data P. 198 - 200



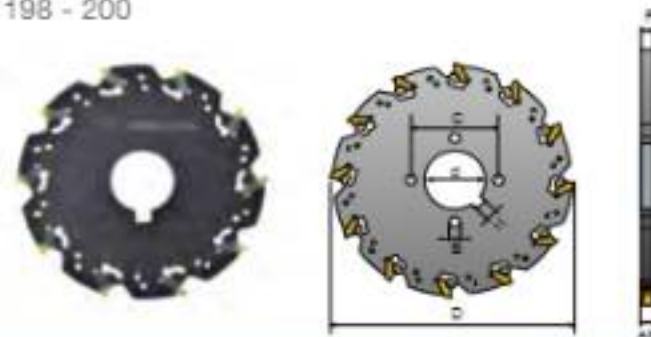
SB

Order code	Dimensions(mm)							H		MAX RPM	Insert LNKT	Key													
	D	AE	P	a	C	M																			
SB080-6-12	80	4.0	2.7	12	-	-	6	-	0.1	12000	6060	180.10-30													
SB080-6-12.7				12.7			-	-																	
SB080-6-16				16			-	-																	
SB080-6-16.875	16.875			-			-																		
SB080-6-20	20			-			-																		
SB080-6-25.4	25.4			-			-																		
SB100-6-20	100			4.0	2.7	20	-	-	8.32	0.2			8000	6060	180.10-30										
SB100-6-25.4						25.4							-			-									
SB100-6-25.4						25.4							10			-									
SB100-6-27	27					7			-																
SB125-6-22	22					8.32			0.2	8000															
SB125-6-25.4	25.4												12												
SB125-6-32	32						8																		
SB125-6-32.4	125					4.0	2.7	32.4	-	-			8.32			0.2	8000	6060	180.10-30						
SB150-6-25.4								25.4												8.32	0.28	6000			
SB150-6-32								32															18	8	
SB150-6-40	40							10																	
SB200-6-25.4	200							4.0					2.7			25.4	-			-	8.32	1.2	3200	6060	180.10-30
SB200M-6-25.4																25.4									
		20	-																						

* Key 180.10-30 is not included

Saw Blades

- Insert P. 187 - 194
- Cutting Data P. 198 - 200



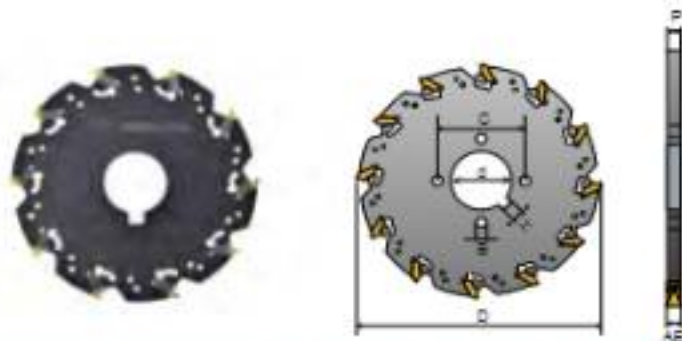
SB

Order code	Dimensions(mm)							H		MAX RPM	Insert LNKT	Key
	D	AE	P	a	C	M						
SB200-6-22	200	4.0	2.7	22	80	11	20	8	1.2	2200		180.10-30
SB200M-6-22							28					
SB200-6-40				40	90		30					
SB200M-6-40							34					
SB200-6-25.4	280			25.4	-	-	28	8.25	1.2	2800		
SB200M-6-25.4							34					
SB200-6-32				32	80	11	28	8				
SB200M-6-32							34					
SB200-6-40	40			90	28		10					
SB200M-6-40					34							
SB200-6-25.4	300			25.4	-	-	30	8.25	2200			
SB200M-6-25.4							40					
SB200-6-32				32	80	11	30	8				
SB200M-6-32							40					
SB200-6-40	40			90	30		10					
SB200M-6-40					40							

* Key 180.10-30 is not included

Saw Blades

- Insert P. 187 - 194
- Cutting Data P. 198 - 200



SB

Order code	Dimensions(mm)							H		MAX RPM	Insert LNKT	Key
	D	AG	F	s	U	E						
SB050-S-13	50	5.0	6.5	13	-	-	4	-	0.18	12000	SB050	150-10-30
SB050-S-12.7				12.7			4					
SB050-S-18				18			4					
SB050-S-18.875	18.875			8			0.25	8000				
SB050-S-22	22			8								
SB050-S-25.4	25.4			8								
SB100-S-22	100			22	-	-	8	0.28	8000	SB100		
SB100-S-25.4				25.4			8					
SB100-S-27				27			10					
SB125-S-22	125			22			10	0.35	6000	SB125		
SB125-S-25.4				25.4			12					
SB125-S-27				27			12					
SB150-S-22	150			22			10	0.42	4000	SB150		
SB150-S-25.4				25.4			12					
SB150-S-27				27			12					
SB180-S-22	180			22			10	0.42	4000	SB180		
SB180-S-25.4				25.4			12					
SB180-S-27				27			12					

*Key 150-10-30 is not included



Features

Available in materials



Cost
200~300%
DOWN

Variety of
Machines
CNC Milling machine

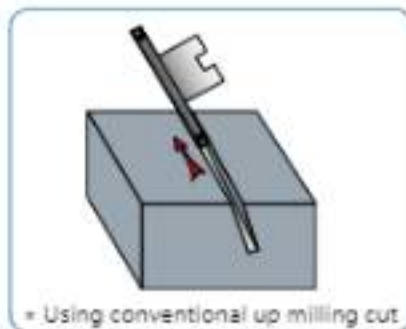
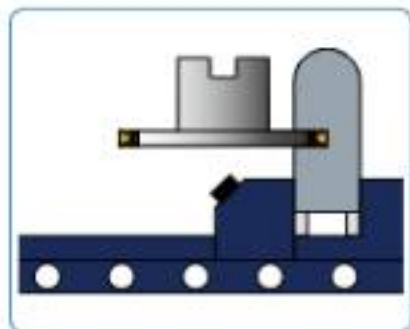
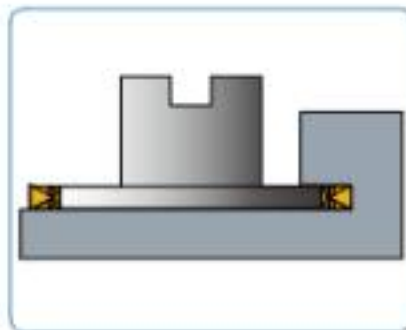
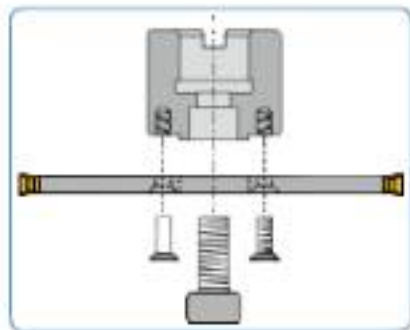
Efficiency
300~500%
UP

Durability
300%
UP

New
System
For T-Slot
Milling

TRANSFORMER HOLDER

Slitting / Slotting / Cut-off

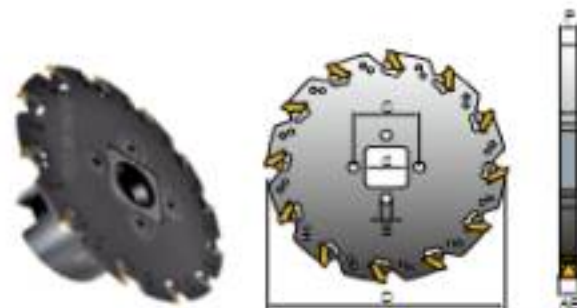


* Using conventional up milling cut

PRODUCT SPECIFICATIONS

Saw Milling Cutters

- Combination Holder P. 159
- Insert P. 187 - 194
- Cutting Data P. 198 - 200



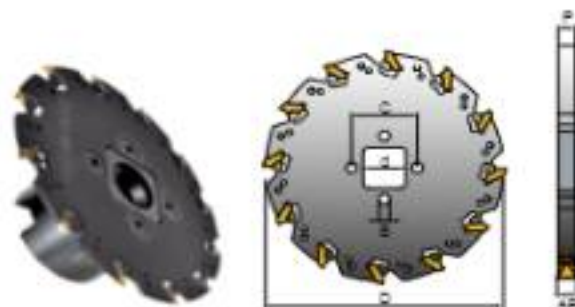
SBL

Order code	Dimensions(mm)							H	△K _D	MAX RPM	Insert LENG	Key
	D	AB	P	φ	φ	φ	φ					
SBL080-1.6-02	80	1.6	1.6	22	24	5	8	-	0.15	8000	1418	180/10-00
SBL100-1.6-02	100						10			8000		
SBL125-1.6-02	125			22	48	8	12		0.2	8000		
SBL150-1.6-02	150						18		0.25	4000		
SBL080-1.8-02	80	1.8	1.8	22	24	5	8	-	0.15	8000	1818	180/10-00
SBL100-1.8-02	100						10			8000		
SBL125-1.8-02	125			22	48	8	12		0.2	8000		
SBL150-1.8-02	150						18		0.25	4000		

* Key 180/10-00 is not included

Saw Milling Cutters

- Combination Holder P. 159
- Insert P. 187 - 194
- Cutting Data P. 198 - 200



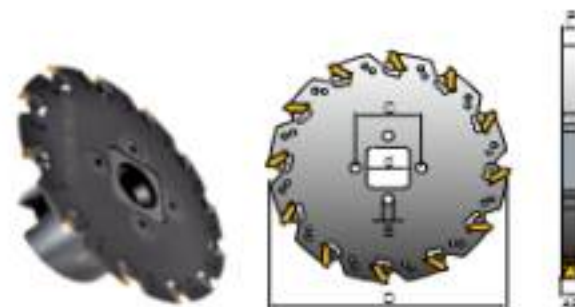
SBL

Order code	Dimensions(mm)						H	H ₂	MAX RPM	Insert LENGHT	Key
	D	AB	P	R	Q	R					
SBL100-1.0-22	80	1.0	1.0	22	24	8	-	0.15	8000	1010	100/10-20
SBL100-1.0-22	100								8000		
SBL125-1.0-22	125								8000		
SBL150-1.0-22	150								4000		
SBL100-2.0-22	80	2.0	1.75	22	24	8	-	0.15	8000	1010	100/10-20
SBL100-2.0-22	100								8000		
SBL125-2.0-22	125								8000		
SBL150-2.0-22	150								4000		
SBL100-2.5-22	80	2.5	2.25	22	24	8	-	0.15	8000	1010	100/10-20
SBL100-2.5-22	100								8000		
SBL125-2.5-22	125								8000		
SBL150-2.5-22	150								4000		

*Key 100/10-20 is not included

Saw Milling Cutters

- Combination Holder P. 159
- Insert P. 187 - 194
- Cutting Data P. 198 - 200



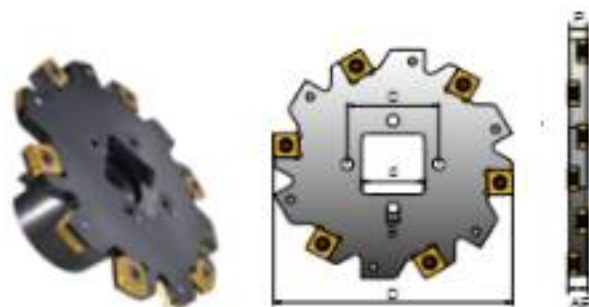
SBL

Order code	Dimensions(mm)						H	H ₂	MAX RPM	Insert LENGHT	Key
	D	AB	P	R	Q	R					
SBL100-3-22	80	3.0	2.7	22	24	8	-	0.17	8000	1010	100/10-20
SBL100-3-22	100								8000		
SBL125-3-22	125								8000		
SBL150-3-22	150								4000		
SBL100-4-22	80	4.0	3.7	22	24	8	-	0.2	8000	1010	100/10-20
SBL100-4-22	100								8000		
SBL125-4-22	125								8000		
SBL150-4-22	150								4000		
SBL100-5-22	80	5.0	4.5	22	24	8	-	0.22	8000	1010	100/10-20
SBL100-5-22	100								8000		
SBL125-5-22	125								8000		
SBL150-5-22	150								4000		

*Key 100/10-20 is not included

Side Milling Cutters

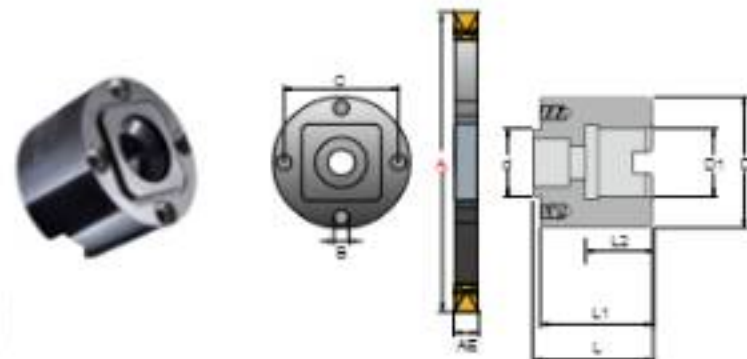
- Combination Holder P. 159
- Insert P. 195 - 197
- Cutting Data P. 201 - 202



STL

Order code	Dimensions(mm)						H	MAX RPM	Insert SHOCK SHOW	Screw	Key
	D	AE	B	C	E						
STL050-6-22	50	4	3.4	22	34	5	8	13700	1102	T925L	T09P
STL050-8-22		5	4.2						1102	T925S	T09P
STL100-6-22	100	4	3.4	22	34	8	10	12000	1102	T925L	T09P
STL100-8-22		5	4.2						1102	T925S	T09P
STL125-6-22	125	4	3.4	22	46	8	12	10800	1102	T925L	T09P
STL125-8-22		5	4.2						1102	T925S	T09P
STL150-6-22	150	4	3.4	22	46	8	15	8300	1102	T925L	T09P
STL150-8-22		5	4.2						1102	T925S	T09P

Combination Holder

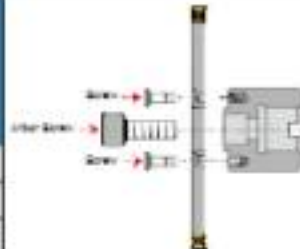


BL/BLU

Order code	Dimensions(mm)									Screw (KG)	Insert UNGT / SHOCK / SHOW
	D	DN	W	D	W	L	L1	L2	A		
BL05-22	45	22	22	34	5	45	41.5	27	50	0.3	0.4
BL05-22.4		22.4				45	42.5		100		
BL05-21.75	55	21.75	22	45	5	55	52.5	28	125	0.5	0.55
BL05-22		22				55	52.5		150		
BL10-22	45	22	22	34	5	45	42.5	27	50	0.3	0.4
BL10-22.4		22.4				45	42.5		100		
BL10-21.75	55	21.75	22	45	5	55	52.5	28	125	0.7	0.55
BL10-22		22				55	52.5		150		

Standard Spare Parts

Holders	Screw	Holders	Screw	Arbor Screw
BL05-22	D00812	BL05-22	D00812	MT025
BL05-22.4		BL05-22.4		MT025
BL05-21.75	D00812	BL05-21.75	D00812	MT025/MT025.1/MT025.2
BL05-22		BL05-22		MT025



TRANSFORMER SERIES



Features

Available in
materials



Cost
200~300%
DOWN

Variety of
Machines
CNC Milling machine

Efficiency
300~500%
UP

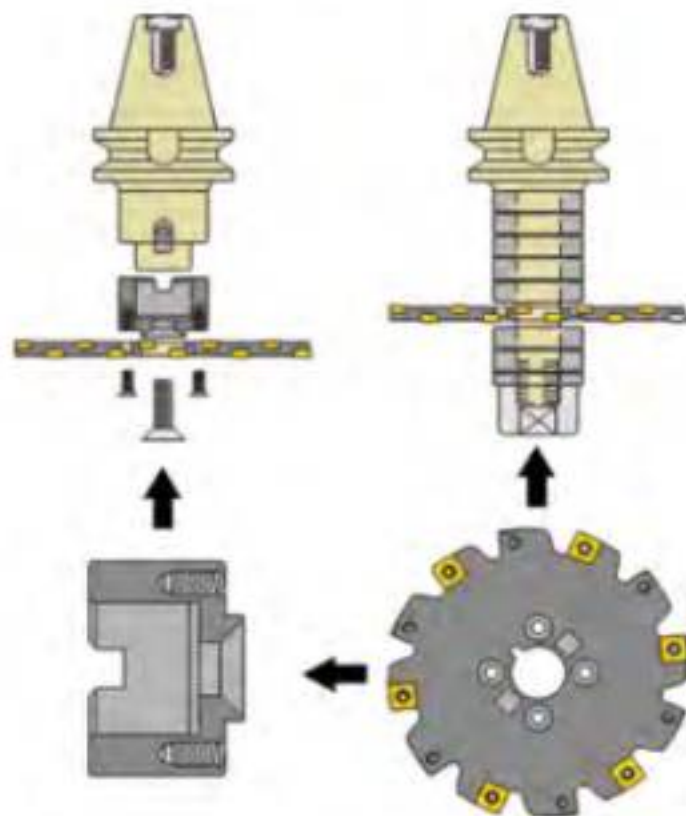
Durability
300%
UP

Product Introduction

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

Face Milling Arbor:
Better strength with shorter
length and bigger diameter

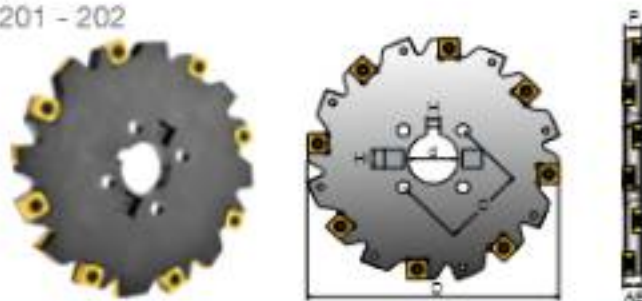
Side Milling Arbor:
Poor strength with longer length
and smaller diameter



PRODUCT SPECIFICATIONS

Side Milling Cutters

- Combination Holder P. 165
- Insert P. 195 - 197
- Cutting Data P. 201 - 202

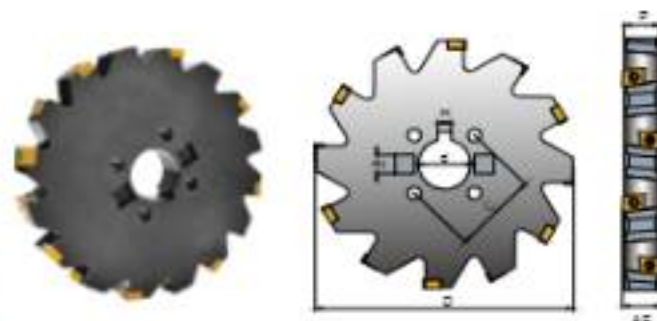


SCL

Order code	Dimensions(mm)							Zc		MAX RPM	Insert SNMG, SNMGH	Screw	Key
	D	A6	P	H	Q	a							
SCL180-8-32	180	8	8	8	32	22	18	8	0.8	8200	1203	T968	T18P
SCL180-8-32		8	7								12048	T967	
SCL180-10-32		10	8								1205	T968	
SCL180-12-32		12	11								1207	T9611	
SCL200-8-40	200	8	8	10	40	22	18	8	1.8	4200	1203	T968	
SCL200-8-40		8	7								12048	T967	
SCL200-10-40		10	8								1205	T968	
SCL200-12-40		12	11								1207	T9611	
SCL250-8-40	250	8	8	10	40	22	18	8	3.0	2800	1203	T968	
SCL250-8-40		8	7								12048	T967	
SCL250-10-40		10	8								1205	T968	
SCL250-12-40		12	11								1207	T9611	

Disc Milling Cutters

- Combination Holder P. 165
- Insert P. 198
- Cutting Data P. 203

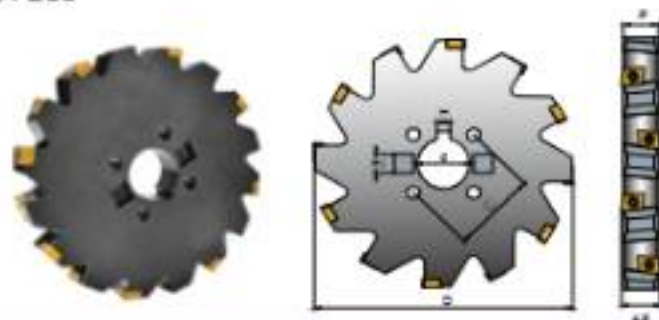


CEL

Order code	Dimensions(mm)							Zc		MAX RPM	Insert CNMGX	Screw	Key
	D	A6	P	H	Q	a							
CEL180-14-32	180	14	12.8	8	22	22	12	8	1.7	8900	1008	COG11	T18P
CEL180-16-32		16	14.5								1008		
CEL180-18-32		18	16.5								1008		
CEL180-20-32		20	18.5								1008		
CEL180-22-32		22	20.5								1008		
CEL180-25-32		25	22.5								1008		
CEL200-14-40	200	14	12.8	10	22	22	12	8	1.8	8100	1008		
CEL200-16-40		16	14.5								1008		
CEL200-18-40		18	16.5								1008		
CEL200-20-40		20	18.5								1008		
CEL200-22-40		22	20.5								1008		
CEL200-25-40		25	22.5								1008		

Disc Milling Cutters

- Combination Holder P. 165
- Insert P. 198
- Cutting Data P. 203



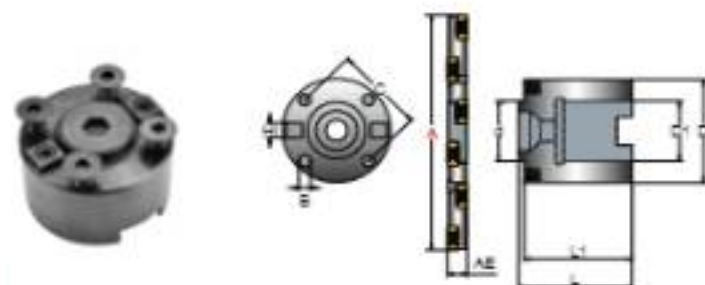
CEL

Order code	Dimensions(mm)							Zc		MAX RPM	Insert CNMG	Screw	Key
	D	A&	P	H	D	d							
CEL250-16-60	250	16	12.8	10	70	40	20	10	2.0	2500	1005	CG4011	T15P
CEL250-18-60		18	14.8						2.1				
CEL250-19-60		19	16.8						2.2				
CEL250-20-60		20	18.8						2.3				
CEL250-22-60		22	20.8				2.0						
CEL250-25-60		25	23.8				4.2	1805					
CEL250-30-60		30	28.8				4.5						

CWL

Order code	Dimensions(mm)								MAX RPM	Insert CNMG	Screw	Key
	D	AE	P	H	D	H						
CWL180-32	180	12	18.8	8	52	32	18	1.0	8000	1205	CG4011	T15P
CWL200-40	200			10	70	40	20	2.0	6100			
CWL250-60	250			15	100	60	25	3.0	3500			

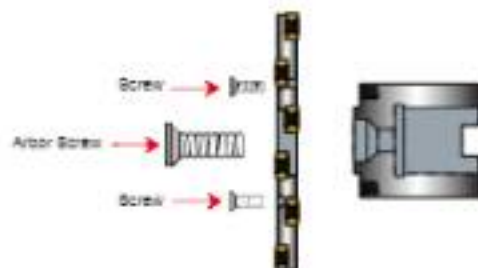
Combination Holders



BCL

Order code	Dimensions(mm)									
	D	DA	d	D	B	L	L1	A	W	
BCL25-32	25	32	22	22	8	48	39.8	180	12	0.8
BCL25-21.75		21.75								
BCL25-40		40								
BCL25-25.1		25.1								
BCL30-60	30	60	40	70	8	80	64.8	200 250	12	1.2
BCL30-25.1		25.1								
BCL30-80		80								
BCL30-50.8		50.8								

Standard Spare Parts



Holder	Screw	Arbor Screw
SDL-150-8-32	090018	0901840
SDL-150-8-32	090018	
SDL-150-10-32	090020	
SDL-150-12-32	090020	
SDL-200-8-40	090018	
SDL-200-8-40	090018	
SDL-200-10-40	090020	
SDL-200-12-40	090020	
SDL-250-8-40	090018	
SDL-250-8-40	090018	
SDL-250-10-40	090020	0901840
SDL-250-10-40	090020	
OWL-150-32	090020	
OWL-200-40	090020	
OWL-250-40	090020	

Holder	Screw	Arbor Screw
DL-150-10-32	090020	0901840
DL-150-10-32	090020	
DL-150-10-32	090020	
DL-150-20-32	090020	
DL-150-20-32	090020	
DL-150-25-32	090020	
DL-150-25-32	090020	
DL-200-10-40	090020	
DL-200-10-40	090020	
DL-200-10-40	090020	
DL-200-20-40	090020	0901840
DL-200-20-40	090020	
DL-200-20-40	090020	
DL-200-20-40	090020	
DL-200-20-40	090020	
DL-200-20-40	090020	
DL-200-20-40	090020	
DL-200-20-40	090020	
DL-200-20-40	090020	
DL-200-20-40	090020	

SIDE MILLING CUTTER



Video

Features

Available in materials



Cost
200~300%
DOWN

Variety of
Machines
CNC Milling machine

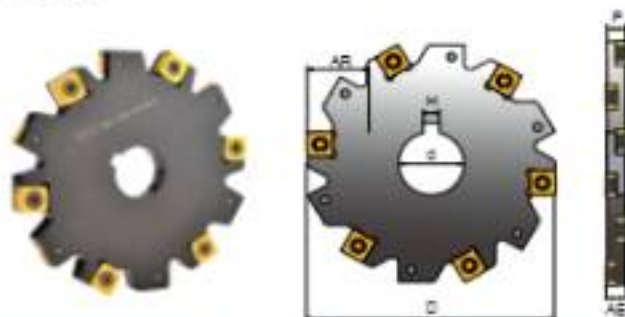
Efficiency
300~500%
UP

Durability
300%
UP

PRODUCT SPECIFICATIONS

Side Milling Cutters

- Insert P. 195 - 197
- Cutting Data P. 201 - 202

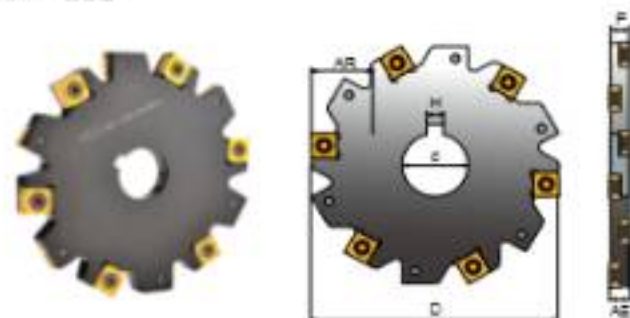


SC

Order code	Dimensions(mm)							Zn		MAX RPM	Insert stock shown	Screw	Key
	D	AC	AR	P	H	W							
SC-80-4-22	80	4	18	2.0	8	22	8	4	0.3	12700	1102	T9204	T08P
SC-80-5-22		5		4.2							1103	T9205	T08P
SC-80-6-22		6		8							1203	T943	T12P
SC-80-7-22		7		8							1204	T945	
SC-80-8-22		8		7							1205	T946	
SC-80-10-22		10		9							1206	T947	
SC-80-12-22		12		11							1207	T948	
SC-100-4-27	100	4	28	2.0	7	27	10	5	0.5	12000	1102	T9204	T08P
SC-100-5-27		5		4.2							1103	T9205	T08P
SC-100-6-27		6		8							1203	T943	T12P
SC-100-7-27		7		8							1204	T945	
SC-100-12-27		12		11							1207	T948	

Side Milling Cutters

- Insert P. 195 - 197
- Cutting Data P. 201 - 202

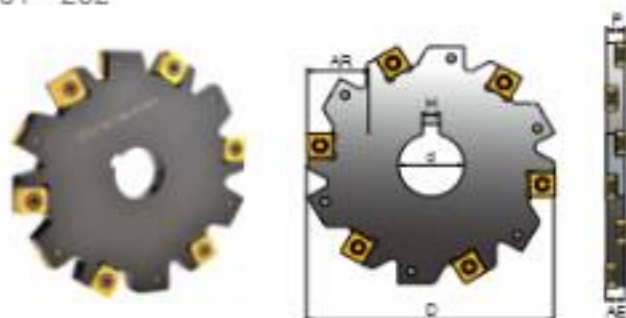


SC

Order code	Dimensions(mm)							Zn		MAX RPM	Insert stock shown	Screw	Key			
	D	AC	AD	P	H	d										
SC-100-4-27	100	4	28	2	7	27	10	5	0.5	12000	12045	T947	T12P			
SC-100-5-27		5		4.2					1205		T948					
SC-100-12-27		12		11					1207		T949					
SC-125-4-32	125	4	32	2.0	8	32	12	8	0.5	12500	1102	T9204	T08P			
SC-125-5-32		5		4.2							1103	T9205	T08P			
SC-125-6-32		6		8							1203	T943	T12P			
SC-125-7-32		7		8							1204	T945				
SC-125-8-32		8		7							1205	T946				
SC-125-10-32		10		9							1206	T947				
SC-125-12-32		12		11							1207	T948				
SC-125-4-40		4		2.0	10	40					1102	T9204	T08P			
SC-125-5-40		5		4.2							1103	T9205	T08P			
SC-125-6-40		6		8							1203	T943	T12P			
SC-125-7-40		7		8							1204	T945				
SC-125-8-40		8		7							1205	T946				
SC-125-10-40		10		9							1206	T947				
SC-125-12-40		12		11							1207	T948				

Side Milling Cutters

- Insert P. 195 - 197
- Cutting Data P. 201 - 202

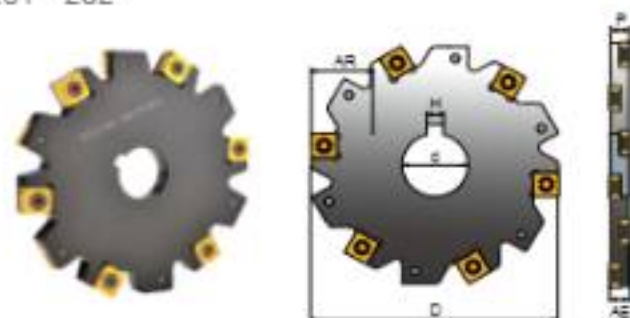


SC

Order code	Dimensions(mm)							Zr		MAX RPM	Insert SHOX SHOW	Screw	Key		
	D	AC	AR	P	H	d									
SC-180-4-32	180	4	45	3.6	8	32	18	8	8200	1103	T9284	T08P			
SC-180-5-32		5		4.2						1103	T9285	T08P			
SC-180-6-32		6		5						1203	T945	T18P			
SC-180-7-32		7		6						1204	T945				
SC-180-8-32		8		7						12045	T947				
SC-180-10-32		10		9						1305	T945				
SC-180-12-32		12		11						1307	T9411				
SC-180-4-40		4		3.6	10	40				1103	T9284	T08P			
SC-180-5-40		5		4.2						1103	T9285	T08P			
SC-180-6-40		6		5						1203	T945	T18P			
SC-180-7-40		7		6						1204	T945				
SC-180-8-40		8		7						12045	T947				
SC-180-10-40		10		9						1305	T945				
SC-180-12-40		12		11						1307	T9411				

Side Milling Cutters

- Insert P. 195 - 197
- Cutting Data P. 201 - 202

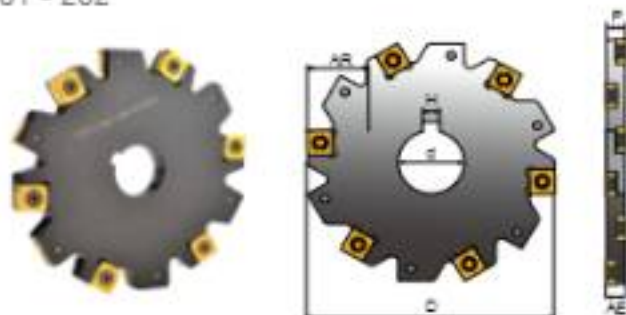


SC

Order code	Dimensions(mm)							Zo		MAX RPM	Insert SHOX ORDER	Screw	Key
	D	AC	AR	P	H	e							
SC-80-4-25.4	80	4	18	3.6	5	25.4	8	4	0.2	12700	1103	T9284	T08P
SC-80-5-25.4		5		4.2							1103	T9285	T08P
SC-80-6-25.4		6		5							1203	T945	T18P
SC-80-7-25.4		7		6							1204	T945	
SC-80-8-25.4		8		7							12045	T947	
SC-80-10-25.4		10		9							1305	T945	
SC-80-12-25.4		12		11							1307	T9411	
SC-100-4-25.4	100	4	25	3.6	8	25.4	10	5	0.2	10000	1103	T9284	T08P
SC-100-5-25.4		5		4.2							1103	T9285	T08P
SC-100-6-25.4		6		5							1203	T945	T18P
SC-100-7-25.4		7		6							1204	T945	
SC-100-8-25.4		8		7							12045	T947	
SC-100-10-25.4		10		9							1305	T945	
SC-100-12-25.4		12		11							1307	T9411	
SC-125-4-25.4	125	4	32	3.6	8	25.4	12	8	0.2	10000	1103	T9284	T08P
SC-125-5-25.4		5		4.2							1103	T9285	T08P
SC-125-6-25.4		6		5							1203	T945	T18P

Side Milling Cutters

- Insert P. 195 -197
- Cutting Data P. 201 - 202



SC

Order code	Dimensions(mm)							Zc		MAX RPM	Insert STOCK SHOW	Screw	Key
	D	AE	AR	P	M	d							
SD-125-7-25.4	125	7	22	5			12	5	0.3	10000	1204	TS45	T1.5F
SD-125-9-25.4		9		7							1204	TS47	
SD-125-10-25.4		10		9							1205	TS45	
SD-125-12-25.4		12		11							1207	TS411	
SD-150-6-25.4	150	6	45	3.6	9.25	25.4	15	5	0.7	8000	1102	TS254	TS05
SD-150-8-25.4		8		4.2							1102	TS255	TS05
SD-150-9-25.4		9		5							1203	TS45	T1.5F
SD-150-10-25.4		10		5							1204	TS45	
SD-150-12-25.4		12		7					1204		TS47		
SD-150-14-25.4		14		9					1205		TS45		
SD-150-16-25.4		16		11					1207		TS411	T1.5F	
SD-150-18-25.4		18		13					1207		TS411		
SD-150-20-25.4		20		15					1207		TS411		
SD-150-22-25.4		22		17					1207		TS411		
SD-150-24-25.4		24		19					1207		TS411	T1.5F	
SD-150-26-25.4		26		21					1207		TS411		
SD-150-28-25.4		28		23					1207		TS411		
SD-150-30-25.4		30		25					1207		TS411		
SD-150-32-25.4		32		27					1207		TS411	T1.5F	
SD-150-34-25.4		34		29					1207		TS411		
SD-150-36-25.4		36		31					1207		TS411		
SD-150-38-25.4		38		33					1207		TS411		
SD-150-40-25.4		40		35					1207		TS411	T1.5F	
SD-150-42-25.4		42		37					1207		TS411		
SD-150-44-25.4		44		39					1207		TS411		
SD-150-46-25.4		46		41					1207		TS411		
SD-150-48-25.4		48		43					1207		TS411	T1.5F	
SD-150-50-25.4		50		45					1207		TS411		
SD-150-52-25.4	52	47	1207	TS411									
SD-150-54-25.4	54	49	1207	TS411									

Side Milling Cutters

- Insert P. 195 -197
- Cutting Data P. 201 - 202



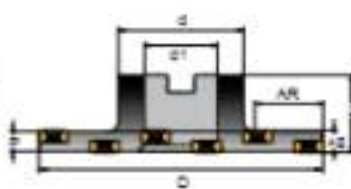
ST

Order code	Dimensions(mm)								Zc		MAX RPM	Insert STOCK SHOW	Screw	Key
	D	AE	AR	P	d	d1	L							
ST-80-6-32	80	6	18.5	3	22	25	5	4	0.5	12700	1202	TS45	T1.5F	
ST-80-7-32		7		5							1204	TS45		
ST-80-8-32		8		7							1204	TS47		
ST-80-10-32		10		9							1205	TS45		
ST-80-12-32		12		11							1207	TS411		
ST-100-6-32	100	6	25.5	3	27	30	10	5	0.5	12000	1202	TS45	T1.5F	
ST-100-7-32		7		5							1204	TS45		
ST-100-8-32		8		7							1204	TS47		
ST-100-10-32		10		9							1205	TS45		
ST-100-12-32		12		11							1207	TS411		
ST-125-6-32	125	6	30.5	3	33	36	12	6	1.5	12900	1202	TS45	T1.5F	
ST-125-7-32		7		5							1204	TS45		
ST-125-8-32		8		7							1204	TS47		
ST-125-10-32		10		9							1205	TS45		
ST-125-12-32		12		11							1207	TS411		
ST-150-6-32	150	6	35.5	3	39	42	15	8	2.0	8000	1202	TS45	T1.5F	
ST-150-7-32		7		5							1204	TS45		
ST-150-8-32		8		7							1204	TS47		
ST-150-10-32		10		9							1205	TS45		
ST-150-12-32		12		11							1207	TS411		
ST-180-6-32	180	6	40.5	3	45	48	18	9	2.1	8000	1202	TS45	T1.5F	
ST-180-7-32		7		5							1204	TS45		
ST-180-8-32		8		7							1204	TS47		
ST-180-10-32		10		9							1205	TS45		
ST-180-12-32		12		11							1207	TS411		

Side Milling Cutters

- Insert P. 195 - 197
- Cutting Data P. 201 - 202

ST



Order code	Dimensions(mm)							Z ₀	MAX RPM	Insert 250X25X6	Screw	Key
	D	AC	AR	D	d	d1	L					
ST-80-6-25.4	80	6	18.5	6	40	25.4	8	4	12700	1203	T908	T12P
ST-80-7-25.4		7		6						1204	T908	
ST-80-8-25.4		8		7						1204S	T907	
ST-80-10-25.4		10		9						1205	T908	
ST-80-12-25.4		12		11						1207	T9011	
ST-100-6-25.4	100	6	26.5	6	40	25.4	10	8	12000	1203	T908	
ST-100-7-25.4		7		6						1204	T908	
ST-100-8-25.4		8		7						1204S	T907	
ST-100-10-25.4		10		9						1205	T908	
ST-100-12-25.4		12		11						1207	T9011	
ST-125-6-31.75	125	6	30.5	6	40	31.75	12	8	10000	1203	T908	
ST-125-7-31.75		7		6						1204	T908	
ST-125-8-31.75		8		7						1204S	T907	
ST-125-10-31.75		10		9						1205	T908	
ST-125-12-31.75		12		11						1207	T9011	
ST-160-6-31.75	160	6	45	6	40	31.75	16	8	8200	1203	T908	
ST-160-7-31.75		7		6						1204	T908	
ST-160-8-31.75		8		7						1204S	T907	
ST-160-10-31.75		10		9						1205	T908	
ST-160-12-31.75		12		11						1207	T9011	

DISC MILLING CUTTER



Features

Available in
materials

Cost
100~300%
DOWN

Variety of
Machines
CNC Milling machine

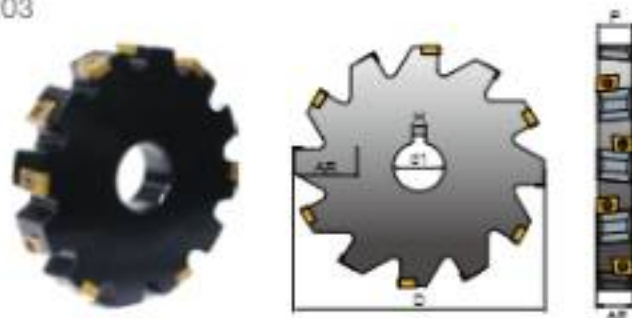
Efficiency
300~500%
UP

Durability
300%
UP

PRODUCT SPECIFICATIONS

Disc Milling Cutters

- Insert P. 198
- Cutting Data P. 203

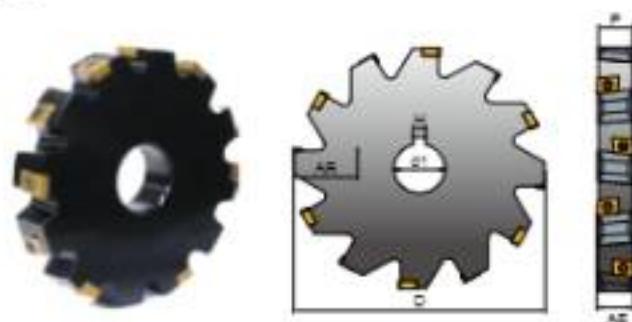


CE

Order code	Dimensions(mm)							Zc		MAX RPM	Insert CNGX	Screw	Key
	D	AR	AR	P	H	DT							
CE080-14-22	80	14	16	12.5	8	22		6	0.65	12700	1008	CG4011	T12P
CE080-16-22		16		14.2					0.7				
CE080-18-22		18		16.5					0.8				
CE080-20-22		20		18.8					1.0		1208		
CE080-22-22		22		20.8					1.2				
CE080-25-22		25		23.5					1.4		1808		
CE080-30-22		30		28.5					1.8				
CE100-14-27	100	14	28	12.5	7	27		6	0.6	13000	1008	CG4011	T12P
CE100-18-27		18		14.2					1.0				
CE100-19-27		19		16.5					1.1		1208		

Disc Milling Cutters

- Insert P. 198
- Cutting Data P. 203

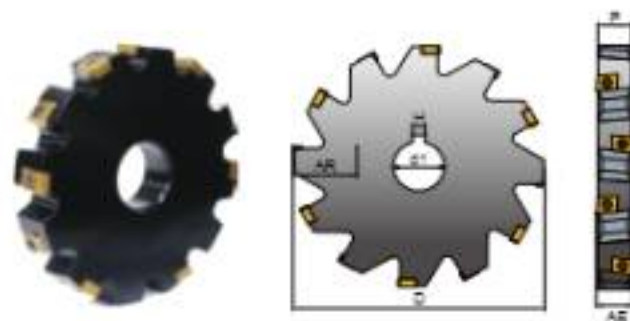


CE

Order code	Dimensions(mm)							Zc		MAX RPM	Insert CNGX	Screw	Key
	D	AR	AR	P	H	DT							
CE100-20-27	100	20	28	18.8	7	27		6	1.2	12000	1208	CG4011	T12P
CE100-23-27		23		20.8					1.6				
CE100-25-27		25		23.5					1.8		1808		
CE100-30-27		30		28.5					1.8				
CE125-14-32	125	14	32	12.5	8	32		8	1.2	10800	1008	CG4011	T12P
CE125-16-32		16		14.2					1.5				
CE125-18-32		18		16.5					1.7				
CE125-20-32		20		18.8					1.8		1208		
CE125-23-32		23		20.8					2.2				
CE125-25-32		25		23.5					2.5		1808		
CE125-30-32		30		28.5					2.8				
CE080-14-25.4	80	14	16	12.5	6.35	25.4		6	0.65	12700	1008	CG4011	T12P
CE080-16-25.4		16		14.2					0.7				
CE080-18-25.4		18		16.5					0.8		1208		
CE080-20-25.4		20		18.8					1.0				
CE080-23-25.4	80	23	28	20.8	6.35	25.4		6	1.2	12700	1208	CG4011	T12P
CE080-25-25.4		25		23.5					1.4				

Disc Milling Cutters

- Insert P. 198
- Cutting Data P. 203



CE

Order code	Dimensions(mm)							Zr		MAX RPM	Insert CNGX	Screw	Key	
	φ	AR	AR	P	W	W								
CE080-25-25.6	80	25	18	22.5	8.55	22.4		4		12700	1808	D64211	712P	
CE080-30-25.6		30		28.8										
CE100-14-25.6	100	14	12.5	1000										
CE100-15-25.6		15	14.5											
CE100-18-25.6		18	16.5											
CE100-20-25.6		20	18.5											
CE100-22-25.6		22	20.5											
CE100-25-25.6		25	22.5											
CE100-30-25.6		30	28.5											
CE100-32-25.6		32	30.5											
CE125-14-25.6	125	14	12.5	12000				8		1008	D64211	712P		
CE125-15-25.6		15	14.5											
CE125-18-25.6		18	16.5											
CE125-20-25.6		20	18.5											
CE125-22-25.6		22	20.5											
CE125-25-25.6		25	22.5											
CE125-30-25.6		30	28.5											
CE125-32-25.6		32	30.5											

Disc Milling Cutters

- Insert P. 198
- Cutting Data P. 203



CW

Order code	Dimensions(mm)							Zr		MAX RPM	Insert CNGX	Screw	Key
	φ	AR	AR	P	W	W							
CW080-14-22	80	14	18	12.5	40	22		4		12700	1308	D64211	712P
CW080-15-22		15		14.5									
CW080-18-22		18		16.5									
CW080-20-22		20		18.5									
CW080-22-22		22		20.5									
CW080-25-22		25		22.5									
CW080-30-22		30		28.5									
CW080-32-22		32		30.5									
CW100-14-27	100	14	25	12.5	48	27		4		10000	1308	D64211	712P
CW100-15-27		15		14.5									
CW100-18-27		18		16.5									
CW100-20-27		20		18.5									
CW100-22-27		22		20.5									
CW100-25-27		25		22.5									
CW100-30-27		30		28.5									
CW100-32-27		32		30.5									
CW125-14-32	125	14	25	12.5	55	32		8		10000	1008		
CW125-15-32		15		14.5									

Disc Milling Cutters

- Insert P. 198
- Cutting Data P. 203



CW

Order code	Dimensions(mm)								Zc		MAX RPM	Insert CNGX	Screw	Key
	D	E	AR	P	A	Q1	L							
DW125-15-22	125	15	20	15.5	25	32	25	12	8	1.2	10000	1208	C04011	T18P
DW125-20-22		20		19.5						2.1				
DW125-25-22		25		20.5						2.5				
DW125-30-22		30		22.5						2.5				
DW125-35-22		35		23.5			2.5							
DW125-40-22		40								2.6		1608		
DW250-14-25.4	250	14	20	12.2	60	25	25	12	8	0.75	12700	1208	C04011	T18P
DW250-15-25.4		15		14.5						0.8				
DW250-18-25.4		18		16.5						0.9				
DW250-20-25.4		20		18.5						1.1				
DW250-22-25.4		22		20.8						1.2				
DW250-25-25.4		25		22.5						1.35				
DW250-30-25.4		30		25.5						1.7				
DW250-35-25.4		35		27.5			1.7							
DW100-14-25.4	100	14	20	12.2	45	25	25	12	8	1.2	12000	1008	C04011	T18P
DW100-15-25.4		15		14.5						1.1				
DW100-18-25.4		18		16.5						1.2				
DW100-20-25.4		20		18.5						1.3				
DW100-25-25.4		25		22.5						1.7				

Disc Milling Cutters

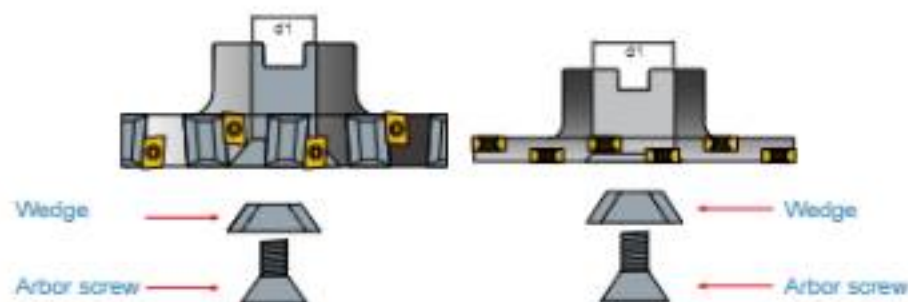
- Insert P. 198
- Cutting Data P. 203



CW

Order code	Dimensions(mm)								Zc		MAX RPM	Insert CNGX	Screw	Key
	D	E	AR	P	A	Q1	L							
DW100-20-25.4	100	20	20.0	20.0	45	25.4	25	12	8	1.2	12000	1208	C04011	T18P
DW100-25-25.4		25		22.5			2			1.3		1800		
DW100-30-25.4		30		25.0			40			2.3				
DW125-14-21.75	125	14	20	12.0	25	31.75	25	12	8	1.2	10000	1208	C04011	T18P
DW125-15-21.75		15		14.5						1.7				
DW125-18-21.75		18		16.5						1.2				
DW125-20-21.75		20		18.5						2.1				
DW125-22-21.75		22		20.5						2.5				
DW125-25-21.75		25		22.5						2.5				
DW125-30-21.75		30		25.5			40			2.6				

Mounting Dimensions



Dimension(mm)		
cutter dimension d1	Arbor screw	Wedge
ST Ø 22	C901085	WE90
ST Ø 27	C901285	
ST Ø 32	C901685	WE45
ST Ø 25.4	C901285	WE90
ST Ø 31.75	C901285, C901685	WE90, WE45
CW Ø 22	C901085	WE90
CW Ø 27	C901285	
CW Ø 32	C901685	WE45
CW Ø 40	C901640	WE65
CW Ø 25.4	C901285	WE90
CW Ø 31.75	C901285, C901685	WE90, WE45
CW Ø 38.1	C901685	WE65
CW Ø 50.8		

DISC MILLING CUTTER



Features

Available in materials



Cost
100~300%
DOWN

Variety of
Machines
Disc Milling machine

Efficiency
300%
UP

Durability
300%
UP

Product Advantages

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

Back milling Cutter



Double side cutter

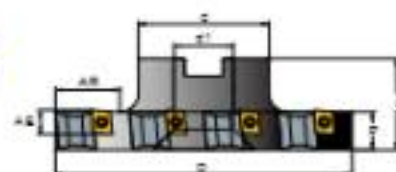


PRODUCT SPECIFICATIONS

Back milling Cutter

- Insert P. 198
- Cutting Data P. 203

CB



Order code	Dimensions(mm)									MAX RPM	Insert CNGX	Screw	Key
	D	A6	P	d	d1	L	A6						
CB-100-27	100			25	27		25	10	1.2	12000	1208	CB6011	T187
CB-125-22	125	12	18.8	25	22		20	10	1.0	10800			

Double side cutter

- Insert P. 198
- Cutting Data P. 203



CDL/CDR

Order code	Dimensions(mm)								MAX RPM	Insert CNGX	Screw	Key
	D	AG	F	d	H	L/R						
CDL-100-27	100			27	7	L	10	1.1	12000			
CDR-100-27						R						
CDL-125-32	125	12	18.5	32	8	L	12	1.3	10000	1300	CDL211	T15P
CDR-125-32						R						
CDL-160-40	160			40	10	L	16	1.5	8000			
CDR-160-40						R						

LNGT Insert



Dimensions in mm			
Stk	S	I	C
1.2	1.4		
1.6	1.8		
2.0	2.2		
2.4	2.6		
2.8	3.0		

Inserts	Part No.	Grades										
		Carbide					Metal		Uncoated			
		6100	C200	C201	F20	F30	C20	C21	K10	C1		
NLS	LNGT 1414NLS-SS											Insert Sequencing Position (one left other than one right) NLS NRS
	LNGT 1415NLS-SS											
	LNGT 1818NLS-SS											
	LNGT 1819NLS-SS											
NRS	LNGT 1414NRS-SS											
	LNGT 1415NRS-SS											
	LNGT 1818NRS-SS											
	LNGT 1819NRS-SS											



Dimensions in mm			
Stk	S	I	C
1.2	1.4		
1.6	1.8		
2.0	2.2		
2.4	2.6		
2.8	3.0		

Inserts	Part No.	Grades										 
		Carbide					Metal		Uncoated			
		6100	C200	C201	F20	F30	C20	C21	K10	C1		
NLS	LNGT 1414NLS-M											 Insert Sequencing Position (one left other than one right)
	LNGT 1415NLS-M											
	LNGT 1818NLS-M											
	LNGT 1819NLS-M											
	LNGT 1414NLS-MS											
	LNGT 1415NLS-MS											
	LNGT 1818NLS-MS											
	LNGT 1819NLS-MS											
NRS	LNGT 1414NRS-M											
	LNGT 1415NRS-M											
	LNGT 1818NRS-M											
	LNGT 1819NRS-M											
	LNGT 1414NRS-MS											
	LNGT 1415NRS-MS											
	LNGT 1818NRS-MS											
	LNGT 1819NRS-MS											

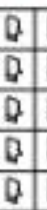
- Steel Stainless Steel Steel/Stainless Steel Cast Iron Aluminum Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: LNGT 1414NLS-M 6100

LNGT Insert



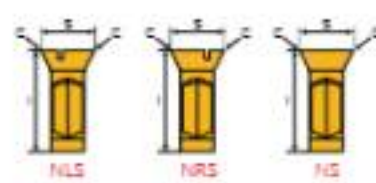
Tolerances ± 0.03 (mm)

Dimensions in mm			
Size	S	H	L
1.75	1.75	1.75	1.75
2.2	2.2	2.2	2.2
2.7	2.7	2.7	2.7
3.7	3.7	3.7	3.7
4.5	4.5	4.5	4.5

Inserts	Part No.	Grades										
		Cermet					Metal matrix		Uncoated			
		B-10	C-10	C-15	P-10	P-15	C-10	C-15	K-10	K-15	C-15	
NLS	LNGT 2020NLS-00											 NLS NLS NLS NLS
	LNGT 2020NLS-00											
	LNGT 2020NLS-00											
	LNGT 2020NLS-00											
	LNGT 2020NLS-00											
	LNGT 2020NLS-00											
	LNGT 2020NLS-00											
	LNGT 2020NLS-00											
	LNGT 2020NLS-00											
	LNGT 2020NLS-00											
	LNGT 2020NLS-00											
	LNGT 2020NLS-00											
	LNGT 2020NLS-00											
NRS	LNGT 2020NRS-00											 NRS NRS NRS NRS
	LNGT 2020NRS-00											
	LNGT 2020NRS-00											
	LNGT 2020NRS-00											
	LNGT 2020NRS-00											
	LNGT 2020NRS-00											
	LNGT 2020NRS-00											
	LNGT 2020NRS-00											
	LNGT 2020NRS-00											
	LNGT 2020NRS-00											
	LNGT 2020NRS-00											
	LNGT 2020NRS-00											
	LNGT 2020NRS-00											
NS	LNGT 2020NS-00											 NS NS NS NS
	LNGT 2020NS-00											
	LNGT 2020NS-00											
	LNGT 2020NS-00											
	LNGT 2020NS-00											
	LNGT 2020NS-00											
	LNGT 2020NS-00											
	LNGT 2020NS-00											
	LNGT 2020NS-00											
	LNGT 2020NS-00											
	LNGT 2020NS-00											
	LNGT 2020NS-00											
	LNGT 2020NS-00											

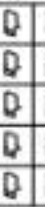
- Steel Stainless Steel Steel/Stainless Steel Cast Iron Aluminum Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: LNGT 2020NLS-00, P20

LNGT Insert



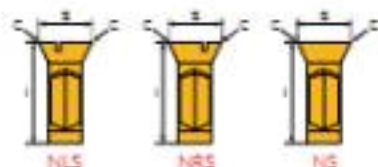
Tolerances ± 0.03 (mm)

Dimensions in mm			
Size	S	H	L
1.75	1.75	1.75	1.75
2.2	2.2	2.2	2.2
2.7	2.7	2.7	2.7
3.7	3.7	3.7	3.7
4.5	4.5	4.5	4.5

Inserts	Part No.	Grades										
		Cermet					Metal matrix		Uncoated			
		Gr 01	Gr 02	Gr 03	Gr 04	Gr 05	Gr 06	Gr 07	Gr 08	Gr 09	Gr 10	
NLS	LNGT 2020NLS-M											 NLS NLS NLS NLS
	LNGT 2021NLS-M											
	LNGT 2022NLS-M											
	LNGT 2023NLS-M											
	LNGT 2027NLS-M											
	LNGT 2030NLS-M											
	LNGT 2032NLS-M											
	LNGT 2033NLS-M											
	LNGT 2035NLS-M											
	LNGT 4040NLS-M											
	LNGT 4042NLS-M											
	LNGT 4043NLS-M											
	LNGT 5050NLS-M											
NRS	LNGT 2020NRS-M											 NRS NRS NRS NRS
	LNGT 2021NRS-M											
	LNGT 2023NRS-M											
	LNGT 2025NRS-M											
	LNGT 2027NRS-M											
	LNGT 2030NRS-M											
	LNGT 2032NRS-M											
	LNGT 2033NRS-M											
	LNGT 2035NRS-M											
	LNGT 4040NRS-M											
	LNGT 4042NRS-M											
	LNGT 4043NRS-M											
	LNGT 5050NRS-M											
NS	LNGT 5050NS-M											Inserts 10 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.: LNGT 2020NLS-M, P20

LNGT Insert



Tolerances ± 0.03 (mm)

Dimensions in mm			
SIZE	S	E	C
1.75	2.0	8	0.03
	2.2		
	2.5		
2.2	2.5		
	2.7		
	3.0		
2.7	3.0		
	3.2		
	3.5		
3.7	4.0		
	4.2		
	4.5		
4.5	5.0		
	5.2		
	5.5		

Inserts	Part No.	Grades								Inserts Sequencing Position one left after than one right
		Ceramics						Metals	Uncoated	
		SiC	SiC	SiC	SiC	SiC	SiC	SiC	SiC	
NLS	LNGT 2020NLS-ME	●								
	LNGT 2020NLS-ME	●								
	LNGT 2020NLS-ME	●								
	LNGT 2020NLS-ME	●								
	LNGT 2020NLS-ME	●								
	LNGT 2020NLS-ME	●								
	LNGT 2020NLS-ME	●								
	LNGT 2020NLS-ME	●								
	LNGT 2020NLS-ME	●								
	LNGT 2020NLS-ME	●								
	LNGT 2020NLS-ME	●								
	LNGT 2020NLS-ME	●								
	LNGT 2020NLS-ME	●								
	LNGT 2020NLS-ME	●								
	LNGT 2020NLS-ME	●								
NRS	LNGT 2020NRS-ME	●								
	LNGT 2020NRS-ME	●								
	LNGT 2020NRS-ME	●								
	LNGT 2020NRS-ME	●								
	LNGT 2020NRS-ME	●								
	LNGT 2020NRS-ME	●								
	LNGT 2020NRS-ME	●								
	LNGT 2020NRS-ME	●								
	LNGT 2020NRS-ME	●								
	LNGT 2020NRS-ME	●								
	LNGT 2020NRS-ME	●								
	LNGT 2020NRS-ME	●								
	LNGT 2020NRS-ME	●								
	LNGT 2020NRS-ME	●								
	LNGT 2020NRS-ME	●								
NS	LNGT 2020NS-ME	●								
	LNGT 2020NS-ME	●								
	LNGT 2020NS-ME	●								
	LNGT 2020NS-ME	●								
	LNGT 2020NS-ME	●								
	LNGT 2020NS-ME	●								
	LNGT 2020NS-ME	●								
	LNGT 2020NS-ME	●								
	LNGT 2020NS-ME	●								
	LNGT 2020NS-ME	●								
	LNGT 2020NS-ME	●								
	LNGT 2020NS-ME	●								
	LNGT 2020NS-ME	●								
	LNGT 2020NS-ME	●								
	LNGT 2020NS-ME	●								

- 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.: LNGT 2020NLS-ME, SiC

LNGT Insert



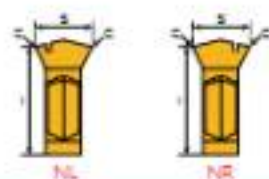
Tolerances ± 0.03 (mm)

Dimensions in mm		
SIZE	S	E
1.75	2.0	8
	2.2	
	2.5	
2.2	2.5	
	2.7	
	3.0	
2.7	3.0	
	3.2	
	3.5	
3.7	4.0	
	4.2	
	4.5	
4.5	5.0	
	5.2	
	5.5	

Inserts	Part No.	Grades								Inserts Sequencing Position
		Ceramics						Metals	Uncoated	
		SiC	SiC	SiC	SiC	SiC	SiC	SiC	SiC	
N2	LNGT 1616N2-GE									
	LNGT 1616N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
N2	LNGT 1616N2-GE									
	LNGT 1616N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									
	LNGT 2020N2-GE									

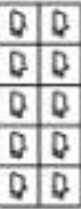
- Steel ■ Stainless Steel ■ Steel/Stainless Steel ■ Cast Iron ■ Aluminum ■ Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, i.e.: LNGT 1616N2-GE, SiC

LNGT Insert



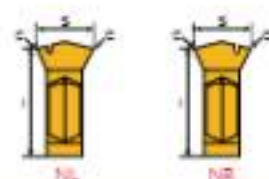
Tolerances ± 0.03 (mm)

Dimensions in mm			
SIZE	S	L	C
1.75	2.0 2.2 2.5	9	0.08
2.2	2.8 3.1 3.5		
2.7	3.0 3.3 3.5		
3.7	4.0 4.3 4.5		
4.8	5.0 5.3 5.5		

Inserts	Part No .	Grades										
		Cermet					Metal insert		Uncoated			
		CBN	CBN	CBN	PCD	PCD	CBN	CBN	PCD	CB	CB	
NL	LNGT 2020NL-M											 Inserts Sequencing Position (one left after than one right)
	LNGT 2022NL-M											
	LNGT 2025NL-M											
	LNGT 2028NL-M											
	LNGT 2027NL-M											
	LNGT 2030NL-M											
	LNGT 2032NL-M											
	LNGT 2035NL-M											
	LNGT 2038NL-M											
	LNGT 2040NL-M											
	LNGT 2042NL-M											
	LNGT 2045NL-M											
NR	LNGT 2020NR-M											 Inserts 10 PCS / Box
	LNGT 2022NR-M											
	LNGT 2025NR-M											
	LNGT 2028NR-M											
	LNGT 2027NR-M											
	LNGT 2030NR-M											
	LNGT 2032NR-M											
	LNGT 2035NR-M											
	LNGT 2038NR-M											
	LNGT 2040NR-M											
	LNGT 2042NR-M											
	LNGT 2045NR-M											

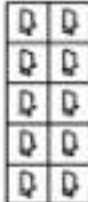
- Steel Stainless Steel Steel/Stainless Steel Cast Iron Aluminum Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert, is: LNGT 2020NL-M, \$100

LNGT Insert



Tolerances ± 0.03 (mm)

Dimensions in mm			
SIZE	S	L	C
1.75	2.0 2.2 2.5	9	0.08
2.2	2.8 3.1 3.5		
2.7	3.0 3.3 3.5		
3.7	4.0 4.3 4.5		
4.8	5.0 5.3 5.5		

Inserts	Part No.	Grades										
		Cermet					Metal insert		Uncoated			
		CBN	CBN	CBN	PCD	PCD	CBN	CBN	PCD	CB	CB	
NL	LNGT 2020NL-M	●										
	LNGT 2022NL-M	●										
	LNGT 2025NL-M	●										
	LNGT 2028NL-M	●										
	LNGT 2027NL-M	●										
	LNGT 2030NL-M	●										
	LNGT 2032NL-M	●										
	LNGT 2035NL-M	●										
	LNGT 2038NL-M	●										
	LNGT 2040NL-M	●										
	LNGT 2042NL-M	●										
	LNGT 2045NL-M	●										
NR	LNGT 2020NR-M	●										
	LNGT 2022NR-M	●										
	LNGT 2025NR-M	●										
	LNGT 2028NR-M	●										
	LNGT 2027NR-M	●										
	LNGT 2030NR-M	●										
	LNGT 2032NR-M	●										
	LNGT 2035NR-M	●										
	LNGT 2038NR-M	●										
	LNGT 2040NR-M	●										
	LNGT 2042NR-M	●										
	LNGT 2045NR-M	●										

Inserts Sequencing Position
(one left after than one right)

Inserts 10 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, is: LNGT 2020NL-M, \$100

LNGT Insert



Tolerances ± 0.03 (mm)

Dimensions in mm			
SIZE	S	L	R
1.5	1.5	9	0.75
2.0	2.0		1.0
2.5	2.5		1.25
3.0	3.0		1.5

Inserts	Part No.	Grades										
		Carbide					Steel cemented		Uncoated			
		CB10	CB20	CB30	CB40	CB50	CB60	CB70	CB80	CB90	CB100	
	LNGT 1412R075-ME											 
	LNGT 2020R100-ME											
	LNGT 2020R125-ME											
	LNGT 2020R150-ME											

Inserts Sequencing Position





Inserts 10 PCS / Box

Inserts 10 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.: LNGT 14L3K075-ME, CB10

SNGX Insert



Tolerances (mm)
L ± 0.025 S ± 0.025



Inserts 10 PCS / Box

Dimensions in mm		
SIZE	S	L
1100	2.2	11.0
1100	2.7	
1200	3.2	
1200	4.0	12.7
1200S	4.5	
1200	5.0	
1200	6.0	
1200	7.0	

Inserts	Part No.	Cutting Rate	Part Chamfer		Grades									
			Width mm	Angle	Carbide					Steel cemented		Uncoated		
					CB10	CB20	CB30	CB40	CB50	CB60	CB70	CB80	CB90	CB100
	SNGX 1100-E	25	-	-										
	SNGX 1100-E													
	SNGX 1200-E													
	SNGX 1200-E													
	SNGX 1200S-E													
	SNGX 1200-E													
	SNGX 1200-E													
	SNGX 1100-ME	18	-	-										
	SNGX 1100-ME													
	SNGX 1200-ME													
	SNGX 1200-ME													
	SNGX 1200S-ME													
	SNGX 1200-ME													
	SNGX 1100TM	18	0.18	10										
	SNGX 1100TM													
	SNGX 1200TM													
	SNGX 1200TM													
	SNGX 1200S-M													
	SNGX 1200TM													

- 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.: SNGX 1100-E, F20

SNGW Insert



Tolerances (mm)
±0.025 S±0.025



Inserts 10 PCS / Box

Dimensions in mm			
SIZE	S	L	
1100	9.0	11.0	11.0
1105	9.7		
1200	9.0		
1205	9.7	12.7	12.7
1206	9.0		
1207	9.7		
1208	9.0		
1209	9.7		

Inserts	Part No.	Cutting Rate	Part. Chamfer		Grades									
			Width mm	Angle	Ductile					Metal (normal)			Uncoated	
					1100	1105	1200	1205	1206	1207	1208	1209	1206	1207
	SNGW 1100-E	25	9.0	11.0										
	SNGW 1105-E													
	SNGW 1200-E													
	SNGW 1205-E													
	SNGW 1206-E													
	SNGW 1207-E													
	SNGW 1100-ME	12	9.0	11.0										
	SNGW 1105-ME													
	SNGW 1200-ME													
	SNGW 1205-ME													
	SNGW 1206-ME													
	SNGW 1207-ME													
	SNGW 1100-TM	18	9.18	10										
	SNGW 1105-TM													
	SNGW 1200-TM													
	SNGW 1205-TM													
	SNGW 1206-TM													
	SNGW 1207-TM													

- 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. SNGW 1100-E F20

SNGW Insert - R0.4~R3.0



Tolerances (mm)
±0.025 S±0.025



Inserts 10 PCS / Box

Dimensions in mm			
SIZE	S	L	R
1100	9.0	11.0	0.4
1105			0.6
1106			0.8
1107	9.7	11.0	0.4
1108			0.6
1109			0.8
1200	9.0	12.7	0.4
1205			0.6
1206			0.8
1207	9.7	12.7	0.4
1208			0.6
1209			0.8
1206	4.8	12.7	0.4
1207			0.6
1208			0.8
1206	4.8	12.7	1.0
1207			1.2
1208			1.5

Dimensions in mm			
SIZE	S	L	R
1200	4.8	12.7	1.0
1205			1.2
1206			1.5
1207	5.0	12.7	1.0
1208			1.2
1209			1.5
1206	5.0	12.7	1.8
1207			2.0
1208			2.5
1206	5.0	12.7	2.0
1207			2.5
1208			3.0

Inserts	Part No.	Cutting Rate	Part. Chamfer		Grades									
			Width mm	Angle	Ductile					Metal (normal)			Uncoated	
					1100	1105	1200	1205	1206	1207	1208	1209	1206	1207
	SNGW 1100R0.4-ME	12	9.0	11.0										
	SNGW 1105R0.4-ME													
	SNGW 1106R0.4-ME													
	SNGW 1107R0.4-ME													
	SNGW 1108R0.4-ME													
	SNGW 1109R0.4-ME													
	SNGW 1200R0.4-ME													
	SNGW 1205R0.4-ME													
	SNGW 1206R0.4-ME													
	SNGW 1207R0.4-ME													
	SNGW 1208R0.4-ME													
	SNGW 1209R0.4-ME													
	SNGW 1206R0.6-ME													
	SNGW 1207R0.6-ME													
	SNGW 1208R0.6-ME													
	SNGW 1209R0.6-ME													
	SNGW 1206R1.0-ME													
	SNGW 1207R1.0-ME													
	SNGW 1208R1.0-ME													
	SNGW 1209R1.0-ME													
	SNGW 1206R1.2-ME													
	SNGW 1207R1.2-ME													
	SNGW 1208R1.2-ME													
	SNGW 1209R1.2-ME													
	SNGW 1206R1.5-ME													
	SNGW 1207R1.5-ME													
	SNGW 1208R1.5-ME													
	SNGW 1209R1.5-ME													

- 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. SNGW 1100R0.4-ME F20

CNGX Insert



Tolerances: ±0.03 (mm)

Dimensions in mm			
SIZE	S	T	A
1005	8.4	10.0	10
1205		12.7	
1605		16.0	

Inserts	Part No.	Grades									
		Cermet					Metal matrix		Uncoated		
		B100	C250	F20	F30	F40	CE60	CE	K10	F30	CE
	CNGX 1005-E										
	CNGX 1205-E										
	CNGX 1605-E										
	CNGX 1005-UB										
	CNGX 1205-UB										
	CNGX 1605-UB										
	CNGX 1005-TM										
	CNGX 1205-TM										
	CNGX 1605-TM										

Inserts 10 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, ex: CNGX 1005-E, F20

Recommendation-LNGT Insert

LNGT Insert Grade Selection

Data reference

Material group No.	Recom. feed fz mm/tooth	Insert		
		LNGT_M	LNGT_ME	LNGT_EE
1	0.04-0.12	W100	W100	-
2	0.04-0.10	W100	W100	-
3	0.04-0.10	W100	W100	-
4	0.04-0.10	W100	W100	-
5	0.04-0.08	W100	W100	-
6	0.04-0.07	W100	W100	-
7	0.03-0.08	-	W100	-
8	0.04-0.12	-	W100	-
9	0.04-0.10	-	W100	-
10	0.04-0.08	-	W100	-
11	0.04-0.08	-	W100	-
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	0.08-0.12	-	-	F20
17	0.08-0.12	-	-	F20
18	0.08-0.11	-	-	F20
19	0.08-0.08	-	W100	-
20	0.08-0.08	-	W100	-
21	0.04-0.08	-	W100	-
22	0.04-0.07	-	W100	-

Recommendation-LNGT Insert

LNGT Insert Recommended Cutting speed, Vc(m/min)

Data reference

Material group No.	grades						
	B100	C250	F20	CE60	CE	K10	F30
	Feed, fz (mm/tooth)						
	0.05 0.05 0.05	0.05 0.05 0.15					
Cutting SPEED, Vc (m/min)							
1	218 198 188	-	-	-	-	-	-
2	188 181 125	-	-	-	-	-	-
3	181 128 122	-	-	-	-	-	-
4	124 122 109	-	-	-	-	-	-
5	121 108 97	-	-	-	-	-	-
6	108 - -	-	-	-	-	-	-
7	- - -	-	-	-	-	-	-
8	108 75 -	-	-	-	-	-	-
9	92 88 -	-	-	-	-	-	-
10	78 84 -	-	-	-	-	-	-
11	84 - -	-	-	-	-	-	-
12	- - -	188 142 125	-	-	-	-	-
13	- - -	181 128 117	-	-	-	-	-
14	- - -	124 117 108	-	-	-	-	-
15	- - -	108 97 -	-	-	-	-	-
16	- - -	118 92 88	-	-	-	-	-
17	- - -	92 78 70	-	-	-	-	-
18	- - -	92 78 70	-	-	-	-	-
19	80 68 -	-	-	-	-	-	-
20	80 68 -	-	-	-	-	-	-
21	25 60 -	-	-	-	-	-	-
22	80 68 -	-	-	-	-	-	-

Cutting Data-Side Milling

Data reference

Operations	vc/m	Recom. feed fz mm/tooth			Speed factor
Radial infeed	-	0.05	0.1	0.14	0.80
Side milling	20%	0.20	0.30	0.40	1.00
	50%	0.14	0.20	0.40	
	100%	0.10	0.20	0.30	
	200%	0.07	0.14	0.20	
Average chip thickness		0.02	0.08	0.08	-

Type Of Insert

	Style	Width of cut mm
	1.0N	1.2
	2.0N	2.0
	3.0N	3.0
	4.0N	4.0
	5.0N	5.0

Recommendation-LNGT Insert

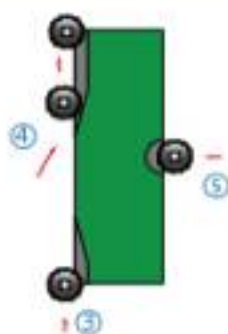
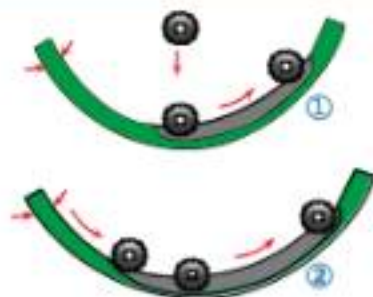
Feed f_z (mm/th)



• f_z (mm/tooth)

Data reference

Material group No.	Feed f_z					
	Material group No.					
	1 2 3 4	5 6	7 8 9 10 11	12 13 14 15	16 17 18	19 20 21 22
1.4~1.7 mm	0.03~0.03	0.015~0.022	0.03~0.04	0.03~0.04	0.03~0.04	0.015~0.022
1.8~2.2 mm	0.03~0.03	0.02~0.04	0.03~0.04	0.03~0.03	0.03~0.03	0.03~0.03
2.3~2.6 mm	0.03~0.03	0.03~0.03	0.03~0.03	0.03~0.03	0.03~0.1	0.03~0.04
2.7~2.8 mm						
2.9~3.2 mm	0.04~0.03	0.03~0.03	0.03~0.03	0.04~0.1	0.04~0.1	0.03~0.03
3.3~3.5 mm						
3.6~3.8 mm	0.03~0.1	0.04~0.03	0.04~0.07	0.03~0.12	0.03~0.17	0.04~0.03



1. Plunging to mill P_c to 50%
2. Ramping to mill P_c to 100%
3. Mill P_c to 100%
4. Ramping P_c to 100%
5. Plunging to mill P_c to 50%

Recommendation-SNGX Insert

SNGX Insert Grade Selection

Data reference

Material group No.	Recom. feed f_z mm/tooth	Insert			
		SNGX_M	SNGX_ME	SNGX_ET	
1	0.14~0.20	0280 S100	S100	-	-
2	0.14~0.22	0280 S100	S100	-	-
3	0.14~0.22	0280 S100	S100	-	-
4	0.14~0.22	0280 S100	S100	-	-
5	0.14~0.20	0280 S100	S100	-	-
6	0.10~0.18	0280 S100	S100	-	-
7	0.10~0.13	0280 S100	S100	-	-
8	0.14~0.22	-	S100	-	-
9	0.14~0.22	-	S100	-	-
10	0.14~0.20	-	S100	-	-
11	0.10~0.18	-	S100	-	-
12	0.14~0.20	-	F20	-	-
13	0.14~0.22	-	F20	-	-
14	0.14~0.20	-	F20	-	-
15	0.10~0.18	-	F20	-	-
16	0.18~0.20	-	-	F20	-
17	0.18~0.22	-	-	F20	-
18	0.18~0.20	-	-	F20	-
19	0.14~0.20	-	S100	-	-
20	0.14~0.18	-	S100	-	-
21	0.10~0.13	-	S100	-	-
22	0.14~0.20	-	S100	-	-

Recommendation-SNGX SNGW Insert

Recommended Cutting speed, Vc(m/min)

Data reference

Material group No.	grades						
	B100	C250	F20	CC80	CE	K10	P30
	Feed fz (mm/tooth)						
	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, Vc (m/min)							
1	188 188 188	188 188 188	-	-	-	-	-
2	188 188 188	188 188 188	-	-	-	-	-
3	121 128 123	121 118 103	-	-	-	-	-
6	138 122 110	118 102 90	-	-	-	-	-
9	120 110 99	100 90 79	-	-	-	-	-
8	80 78 -	72 88 -	-	-	-	-	-
7	-	-	-	-	-	-	-
10	112 80 -	-	-	-	-	-	-
9	80 70 -	-	-	-	-	-	-
10	80 84 -	-	-	-	-	-	-
11	84 -	-	-	-	-	-	-
12	-	-	-	-	-	142 118 105	-
13	-	-	-	-	-	128 108 95	-
16	-	-	-	-	-	118 98 91	-
18	-	-	-	-	-	91 88 -	-
16	-	-	1180 880 880	-	-	-	-
17	-	-	880 780 700	-	-	-	-
18	-	-	880 780 700	-	-	-	-
19	88 68 -	-	-	-	-	-	-
20	88 48 -	-	-	-	-	-	-
21	68 38 -	-	-	-	-	-	-
22	58 48 -	-	-	-	-	-	-

Cutting Data-Side Milling

Data reference

Operations	Ap / Dc	Recomm. feed fz mm/tooth	Speed Factor
Radial Infeed	-	0.08 0.10 0.14 0.88	
Side milling	2%	0.21 0.44 0.88 1.30	
	5%	0.16 0.28 0.41 1.10	
	10%	0.10 0.20 0.30 1.00	
	20%	0.07 0.14 0.21 0.80	
	30%	0.08 0.12 0.18 0.88	
Average Chip Thickness mm	-	0.08 0.08 0.08 -	

Type Of Insert

Style	Width of slot mm
1202	8
1204	7
1204S	8
1206	10
1207	12

Recommendation-CNGX Insert

CNGX Insert Grade Selection

Material group No.	Recomm. feed fz mm/tooth	Insert		
		CNGX...B	CNGX...Bc	CNGX...Bt
1	0.2-0.4	CNGX-B10	B10	-
2	-	CNGX-B10	B10	-
3	0.2-0.4	CNGX-B10	B10	-
6	-	CNGX-B10	B10	-
9	0.2-0.4	CNGX-B10	B10	-
8	-	CNGX-B10	B10	-
7	0.12-0.8	CNGX-B10	B10	-
10	0.2-0.4	-	B10	-
11	-	-	B10	-
12	0.2-0.4	-	B10	-
13	-	-	B10	-
16	0.02-0.4	-	B10	-
17	-	-	B10	-
18	0.2-0.4	-	B10	-
19	-	-	B10	-
20	-	-	B10	-
21	0.12-0.32	-	B10	-
22	0.2-0.32	-	B10	-

Recommended Cutting speed, Vc(m/min)

Data reference

Material group No.	grades						
	B100	C250	F20	CC80	CE	K10	P30
	Feed fz (mm/tooth)						
	0.1 0.2 0.4	0.1 0.2 0.4	0.1 0.2 0.4				0.1 0.2 0.4
Cutting SPEED, Vc (m/min)							
1	188 188 188	188 188 188	-	-	-	-	-
2	188 188 188	188 188 188	-	-	-	-	-
3	120 121 80	120 121 80	-	-	-	-	-
6	108 80 80	108 80 80	-	-	-	-	-
9	80 78 70	80 78 70	-	-	-	-	-
8	80 68 -	80 68 -	-	-	-	-	-
7	-	88 -	-	-	-	-	-
10	112 80 -	-	-	-	-	-	-
9	88 70 -	-	-	-	-	-	-
10	80 80 -	-	-	-	-	-	-
11	80 -	-	-	-	-	-	-
12	-	-	-	-	-	142 118 105	-
13	-	-	-	-	-	128 108 95	-
16	-	-	-	-	-	118 98 91	-
18	-	-	-	-	-	91 88 -	-
16	-	-	810 880 880	-	-	-	-
17	-	-	880 780 700	-	-	-	-
18	-	-	880 780 700	-	-	-	-
19	88 68 -	-	-	-	-	-	-
20	88 48 -	-	-	-	-	-	-
21	68 38 -	-	-	-	-	-	-
22	58 48 -	-	-	-	-	-	-

Cutting Data-Side Milling

Data reference

Operations	Ap / Dc	Recomm. feed fz mm/tooth	Speed Factor
Radial Infeed	-	0.08 0.10 0.16 0.80	
Side milling	2%	0.21 0.44 0.88 1.30	
	5%	0.16 0.28 0.41 1.10	
	10%	0.10 0.20 0.30 1.00	
	20%	0.07 0.14 0.21 0.80	
	30%	0.08 0.12 0.18 0.88	
Average Chip Thickness mm	-	0.08 0.08 0.08 -	

Type Of Insert

Style	Width of slot mm
1202	10/12
1204	18/20
1206	28/30

CENTER SERIES

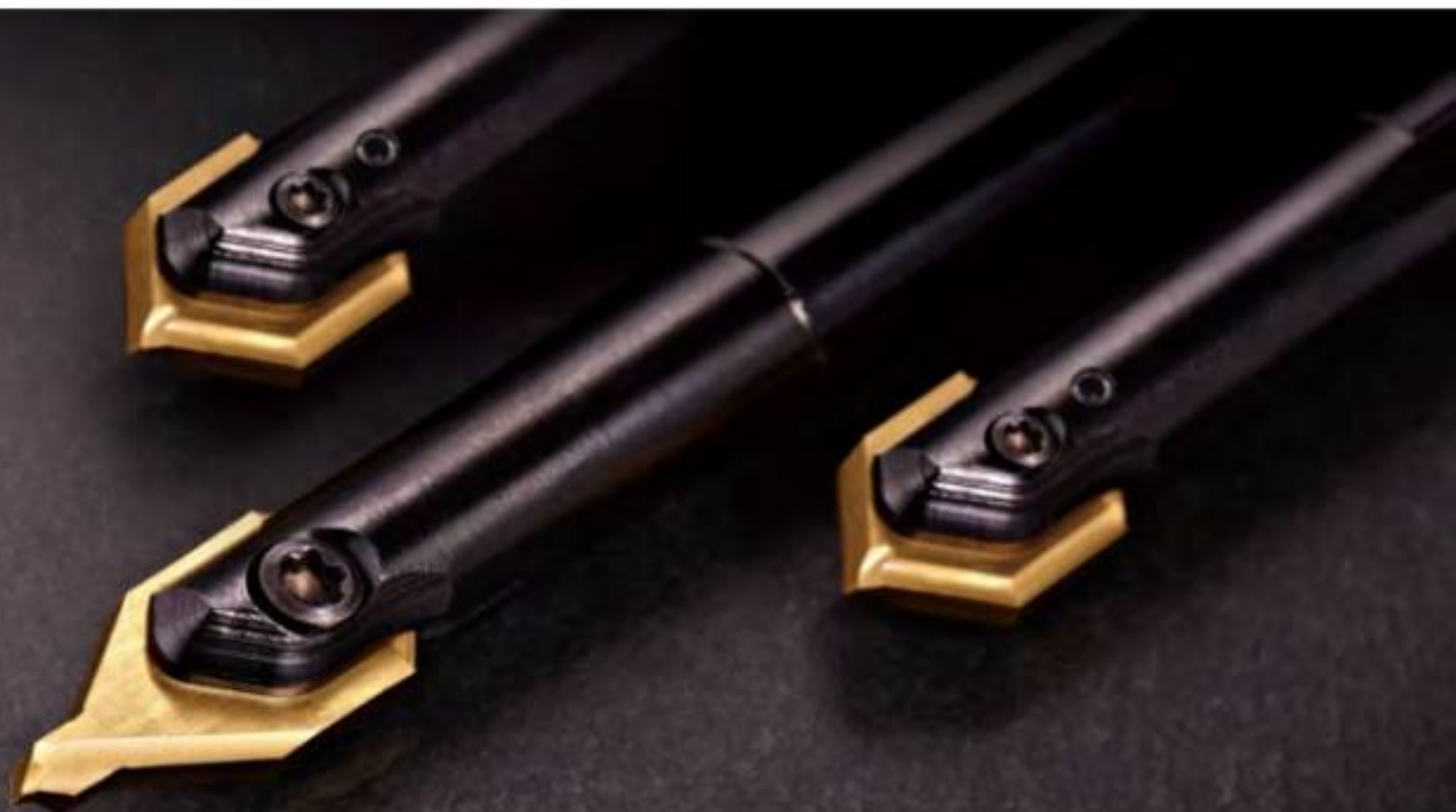
- CENTER/SPOT DRILL IN MILLING AND TURNING

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



Video



Features

Available in
materials



Cost
**300-500%
DOWN**

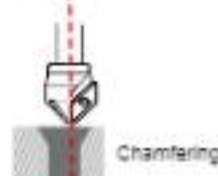
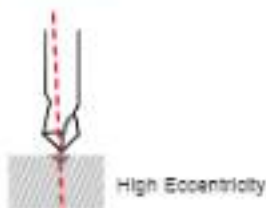
Variety of
Machines
Milling / Turning /
Drilling

Efficiency
**300%
UP**

Durability
**300%
UP**

Product Design

Other Brands



Y.T.



Y.T. Spot Drill's center
accuracy will save
your drill and taps
from breakage



Multipurpose Y.T. Spot Drill



Can be used in M/C and
drilling machine

Other brands



The minimum eccentricity is 0.3 mm

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.

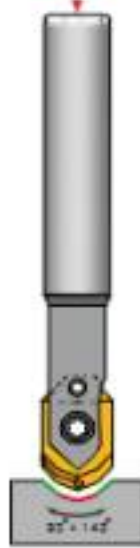
YIH TROUN



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

1. The centering is accurate and close to perfection, which help drill tool life.
2. The speed can be up to 300%~1000% faster with special carbide insert.
3. Can also be used in chamfering with 2 flutes.

YIH TROUN

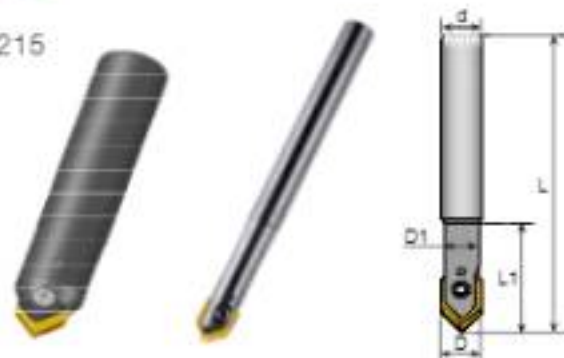


1. The centering is accurate and close to perfection, which help drill tool life.
2. 142° is perfect for carbide drill and HSS Drill.
3. Spot and chamfer in one step.

PRODUCT SPECIFICATIONS

Spot Drill Toolholders

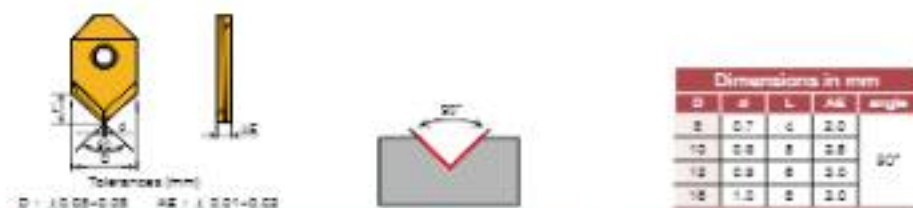
- Insert P. 210
- Cutting Data P. 211 - 215



13

Order code	Dimensions(mm)						kg	Insert	Screw	Key
	D	D1	d	L	L1	L2				
13-0805-80	8	7.8	8	80	20		0.12	20-0805	002005 S020025	T08P L013
13-0805-85	8	7.8	8	85	20		0.18			
13-1005-80	10	9.8	10	80	20		0.12			
13-1010-85	10	9.8	10	85	20		0.18	20-1002	002008 S02003	T08P L013
13-1010-100	10	9.8	10	100	20		0.18			
13-1010-180	10	9.8	10	180	20		0.18			
13-1210-85	12	11.7	12	85	20		0.2	20-1203	002010 S0204	T08P L018
13-1212-80	12	11.7	12	80	20		0.25			
13-1212-110	12	11.7	12	110	20		0.2			
13-1212-180	12	11.7	12	180	20		0.25			
13-1812-80	18	17.7	18	80	25		0.3			
13-1818-100	18	17.7	18	100	25		0.35	20-1803	002012 S0205	T10P L02
13-1818-120	18	17.7	18	120	25		0.4			
13-1818-180	18	17.7	18	180	25		0.45			

23 Insert

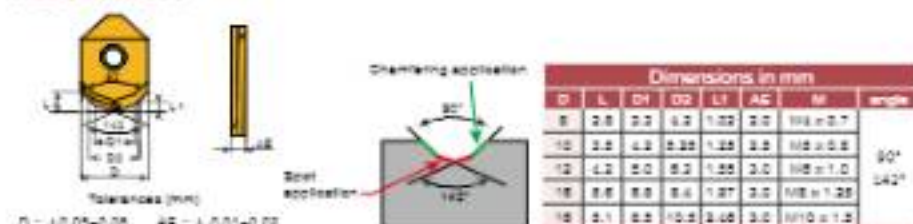


Dimensions in mm					
D	L	L	AC	angle	
8	0.7	0	2.0	90°	
10	0.8	0	2.0		
12	0.9	0	2.0		
16	1.0	0	2.0		

Inserts	Part No.	Grades									
		Cermet				Metal cement		Uncoated			
		C10	B302	C100	P10	P10	C10	C10	K10		
	23-0802-90-8										
	23-1002-90-8										
	23-1202-90-8										
	23-1602-90-8										
	23-0802-90-16										
	23-1002-90-16										
	23-1202-90-16										
	23-1602-90-16										
23-0802-90-32											
23-1002-90-32											
23-1202-90-32											
23-1602-90-32											


Inserts 10 PCS / Box

A23 Insert



Inserts	Part No.	Grades									
		Cermet				Metal cement		Uncoated			
		C100	B100	C100	F100	F100	C100	C100	N100		C100
	A23-0802-110-16										 Inserts 10 Pcs / Box
	A23-1002-110-16										
	A23-1202-110-16										
	A23-1602-110-16										
	A23-1802-110-16										

- Steel, Stainless Steel, Steel/Stainless Steel, Cast Iron, Aluminum, Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Contact price and stock are based on current situation
- Please specify model number and grade of insert, is: A23-0802-110-16 8090

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.

Material group	Cutting Speed V_c (m/min)	Feed, f_z (mm/tooth)		Grades	
		D:5-10mm	D:11-16mm	ME	E
1-2	50-70	0.10 0.12	0.11 0.14	G250/G350	-
3	50-70	0.10 0.12	0.11 0.14	G250/G350	-
4-5-6	65-80	0.08 0.10	0.10 0.12	G250/G350	-
7	25-30	0.08 0.08	0.08 0.08	G250	-
8-9	25-30	0.08 0.10	0.10 0.12	G250	-
10-11	25-30	0.07 0.08	0.08 0.10	G250	-
12-13	70-90	0.10 0.12	0.10 0.12	G250	-
14-15	80-90	0.10 0.12	0.10 0.12	G250	-
16-18	200-300	0.10 0.12	0.10 0.12	-	200

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

Screwing the Insert

- Put the insert into the slot of shank and press it with the finger
- Fully tighten the screw A first
- Half tighten the screw B on one side
- Half tighten the screw C on other side
- Fully tighten the screw B again (Important)
- Fully tighten the screw C again (Important)



Standard spare parts

Insert dimension (D mm)	Screw A	Screw B/C	Key	Key
8	S00008	S00008	T008	L010
10	S00010	S00010	T010	L010
12	S00012	S00012	T012	L012
16	S00016	S00016	T016	L016

Recommended Cutting Data



Side Chamfering

Chamfering Application

Material		Steel		Heat Treatment		Stainless		Inconel		Cast		Aluminium	
Using Insert		C350		C350		S350		S350		C350		F20	
Insert	Cut Depth	S	F	S	F	S	F	S	F	S	F	S	F
φ8	1C	4800	720	2000	240	2400	280	1800	190	3200	840	9000	2000
φ10	1C	3800	570	1600	190	1900	220	1300	160	2550	510	6300	1500
	2C	3800	450	1600	160	1900	190	1300	130	2550	400	6300	1260
φ12	1C	3200	480	1300	150	1800	190	1050	125	2100	420	5300	1250
	2C	3200	380	1300	130	1800	160	1050	105	2100	340	5300	1050
	3C	3200	320	1300	100	1800	130	1050	95	2100	280	5300	850
φ16	1C	2400	360	1000	120	1200	145	800	95	1800	320	4000	960
	2C	2400	290	1000	100	1200	120	800	80	1800	255	4000	800
	3C	2400	240	1000	80	1200	100	800	65	1800	190	4000	480
	4C	2000	180	900	65	1000	80	600	50	1400	140	3500	420

Recommended Cutting Data



Grooving

V Groove Application

Material		Steel		Heat Treatment		Stainless		Inconel		Cast		Aluminium	
Using Insert		C350		C350		S350		S350		C350		F20	
Insert	Cut Depth	S	F	S	F	S	F	S	F	S	F	S	F
φ8	2mm	4800	360	1200	95	2400	140	1400	95	4000	840	9000	2400
φ10	2mm	3800	300	950	75	1900	115	1100	65	3200	500	6400	1920
	3mm	3800	220	950	55	1900	750	1100	45	3200	380	6400	1500
φ12	2mm	3200	280	800	65	1800	95	900	55	2650	420	5300	1600
	3mm	3200	190	800	50	1800	65	900	35	2650	320	5300	1300
φ16	2mm	2400	190	600	50	1200	70	700	40	2000	320	4000	1200
	3mm	2400	145	600	35	1200	50	700	30	2000	240	4000	960
	4mm	2400	100	600	25	1200	25	700	20	2000	200	4000	800

Recommended Cutting Data



Spotting and Chamfering
in one step

Spot Application

Material		Steel		Heat Treatment		Stainless		Inconel		Cast		Aluminium	
Using Insert		C350		C350		B350		B350		C350		F20	
Insert	Cut Depth	S	F	S	F	S	F	S	F	S	F	S	F
ø8	1mm	2000	300	900	95	1600	160	1000	100	2800	560	6000	1200
	2mm	2000	250	900	90	1600	120	1000	75	2800	490	6000	1050
	3mm	2000	250	900	90	1600	120	1000	75	2800	490	6000	1050
	4mm	2000	200	900	85	1600	90	1000	50	2800	420	6000	900
ø10	1mm	1600	240	650	60	1300	130	800	80	2200	440	4800	960
	2mm	1600	200	650	65	1300	100	800	60	2200	385	4800	840
	3mm	1600	200	650	65	1300	100	800	60	2200	385	4800	840
	4mm	1600	160	650	50	1300	65	800	40	2200	330	4800	720
	5mm	1300	130	500	40	1000	50	650	30	1900	295	4200	630
ø12	1mm	1300	200	550	65	1050	105	650	65	1850	370	4000	800
	2mm	1200	180	550	55	1050	90	650	50	1850	315	4000	700
	3mm	1300	180	550	55	1050	90	650	50	1850	315	4000	700

Recommended Cutting Data



Spotting and Chamfering
in one step

Spot Application

Material		Steel		Heat Treatment		Stainless		Inconel		Cast		Aluminium	
Using Insert		C350		C350		B350		B350		C350		F20	
Insert	Cut Depth	S	F	S	F	S	F	S	F	S	F	S	F
ø12	4mm	1300	130	550	45	1050	50	650	35	1850	290	4000	600
	5mm	1050	105	400	45	800	40	530	30	1600	240	3500	525
	6mm	1050	85	400	30	800	30	530	20	1600	200	3500	430
ø16	1mm	1000	150	400	45	800	90	500	50	1400	280	3000	600
	2mm	1000	125	400	40	800	60	500	40	1400	245	3000	525
	3mm	1000	125	400	40	800	60	500	40	1400	245	3000	525
	4mm	1000	100	400	30	800	40	500	25	1400	210	3000	450
	5mm	900	80	300	25	600	30	400	20	1200	180	2600	390
	6mm	900	65	300	20	600	25	400	16	1200	150	2600	325
	7mm	900	65	300	20	600	25	400	16	1200	150	2600	325
	8mm	900	50	300	15	600	18	400	12	1200	120	2600	260

CENTER DRILL - 390 SYSTEM

Surface Finish Ra < 0.5 μ m



Video



Features

Available in materials

Cost
 300~500%
 DOWN

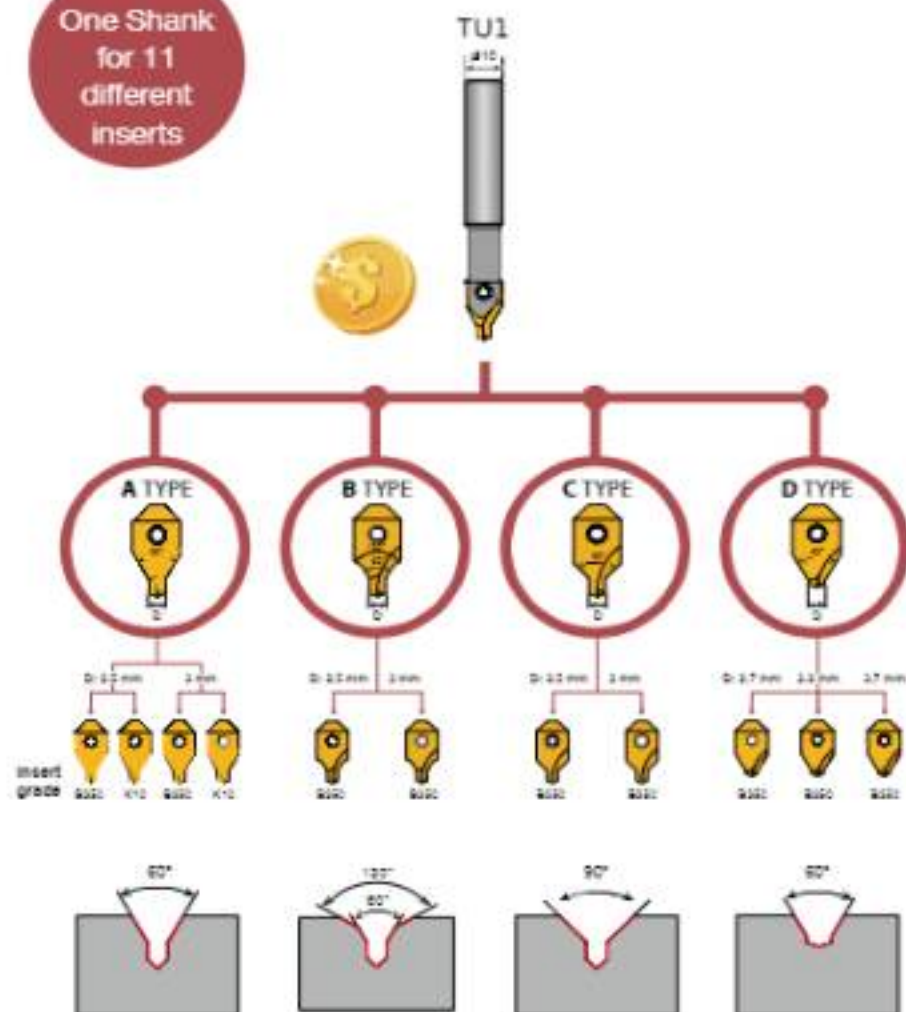
Variety of
 Machines
 Milling / Turning

Efficiency
 300%
 UP

Durability
 300%
 UP

Product (Design)

One Shank
 for 11
 different
 inserts



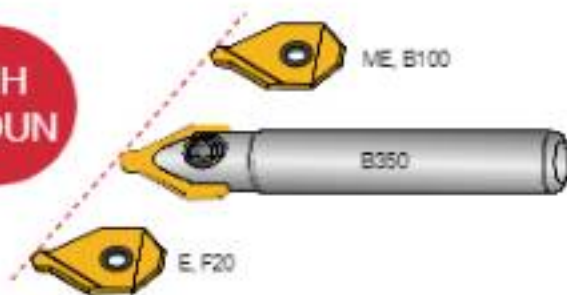
Center Drill

TECHNICAL GUIDE

Indexable center drill

- Carbide insert with higher tool life
- Only change a new insert without resetting every time
- For big drill depth please refer to the technical information at page 239

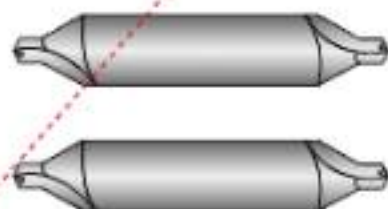
YIH
TROUN



Solid center drill

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

HSS
SOLID



Traditional and New



Dedicated Hole Center Drill for Hole Shaft



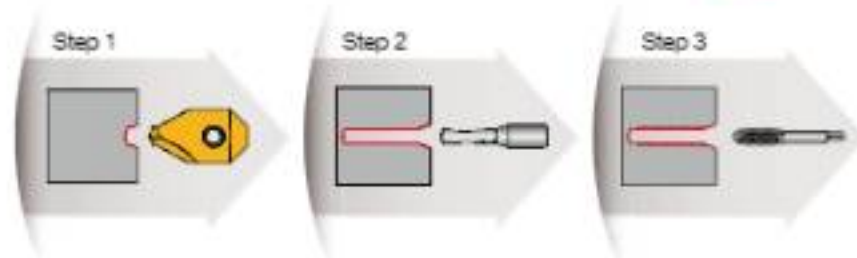
Efficiency
400~600% up



Durability
400~600% up

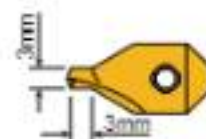


No broken



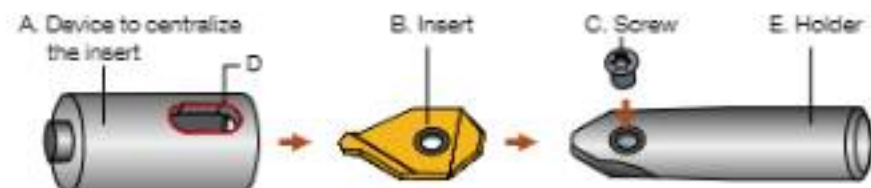
Old

Standard Center Drill



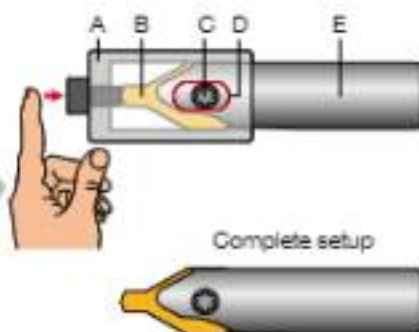
Device to centralize the insert: Methods to mount

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



Device to centralize the insert



Video



Order code	D	D1	L
GA-0810	8	8.2	25
GA-1010	10	10.2	30
GA-1210	12	12.2	30
GA-1820	18	18.2	38

Center Drill Toolholders (Milling And Turning)

- Insert P. 222 - 224
- Cutting Data P. 225



TU1

Order code	Dimensions(mm)					KG	Insert	Screw	Key
	D	D1	d	L	L1				
TU1-0808-02	8	8.2	8	80	20	0.11	080210 080220	002008	T08P
TU1-1010-02	10	10.2	10	85	25	0.14	100220 100230	002010	T08P
TU1-1212-02	12	12.2	12	85	30	0.20	120240 120250	002012	T10P
TU1-1818-10	18	18.2	18	110	38	0.3	180260 180280	002018	T10P

Center Drill Toolholders (Turning)

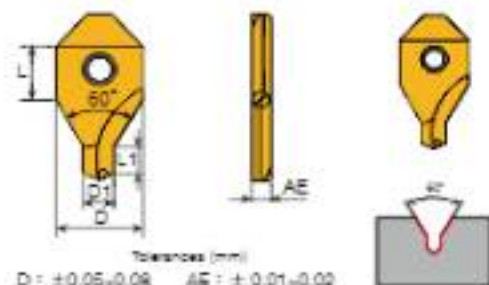
- Insert P. 222 - 224
- Cutting Data P. 225



TU

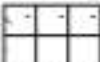
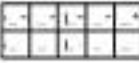
Order code	Dimensions(mm)						KG	Insert	Screw	Key
	D	D1	d	L	L1	h				
TU-0808-02	8	8.2	8	85	20	7.5	0.14	080210 080220	002008	T08P
TU-1010-100	10	10.2	10	100	25	9.2	0.18	100230 100240	002010	T08P
TU-1212-110	12	12.2	12	110	30	11.5	0.3	120240 120250	002012	T10P
TU-1818-120	18	18.2	18	120	38	18.5	0.4	180260 180280	002018	T10P

A 24 Insert



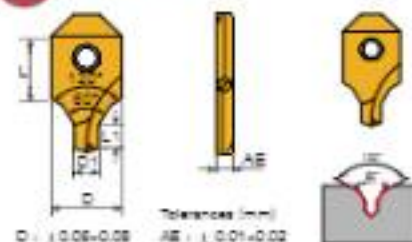
Tolerances (mm)
D : $\pm 0.05-0.08$ AE : $\pm 0.01-0.02$

Dimensions in mm					
D	L	AE	D1	L1	angle
8	4	2.0	1.8	1.8	60°
			2.0	2.0	
10	5	2.5	2.5	2.5	
			3.0	3.0	
12	6	3.0	3.0	3.0	
			4.0	4.0	
15	8	3.0	3.0	3.0	
			4.0	4.0	

Inserts	Part No.	Grades											
		Cermet					Metal cement		Uncoated				
		C10	B10	C10	P10	M10	C10	C10		K10	Q10		
	A24-080218-80-E												
	A24-080220-80-E												
	A24-100225-80-E												
	A24-100230-80-E												
	A24-120240-80-E												
	A24-120250-80-E												
	A24-160280-80-E												
	A24-160290-80-E												
	A24-080218-80-ME		3										
	A24-080220-80-ME		3										
	A24-100225-80-ME		3										
	A24-100230-80-ME		3										
	A24-120240-80-ME		3										
	A24-120250-80-ME		3										
	A24-160280-80-ME		3										
	A24-160290-80-ME		3										
 Inserts 6 PCS / Box Only for insert A24-18"													
 Inserts 10 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. A24-080218-80-E, K10

B 24 Insert

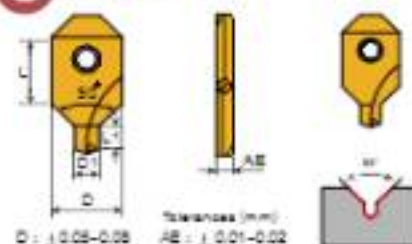


Tolerances (mm)
D : $\pm 0.05-0.08$ AE : $\pm 0.01-0.02$

Dimensions in mm					
D	L	AE	D1	L1	angle
8	4	2.0	1.8	1.8	120° 90°
			2.0	2.0	
10	5	2.5	2.5	2.5	
			3.0	3.0	
12	6	3.0	3.0	3.0	
			4.0	4.0	
15	8	3.0	3.0	3.0	
			4.0	4.0	

Inserts	Part No.	Grades									
		Cermet				Metal cement		Uncoated			
		C100	B20	C80	P1	P2	C20	C30	K1		Q1
	B24-080218-120-ME										 Inserts 6 PCS / Box Only for insert B24-18"
	B24-080220-120-ME										
	B24-100225-120-ME										
	B24-100230-120-ME										
	B24-120240-120-ME										
	B24-120250-120-ME										
	B24-160280-120-ME										 Inserts 10 PCS / Box
	B24-160290-120-ME										
	B24-080218-90-ME										
	B24-080220-90-ME										
	B24-100225-90-ME										
	B24-100230-90-ME										

C 24 Insert



Tolerances (mm)
D : $\pm 0.05-0.08$ AE : $\pm 0.01-0.02$

Dimensions in mm					
D	L	AE	D1	L1	angle
8	4	2.0	1.8	1.8	120° 90°
			2.0	2.0	
10	5	2.5	2.5	2.5	
			3.0	3.0	
12	6	3.0	3.0	3.0	
			4.0	4.0	
15	8	3.0	3.0	3.0	
			4.0	4.0	

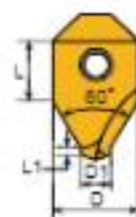
Inserts	Part No.	Grades										
		Cermet					Metal cement			Uncoated		
		C10	B10	C10	P10	M10	C10	C10		K10	Q10	
	C24-080218-90-ME											 Inserts 6 PCS / Box Only for insert C24-18"
	C24-080220-90-ME											
	C24-100225-90-ME											
	C24-100230-90-ME											
	C24-120240-90-ME											
	C24-120250-90-ME											
	C24-160280-90-ME											 Inserts 10 PCS / Box
	C24-160290-90-ME											

- 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. C24-080218-90-ME, B10

D 24 Insert



Center drill specialize for pre-drilling and pre-tapping



Dimensions in mm					
D	L	AE	D1	L1	angle
6	6	2.0	1.7	0.6	80°
			2.2	0.6	
10	8	2.0	2.7	0.6	
			3.2	0.7	
12	8	2.0	3.7	0.7	
			4.2	0.8	
16	8	2.0	5.2	1.0	
			5.7	1.1	

Tolerances (mm)

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

Inserts	Part No.	Grades									
		Cermet					Metal cermet			Uncoated	
		CB	CB	CB	CB	CB	CB	CB	CB	CB	CB
	D24-080217-80-ME										
	D24-080220-80-ME										
	D24-100221-80-ME										
	D24-100222-80-ME										
	D24-100223-80-ME										
	D24-120224-80-ME										
	D24-120225-80-ME										
	D24-160226-80-ME										
Inserts 6 PCS / Box Only for insert D24-180°											
Inserts 10 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, eg: D24-080221-80-ME, 8930

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	
			D1.5-3.5mm	D1.3-5mm	ME	E
1-2	15-20	20-120	0.02 0.08	0.08 0.10	Q220	+
3	12-18		0.02 0.08	0.08 0.10	Q220	+
4-6-8	10-12		0.02 0.08	0.08 0.10	Q220	+
7	8-10	20-30	0.02 0.08	0.08 0.08	Q220	+
9-9	8-12		0.02 0.08	0.08 0.08	Q220	+
10-11	8-10		0.02 0.08	0.08 0.08	Q220	+
12-13	20-25	80-80	0.08 0.08	0.08 0.12	Q220	+
14-15	18-20		0.08 0.08	0.08 0.12	Q220	+
16-18	20-30	200-300	0.02 0.08	0.08 0.12	-	Q220

Surface Finishing Test Result

Holder	TU-1010-100	Mitutoyo	SURFTEST WT-2001
Insert	D24-100222-80-ME, 8100	DATE 2017/02/08	TIME 09:20:32
S	1800 mm ²	Ra	0.360 μ m
		Rz	2.024 μ m
f	0.08 mm/rev	Mitutoyo	SURFTEST WT-2001
Material	SAE1045	DATE 2017/02/08	TIME 09:20:32
		Ra	14.16 μ m
		Rz	80.94 μ m

TRY ME Box

(1 shank + 2 inserts)

- Try me box with 1 holder+2insert is a good chane to test the accurate (tolerance ± 0.01) indexable center drill and spot drill
- For the tool specification please refer to: spot drill p.209-210 center drill p.220-224

Convenient ,
Durable ,
Efficiency



SAVE THE TIME OF TOOL
MEASURING AND RESETING



Center Drill

Spot Drill

Center
Drill

1 shank + 2 inserts +
1 fitting gauge

Available size in : 1.6 · 2.0 · 2.5 · 3.0 ·
4.0 · 5.0 · 6.0mm

Spot
Drill

1 shank + 2 inserts

Available size in : 08 · 10 · 12 · 16mm
90° · 90° +142°

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 counter bore reduce machining process from 4 steps to 2 steps.

Counter Bore : M8-M36

Counter Bore with chamfer: M8-M36

4 in 1 Counter Bore: M3-M12

4 IN 1 COUNTER BORE



Video

Patent No.
M473332
M474555
M473331

Patent No.
201390453057.3
201320772657.5

PCT Priority No.
PCT/CH2013/086393

Features

Available in
materials



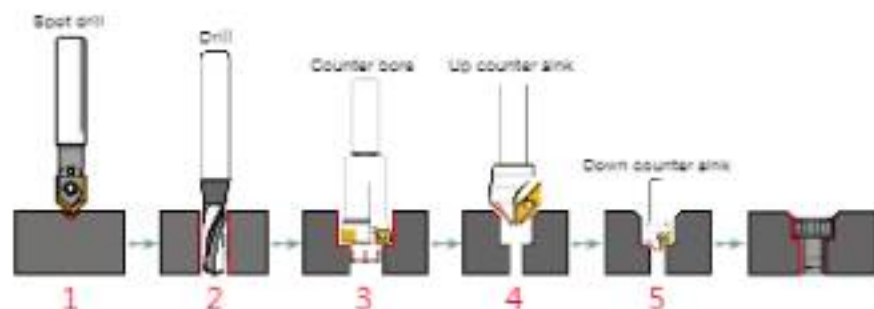
Cost
**300-500%
DOWN**

Variety of
Machines
Hitting / Drilling
/ Reamer drilling

Efficiency
**300%
UP**

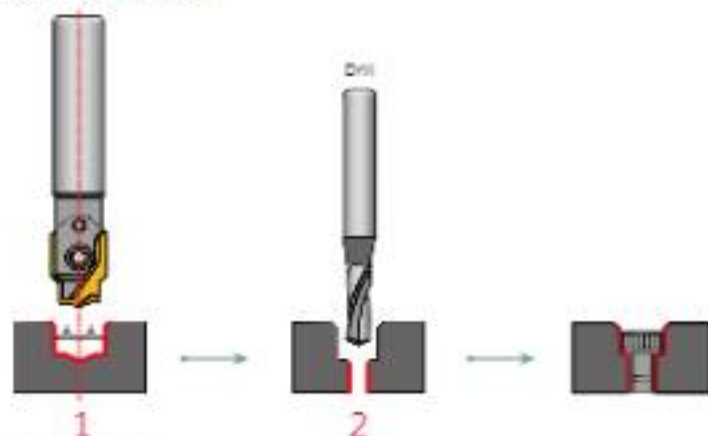
Durability
**300%
UP**

Standard Procedure: Need 5 Tools



New Procedure: Need Only 2 Tools

4 in 1 counter bore = 1+2+4+1



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



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

* Patent Pending

4 main functions



Bolt counter bore Mill large



Bolt counter bore Mill small



Bolt counter bore INCH



Punch counter bore



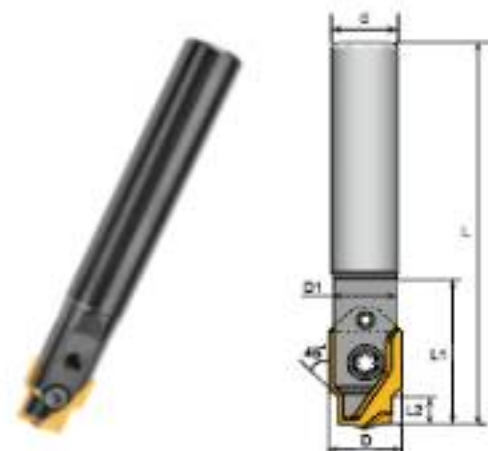
- Up Chamfering
- Bolt Counter Bore
- Down Chamfering

Can make 140° Spot for accurate drilling



4 In 1 Counter Bore Shank

- Insert P. 234 - 236
- Cutting Data P. 238



14

Order code	Screw Dimensions		Dimensions (mm)							Screw	Key
	MM	INCH	D	D1	d	L	L1	L2			
14-0803-70	3.2	1/8	8	7.4	8	70	15	3.1	0.12	003808 S028025	T08P L013
14-0803-80	3.2	-				80	20	3.8	0.12		
14-1004-80	4.0	3/8	10	9.4	10	80	18	4.0	0.15	003907 S02503	T08P L013
14-1004-100		-				100	21	4.0	0.18		
14-1205-80	5.0	-	12	11.2	12	80	20	5.0	0.18	003908 S02003	T08P L018
14-1205-110	5.0	1/2				110	25	5.4	0.21		
14-1205-80	7.0	5/8	12	11.2	12	80	25	5.4	0.19	003910 S0108	T10P L02
14-1808-100		-				100	25	7.4	0.25		
14-1808-120	8.0	5/8	18	16.4	18	120	30	8.4	0.22	004012 S02608	T10P L028
14-2010-100	10	-				100		30	10.2		
14-2010-140	10	3/8	20	19.0	20	140	35	10.2	0.30		

4 In 1 Counter Bore Insert

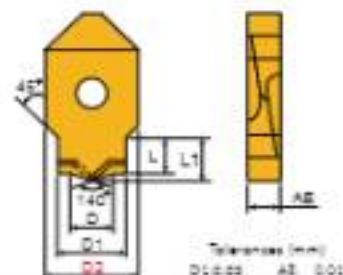
MM / INCH standard size dimensions- DIN373



Inserts 6 PCS / Box
Only for insert 26-20***



Inserts 10 PCS / Box



Tolerances (mm)
D1: 0.02 A6: 0.01

Dimensions in mm									
D	D1	D2	L	L1	A6	MM	INCH		
2.6	6.8	8	2.1	2.7	2.0	1/32	1/8		
4.7	8.2	10	2.8	3.2	2.0	1/16	1/4		
6.8	10.4	12	3.2	3.6	2.0	1/8	1/2		
8.9	12.5	14	3.6	4.0	2.0	1/4	3/8		
11.0	14.6	16	4.0	4.4	2.0	3/16	1/2		
13.1	16.7	18	4.4	4.8	2.0	1/8	5/8		
15.2	18.8	20	4.8	5.2	2.0	3/8	1		
17.3	20.9	22	5.2	5.6	2.0	7/16	1 1/8		

Inserts	Order code	Grades										Corresponding shank	
		Cast iron					Stainless steel		Uncoated				
		CI 10	CI 15	CI 20	CI 25	CI 30	SS 10	SS 15	SS 20	SS 25	SS 30		
	26-0803-E												16-0803-70 16-0803-80
	26-0803-M												
	26-0805-E												
	26-0805-M												
	26-1006-E												16-1006-80 16-1006-100
	26-1006-M												
	26-1208-E												16-1208-80 16-1208-110
	26-1208-M												
	26-1208-E												
	26-1208-M												
	26-1607-E												16-1208-80 16-1607-100 16-1607-120
	26-1607-M												
	26-1808-E												
	26-1808-M												
	26-2010-E												16-2010-80 16-2010-100 16-2010-120
	26-2010-M												
	26-2012-E												
	26-2012-M												

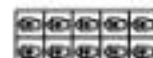
- Steel Stainless Steel Steel/Stainless Steel Cast Iron Aluminum Steel/Cast Iron
- Steel/Stainless Steel/Cast Iron
- Correct price and stock are based on current situation
- Please specify model number and grade of insert. Ex: 26-0805-E, F20

4 In 1 Counter Bore Insert

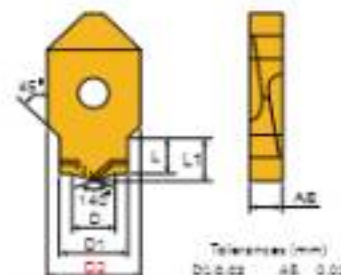
MM large size dimensions- DIN373



Inserts 6 PCS / Box
Only for insert 26-20***



Inserts 10 PCS / Box



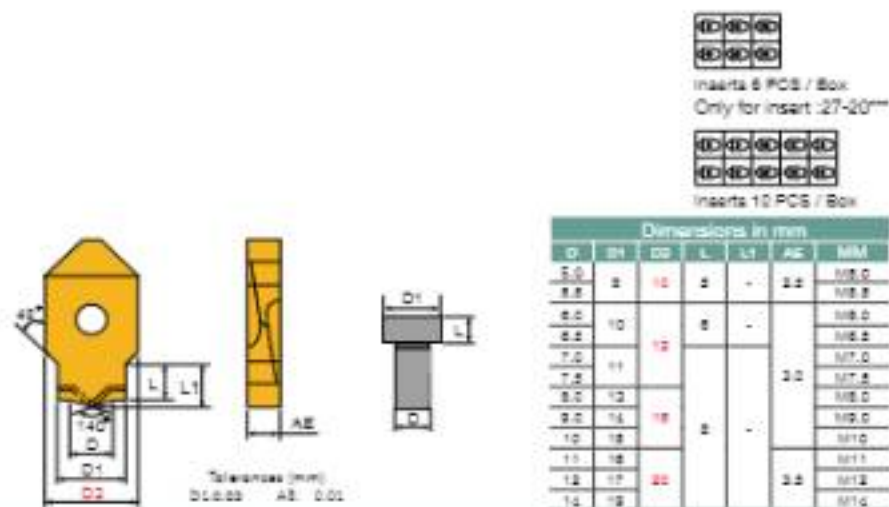
Tolerances (mm)
D1: 0.02 A6: 0.01

Dimensions in mm									
D	D1	D2	L	L1	A6	MM	INCH		
2.6	6.8	8	2.1	2.7	2.0	1/32	1/8		
4.7	8.2	10	2.8	3.2	2.0	1/16	1/4		
6.8	10.4	12	3.2	3.6	2.0	1/8	1/2		
8.9	12.5	14	3.6	4.0	2.0	1/4	3/8		
11.0	14.6	16	4.0	4.4	2.0	3/16	1/2		
13.1	16.7	18	4.4	4.8	2.0	1/8	5/8		
15.2	18.8	20	4.8	5.2	2.0	3/8	1		
17.3	20.9	22	5.2	5.6	2.0	7/16	1 1/8		

Inserts	Order code	Grades										Corresponding shank	
		Cast Iron					Stainless Steel		Uncoated				
		CI 10	CI 15	CI 20	PI	PI	SS 10	SS 15	SS 20	SS 25	SS 30		
	26-0803-E												16-0803-70 16-0803-80
	26-0803-M												
	26-1005-E												16-1005-80 16-1005-100
	26-1005-M												
	26-1208-E												16-1208-80 16-1208-110
	26-1208-M												
	26-1208-E												
	26-1208-M												
	26-1607-E												16-1607-80 16-1607-100 16-1607-120
	26-1607-M												
	26-2010-E												16-2010-80 16-2010-100 16-2010-120
	26-2010-M												
	26-2012-E												16-2012-80 16-2012-100 16-2012-120
	26-2012-M												

- 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. Ex: 26-0805-E, F20

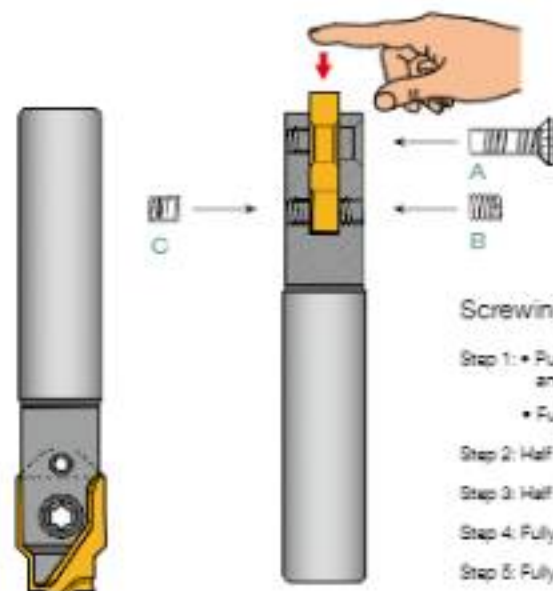
4 In 1 Punch Counter Bore Inserts



Inserts	Order code	Grades										Corresponding shank
		Cast Iron					Steel/Aluminum			Uncoated		
		CI 15	CI 20	CI 25	CI 30	CI 35	SA 15	SA 20	SA 25	SA 30	SA 35	
 	27-1005-M											14-1005-00
	27-1005-H											14-1005-100
	27-1205-M											14-1205-00 14-1205-110
	27-1205-H											
	27-1207-M											
	27-1207-H											
	27-1209-M											14-1209-00
	27-1209-H											14-1209-100
	27-1209-M											14-1209-130
	27-1209-H											
	27-2011-M											14-2011-100
	27-2011-H											14-2011-140

- 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.: 27-2011-M, C350

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



Screwing the Insert

- Put the insert into the slot of shank and press it with the finger
- Fully tighten the screw A first
- Half tighten the screw B on one side
- Half tighten the screw C on other side
- Fully tighten the screw B again
- Fully tighten the screw C again

Standard spare parts

Insert dimension D2 (mm)	Screw A	Screw B/C	Key	Key
5	002808	002808	708F	U010
10	003007	003008	708F	U010
12	003008	003008	710F	U010
16	003510	003508	712F	U010
20	004012	003508	714F	U020

Recommended Cutting Data And Insert Grade

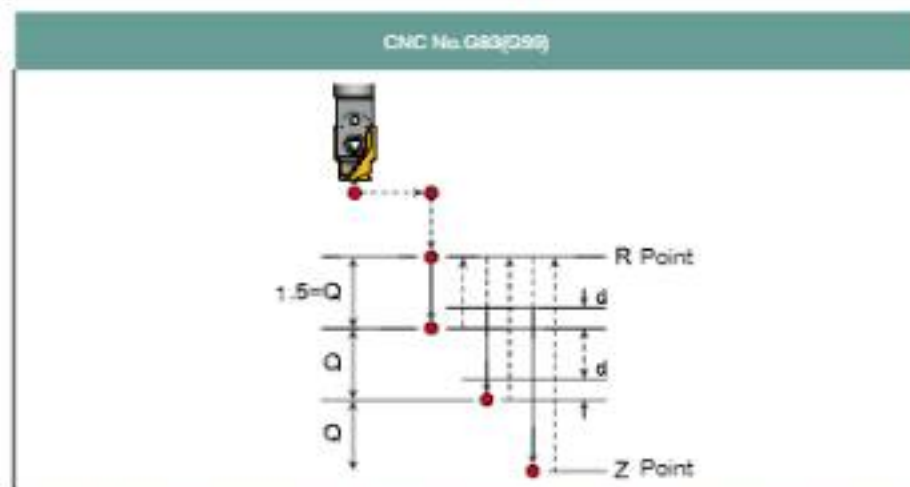
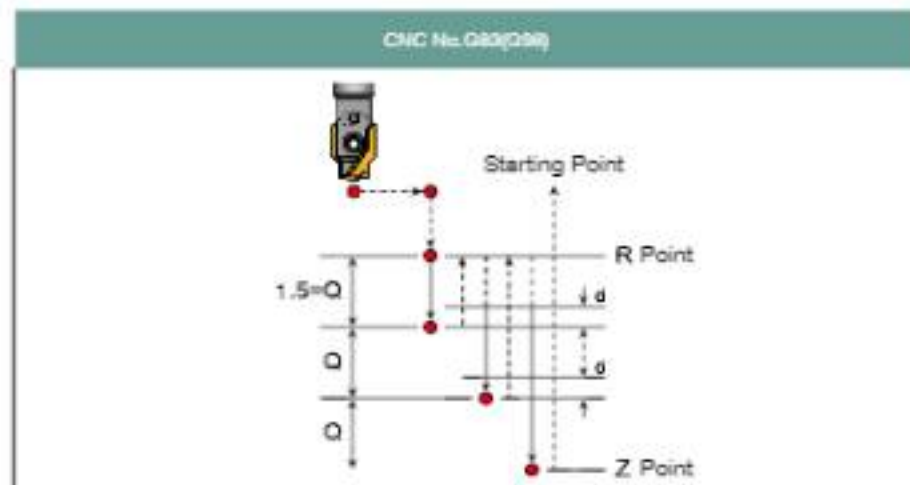
Recommended cutting speed, V_c (m/min), Feed, f_z (mm/tooth). The effective no. of teeth is calculated with 1 flute.

Material group	 Cutting Speed V _{cut} /min	Feed, F _z (mm/ tooth)				Grades	
		140°				M	E
		(D) 8	(D) 10	(D) 12	(D) 16-20		
1-2	50-70	0.08 0.08	0.08 0.08	0.07 0.09	0.07 0.09	G350/G350	-
3	50-70	0.08 0.08	0.08 0.08	0.07 0.09	0.07 0.09	G350/G350	-
4-5-6	40-60	0.06 0.07	0.06 0.07	0.06 0.08	0.06 0.08	G350/G350	-
7	20-30	0.04 0.06	0.04 0.06	0.04 0.07	0.04 0.07	G350	-
8-9	20-40	0.06 0.08	0.06 0.08	0.07 0.08	0.07 0.08	G350	-
10-11	20-40	0.06 0.07	0.06 0.07	0.06 0.08	0.06 0.08	G350	-
12-13	70-80	0.12 0.15	0.12 0.15	0.12 0.15	0.12 0.15	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	0.12 0.13	0.12 0.13	0.11 0.14	0.11 0.14	-	F30

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

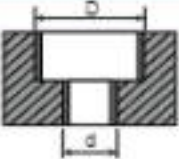
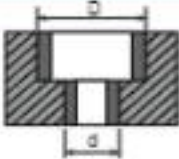
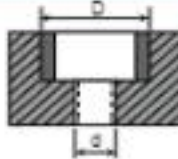
4 In 1 Counter Bore Program Description

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)

Screw Dimensions	Standard (D x d)	Large (D x d)	Screw (D x d)
Dimension			
M1.0	2.1 x 1.0	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
M1.4	2.7 x 1.5	2.8 x 1.6	2.8 x 1.1
M1.6-M1.8	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	4.8 x 2.4	4.9 x 2.6	4.9 x 2.0
M2.5	5.0 x 2.7	5.2 x 2.8	5.0 x 1.9
M2.6-M2.8	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 4.2	8.0 x 4.5	8.0 x 3.3
M5.0	9.3 x 5.2	10.0 x 5.5	10.0 x 4.3
M6.0	10.4 x 6.4	11.0 x 6.6	11.0 x 5.0
M8.0	12.8 x 8.4	13.0 x 9.0	13.0 x 6.6
M10	15.8 x 10.8	16.0 x 11	16.0 x 8.0
M12	19.0 x 13	20.0 x 14	20.0 x 10.0
M14	24.0 x 15	24.0 x 16	-
M16	26.0 x 17	26.0 x 18	-

Machines And Tools Application

Suitable for various kinds of machines



A. Drill machine



B. Milling machine



C. Radial drilling machine



D. Milling machine

INDEXABLE COUNTER BORE



Video

Features

Available in
materials
CNC

Cost
300-500%
DOWN

Combination
type is
available
max. 300mm

Variety of
Machines
Milling / Drilling
/ Reamed drilling

Efficiency
300%
UP

Durability
300%
UP

Product Design

CBK

Counter bore tools application for bolts, nuts & screws

Patent No. ZL 01 2 03413.3



HBM



CBK



CBI

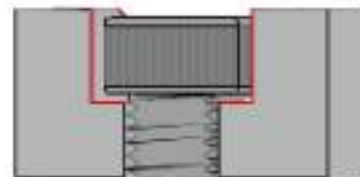


CBK

better cutter tool life
with patented carbide strip

Counterbore

Screw M8~M36



counterbore

counterbore + chamfer

PRODUCT SPECIFICATIONS

Counterbore Toolholders

- Insert P. 247
- Cutting Data P. 247



DIN 974

Order code	Dimensions(mm)									MAX RPM	Insert	Screw	Key
	D	d	D1	L	L1	L2	L3						
CBK-08	14	8.4	10	10	30	35	8	2	0.3	20000	S04T 080308	0025015	T08P
CBK-08S	12	8.8											
CBK-10	16	10.9											
CBK-10S	20	12.4											
CBK-12	20	12.4	12	80	30	37	8	2	0.3	20000	S04T 080308	004007	T18P
CBK-12S	22	12.4											
CBK-14	24	14.9											
CBK-14S	28	15.4											
CBK-16	28	17.4	27	90	30	44	8	2	0.35	17000	S04T 08T	004008	T18P
CBK-16S	27	17.4											

Counterbore Combi Cutters

- Insert P. 247
- Cutting Data P. 247

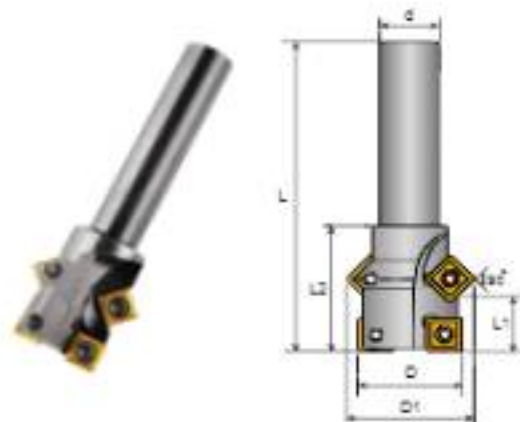


DIN 974

Order code	Dimensions(mm)								MAX RPM	Insert	Screw	Key
	D	d	L	L1	L2	M						
HBM-18	28	17.4	48	8	60	16	2	0.3	17000	S04T08T	004008	T18P
HBM-18S	28	15.4	52		68							
HBM-20	32	21.3	58		68							
HBM-22	38	23.4	80	10	80	16	2	0.3	13000	S04T08T	004011	T18P
HBM-24	40	25.9	80		80							
HBM-26	50	32.9	80		80							
HBM-30	58	38.9	80	10	80	16	2	0.3	10000	S04T08T	004011	T18P
HBM-32	60	40.9										

Counterbore + Chamfer Toolholders

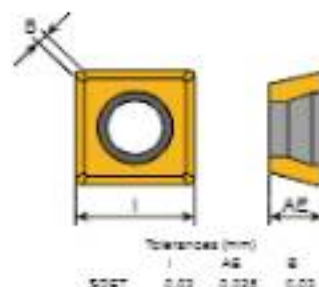
- Insert P. 247
- Cutter Data P. 247



DIN 974-1

Order code	Dimensions(mm)							Z ₀		MAX RPM	Insert	Spline	Key	
	D	d	D1	L	L1	L2								
CG-08	18	10	20.0	85	5	25	4	2	0.2	25000	SDET 060208	CG08045	708P	
CG-10	18		22.5		11									
CG-12	20	12	22.8	70	12	30			0.3	32000				SDET 060208
CG-14	24		24.4		18									
CG-16	28	16	23.6	80	18.8	32			0.35	17000				SDET 060208
CG-18	28		26.6		19.8									
CG-20	32	20	27.6	90	21	40			0.4	16000				SDET 060208
CG-22	38		30.4		22.8									
CG-24	40	25	44.0	100	25	43			0.5	15000				SDET 060208
CG-30	50		51.4		30									
CG-35	55	28	57.4	110	35	50	0.6	14000	SDET 060208					
CG-40	60		63.4		40									

SDET / SEHT Inserts



Inserts 10 PCS / Box

Size	Dimensions in mm		
	L	AE	B
0602	6.0	2.2	1.0
0612	9.0	2.87	1.2

Inserts	Part No.	Grades							
		Carbide					Metal cermet		Uncoated
		M10	Q02	Q03	P01	P02	Q01	Q02	M12
	SDET060208H-M8	●							
	SDET060208H-M	●							

- 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.: SDET060208H-M8, \$100

Recommended Cutting Data and Insert Selection

- Recommended Cutting Speed, Vc (m/min), Feed, fz (mm/tooth) Data Reference

Material group	Cutting Speed Vc(m/min)	Feed, Fz(mm/tooth)		Insert Grade Selection	
		M8 - M12	M14 - M30	M	ME
1-2	40-70	0.08 0.10	0.10 0.12	#100 #250	#100
3	35-60	0.08 0.10	0.08 0.12	#100 #250	#100
4-5-6	30-50	0.08 0.10	0.08 0.10	#100 #250	#100
7	25-50	0.08 0.08	0.08 0.08	#100 #250	#100
12-13	40-70	0.08 0.12	0.10 0.12	#30	#30
14-15	30-50	0.08 0.10	0.10 0.12	#30	#30

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 tool life. Available from dia. 4-110mm.



Video

INDEXABLE CHAMFER KING



Video

Features

Available in
materials



Cost
**300-500%
DOWN**

Combination
type is
available
max. 300mm

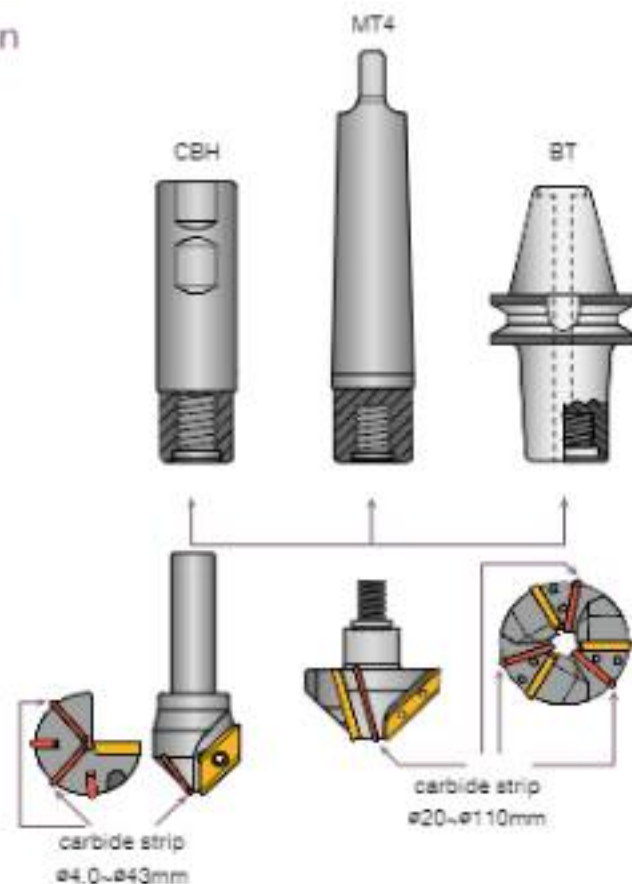
Variety of
Machines
Milling / drilling
/ lathe / electric
hand tool

Efficiency
**300%
LP**

Durability
**500-1000%
LP**

Product Design

CUTTING
RANGE
ø4.0~ø110 mm

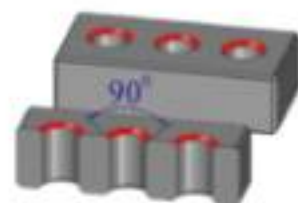


Carbide Strip Cutter With Carbide Insert:

- 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.



Geometries Application



Standard chamfer with 90°



- Excellent Design
- No burrs.



Chamfer cutter with longer shank



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



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

Applicable Machine And Tools



A. Drilling machine



B. Milling machine



C. Radial drilling machine



E. Conventional milling machine

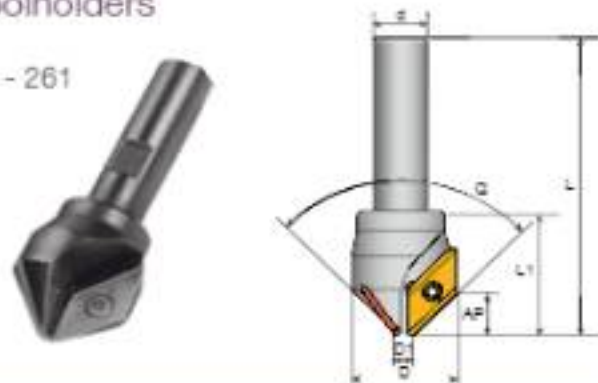


D. Electric Hand Tool

PRODUCT SPECIFICATIONS

Chamfer King Toolholders

- Insert P. 259
- Cutting Data P. 260 - 261



CI

• 60°

Order code	Dimensions(mm)						Q			MAX RPM	Insert	Screw	Key
	D1	D	d	L	AP	L1							
CI-17-60°	7	17	12	65	5.5	27	60°	1	0.2	35000	XDGT120305	C03505	T10P
CI-21-60°	15.5	21	12	75	12	28							

• 90°

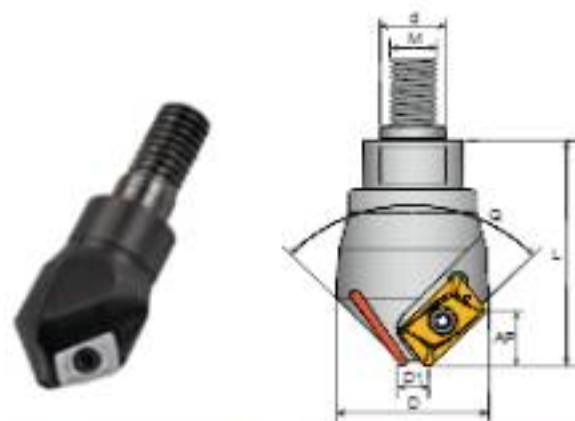
Order code	Dimensions(mm)						Q			MAX RPM	Insert	Screw	Key
	D1	D	d	L	AP	L1							
CI-100	4	10		80	3	12	90°	1	0.1	45000	ADGT080204	C01803	T08P
CI-13-90° L			10	90									
CI-22-90°	5.5	22		85	5	27							
CI-25-90°	15	25	12	75	10	28							

• 120°

Order code	Dimensions(mm)						Q			MAX RPM	Insert	Screw	Key
	D1	D	d	L	AP	L1							
CI-25-120°	7	25	10	65	5	27	120°	1	0.2	35000	XDGT120305	C03505	T10P
CI-35-120°	11	35	12	75	5	28							

Chamfer King Toolholders

- Combi holders P. 257 - 258
- Insert P. 259
- Cutting Data P. 260 - 261



HCI

• 60°

Order code	Dimensions(mm)						Q			MAX RPM	Insert	Screw	Key
	D1	D	d	L	AP	M							
HCI-17-60°	7	17	12	27	5.5	8	60°	1	0.2	35000	XDGT120305	C03505	T10P
HCI-21-60°	15.5	21	12	45	12	8							

• 90°

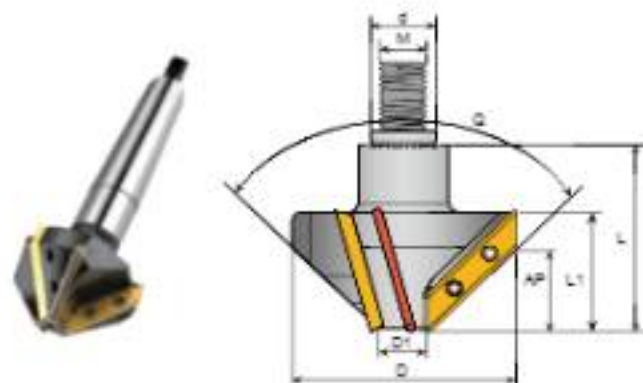
Order code	Dimensions(mm)						Q			MAX RPM	Insert	Screw	Key
	D1	D	d	L	AP	M							
HCI-13-90°	4	10	10	24	3	8	90°	1	0.1	45000	ADGT080204	C01803	T08P
HCI-22-90°	5.5	22	12	27	5	8							
HCI-25-90°	15	25	12	45	10	8							
HCI-35-90°	15	35	12	45	10	8							

• 120°

Order code	Dimensions(mm)						Q			MAX RPM	Insert	Screw	Key
	D1	D	d	L	AP	M							
HCI-25-120°	7	25	12	27	5	8	120°	1	0.2	35000	XDGT120305	C03505	T10P
HCI-35-120°	11	35	12	45	5	8							

Chamfer King Toolholders

- Combi holders P. 257 - 258
- Insert P. 259
- Cutting Data P. 260 - 261

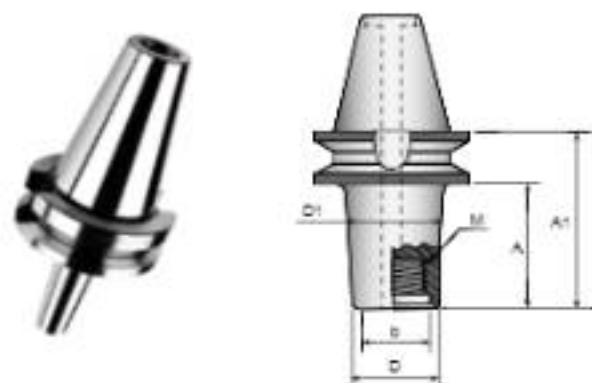


HCI

- 90°

Order code	Dimensions(mm)									MAX RPM	Insert	Screw	Key
	D1	D	d	L	AP	L1	M	Q	R				
HCN75-90°	20	18	30	80	20	41	16	90°	2	1.2	12700	CD4011	718P
HCN110-90°	25	110	30	80	20	41	16	90°	2	2.8	10000	CD4011	718P

BT Arbor (Screw Type)



BT

Order code	Dimensions(mm)					M
	D	A	A1	b	D1	
BT40-2280A	20	22	78	14	28	1/12
BT40-22120A		22	118		21	
BT40-2080A		22	78		28	
BT40-20120A	30	22	118	22	28	1/10
BT40-2080A		22	78		28	
BT40-20120A		22	118		28	
BT50-2280A	20	22	77	14	28	1/12
BT50-22120A		22	117		21	
BT50-2080A		22	77		28	
BT50-20120A	30	22	117	22	28	1/10
BT50-2080A		22	77		28	
BT50-20120A		22	117		28	
BT50-2080A	40	22	77	28	28	1/10
BT50-20120A		22	117		28	
BT50-2080A		22	77		28	
BT50-20120A	50	22	117	28	28	1/20
BT50-2080A		22	77		28	
BT50-20120A		22	117		28	
BT50-2080A	60	22	117	28	28	1/20
BT50-20120A		22	77		28	
BT50-2080A		22	117		28	

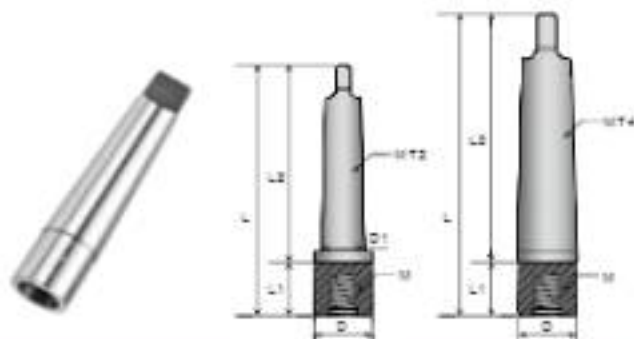
Chamfer King Combi Toolholders

CBH



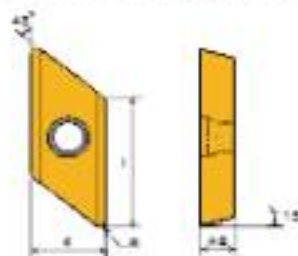
Order code	Dimensions(mm)					
	d	d1	L1	L2	L	M
CBH-1000-100	10	9	80	20	80	1/8
CBH-1211-100	12	11	80		100	
CBH-1211-140			100		120	
CBH-1818-100	18	18	-	-	70	1/8
CBH-1818-120		18	70	20	90	
CBH-1818-150			90	20	120	
CBH-2222-100	22	22	-	-	80	1/8
CBH-2222-140		20	80	20	100	
CBH-2222-200			100	20	180	
CBH-2222-260			170		200	
CBH-2222-300			210	50	280	

MTH



Order code	Dimensions(mm)						
	D	D1	L	L1	L2	M	MT
MTH-2	22	22.55	160	40	100	M18	3
MTH-4	21.5	-	180		120	M18	4

Chamfer King Inserts

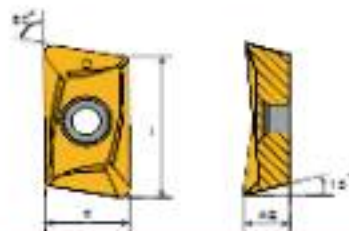


	Tolerances (mm)		
	d	AE	l
XDST12	0.02	0.028	0.02
XDST18	0.02	0.028	0.02
XDST30	0.02	0.028	0.02

Size	Dimensions in mm				
	l	d	AE	Q	Q1
12	12	8.8	2.18	-	-
18	18	10.8	4.78	-	-
30	30	10.8	4.78	-	-

Inserts	Part No .	Grades										
		Coated						normal		Uncoated		
		B10	C10	C15	P10	P15	CE10	CE15		K10	CE	
	XDST12030STR-1/8-0											 Inserts 10 PCS / Box
	XDST18030STR-1/8											
	XDST30030STR-1/8											

+ All Materials



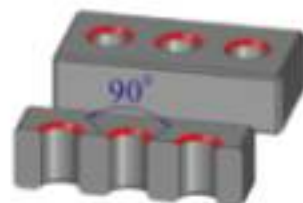
	Tolerances (mm)		
	d	AE	l
XDST	0.02	0.028	

Size	Dimensions in mm		
	d	l	AE
0822	4.08	8.88	2.4

Inserts	Part No.	Grades										
		Coated					normal		Uncoated			
		B10	C80	C10	P10	P10	C10	C10		K10	CE	
	ADGT08020(STR)-1/8-0											
Inserts 10 Pcs / Box												

+ All Materials

TECHNICAL GUIDE



- Cutting data table for chamfering in hole

Dia. of hole (mm)	Material group											
	Steel	Harden steel	Stainless steel	Cast iron			Aluminum			Titanium alloy Ti based superalloy Co-based superalloy		
	1 2 3 4 5 6	7	8 9 10 11	12 13 14 15			16 17 18			19 20 21 22		
	Vc20 m/min Fe0.1 mm/tooth			Vc15 m/min Fe0.12 mm/tooth			Vc10 m/min Fe0.15 mm/tooth			Vc20 m/min Fe0.1 mm/tooth		
	ap mm		Feed mm/min	ap mm		Feed mm/min	ap mm		Feed mm/min	ap mm		Feed mm/min
	1 Tooth	2 Teeth		1 Tooth	2 Teeth		1 Tooth	2 Teeth		1 Tooth	2 Teeth	
5-7	100	100	-	70	90	-	200	200	-	70	90	-
8-10	70	71	-	50	60	-	150	200	-	50	60	-
11-12	50	52	-	30	40	-	120	150	-	30	40	-
13-15	40	42	-	20	30	-	100	120	-	20	30	-
16-18	30	30	-	20	20	-	80	100	-	20	20	-
19-22	30	30	21	20	20	32	70	110	20	20	20	60
23-25	20	27	30	10	20	70	60	100	200	10	20	60
26-28	20	24	71	10	21	60	50	80	200	10	10	60
29-31	210	21	50	10	10	57	50	80	220	10	10	60
32-34	180	18	50	10	17	50	40	70	210	10	14	40
35-37	170	18	50	10	18	48	40	60	190	10	10	40
38-40	160	18	40	10	16	44	40	60	180	10	10	37
41-43	150	-	40	110	-	41	30	-	170	110	-	36
44-46	140	-	40	100	-	38	20	-	160	100	-	35
47-49	130	-	40	100	-	38	20	-	150	100	-	30
50-52	120	-	37	90	-	34	210	-	140	90	-	28
53-55	110	-	38	80	-	30	200	-	130	80	-	27
56-58	110	-	34	80	-	30	200	-	120	80	-	25

Technical Guide

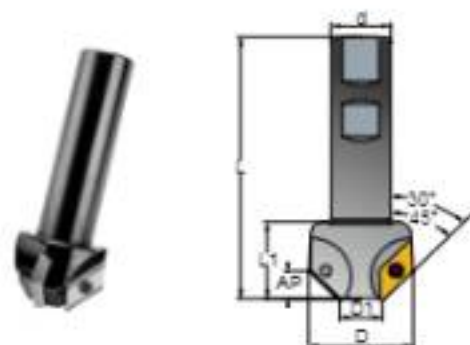
Dia. of hole (mm)	Material group											
	Steel	Harden steel	Stainless steel	Cast iron			Aluminum			Titanium alloy Ti based superalloy Co-based superalloy		
	1 2 3 4 5 6	7	8 9 10 11	12 13 14 15			16 17 18			19 20 21 22		
	Vc20 m/min Fe0.1 mm/tooth			Vc15 m/min Fe0.12 mm/tooth			Vc10 m/min Fe0.15 mm/tooth			Vc20 m/min Fe0.1 mm/tooth		
	ap mm		Feed mm/min	ap mm		Feed mm/min	ap mm		Feed mm/min	ap mm		Feed mm/min
	1 Tooth	2 Teeth		1 Tooth	2 Teeth		1 Tooth	2 Teeth		1 Tooth	2 Teeth	
59-61	100	-	30	80	-	30	200	-	110	80	-	24
62-64	100	-	30	70	-	27	200	-	110	70	-	22
65-67	90	-	30	70	-	25	200	-	100	70	-	22
68-70	80	-	30	60	-	25	200	-	100	60	-	21
71-73	80	-	27	60	-	24	220	-	100	60	-	20
74-76	80	-	25	60	-	22	210	-	90	60	-	19
77-79	80	-	24	60	-	-	200	-	90	60	-	18
80-82	70	-	24	50	-	-	190	-	80	50	-	18
83-85	70	-	22	50	-	-	180	-	80	50	-	17
86-88	70	-	20	50	-	-	180	-	80	50	-	16
89-91	70	-	21	50	-	-	170	-	80	50	-	16
92-94	60	-	21	50	-	-	170	-	70	50	-	15
95-97	60	-	20	50	-	-	160	-	70	50	-	15
98-100	60	-	19	40	-	-	160	-	70	40	-	14
101-103	60	-	18	40	-	-	150	-	70	40	-	14
104-106	60	-	18	40	-	-	150	-	60	40	-	14
107-109	50	-	18	40	-	-	140	-	60	40	-	13
110	50	-	17	40	-	-	140	-	60	40	-	13

DOVETAIL & CHAMFER MILLING CUTTERS SERIES



Chamfer Milling Cutter

- Insert P. 277
- Cutting Data P. 277 - 278



C

Order code	Dimensions(mm)								MAX RPM	Insert	Screw	Key
	D	2R	d	L	AP	L1						
C-1120-20°	24	10	20	80	10	30	2	0.2	28000	XDGT1203	003508	T10P
C-1820-20°	20	18	28	88	14	38		0.8	28000	XDGT1804	004011	T18P
C-2880-30°	80	38	38	130	33	55	3	1.1	8800	XDGT4004		T18P
C-1125-45°	28	10	20	80	8	30	2	0.2	35000	XDGT1203	003508	T10P
C-1765-45°	60	17	25	95	11	35	3	0.2	28000	XDGT1804	004011	T18P
C-1770-45°	70	17	25	120	28	80		1.1	8800	XDGT4004		T18P

Features



Cost
100~300%
DOWN

Variety of
Machines
CNC Milling machine

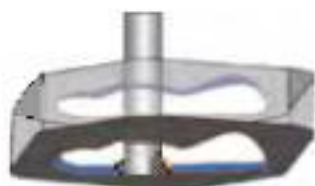
Efficiency
300%
UP

Durability
300%
UP

Product Application

Type of operation

1



2



3



4



Two-Side Chamfer Milling Cutter

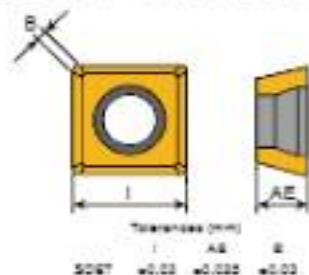
- Insert P. 266
- Cutting Data P. 266
- Combi Toolholders P. 286 - 289

MC



Order code	Dimensions(mm)								$\frac{C}{K}$	MAX RPM	Insert	Screw	Key
	D	D1	d	L	AP	16							
MC-1215	18	11	12	90	3	-	2	0.15	28000	SD-08	C035018	T08F	
MC-1820	25	19	18	100		-	3	0.25	28000				
MC-2022	22	22	20	100		-	2	0.45	17000				
MC-2245	45	32	22	110	5	-	3	0.7	14000	SB-1375	C035025	T10F	
WMC-12	18	11	11	20	3	5	2	0.15	28000	SD-08	C035018	T08F	
WMC-20	25	19	18	20		5	3	0.2	28000				
WMC-22	22	22	19	20		10	2	0.2	17000				
WMC-45	45	32	31	40	5	15	3	0.5	14000	SB-1375	C035025	T10F	

SDET / SEHT Inserts



Inserts 10 PCS / Box

Size	Dimensions in mm		
	L	AE	B
0603	6.0	2.3	1.0
0803	8.0	2.97	1.2
1203	12.4	3.97	1.5

Inserts	Part No.	Grades									
		Cermet					Metal cement		Uncoated		
		CBT	CBT	CBT	CBT	CBT	CBT	CBT	CBT	CBT	CBT
	SDET060308N-M6	1									
	SDET060308N-M	2									
	SDET060308N-M6	3									
	SDET060308N-M	4									
	SDET060308N-M6	5									
	SDET060308N-M	6									

- 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, ex: SDET060308N-M6, \$100

Recommended Insert Grade

Material Group No.	Recom. feed fz mm/tooth	Insert			
		SDET_M SEHT_M	SDET_ME SEHT_ME		
1	0.08-0.30	CBT06100	CBT06100	-	-
2	0.08-0.15	CBT06100	CBT06100	-	-
3	0.08-0.15	CBT06100	CBT06100	-	-
4	0.08-0.15	CBT06100	CBT06100	-	-
5	0.08-0.15	CBT06100	CBT06100	-	-
6	0.08-0.15	CBT06100	CBT06100	-	-
7	0.08-0.15	CBT06100	CBT06100	-	-
8	0.08-0.15	-	CBT06100	-	-
9	0.07-0.15	-	CBT06100	-	-
10	0.08-0.15	-	CBT06100	-	-
11	0.10-0.30	-	CBT06100	-	-
12	0.10-0.30	-	CBT06100	-	-
13	0.10-0.15	-	CBT06100	-	-
14	0.10-0.15	-	CBT06100	-	-
15	0.08-0.30	-	CBT06100	-	-
16	0.08-0.30	-	CBT06100	-	-
17	0.08-0.10	-	CBT06100	-	-
18	0.08-0.15	-	CBT06100	-	-
19	0.08-0.08	-	CBT06100	-	-
20	0.08-0.08	-	CBT06100	-	-
21	0.08-0.10	-	CBT06100	-	-
22	0.08-0.08	-	CBT06100	-	-

CORNER ROUNDING CUTTER-390 SYSTEM



Patent No.
M473882
M474588
M473881

Patent No.
201310453057.2
201320773997.5

PCT Priority No.
PCT/CN2013/086392



Video

Features

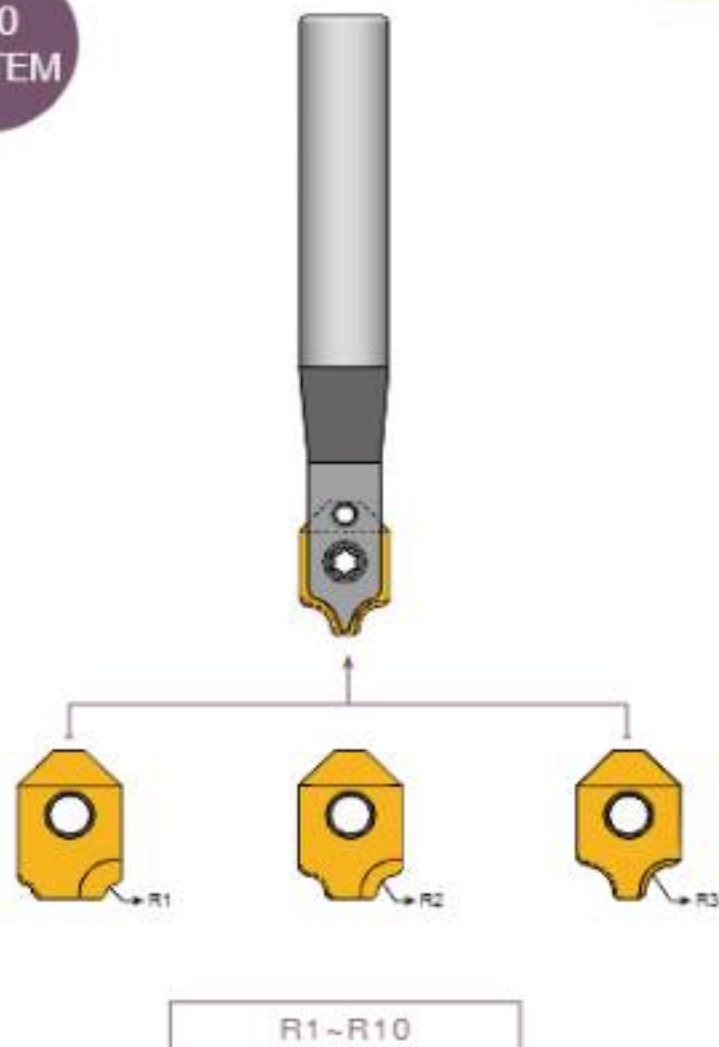
Available in
materials

Cost
300~500%
DOWN

Variety of
Machines
fitting

Efficiency
300%
UP

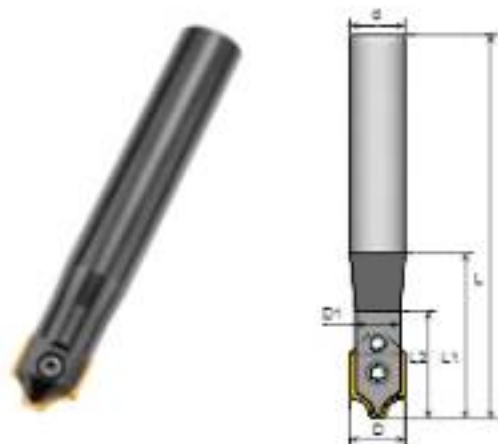
Durability
300%
UP

390
SYSTEM

Indexable Corner Rounding Toolholders (Milling)

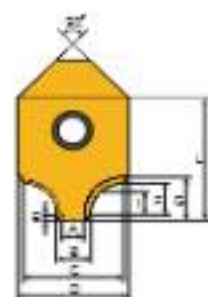
- Insert P. 270
- Cutting Data P. 272

15



Order code	Dimensions(mm)							Insert	Screw	Key		
	D	D1	d	L	L1	L2						
15-1515-100-R1-2	15	14	15	100	30	25	0.25	R1-2	003310 S0004	T102 L02		
15-1515-120-R1-2				120			0.25					
15-1515-100-R5-2				100			0.25	R5-2				
15-1515-120-R5-2				120			0.25					
15-2525-110-R5-2	25	22	25	110	35	30	0.50	R5-2	004317 S0008	T102 L025		
15-2525-140-R5-2				140			0.50					
15-2525-110-R5-10				110			0.50	R5-10				
15-2525-140-R5-10				140			0.50					

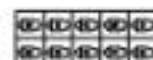
25 Carbide Inserts



Tolerances (mm)
D: 0.05-0.08 AB: 0.01-0.02



Inserts 6 PCS / Box
Only for Insert 25-25***



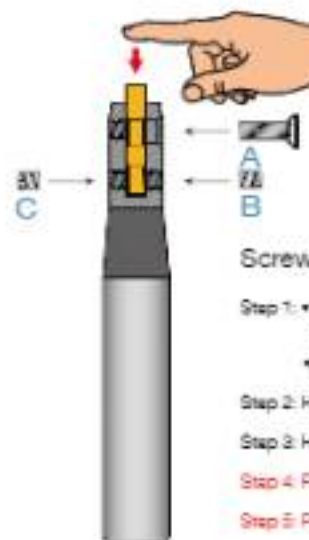
Inserts 10 PCS / Box

Dimensions in mm												
R	A	E	D	D	E	F	G	H	I	L	AB	
1.0	12.0	12.25	15.17	15.25	0.84	0.85	2.33	12.05	1.30			
1.5	11.0	12.25	15.15	15.25	0.87	1.47	2.55	12.15	1.55			
2.0	10.0	11.25		15.24	0.89	1.87	3.25	12.27	2.05			
2.5	9.00	10.51	15.15	15.21	0.97	2.47	3.55	11.74	2.25	21.5	2.5	
3.0	7.94	9.25	15.14	15.22	0.94	3.21	4.39	10.95	2.74			
4.0	6.00	7.25	15.09	15.04	0.87	3.87	5.27	9.55	3.45			
5.0	4.92	5.14	15.04	15.55	0.85	4.99	6.25	8.04	4.17			
6.0	11.2	12.35	24.15	25.21	0.95	5.95	7.15	15.54	4.75			
7.0	9.20	10.25	24.05		0.85	6.85	8.14	14.25	5.45			
8.0	7.05	8.25	24.33	25.15	0.94	7.87	9.13	13.35	6.20	30.0	2.5	
9.0	4.85	5.25	23.95		0.95	8.55	10.15	11.33	6.85			
10.0	3.00	3.75	23.95		0.99	10.5	11.25	9.70	7.55			

Inserts	Part No.	Grades									
		Carbide					Metal ceramic		Uncoated		
		G15	G30	G50	P10	P15	G25	G30	K10	K5	
	25-1503-R1 0-E										
	25-1503-R1 5-E										
	25-1503-R2 0-E										
	25-1503-R2 5-E										
	25-1503-R3 0-E										
	25-1503-R3 5-E										
	25-1503-R4 0-E										
	25-1503-R4 5-E										
	25-2503-R5 0-E										
	25-2503-R7 0-E										
	25-2503-R5 0-E										
	25-2503-R5 0-E										
	25-2503-R10-E										
	25-1503-R1 0-1/2										
	25-1503-R1 5-1/2										
	25-1503-R2 0-1/2										
	25-1503-R2 5-1/2										
	25-1503-R3 0-1/2										
	25-1503-R3 5-1/2										
	25-1503-R4 0-1/2										
	25-1503-R4 5-1/2										
	25-2503-R5 0-1/2										
	25-2503-R7 0-1/2										
	25-2503-R5 0-1/2										
	25-2503-R10-1/2										

☐ 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.: 25-1503-R1 0-E P10

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



Screwing the Insert

- Put the insert into the slot of shank and press it with the finger
- Fully tighten the screw A first
- Half tighten the screw B on one side
- Half tighten the screw C on other side
- Fully tighten the screw B again (important)
- Fully tighten the screw C again (important)

Standard spare parts

Insert dimension (D mm)	Screw A	Screw B/C	Key	Key
15				
25				

Recommended Cutting Data And Insert Grade

Material group No.	Recom. feed ft mm/tooth ae/Do = 10%	Geometry	
		ME	E
1	0.10-0.12	C050	-
2	0.10-0.12	C050	-
3	0.08-0.12	C050	-
4	0.07-0.10	C050	-
5	0.07-0.10	C050	-
6	0.08-0.08	C050	-
7	0.08-0.08	C050	-
8	0.10-0.12	C050	-
9	0.10-0.12	C050	-
10	0.08-0.10	C050	-
11	0.08-0.10	C050	-
12	0.12-0.15	C050	-
13	0.12-0.15	C050	-
14	0.10-0.12	C050	-
15	0.10-0.12	C050	-
16	0.08-0.10	-	F20
17	0.08-0.10	-	F20
18	0.08-0.10	-	F20

* Corner Rounder recommended 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			F20
		0.07	0.10	0.14	
1	-	307	100	187	-
2	-	188	187	150	-
3	-	187	180	128	-
4	-	150	138	130	-
5	-	125	120	109	-
6	-	120	108	97	-
7	-	45	45	-	-
8	-	110	95	85	-
9	-	88	88	76	-
10	-	88	74	64	-
11	-	74	64	55	-
12	-	170	148	128	-
13	-	165	135	115	-
14	-	110	90	82	-
15	-	110	90	-	-
16	-	-	-	-	1000 900 750
17	-	-	-	-	950 900 770
18	-	-	-	-	980 900 770

DOVETAIL MILLING CUTTERS SERIES



Features



PRODUCT SPECIFICATIONS

Dovetails

- Insert P. 277
- Cutting Data P. 277 - 278

Type of operation

1



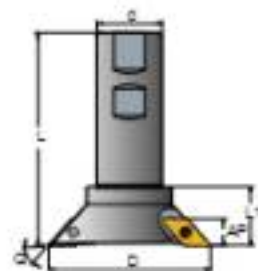
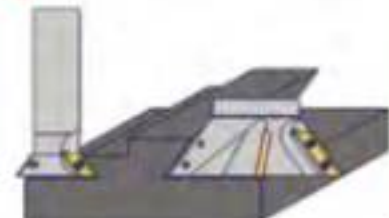
2



3



4



XD

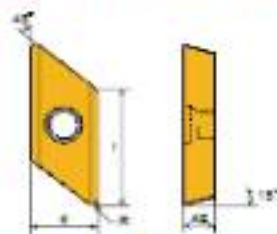
Order code	Dimensions(mm)								MAX RPM	Insert	Screw	Key
	D	d	G	L	A1	L1						
XD2040-80	40	20	80	100	10	20			17000	XDGT 120308	GD2807	T10P
XD2040-88			88		10.8							
XD2040-90			90		11							
XD2260-50	60	30	50	110	14	20			7800	XDGT 190408	GD4011	T10P
XD2260-55			55		15							
XD2260-60			60		16							
XD2280-40	80	35	40	110	14	20			8500	XDGT 190408	GD4011	T10P
XD2280-45			45		15							
XD2280-50			50		16							

Dovetail Milling Cutter

- Insert P. 277
- Cutting Data P. 277 - 278



Recommended Insert Grade



	Tolerance (mm)		
	d	AE	L
XDGT12	0.02	0.028	0.02
XDGT15	0.02	0.028	0.02
XDGT40	0.02	0.028	0.02

Size	Dimensions in mm				
	L	d	AE	Q	Q1
12	12	8.5	2.15	-	-
15	15	10.8	2.75	-	-
40	40	10.8	2.75	-	-

Inserts	Part No .	Grades								 	
		Coated				Uncoated		Uncoated			
		YG8	YG8	YG8	YG8	YG8	YG8	YG8	YG8	YG8	YG8
	XDGT1200R-S										 
	XDGT1200R-ME										
	XDGT1200R-M										
	XDGT1500R-S										 
	XDGT1500R-ME										
	XDGT1500R-M										
	XDGT4000R-S										 
	XDGT4000R-ME										
	XDGT4000R-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. XDGT12000R-S, F20

XDGT Insert Grade Selection

Data reference

Order code	Dimensions(mm)								MAX RPM	Insert	Screw	Key	
	D	D1	d	L	AP	Q							
3XV120-80-22-L	120	80	22.4	55	21	80	L	1.2	8000	XDGT 40000R	C06011	T15P	
3XV120-80-22-L					22	80							
3XV120-80-22-L					23	80							
3XV120-80-27			27		21	80							
3XV120-80-27					22	80							
3XV120-80-27					23	80							

Material Group No.	Recom. feed fz mm/tooth	Insert			
		XDGT ... M	XDGT ... ME	XDGT ... E	
1	0.05-0.25	YG80 Y100	Y100	-	-
2	0.05-0.25	YG80 Y100	Y100	-	-
3	0.05-0.25	YG80 Y100	Y100	-	-
4	0.05-0.25	YG80 Y100	Y100	-	-
5	0.05-0.25	YG80 Y100	Y100	-	-
6	0.05-0.25	YG80 Y100	Y100	-	-
7	0.05-0.15	YG80 Y100	Y100	-	-
8	0.05-0.15	-	Y100	-	-
9	0.07-0.15	-	Y100	-	-
10	0.05-0.15	-	Y100	-	-
11	0.10-0.15	-	Y100	-	-
12	0.10-0.25	-	F20	-	-
13	0.10-0.25	-	F20	-	-
14	0.10-0.25	-	F20	-	-
15	0.05-0.25	-	F20	-	-
16	0.05-0.25	-	-	F20	-
17	0.05-0.25	-	-	F20	-
18	0.05-0.25	-	-	F20	-
19	0.05-0.05	-	Y100	-	-
20	0.05-0.05	-	Y100	-	-
21	0.05-0.05	-	Y100	-	-
22	0.05-0.05	-	Y100	-	-

Recommended Cutting Data

• Recommended Cutting speed, V_c (m/min)

Data reference

Material group No.	Grades						
	R100	C250	F20	CE60	CE	K10	F90
	Feed f_z (mm/tooth)						
	0.08 0.15 0.30	0.08 0.15 0.30	0.08 0.15 0.30				0.08 0.15 0.30
Cutting SPEED, V_c (m/min)							
1	600 180 110	180 180 180	-	-	-	-	-
2	610 182 122	188 182 118	-	-	-	-	-
3	110 188 122	188 118 100	-	-	-	-	-
4	180 180 120	180 180 80	-	-	-	-	-
5	180 110 -	180 80 -	-	-	-	-	-
6	110 80 -	80 70 -	-	-	-	-	-
7	60 50	50 30 -	-	-	-	-	-
8	100 80 70	-	-	-	-	-	-
9	80 70 50	-	-	-	-	-	-
10	70 60 50	-	-	-	-	-	-
11	50 40 -	-	-	-	-	-	-
12	-	-	-	-	-	-	110 100 100
13	-	-	-	-	-	-	100 100 110
14	-	-	-	-	-	-	110 80 -
15	-	-	-	-	-	-	80 70 -
16	-	-	1200 800 780	-	-	-	-
17	-	-	800 800 770	-	-	-	-
18	-	-	1180 800 780	-	-	-	-
19	80 60 -	60 50 -	-	-	-	-	-
20	60 50 -	50 40 -	-	-	-	-	-
21	50 40 -	40 30 -	-	-	-	-	-
22	40 30 -	30 20 -	-	-	-	-	-

• Cutting Data

Data reference

Operations	Ap/Dc	Recom. feed f_z mm/tooth			Speed factor
Full engagement	100%	0.02	0.07	0.12	1.00
Side milling	5%	0.02	0.20	0.24	1.80
	10%	0.04	0.16	0.28	1.80
	20%	0.02	0.09	0.16	1.20
Average chip thickness	-	0.07	0.06	0.08	-

• Type Of Insert

	Style	Length of insert edge mm
	120100	11
	180100	18
	-	-
	-	-

	Style	Length of insert edge mm
	620100	20
	-	-
	-	-
	-	-



ALUMINIUM ALLOY FACE MILLING CUTTER

Features

Available in materials

Cost
150% DOWN

Variety of
Machines
CNC Milling machine

Efficiency
150% UP

Durability
150% UP

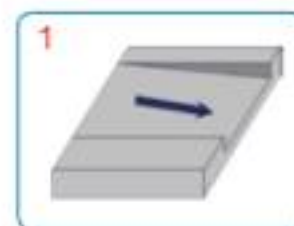
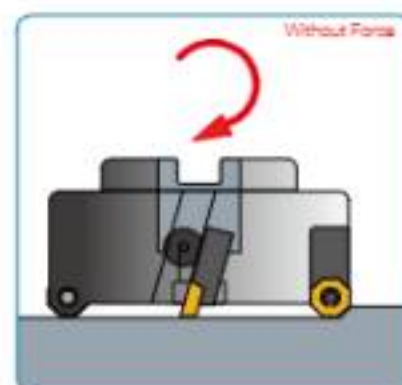
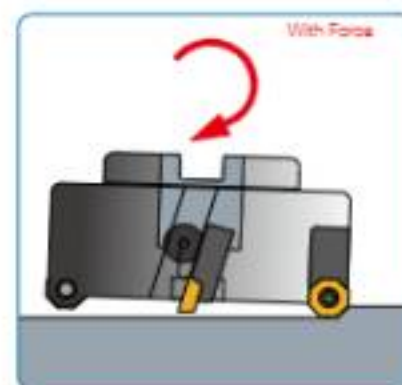
Clamping By A Wedge Centre-Lock Clamping

The Insert Are Held In Position By A Wedge And A Screw Which Clamps The Wedge (Example Shows Milling Cutter With Cassettes)



Surface Finish Ra < 10 µm

The Suggestion For The Octagon Milling Tool



PRODUCT SPECIFICATIONS

Aluminium Alloy Face Milling Cutters

- Insert P. 283
- Cutting Data P. 283 - 284

MO



Order code	Dimensions(mm)							MAX RPM	Insert ODGT	Screw	Key			
	D	D1	#	L	AP									
MO-080R-AL-C-22	80	82	22	80	3	8	0.7	6800	ODGT 0806	ODGT011	712P			
MO-100R-AL-C-27	100	112	27			8	0.9	6100						
MO-125R-AL-C-27	125	127				7	1.5	2800						
MO-160R-AL-C-32	160	172	32	80		8	2.3	3100				ODGT 0806	ODGT011	712P
MO-200R-AL-C-40	200	212	40			10	2.2	2800						
MO-250R-AL-C-40	250	262				12	4.0	2800						
MO-300R-AL-C-40	300	312				14	7.2	2200						

Insert - ODGT

Dimensions in mm		
SIZE	d	l
0806	4.7	12.7

Tolerances ± 0.02 (mm)

Inserts	Part No.	Grades											Insert Sequencing Position (see left after than one right)
		Cermet						Index cement		Uncoated			
		010	015	020	030	010	015	011	01				
	ODGT0806010-E												

- 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. ex: ODGT0806010-E, K10

Standard Spare Parts

For Cutter					
MO-080-300	ODGTAR	ODGT011	SL15	ODGT015	ODGT010

Recommended Insert Grade

Data reference

Material group No.	Recom. feed fz mm/tooth	Insert			
		ODGT05...M	ODGT05...ME	ODGT05...E	
1	-	-	-	-	-
2	-	-	-	-	-
3	-	-	-	-	-
4	-	-	-	-	-
5	-	-	-	-	-
6	-	-	-	-	-
7	-	-	-	-	-
8	-	-	-	-	-
9	-	-	-	-	-
10	-	-	-	-	-
11	-	-	-	-	-
12	-	-	-	-	-
13	-	-	-	-	-
14	-	-	-	-	-
15	-	-	-	-	-
16	-	-	-	-	-
17	0.08-0.12	-	-	K10	-
18	0.08-0.12	-	-	K10	-
19	0.08-0.11	-	-	K10	-
20	-	-	-	-	-
21	-	-	-	-	-
22	-	-	-	-	-

Recommended Cutting Data

• Recommended Cutting speed, V_c (m/min)

Data reference

Material group No.	Grades						
	R100	C250	F20	CE80	CE	K10	F30
	Feed f_z (mm/tooth)						
	Cutting SPEED, V_c (m/min)						
1	+	+	+	+	+	+	+
2	+	+	+	+	+	+	+
3	+	+	+	+	+	+	+
4	+	+	+	+	+	+	+
5	+	+	+	+	+	+	+
6	+	+	+	+	+	+	+
7	+	+	+	+	+	+	+
8	+	+	+	+	+	+	+
9	+	+	+	+	+	+	+
10	+	+	+	+	+	+	+
11	+	+	+	+	+	+	+
12	+	+	+	+	+	+	+
13	+	+	+	+	+	+	+
14	+	+	+	+	+	+	+
15	+	+	+	+	+	+	+
16	+	+	+	+	+	1000 1000 800	+
17	+	+	+	+	+	1000 800 700	+
18	+	+	+	+	+	1000 1000 800	+
19	+	+	+	+	+	+	+
20	+	+	+	+	+	+	+
21	+	+	+	+	+	+	+
22	+	+	+	+	+	+	+

• Surface Finish

Data reference

Type of Insert	Feed mm / Rev	Surface
ODGT050028	1.5	<1.5

• Type Of Insert

Insert Size	Insert Qty
	Insert Qty
4	2000
5	1000
6	500
7	250
8	125

COMBIMASTER TOOLHOLDERS



Features

Maximum
Run Out At
3XD Is 5µm

Cost
**150%
DOWN**

Variety of
Machines
CNC Milling machine

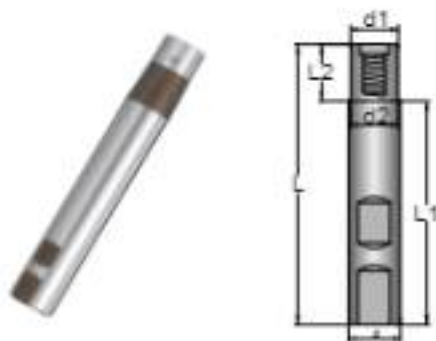
Efficiency
**150%
UP**

Durability
**150%
UP**

PRODUCT SPECIFICATIONS

Combimaster Toolholders

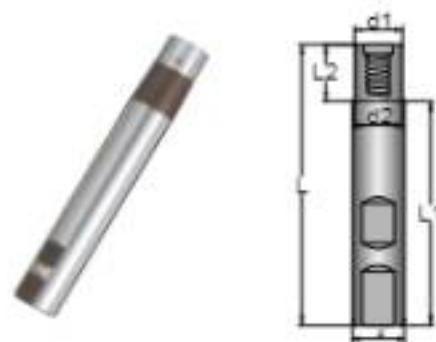
CBH



Order code	Dimensions(mm)						
	d	d1	d2	L1	L2	L	M
CBH-1010-80	10.0	10	10	-	-	80	M8
CBH-1009-100		9	9	80	20	80	
CBH-1212-80	12.0	12	12	-	-	80	
CBH-1211-100		11	11	80	20	80	
CBH-1211-120				80		100	
CBH-1211-140				100		120	
CBH-1616-100	16.0	16	16	-	-	70	M8
CBH-1616-120		16	16	70	20	80	
CBH-1616-180				80	25	120	

Combimaster Toolholders

CBH



Order code	Dimensions(mm)						
	d	d1	d2	L1	L2	L	M
CBH-2020-100	20	20	20	-	-	70	M12
CBH-2019-120		19	19	70	20	80	
CBH-2019-180				80	25	120	
CBH-2525-120	25	25	25	70	20	80	M12
CBH-2525-170				100	20	120	
CBH-2525-210				140		170	
CBH-2525-240				170		200	
CBH-2525-110		25	25	-	-	70	
CBH-3232-100	32	32	32	-	-	80	M18
CBH-3232-140				80	20	100	
CBH-3232-200				120	20	180	
CBH-3232-240				170		200	
CBH-3232-300				210	20	260	
CBH-4240-200	42	40	40	120	20	180	M18
CBH-50.849-210	50.8	49	49	120	20	180	M20
CBH-50.849-280				170	20	200	

Combimaster Toolholders

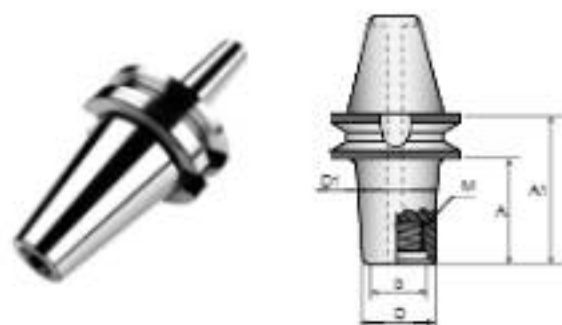
CBH



Order code	Dimensions(mm)						
	d	d1	d2	L1	L	M	Q
CBH-1208-120	12	8	11.8	40	100	M8	2 *
CBH-1811-120	18	11	15.2		60		130
CBH-1811-150							
CBH-2015-180	20	15	19.8	80	130	M8	2 *
CBH-2018-180				70	180		
CBH-2018-200				90	200		
CBH-2519-180	25	19	24	70	180	M10	2 *
CBH-2519-220				90	190		
CBH-3220-200	32	22	28	75	180	M12	2 *
CBH-3220-240			21.8	80	200		
CBH-3230-240		30	39	110	260	M16	2 *
CBH-3220-280							
CBH-4232-280	42	32	41.8	120	300	M18	2 *
CBH-4232-340				130	320		
CBH-4232-410				150	370		

Face Milling Arbor

BT



Order code	Dimensions(mm)					
	D	A	A1	b	D1	M
BT40-2280A	22	82	78	16	28	M12
BT40-22120A		92	118		21	
BT40-3080A	30	82	78	22	32	M16
BT40-30120A		92	118		36	
BT40-4080A	40	82	78	28	45	M18
BT40-40120A		92	118		48	
BT50-2280A	22	42	77	16	28	M12
BT50-22120A		52	117		21	
BT50-3080A	30	42	77	22	32	M16
BT50-30120A		52	117		36	
BT50-4080A	40	42	77	28	45	M18
BT50-40120A		52	117		48	
BT50-5080A	50	42	77	38	55	M20
BT50-50120A		52	117		58	
BT50-50180A		122	127		61	

- RELEVANT INFORMATION

APPENDIX

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.



Troubleshooting

	Problem	Possible cause	Solution
	Flank wear	1. Cutting speed too high 2. Feed/ra 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 increase RPM 2. Use the tangential cut 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	1. Use a coated carbide grade 2. Use correct cutting data 3. Use oil mist or cutting fluid
Excessive wear causing short tool life	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	1. Increase feed/ra 2. Reduce speed 3. Down milling 4. Breakout chips effectively using compressed air 5. Check recommended cutting data

	Problem	Possible cause	Solution
Vibration	Vibration	1. Weak fixturing 2. Tool overhang too long 3. Feed rate is too high	1. Use correct cutting data 2. Check clamping of workplace and tool 3. Minimize overhang 4. Check tool holder run out 5. Choose a tool with fewer teeth 6. Increase number of infeed passes 7. Use up-milling in finishing
	Insufficient thread accuracy	Tool deflection	Reduce feed rate Secure a "zero" cut, and make sure the tool is correct center line

Material Classification Group

• Steel

mat. group No.	Workpiece materials into material groups						
	Wc- Nr	EN	EN-Nr	DIN	BS	AFNOR	JIS
1	1.1133	G 28 Mn2	1.1133	20 Mn2	120 M 19	20 M 2	SMn2 20
	1.1135	010	1.0301	20 Mn2	120 M 20		SMn 1 W; SMn 2
	1.0301			0 10	045 M 10	AF 34 C 10; X10 10	0 10 C
	1.0401	C22-N	1.0402	0 12	080 M 12	AF 37 C 12; X12 12	
	1.0402	C22-N	1.0403	0 22	080 A 20	0 20	
	1.0403	0 108	1.1121	0 22	070 M 20	AF 22 C 20	0 22 C
	1.1121	0 12R	1.1121	0k 12	045 A 10	X10 10	0 10 C; 0 9 CR
	1.1141	0 22R	1.1141	0k 12	080 M 12	X10 12; X12 12	0 12 C; 0 12 CR
	1.1141			0k 22	080 A 22	X122; X12 12	0 22 C; 0 22 CR
	1.1142	S235JR	1.0037	0k 22	080 A 22	X10 22	0 22 C
	1.0037	S235JR22	1.0038	0k 22			
	1.0118	S275J2H	1.0143	0k 27-2	080-02 0	0 20-2; 0 20-4	0 20 C
	1.0143	S275J2H	1.0144	0k 27-2	080-02 0	0 20-2; 0 20-4	0 20 C
	1.0144	S275J2H	1.0144	0k 27-2	080-02 0	0 20-2; 0 20-4	0 20 C
2	1.0721	12 S 20	1.0721	12 S 20	212 M 12	12 S 1	12 S 1
	1.0722		1.0722	12 S 20	212 M 12	12 S 1	
	1.0723	12 S 20	1.0723	12 S 20	212 M 12	12 S 1	12 S 1
	1.0724	12 S 20	1.0724	12 S 20	212 M 12	12 S 1	12 S 1
	1.0725	12 S 20	1.0725	12 S 20	212 M 12	12 S 1	12 S 1
	1.0726	12 S 20	1.0726	12 S 20	212 M 12	12 S 1	12 S 1
	1.0727	12 S 20	1.0727	12 S 20	212 M 12	12 S 1	12 S 1
	1.0728	12 S 20	1.0728	12 S 20	212 M 12	12 S 1	12 S 1
	1.0729	12 S 20	1.0729	12 S 20	212 M 12	12 S 1	12 S 1
	1.0730	12 S 20	1.0730	12 S 20	212 M 12	12 S 1	12 S 1
	1.0731	12 S 20	1.0731	12 S 20	212 M 12	12 S 1	12 S 1
	1.0732	12 S 20	1.0732	12 S 20	212 M 12	12 S 1	12 S 1
	1.0733	12 S 20	1.0733	12 S 20	212 M 12	12 S 1	12 S 1
	1.0734	12 S 20	1.0734	12 S 20	212 M 12	12 S 1	12 S 1
	1.0735	12 S 20	1.0735	12 S 20	212 M 12	12 S 1	12 S 1
3	1.0801	G 28 Mn2	1.0801	20 Mn2	120 M 19	20 M 2	SMn2 20
	1.0802		1.0802	20 Mn2	120 M 20		SMn 1 W; SMn 2
	1.0803	0 10	1.0803	0 10	045 M 10	AF 34 C 10; X10 10	0 10 C
	1.0804	0 12	1.0804	0 12	080 M 12	AF 37 C 12; X12 12	
	1.0805	0 22	1.0805	0 22	080 A 20	0 20	
	1.0806	0 108	1.0806	0 22	070 M 20	AF 22 C 20	0 22 C
	1.0807	0 12R	1.0807	0k 12	045 A 10	X10 10	0 10 C; 0 9 CR
	1.0808	0 22R	1.0808	0k 12	080 M 12	X10 12; X12 12	0 12 C; 0 12 CR
	1.0809	0 22R	1.0809	0k 22	080 A 22	X122; X12 12	0 22 C; 0 22 CR
	1.0810	S235JR	1.0037	0k 22	080 A 22	X10 22	0 22 C
	1.0037	S235JR22	1.0038	0k 22			
	1.0118	S275J2H	1.0143	0k 27-2	080-02 0	0 20-2; 0 20-4	0 20 C
	1.0143	S275J2H	1.0144	0k 27-2	080-02 0	0 20-2; 0 20-4	0 20 C
	1.0144	S275J2H	1.0144	0k 27-2	080-02 0	0 20-2; 0 20-4	0 20 C
	1.0145	S275J2H	1.0145	0k 27-2	080-02 0	0 20-2; 0 20-4	0 20 C
	1.0146	S275J2H	1.0146	0k 27-2	080-02 0	0 20-2; 0 20-4	0 20 C
4	1.0901	G 28 Mn2	1.0901	20 Mn2	120 M 19	20 M 2	SMn2 20
	1.0902		1.0902	20 Mn2	120 M 20		SMn 1 W; SMn 2
	1.0903	0 10	1.0903	0 10	045 M 10	AF 34 C 10; X10 10	0 10 C
	1.0904	0 12	1.0904	0 12	080 M 12	AF 37 C 12; X12 12	
	1.0905	0 22	1.0905	0 22	080 A 20	0 20	
	1.0906	0 108	1.0906	0 22	070 M 20	AF 22 C 20	0 22 C
	1.0907	0 12R	1.0907	0k 12	045 A 10	X10 10	0 10 C; 0 9 CR
	1.0908	0 22R	1.0908	0k 12	080 M 12	X10 12; X12 12	0 12 C; 0 12 CR
	1.0909	0 22R	1.0909	0k 22	080 A 22	X122; X12 12	0 22 C; 0 22 CR
	1.0910	S235JR	1.0037	0k 22	080 A 22	X10 22	0 22 C
	1.0037	S235JR22	1.0038	0k 22			
	1.0118	S275J2H	1.0143	0k 27-2	080-02 0	0 20-2; 0 20-4	0 20 C
	1.0143	S275J2H	1.0144	0k 27-2	080-02 0	0 20-2; 0 20-4	0 20 C
	1.0144	S275J2H	1.0144	0k 27-2	080-02 0	0 20-2; 0 20-4	0 20 C
	1.0145	S275J2H	1.0145	0k 27-2	080-02 0	0 20-2; 0 20-4	0 20 C
	1.0146	S275J2H	1.0146	0k 27-2	080-02 0	0 20-2; 0 20-4	0 20 C

• Steel

mat. group No.	Workpiece materials into material groups						
	UN	SS	AISI/ASTM	UNS	Condition	Misc. Brands	Structure
1	0 22 Mn 2		1022; 1010	010220			
	0 10		1010	010100			
	0 12 C 18	1200	1012	010110			
	0 20 C 21	1430	1020	010200			
	0 22		1022	010220			
	0 10	1200	1010	010100			
	12 C 18	1270	1012	010110			
	0 20		1020	010200			
	0 22		1022	010220			
	Re 300 S	1211	A 303 S 30				
	Re 300 S 30	1212; 1213	A 303 S 30				
	Re 300 S 30	1412	A 303 S 30				
	Re 300 S 30	1413; 1414	A 303 S 30				
	0 10 S 20		1100				
	0 10 S 20		11 L 00				
2	0 10 S 20	1822	1100	011000			
	0 10 S 20	1827	1100	011000			
	0 10 S 20	1870	1100	011000			
	0 10 S 20		1212	010120			
	0 10 S 20	1812	1212	010120			
	0 10 S 20		1218	010180			
	0 10 S 20	1914	12 L 12	010120			
	0 10 S 20	1908	12 L 12	010120			
	14 Mn 2		A 300-LR S				
	12 Mn 2	0100	1200	010200			
			1020	010200			
			1022	010220			
			1010	010100			
			1012	010110			
			1020	010200			
3	0 22	1880	1020	010200			
	0 40		1040				
	0 48	1880	1048	010480			
			1049				
			1050				
	0 28	1872	1028	010280			
	0 40		1040				
			1080				
	0 80		1080				
	Re 810 S; 0 10	2172; 2122	1088				
	Re 800	1888	1088				
			2018				
	14 Mn 2	2018	A 303 S 30				
	18 NiCr 11		2018				
	12 MnCr 6		2018				
4	18 MnCr 6		2018				
	18 MnCr 6	2012	A 303 S 30				
	14 MnCr 6	2018	A 303 S 30				
	18 MnCr 6	2011	A 303 S 30				
			2011				
	20 NiCr 8		2011				
	20 NiCr 8		2011				
	20 NiCr 8		2011				
	20 NiCr 8		2011				
	20 NiCr 8		2011				
	20 NiCr 8		2011				
	20 NiCr 8		2011				
	20 NiCr 8		2011				
	20 NiCr 8		2011				
	20 NiCr 8		2011				

* Steel

mat. group No.	Workpiece materials into material groups						
	W- Nr	EN	EN-Nr	DIN	BS	AFNOR	JIS
1.7222	20 NiCrMo5 2.2	1.7222	21 NiCrMo 2	900 M 20	20 NCD 2	5NCD 220 (H)	
1.7271			22 CrMo5 2.2				
1.7218	22 CrMo 4	1.7218	22 CrMo 4	1717 205 110	22 CD 4.5	50Cr20, 50Cr40	
1.7225			22 NiCr 4				
1.7226			22 NiCrMo 4				
1.7230	22 Cr 4	1.7230	22 Cr 4	920 A 20			
1.8512			22 NiCrMo 4			5NCD 431	
1.7107			22 CrMoV 8				
1.8500			22 CrMo 8	922 M 20	22 CD 8	5NCD 828	
1.8519	21 CrMoV 8	1.8519	21 CrMoV 8		22 CDV 12		
1.7228			21 NiCr 12	922 M 21	22 NCD 11		
1.7230			22 Cr 8			50Cr 420 (H)	
1.7231			22 CrMo 12	722 M 22	22 CD 12	50M 420,	
1.7233	24 Cr 4	1.7233	24 Cr 4	920 A 22	22 CD 4	50Cr12	
1.7220	24 CrMo 4	1.7220	24 CrMo 4	708 A 27	24 CD 4		
1.8520			24 CrMo 4	708 A 27	24 CD 4		
1.8511			24 NiCr 10				
1.8514	25CrNiMo5 2.2		25 CrNiMo 5	918 M 40	25 NCD 5		
1.8728			25 NiCr 10		25 NCD 11		
1.8710			25 NiCr 8	940 A 28	25 NCD 8		
1.7236			27 Cr 6	920 A 28	28 CD 6		
1.8122			27 NiCrMo 6				
1.7203	28 Cr 2	1.7203	28 Cr 2		28 CD 2		
1.8120			28 NiCrMo 6				
1.8522			28 CrMoV 12 8	927 M 28			
1.8211			60 CrNiMo 7				
1.8212			60 CrNiMo5 8 8				
1.8729			60 CrNiMo 8			50Cr 440 (H)	
1.7229	61 Cr 6	1.7229	61 Cr 6	920 M 40	62 CD 6	50M 440	
1.7227			61 CrMo 6	708 M 40	62 CD 6 TS	50Cr 440	
1.7245			62 Cr 6	920 A 40	62 CD 6 TS	50M 440 (H)	
1.7225	62 CrMo 6	1.7225	62 CrMo 6	708 M 40	62 CD 6		
1.7251			62 CrV 8				
1.8220			62 NiCrV 7				
1.8550			63 CrMo 6				
1.8551			64 Cr 2				
1.7208			65 Cr 2		62 CD 2		
1.8121			65 NiCrMo 6			50M 445 (H)	
1.8555			65 CrMo 6			SUP 10	
1.7229			65 CrMo 6	708 A 47			
1.8129	65 CrV 6	1.8129	65 CrV 6	725 A 50	65 CDV 6		
1.8131	65 NiCrSi 6	1.8131	65 NiCrSi 6			SUP 9(H)	
1.8141			63 NiCrSi 6				
1.7178	65 Cr 3	1.7178	65 Cr 3	927 A 60	65 CD 3		
1.8504	65 SiCr 7	1.7100	65 Si 7	920 A 53	65 S 7	SUP 7	
1.8102			65 SiCr 8		65 S 7		
1.8501			65 SiCr 7				
1.8101			65 SiMnCr 6				
1.7220			65 CrV		73 42		
1.8520			65 CrV			SKT	
1.8501	65CrNi	1.8501	65 Cr	920 A 65	65 CD 55		
1.7140			65 CrV		73 52		
1.7144			65 CrV				
1.8520			65 CrV				
1.8520			65 CrV				
1.7150	65 Cr W	1.7150	65 CrW	927 A 6		5NCD 2, 5NCD 3	
1.8528			65 CrV		71 80, 71 80	5NCD 2	
1.8528			65 CrV		71 80	5NCD 3	
1.8528			65 CrV		73 80	5 45 C	
1.7121	65 Cr 5	1.7121	65 Cr 5	920 M 48	70 CD 42	5 55 C	
1.7221	65 Cr 6	1.7221	65 Cr 6	920 A 62	70 CD 60		
1.7221	65 Cr 6	1.7221	65 Cr 6	920 A 67	70 CD 60		
1.7248	65 Cr 8	1.7248	65 Cr 8	920 A 78	70 CD 78		
1.8129			65-80 CrV 4				
1.8500	6 228	1.8500	65 Cr 2	920-922, 920	6 80-2	5NCD 88	

* Steel

Workpiece materials into material groups							
UNI	SS	AISI/ASTM	UNS	Condition	Msp. Brands	Structure	Form
20 NiCrMo 2	2005	9220	922170				
22 CrMo 4 (H)	2225	4130	921300				
22 NiCrMo 2							
22 CrMo 12	2240						
24 Cr 4 (H)		9130	921320				
25 CrMo 6	2224	4130, 4137	921300				
25 CrMo 6	2224	4138	7 81800				
25 NiCrMo 6 (H)							
25 NiCr 8		9040	925400				
25 Cr 6		9130					
25 Cr 2							
25 CrMoV 12 8							
		9 20					
		9 20-8					
		9 20-11					
61 Cr 6		9140	921400				
61 CrMo 6	2246	4142, 4140	921420				
62 Cr 6	2246 7	9140					
62 CrMo 6	2246	4142, 4140	921400				
65 Cr 2		9045					
		9045					
61 CrV 6	2230	4150	921470				
		9150	4-81800				
65 Cr 3	2253	9155	921520				
65 Si 8	2080, 2080	9255					
65 SiCr 8		9255					
65 Cr		1080	910800				
65 Cr W		901	772301				
65 Cr W		W 105					
65 Cr		1875	910420				
65 Cr	1889, 1878	1080	910840				
65 Cr	1770	1070	910700				
65 Cr	1774, 1778	1078, 1080	910780				
		91804					
65 Cr, 65 Cr-2							

• Steel

mat. group No.	Workpiece materials into material groups						
	W-Nr	EN	EN-Nr	DIN	BS	AFNOR	JIS
4	1.4308	X 12 Cr 13	1.4308	X 10 Cr 13	410 S 21	2 12 C 13	SUS 410
	1.4734	X 10 CrAl 13	1.4734	X 10 CrAl 13	2H 12	2 10 C 13	SUS 405
	1.4752	X 10 CrAl 24	1.4752	X 10 CrAl 24		2 10 CrAl 24	SUS 403
	1.4309	X 12 Cr 13	1.4309	X 12 Cr 13	410 S 21		SUS 410
	1.4104	X 14 CrNiS 17	1.4104	X 12 CrNiS 17	411 S 29	2 12 Cr 17	SUS 430 F
	1.4305	X 12 CrS 13	1.4305	X 12 CrS 13	418 S 21	2 12 Cr 13	SUS 418
	1.4306	X 12 Cr 13	1.4306	X 15 Cr 13	420 S 29	2 12 C 13	SUS 410 J 1
	1.4331	X 2 CrNiTi18 2	1.4331	X 2 CrNiTi18 2			
	1.4331	X 2 CrNiTi18 2	1.4331	X 2 CrNiTi18 2			
	1.4303	X 2 CrNi 13	1.4303	X 2 CrNi 13			
	1.4313	X 3 CrNiMo 13 3	1.4313	X 2 CrNi 13 4	422 C 11	2 3 Cr 13 4	SUS 422
	1.4312	X 3 CrTi 12	1.4312	X 2 CrTi 12	428 S 19	2 3 Cr 12	SUS 428
	1.4300	X 8 Cr 12	1.4300	X 8 Cr 12	423 S 17	2 8 C 12	SUS 423
	1.4318	X 8 Cr 17	1.4318	X 8 Cr 17	430 S 18	2 8 C 17	SUS 430
	1.4302	X 8 CrAl 12	1.4302	X 8 CrAl 12	428 S 17	2 8 CrAl 12	SUS 428
	1.4341	X 8 CrMo 4	1.4341	X 8 CrMo 4			
	1.4310	X 8 CrTi 17	1.4310	X 8 CrTi 17		2 8 Cr 17	SUS 430 LR
	1.4311	X 2 CrNi 17	1.4311	X 8 CrNi 17		2 8 CrNi 17	SUS 430 LR
5	1.7330	12 CrNiS 9 10	1.7330	12 CrNiS 9 10	1201-822 Cr 21 12	12 Cr 9 10	
	1.2355	100 Cr 6	1.2355	100 Cr 6	534 A 28	100 C 6	SUJ 2
	1.2310			100 NiCrMoV 4	80 1	90 NiCrMoV 3	SUS 2
	1.2333			100 V 1	8W 2	Y1 100 V	SUS 42
	1.2319	108 WCr 8	1.2319	108 WCr 8		108 WCr 12	SUS 21
	1.2310	107 CrV 2	1.2310	118 CrV 2		100 C 2	
	1.2318			120 WCr 4	8R 1	110 WCr 20	
	1.7738	14 CrNiMo 9 8	1.7738	14 CrNiMo 9 8		20 CrNi 3.27	
	1.2350			14 NiCr 18			
	1.7709			21 CrNiMo 8 7			
	1.8748			22 NiCrMo 14 8	820 M 21	28 NiCr 14	
	1.8804	24 CrAl 8	1.8804	24 CrAl 8			
	1.8807			24 CrAlMo 8	820 M 21	22 CrAl 8.12	
	1.8880	24 CrAlMo 7	1.8880	24 CrAlMo 7		24 CrAlMo 7	
	1.8808			24 CrAlS 8			
	1.8882	24 CrNiMo 8	1.8882	24 CrNiMo 8	817 M 40	28 NiCr 8	SNiCr 447
	1.8848			40 NiCrMo 2 2	211-Type 7	40 NiCr 2	SNiCr 240
	1.8888			40 NiCrMo 8	211-Type 8		SNiCr 439
	1.8809	41 CrNiMo 7 10	1.8809	41 CrNiMo 7	820 M 29	40 CrAl 8.12	SACM 845
	1.2342			48 WCrV 7	8S 1		
	1.2721			80 NiCr 12			
	1.8181			88 CrV 4			
	1.2828			80 NiSiCr 4			
	1.2850			80 WCrV 7		55 WCr 20	
	1.7103			87 SiCr 3			
	1.2108			90 CrSi 8			
	1.1273			90 NiMo 4			
	1.2842	90 NiCrMoV 8	1.2842	90 NiCrMoV 8	90 2	90 NiCr 8	90 NiCrMoV 8 KU
	1.1545	O 105U	1.1545	O 105 W1		Y1 105	
	1.1815			O 105 W2		Y1 105	SK 3
	1.1834			O 110 W			
	1.1883			O 125 W		Y2 120	SK 3
	1.1873			O 125 W		Y2 140	SK 1
	1.1274	O 100S	1.1274	Ok 101	880 A 30		SUP 4
	1.2387			95-34 CoCrNiMoV 18 12			
	1.2392			95-34 CrNiMoV 2 1			
	1.2306			95-34 CrNiMoV 2 1			
	1.4749	X 18 CrNi 28	1.4749	X 18 CrNi 28		2 18 C 28	
	1.2704			X 18 NiCrMo 4			
	1.4331	X 20 Cr 13	1.4331	X 20 Cr 13	430 S 27	2 20 C 13	SUS 430 J1
	1.4335	X 20 CrNiMoV 12 1	1.4335	X 20 CrNiMoV 12 1			
	1.4337	X 20 CrNi 17 2	1.4337	X 20 CrNi 17 2	431 S 28	2 12 Cr 18 02	SUS 431
	1.4333	X 22 CrNiMoV 12 1	1.4333	X 22 CrNiMoV 12 1	782	2 21 CrV 12	
	1.4336	X 20 Cr 13	1.4336	X 20 Cr 13	430 S 45	2 20 C 13	SUS 430 J 2
	1.2316	X 28 CrNi 18	1.2316	X 28 CrNi 17		2 28 Cr 17	
	1.4319	X 4 CrNiMo 18 2	1.4319	X 4 CrNiMo 18 2		2 4 CrNi 18 02 01	
	1.4331	X 28 Cr 13	1.4331	X 40 Cr 13	(430 S 48)	2 40 C 13	SUS 430

• Steel

Workpiece materials into material groups							
UNI	SS	AISI/ASTM	UNS	Condition	Misc.Brands	Structure	Form
X 12 Cr 13	3302	410; CA-15	S41000			Material	
X 10 CrAl 13		405	S40500			Perlite	
X 10 Cr 28		408	S40800			Perlite	
	3302	410 S	S41000			Material	
X 10 CrS 17	3303	430 F	S43000			Perlite	
X 12 CrS 13	3305	418	S41800			Material	
			J81201			Material	
	3328	444				Perlite	
	3336	444				Perlite	
	308		S40877			Perlite	
X 8 CrNi 13 04	3388		S41800			Material	
X 8 CrTi 12		428 L	S42800			Material	
X 8 Cr 13	3321	402	S41000			Perlite	
X 8 Cr 17	3330	430	S43000			Perlite	
X 8 CrNi 12		408	S40800			Perlite	
X 8 CrTi 17		430 Ti	S43008			Perlite	
X 8 CrNi 17		430 Ti8				Perlite	
12 CrNiS 9 10	3218	A 122-R22	J 21880				
100 Cr 6	3288	52100	521888				
88 NiCrMoV 3 KU	3162	521	T21821				
102 V 2 KU		W 210	T 72202				
107 WCr 8 KU							
107 CrV 2 KU		L2	T81822				
112 W 4 KU							
24 CrAlMo 7		A 288 Cl. D	K 22845				
			K 22840				
			K 22745				
28 NiCrMo 8 (WV)	3241	4360					
40 NiCrMo 2 (WV)		8740	887400				
41 CrNiMo 7	3262	A 288 Cl. A	K 24088				
48 WCrV 8 KU	3710	51	T61901				
55 WCrV 8 KU							
90 NiCrMoV 8 KU		52	T21822				
O 100 KU	1080	W 110					
O 100 KU							
O 120 KU		W 112					
O 140 KU	1070	1085	G10850				
X 20 Cr 13	3303	430	S43000			Perlite	
	3303	430	S43000			Material	
X 18 CrNi 18	3331-03	431	S43300			Material	
X 22 CrNiMo 12 1	3317		S42100			Material	
X 20 Cr 13	3304	430	J81123			Material	
X 28 CrNi 18 1 KU		432					
	3337						
X 40 Cr 13	3304.3314	435	S43380			Material	

- **Signal**

[illegible]

Hardened steel

T	1.3601	X 120 Mn 12	1.3601	X 120 Mn 12	GW 10	Z 120 M 12	SC MnH 1
---	--------	-------------	--------	-------------	-------	------------	----------

Stainless steel

2	1.4308	X 8 Drive 18 9	1.4308	X 10 Drive 18 9	303 9 31	2 10 Clr 18 08	SUS 303
	1.4310	X 8 Drive 18 9	1.4310	X 12 Drive 17 7	301 31	2 10 Clr 17 27	SUS 301
	1.4300	X 12 Drive 18 9	1.4300	X 12 Drive 18 9	303 9 38	2 10 Clr 18 9	SUS 303
	1.4308	X 8 Drive 18 10	1.4308	X 8 Drive 18 10	307 9 31		
	1.4301	X 8 Drive 18 9	1.4301	X 8 Drive 18 10	304 31	2 8 Clr 18 09	SUS 304
	1.4302	X 8 Drive 18 11	1.4302	X 8 Drive 18 11	304 31	2 8 Clr 18 09	SUS 304 H
	1.4303	X 8 Drive 18 11	1.4303	X 8 Drive 18 12	306 3 19	2 8 Clr 18 11 RF	
	1.4300	X 8 Drive 18 10	1.4300	X 8 Drive 18 10	307 9 31	2 8 Drive 18 10	SUS 307
3	1.4302	X 8 Drive 18 11 2	1.4302	X 10 Drive 18 12	316 0 17	2 8 Drive 17 12	SUS 316
	1.4308	X 12 Drive 20 21	1.4308	X 12 Drive 20 21	310 9 36	2 10 Clr 20 20	SUS 310, SUS 310 S
	1.4301	X 8 Drive 18 10	1.4301	X 12 Drive 18 9	301 9 31	2 8 Clr 18 10	SUS 301
	1.4302	X 12 Drive 18 3	1.4302	X 12 Drive 18 3		2 8 Drive 18 10	
	1.4305	X 15 Drive 20 12	1.4305	X 15 Drive 20 12	308 9 36	2 17 Clr 20 12	SUS 308
	1.4305	X 8 Drive 18 11	1.4305	X 8 Drive 18 11	304 3 12	2 8 Clr 18 10	SUS 304 L
	1.4304	X 8 Drive 17 12 3	1.4304	X 8 Drive 17 12 3	316 9 11	2 8 Clr 17 12, 03	SUS 316 L
	1.4303	X 8 Drive 18 10 3	1.4303	X 8 Drive 18 10 3	316 9 12	2 8 Clr 17 12	SUS 18, SUS 316 L
	1.4308	X 8 Drive 18 10 4	1.4308	X 8 Drive 18 10 4	317 9 12	2 8 Clr 18 10 4	SUS 317 L

- Steel

Workpiece materials into material groups							
UNI	SS	ANSI/ASTM	UNS	Condition	Misc. Brands	Structure	Form
X 42 Drive 12 8 42 NEMA 12 7	2204	304 H/V 2 307				Variable Variable	
X 80 Drive 20 X 80 12	2207	443 A 304 H/V 8 443 B	36000 36008 36003	sol. treated		Variable Variable	
		302 L8	70100				
WS 10-0-10			T12015 T12001 T12005				
WS 15-0-1		T15	T12001				
WS 15-1-10		T1	T12005				
WS 15-1-1-8		T8	T12006				
WS 2-0-1-8		M2	T11047				
WS 1-0-1		M21/M1	T11007				
WS 3-0-2	2702	M7	T11020				
WS 3-3-2		M22/M24	T11022				
WS 5-0-2	2722	M2					
WS 5-0-2-8	2722	M22	T11022				
WS 5-0-3		M2 D12	T11023				
WS 7-0-2-8		M2	T11047			Variable	
X 100 Drive 5 1 KU	2280	A2	36004				
X 100 Drive 17		443 C	73000				
X 125 Drive 12 1 KU		D2					
X 125 Drive 12 KU	2210						
X 210 Dr 12 KU		15 NAB 205	73005				
X 210 Drive 12 1 KU	2212	D2	73010				
X25 WCH 5 2 KU			73021				
X25 WCH 9 3 KU		H21	73010				
30 Drive 12 12 KU		H10	73011				
307 Drive 5 1 KU		H11	73012				
X 60 Drive 5 1 1 KU	2242	H12					

Hardwood vinyl

14-03	A-128 Grade A					
-------	---------------	--	--	--	--	--

Stainless steel

X 10 On/Off 10 00	2248	202	220200			Authentic	
X 12 On/Off 17 07	22271	201	220100			Authentic	
	2227	202	220200			Authentic	
X 6 On/Off 10 11	2223	208	220800			Authentic	
X 2 On/Off 10 11	2223	200, 204 W	220400			Authentic	
X 2 On/Off 10 10 RW	2223	204 W	220400			Authentic	
X 7 On/Off 10 10	2223	200, 202	220200			Authentic	
X 6 On/Off 10 11	2228	207	220700			Authentic	
X 6 On/Off 17 12	2227	218	220200			Authentic	
X 6 On/Off 20 20	2227	210 B	220100			Authentic	
X 6 On/Off 10 11		221, 221 W	220700			Authentic	
	2252	207 W	220900			Authentic	
	2252	208	220400			Authentic	
X 2 On/Off 10 11	2248	200 L	220500			Authentic	
X 2 On/Off 17 12 2	2223	210 L	220600			Authentic	
X 2 On/Off 17 12 2	2227	210 L	220700			Authentic	
X 2 On/Off 10 10		217 L				Authentic	

- **Stainless steel**

mat. group No.	Workpiece materials into material groups						
	W- Nr	EN	EN-Nr	DIN	BS	AFNOR	JIS
2	1.4311	X 2 CrNi 18 10	1.4311	X 2 CrNi 18 11	304 S 32	2 2 Cr 18, 10 Ac	SUS 304 LH
	1.4308	X 2 CrNiMo 17 12 2	1.4308	X 2 CrNiMo 17 12 3	316 S 33	2 2 CrNi 18,12,03	SUS 316
	1.4308	X 2 CrNi 18 10	1.4308	X 2 CrNi 18 9	304 S 10	2 2 Cr 18, 10 Ni	SUS 312
	1.4308	X 2 CrNiMo 17 12 2	1.4308	X 2 CrNiMo 17 12 3	316 S 11	2 2 CrNiMo 17,12	SUS 316 Ti
	1.4371	X 8 CrNiTiAl 17 12 2	1.4371	X 8 CrNiTiAl 17 12 2	322 S 21	2 8 CrNiTi 17,12	SUS 316 Ti
18	1.4561	X 15 CrNiSi 25 20	1.4561	X 5 CrNiSi 25 20	214 S 25	2 15 Cr 15,25,20	SUS 310
	1.4521	X 5 CrNiSi 17 12 2	1.4521	X 5 CrNiSi 18 10	216 S 21	2 15 CrNi 17,11,1	SUS 316
11	1.4567	X 1 CrNiMo 20 18 7	1.4567	X 1 CrNiMo 20 18 7	X1 CrNiMo 20 18 7		
	1.4563	X 1 NiCrMoCu 31 27 4	1.4563	X 1 NiCrMoCu 31 27 4			
	1.4576	X 10 NiCrTi 32 20	1.4576	X 10 NiCrTi 32 20	2 10 Ni 32 21	Incoloy 800	INCF 800
	1.4586	X 12 NiCrSi 25 16	1.4586	X 12 NiCrSi 25 16	NA 17	2 12 NiCrSi 25,16	SUS 330
	1.4610	X 2 CrNiMo 25 7 4	1.4610	X 2 CrNiMo 25 7 4		2 2 CrNi 25,07 Ac	
	1.4587	X 2 CrNiMoCu 25 5 2	1.4587	X 2 CrNiMoCu 25 5 2			
	1.4591	X 2 CrNiMoCuNi 25 7 4	1.4591	X 2 CrNiMoCuNi 25 7 4		2 2 CrNi 25,05 Ac	
	1.4608	X 2 CrNiMo 17 11 2	1.4608	X 2 CrNiMo 17 12 2	316 S 81	2 2 CrNi 17,12 Ac	SUS 316 LH
	1.4629	X 2 CrNiMo 17 12 2	1.4629	X 2 CrNiMo 17 12 2	316 S 82	2 2 CrNi 17,12 Ac	SUS 316 LH
	1.4629	X 2 CrNiMo 17 12 2	1.4629	X 2 CrNiMo 17 12 2	316 S 82	2 2 CrNi 17,12 Ac	SUS 316 LH
	1.4682	X 2 CrNiMo 22 8 2	1.4682	X 2 CrNiMo 22 8	322 S 18	2 2 CrNi 22,08 Ac	SUS 321J2
	1.4682	X 2 CrNiMo 22 8	1.4682	X 2 CrNiMo 22 8	316 S 18	2 2 CrNi 22,08 Ac	SUS 309 J 2L
	1.4682	X 1 CrNiMo 25 22 9	1.4682	X 2 CrNiMo 25 22 7			
	1.4262	X 2 CrNi 22 6	1.4262	X 2 CrNi 22 6			
	1.4529	X 2 NiCrMoCu 25 20 5	1.4529	X 2 NiCrMoCu 25 20 5	304 S 13		
	1.4529	X 1 NiCrMoCu 25 20 5	1.4529	X 2 NiCrMoCu 25 20 5		2 2 NiCrCu 25 20	
	1.4510	X 4 CrNiCuMo 18 4	1.4510	X 4 CrNiCuMo 18 4			
1.4580	X 2 CrNiMo 27 5 2	1.4580	X 4 CrNiMo 27 5 2		2 4 CrNiMo 18,4 Ni		
1.4513	X 2 CrNiCuMo 18 4	1.4513	X 3 CrNiCuMo 17 4		2 3 CrNi 22,7 Ac	SUS 329 J 1	
					2 8 CrNi 17 4	SUS 316S 6	

Cast iron

12	0.0100	W-GJL-100	0.0100	GG-10	Grade 100	PS 100 D	PC 100
	0.0150	W-GJL-150	0.0150	GG-15	Grade 150	PS 150 D	PC 150
	0.0200	W-GJL-200-22	0.0200	GG-20-2	Grade 200-22	PS 270-17	PC 250-22L
	0.0300	W-GJL-300-18	0.0300	GG-30	Grade 300-18	PS 300-18	PC 300-18L
	0.0400	W-GJL-400-15	0.0400	GG-40-3	Grade 270-17	PS 370-17	PC 300-17L
13	0.0500	W-GJL-500-10	0.0500	GG-50-10	Grade 500-10	PS 500-10	PC 500-10L
	0.0600	W-GJL-600-8	0.0600	GG-60-8	Grade 600-8	PS 600-8	PC 600-8L
	0.0700	W-GJL-700-7	0.0700	GG-70	Grade 700-7	PS 700-7	PC 700-7L
	0.0800	W-GJL-800-6	0.0800	GG-80	Grade 800-6	PS 800-6	PC 800-6L
	0.0900	W-GJL-900-5	0.0900	GG-90	Grade 900-5	PS 900-5	PC 900-5L
14	0.0100	W-GJL-100	0.0100	GG-10	Grade 100	PS 100 D	PC 100
	0.0150	W-GJL-150	0.0150	GG-15	Grade 150	PS 150 D	PC 150
	0.0200	W-GJL-200-7	0.0200	GG-20	Grade 200-7	PS 200-7	PC 200-7L
	0.0300	W-GJL-300-3	0.0300	GG-30	Grade 300-3	PS 300-3	PC 300-3L
	0.0400	W-GJL-400-2	0.0400	GG-40	Grade 400-2	PS 400-2	PC 400-2L
15	0.0500	W-GJL-500-2	0.0500	GG-50	Grade 500-2	PS 500-2	PC 500-2L
	0.0600	W-GJL-600-2	0.0600	GG-60	Grade 600-2	PS 600-2	PC 600-2L
	0.0700	W-GJL-700-2	0.0700	GG-70	Grade 700-2	PS 700-2	PC 700-2L
	0.0800	W-GJL-800-2	0.0800	GG-80	Grade 800-2	PS 800-2	PC 800-2L
	0.0900	W-GJL-900-2	0.0900	GG-90	Grade 900-2	PS 900-2	PC 900-2L
16	0.0100	W-GJL-100	0.0100	GG-10	Grade 100	PS 100 D	PC 100
	0.0150	W-GJL-150	0.0150	GG-15	Grade 150	PS 150 D	PC 150
	0.0200	W-GJL-200-2	0.0200	GG-20	Grade 200-2	PS 200-2	PC 200-2L
	0.0300	W-GJL-300-2	0.0300	GG-30	Grade 300-2	PS 300-2	PC 300-2L
	0.0400	W-GJL-400-2	0.0400	GG-40	Grade 400-2	PS 400-2	PC 400-2L
17	0.0500	W-GJL-500-2	0.0500	GG-50	Grade 500-2	PS 500-2	PC 500-2L
	0.0600	W-GJL-600-2	0.0600	GG-60	Grade 600-2	PS 600-2	PC 600-2L
	0.0700	W-GJL-700-2	0.0700	GG-70	Grade 700-2	PS 700-2	PC 700-2L
	0.0800	W-GJL-800-2	0.0800	GG-80	Grade 800-2	PS 800-2	PC 800-2L
	0.0900	W-GJL-900-2	0.0900	GG-90	Grade 900-2	PS 900-2	PC 900-2L
18	0.0100	W-GJL-100	0.0100	GG-10	Grade 100	PS 100 D	PC 100
	0.0150	W-GJL-150	0.0150	GG-15	Grade 150	PS 150 D	PC 150
	0.0200	W-GJL-200-2	0.0200	GG-20	Grade 200-2	PS 200-2	PC 200-2L
	0.0300	W-GJL-300-2	0.0300	GG-30	Grade 300-2	PS 300-2	PC 300-2L
	0.0400	W-GJL-400-2	0.0400	GG-40	Grade 400-2	PS 400-2	PC 400-2L
19	0.0500	W-GJL-500-2	0.0500	GG-50	Grade 500-2	PS 500-2	PC 500-2L
	0.0600	W-GJL-600-2	0.0600	GG-60	Grade 600-2	PS 600-2	PC 600-2L
	0.0700	W-GJL-700-2	0.0700	GG-70	Grade 700-2	PS 700-2	PC 700-2L
	0.0800	W-GJL-800-2	0.0800	GG-80	Grade 800-2	PS 800-2	PC 800-2L
	0.0900	W-GJL-900-2	0.0900	GG-90	Grade 900-2	PS 900-2	PC 900-2L
20	0.0100	W-GJL-100	0.0100	GG-10	Grade 100	PS 100 D	PC 100
	0.0150	W-GJL-150	0.0150	GG-15	Grade 150	PS 150 D	PC

- Stainless steel

Workplace materials into material groups							
UNI	SS	ANSI/ASTM	UNS	Condition	Misc.Brands	Structure	Form
X 2 Drivels 15 11	2271	304 LV	S30403			Austenite	
X 2 Drivels 17 12 2	2262	316	S31600			Austenite	
	2222	306	S30600			Austenite	
X 2 Drivels 17 12		316 Se	S31603			Austenite	
X 2 Drivels 17 12	2220	316 Ti	S31603			Austenite	
X 15 Drivels 22 22		316-310	S31000	316 S 25		Austenite	
X 2 Drivels 17 12	2267	316	S31600	316 S 31		Austenite	
X 1 Drivels 20 18 7	2278		S31250 N08028 N08900 N08330	Sol. treated	284 SAHD Sanico 28 Aloy 800 Incoloy 82	Super austenite Super austenite PW Austenite	
X 2 Drivels 22 P 4	2228	320 F 22 320 F 22	S32700 S32800 S32800 S32700		SAP 2207 Fenatum Zenith 100	Super duplex Super duplex Super duplex	
X 2 Drivels 17 12		316 LV	S 31603			Austenite	
X 2 Drivels 17 12 2	2278	316 LV	S31603			Austenite	
		316 LV	S31603			Austenite	
X 2 Drivels 22 8	2277	320 LV	S31200		SAP 2208	Duplex	
X 2 Drivels 22 8	2277	318	S32100		SAP 2208	Duplex	
	2227	-	S32104		884 SAHD	Super austenite	
	2282	304L	N08904		SAP 2204	Duplex	
	2284	316Ti	N08904			Super austenite	
		316Ti	N08904			Super austenite	
X 2 Drivels 27 2 2	2224	304-12	S 30500	Sol. treated	12-2-PW	PW	
		329	S32900			Duplex	
		330	S31600	Sol. treated	17-2-PW	Super austenite	

Cast *Went*

Q10	Q1 10-00	A48 20 0	F11601			SD	
Q18	Q1 18-00	A48 28 0	F11601			SD	
	Q7 17-18					DC	
Q5 400-10	Q7 17-02	80-60-18	F28000			DC	
Q50 40-17	Q7 17-12	80-60-18	F28000			DC	
Q 35-12	Q8 15-00	A47 32010	F20200			Material	
P 45-08	Q8 22-00	A220 45000	F20130			Material	
P 55-04	Q8 24-00	A220 60000	F20130			Material	
Q30	Q1 30-00	A48 20 0	F12101			SD	
Q38	Q1 38-00	A48 28 0	F12101			SD	
Q5 800-7	Q7 27-00	A808 80-88-8	F28000			DC	
Q5 800-2	Q7 22-02	A478 80-80-02	F20100			DC	
		A438 Type D-2	F40000			Auxiliary	
		A438 Type D-22	F40001			Auxiliary	
	Q7 12-00	-	-			Auxiliary	
	Q8 23-00	A438 Type 2	F41002			Auxiliary	
		A438 Type 20	F41003			Auxiliary	
P85-03	Q8 55-00	A220 70000	F40020			Material	
Q30	Q1 30-00	A48 18 0	F12101			SD	
Q5 700-2	Q7 27-01	A808 100-70-02	F28000			DC	
		A438 Type 1	F41000			Auxiliary	
		A438 Type 1a	F41001			Auxiliary	
P 70-02	Q8 82-00	A220 90001	F28230			Material	
Q38	Q1 38-00	A48 80 0	F12602			SD	
	Q1 40-00	A278 80 0	F41102			SD	
Q5 800-2		A808 120-80-02	F28000			Material	
		A438 Type D-22	F40000			Auxiliary	
		A438 Type D-5	F40005			Auxiliary	
		A438 Type D-3A	F40006			Auxiliary	
		A438 Type D-3	F40003			Auxiliary	
		A438 Type D-5B	F40007			Auxiliary	
		A438 Type D-20i	F40010			Auxiliary	
		Horizontal Spherule	-			Auxiliary	
		A438 Type D-4	F40008			Auxiliary	
		A438 Type 2	F41001			Auxiliary	
		Horizontal	-			Auxiliary	
		A438 Type D-4	-			Auxiliary	

- Non-Ferrous metal

mat. group No.	Workpiece materials into material groups						
	Wt- Nr	EN	EN-Nr	DIN	BS	AFNOR	JIS
16	0.0000	AW-1000	A000	A000	10/1000	A-01000	A1000
	0.0000	AW-1000A	A000A	A000A	10/1000A	A-01000A	A1000A
	0.0010	AW-1010	A001	A001		A-01010	
	0.0000	AW-1000	A000	A000	1A	A-01000	
	0.1000			A000.0.0000.0	0.00	A-000	
	0.1000	AW-2011	A0000Fe	A0000Fe	001.0011	A-0000Fe/0011	A0011
	0.1000	AW-2004	A000Mg1	A000Mg1	014	A-0000.0000	A0017
	0.1000			A000Mg2	0001.00	A-0001	
	0.1000	AW-2014	A0000Mn	A0000Mn	010.0014	A-0000.0014	
	0.0010	AW-2000A	A0001	A0001	001.0000	A-000	
	0.0010			A0001.0		A-001.0	
	0.0011	AW-0001	A000100Cu	A000100Cu	000	(0001)	A0001
	0.0000	AW-0000	A0000.0	A0000.0	(014)	A-000.0000.0000	A0000
	0.0001	AW-0004	A0000.70Mn	A0000.70Mn	001.0004	A-000.0000.0004	A0004
	0.0000	AW-0001	A00000Mn0.0	A00000Mn0.0	001.0001	A-0001	
	0.0001	AW-0004	A00000Mn0.0	A00000Mn0.0		A-0000Mn0.0	
	0.0000	AW-0004	A0000	A0000		A-0001	A0000
	0.0001	AW-0000	A0000.00Mn	A0000.00Mn	000.0000	A-000.0000	
	0.0000	AW-0000	A00000Mn	A00000Mn	(014.0)	A-0000.0000	
	0.0000	AW-0000	A000000.0	A000000.0	(0001.0000)	A-0000.0000	
	0.0010	AW-0000	A000000.7	A000000.7	(010)	A-0000.0000.7	A0000
	0.0010	AW-0000	A000001	A000001	000.0000	A-0000.0.7.0000	
	0.0010			A00000Fe		A-000Fe	
	0.0000	AW-0100	A0000.00Mg0.0	A0000.00Mg0.0	001	A-0000.0.0000	
	0.0000	AW-0000	A0000.00Mg0.0	A0000.00Mg0.0		A-0000.0.0000	
	0.0010	AW-0000	A0001	A0001	00.0100	A-001/0000	A0000
	0.0000	AW-0004	A0001Mg1	A0001Mg1		A-0000.0000	
	0.0000	AW-0000	A0000.0Mg1	A0000.0Mg1	017.0000	A-0000.0000	
	0.0000			A000Mg000.0		A-0000	
	0.0000	AW-0070	A000Mg001.0	A000Mg001.0	0000.00	A-0000.0070	A0070
	0.1001	AD-21100	A000Ti	G-A000Ti			
	0.1071	AD-21000	A000TiMg	G-A000TiMg	001.00	A-0007	
0.0001	AD-01100	A0003	G-A0003		A-007		
0.0001			G-A000000				
0.0001	AD-01000	A000000	G-A0000				
0.0000	AD-01000	A0000	G-A0000	000			
0.0000	AD-01000	A0000	G-A0000				
0.0001	AD-00000	A0000Mg0Fe	G-A0000Mg	000	A-0100		
0.0001	AD-00000		G-A0000Mg	0000	A-010		
0.0011	AD-00000	A000000	G-A000000				
0.0071	AD-00100	A000TiMg	G-A000TiMg	000	A-01000		
0.0001	AD-00000	A000000000	G-A000000				
0.0070	AD-00000	A0000Mg	G-A0000Mg		A-0100		
0.0100			G-A00000000000				
0.0014	M0-P-00	MgA000n	G-MgA000n	MAG-0-111	G-A0-01		
0.0000	M0-01000	MgA000n	G-MgA000n				
0.0010	M0-P-00	MgA000n	G-MgA000n	MAG-0-101	G-A0-01		
0.0010	M0-P-01	MgA000n	G-MgA000n	MAG-0-101	G-A0		
0.0010	M0-01110	MgA000n	G-MgA000n	A00	G-A00		
0.0010	M0-01110	MgA000n	G-MgA000n	MAG0	G-A00		
0.0000			G-MgA000	MAG-0-101	G-A0		
0.0100	M0-00110	MgSe000000	G-MgSe000000	MAG0-00	0001		
0.0100			G-MgSe000000				
17	0.0000	AD-00000	A0000Mg0Cu	G-A0000Mg0Cu			
	0.0000	AD-00000	A0000	00-A0000			
	0.0000	AD-00100	A000100Fe	G-A000100	000		A0010
	0.0000	AD-07100	A000100Fe	G-A000100			A0010
18	0.1000	CU0004A	CuAg0.1	CuAg0.1	CuAg0.4	CuAl0Fe	
	0.0010.01	CU0010A	CU0010Fe	CUAl02Fe	A01	CuAl0Fe	
	0.00300-02	CU00300-02	CUAl02Fe0.02	CUAl01Fe	A02	CuAl01Fe0.02	
	0.00300	CU00300					

- Non-Ferrous metal

Workpiece materials into material groups							
UNI	SS	AISI/ASTM	UNS	Condition	Misc. Brands	Structure	Form
6210			AA1200				
6207			AA1200A				
6208			AA1210A				
6206			AA1200A				
			AA2117				
6209			AA2011				
			AA2017A				
			AA2004				
6206			AA2014				
6108			AA2003A				
			AA2000				
			AA2001				
6120			AA2002				
			AA2004				
6118			AA2042				
6129			AA2754				
			AA2002				
6140			AA2002				
			AA2008				
6102			AA2000				
6104, 6107			AA2008				
6212			AA2002				
			AA2012				
			AA2108				
			AA2008				
6204			AA2102				
			AA2000				
6209			AA2000				
			AA7020				
			AA7022				
			AA7072				
6207		200	A20040				
		2100	A20140				
		2008A					
6183							
6203		200	A13600				
6244		200					
6245			A13900				
6201		A200					
		200.2					
		6410					
			A2218				
6220			A1100A				
			A221A				
			A220A				
6227		6427	A221A				
6228		6442	A221A-B				
			671A				
			680				
			690				
		A413.2					
		A204.0					
		6390.0	AA284				
2012							
2030							
2710		CA202	C11800				
			C90200				
2718		CA202	C60200				

• Non-Ferrous metal

mat. group No.	Workpiece materials into material groups						
	W.- Nr	EN	EN-Nr	DN	BS	AFNOR	JIS
	2.0000	DA1000	DA1000Fe1	DA1000Fe1	DA100	DA100	DA100
	2.0001	DA1001	DA1001Fe2	DA1001Fe2	DA100	DA100	DA100
	2.0002	DA1002	DA1002Fe3	DA1002Fe3	DA100	DA100	DA100
	2.0003	DA1003	DA1003Fe4	DA1003Fe4	DA100	DA100	DA100
	2.0004	DA1004	DA1004Fe5	DA1004Fe5	DA100	DA100	DA100
	2.0005	DA1005	DA1005Fe6	DA1005Fe6	DA100	DA100	DA100
	2.0006	DA1006	DA1006Fe7	DA1006Fe7	DA100	DA100	DA100
	2.0007	DA1007	DA1007Fe8	DA1007Fe8	DA100	DA100	DA100
	2.0008	DA1008	DA1008Fe9	DA1008Fe9	DA100	DA100	DA100
	2.0009	DA1009	DA1009Fe10	DA1009Fe10	DA100	DA100	DA100
	2.0010	DA1010	DA1010Fe11	DA1010Fe11	DA100	DA100	DA100
	2.0011	DA1011	DA1011Fe12	DA1011Fe12	DA100	DA100	DA100
	2.0012	DA1012	DA1012Fe13	DA1012Fe13	DA100	DA100	DA100
	2.0013	DA1013	DA1013Fe14	DA1013Fe14	DA100	DA100	DA100
	2.0014	DA1014	DA1014Fe15	DA1014Fe15	DA100	DA100	DA100
	2.0015	DA1015	DA1015Fe16	DA1015Fe16	DA100	DA100	DA100
	2.0016	DA1016	DA1016Fe17	DA1016Fe17	DA100	DA100	DA100
	2.0017	DA1017	DA1017Fe18	DA1017Fe18	DA100	DA100	DA100
	2.0018	DA1018	DA1018Fe19	DA1018Fe19	DA100	DA100	DA100
	2.0019	DA1019	DA1019Fe20	DA1019Fe20	DA100	DA100	DA100
	2.0020	DA1020	DA1020Fe21	DA1020Fe21	DA100	DA100	DA100
	2.0021	DA1021	DA1021Fe22	DA1021Fe22	DA100	DA100	DA100
	2.0022	DA1022	DA1022Fe23	DA1022Fe23	DA100	DA100	DA100
	2.0023	DA1023	DA1023Fe24	DA1023Fe24	DA100	DA100	DA100
	2.0024	DA1024	DA1024Fe25	DA1024Fe25	DA100	DA100	DA100
	2.0025	DA1025	DA1025Fe26	DA1025Fe26	DA100	DA100	DA100
	2.0026	DA1026	DA1026Fe27	DA1026Fe27	DA100	DA100	DA100
	2.0027	DA1027	DA1027Fe28	DA1027Fe28	DA100	DA100	DA100
	2.0028	DA1028	DA1028Fe29	DA1028Fe29	DA100	DA100	DA100
	2.0029	DA1029	DA1029Fe30	DA1029Fe30	DA100	DA100	DA100
	2.0030	DA1030	DA1030Fe31	DA1030Fe31	DA100	DA100	DA100
	2.0031	DA1031	DA1031Fe32	DA1031Fe32	DA100	DA100	DA100
	2.0032	DA1032	DA1032Fe33	DA1032Fe33	DA100	DA100	DA100
	2.0033	DA1033	DA1033Fe34	DA1033Fe34	DA100	DA100	DA100
	2.0034	DA1034	DA1034Fe35	DA1034Fe35	DA100	DA100	DA100
	2.0035	DA1035	DA1035Fe36	DA1035Fe36	DA100	DA100	DA100
	2.0036	DA1036	DA1036Fe37	DA1036Fe37	DA100	DA100	DA100
	2.0037	DA1037	DA1037Fe38	DA1037Fe38	DA100	DA100	DA100
	2.0038	DA1038	DA1038Fe39	DA1038Fe39	DA100	DA100	DA100
	2.0039	DA1039	DA1039Fe40	DA1039Fe40	DA100	DA100	DA100
	2.0040	DA1040	DA1040Fe41	DA1040Fe41	DA100	DA100	DA100
	2.0041	DA1041	DA1041Fe42	DA1041Fe42	DA100	DA100	DA100
	2.0042	DA1042	DA1042Fe43	DA1042Fe43	DA100	DA100	DA100
	2.0043	DA1043	DA1043Fe44	DA1043Fe44	DA100	DA100	DA100
	2.0044	DA1044	DA1044Fe45	DA1044Fe45	DA100	DA100	DA100
	2.0045	DA1045	DA1045Fe46	DA1045Fe46	DA100	DA100	DA100
	2.0046	DA1046	DA1046Fe47	DA1046Fe47	DA100	DA100	DA100
	2.0047	DA1047	DA1047Fe48	DA1047Fe48	DA100	DA100	DA100
	2.0048	DA1048	DA1048Fe49	DA1048Fe49	DA100	DA100	DA100
	2.0049	DA1049	DA1049Fe50	DA1049Fe50	DA100	DA100	DA100

• Non-Ferrous metal

Workpiece materials into material groups							
UNI	SS	AISI/ASTM	UNS	Condition	Min. Brands	Structure	Form
			DA1000				
			DA1001				
			DA1002				
			DA1003				
			DA1004				
			DA1005				
			DA1006				
			DA1007				
			DA1008				
			DA1009				
			DA1010				
			DA1011				
			DA1012				
			DA1013				
			DA1014				
			DA1015				
			DA1016				
			DA1017				
			DA1018				
			DA1019				
			DA1020				
			DA1021				
			DA1022				
			DA1023				
			DA1024				
			DA1025				
			DA1026				
			DA1027				
			DA1028				
			DA1029				
			DA1030				
			DA1031				
			DA1032				
			DA1033				
			DA1034				
			DA1035				
			DA1036				
			DA1037				
			DA1038				
			DA1039				
			DA1040				
			DA1041				
			DA1042				
			DA1043				
			DA1044				
			DA1045				
			DA1046				
			DA1047				
			DA1048				
			DA1049				

- Heat resistant super alloys / Titanium alloys

Workpiece materials into material groups							
mat. group No.	W- Nr	EN	EN-Nr	ÖN	BS	AFNOR	JIS
21	1.0210	WCr12Fe					
	1.0211						
	1.0220	WCr12SiMn2Ni6					
	1.0221	WCr12SiMn2Ni6					
	1.0222	WFe12SiCr12Ni6					
	1.0223	WCr12Fe12SiMn2Ni6					
	1.0224	WCr12Fe12SiMn2Ni6					
	1.0225	WCr12Fe12SiMn2Ni6					
	1.0226						
	1.0227						
	1.0228						
	1.0229						
	1.0230						
	1.0231	WCr12SiTiAl					
	1.0232						
	1.0233						
	0077	WCr12Co12SiMn2Ti3Al3					
	1.0234	WCr12Co12SiMn2Ti3Al					
	1.0235	WCr12Co12SiMn2Ti3Al					
	22	3.7120			TiV10Fe8Al2		
3.7121							
3.7122		TiV6Fe					
		TiAl65Fe2.5					
		TiAl65Fe2.5					
		TiAl65Fe2.5					
3.7126		TiAl65Fe					
3.7127		TiAl65Fe					
3.7128		TiAl65Fe					
3.7129		TiAl65Fe					

- Heat resistant super alloys / Titanium alloys

[illegible]

Insert Screw Dimensions And Torque Values

Screw	Th	Nm	ISO Size	Key
001004	M1.0(SH)	0.2	0P	T00P
0020045	M2.0(SH)	1.2	0P	T00P
002006	M2.0(SH)	1.2	0P	T00P
002008	M2.0(SH)	2.0	0P	T00P
002007	M2.0(SH)	2.0	0P	T00P
002008	M2.0(SH)	2.0	0P	T00P
002010	M2.0(SH)	2.0	0P	T00P
002012	M2.0(SH)	2.0	0P	T00P
002008	M2.0(SH)	2.0	10P	T10P
002008	M2.0(SH)	2.0	10P	T10P
002007	M2.0(SH)	2.0	10P	T10P
002008	M2.0(SH)	2.0	10P	T10P
002010	M2.0(SH)	2.0	10P	T10P
002011	M2.0(SH)	2.0	10P	T10P
002012	M2.0(SH)	2.0	10P	T10P
002012	M2.0(SH)	2.0	10P	T10P
004011	M4.0(SH)	4.0	10P	T10P
004012	M4.0(SH)	4.0	10P	T10P
004014	M4.0(SH)	4.0	10P	T10P
004016	M4.0(SH)	4.0	10P	T10P
004017	M4.0(SH)	4.0	10P	T10P
004011	M4.0(SH)	8.0	20P	T20P
008013	M8.0(SH)	8.0	20P	T20P

* Always apply solid lubricant paste to screw prior to use.

Cutting Data Calculation

* Nomenclature and formulae

RPM

$$n = \frac{v_c \cdot 1000}{D} \quad (\text{rev/min})$$

Cutting speed

$$v_c = \frac{n \cdot D}{1000} \quad (\text{m/min})$$

Feed speed

$$v_f = n \cdot z \cdot f_z \quad (\text{mm/min})$$

$$v_f = n \cdot z_0 \cdot f_z \quad (\text{mm/min})$$

Feed per revolution

$$f = z \cdot f_z \quad (\text{mm/rev})$$

$$f = z \cdot f_z \quad (\text{mm/rev})$$

Metal removal rate

$$Q = \frac{a_p \cdot a_d \cdot v_f}{1000} \quad (\text{cm}^3/\text{min})$$

Cutting speed and RPM for copying

$$v_c = \frac{n \cdot D_w}{1000} \quad (\text{m/min})$$

$$v_c = \frac{v_c \cdot 1000}{D_w} \quad (\text{RPM})$$

$$D_w = 2 \sqrt{a_p (D - a_p)} \quad (\text{mm})$$

Feed speed in tapping

$$v_{fn} \cdot \text{pitch} \quad (\text{mm/min})$$

a_p – Width of cut mm/radial depth of cut (mm)
 a_d – Depth of cut mm/axial depth of cut (mm)
 D – Outer diameter (mm)
 f – Feed per revolution (mm/rev)
 f_z – Feed per tooth (mm/tooth)
 z_0 – Effective No. of teeth for calculation of feed speed or feed per rev (see below)
 n – RPM (rev/min)
 Q – Material removal rate (cm³/min)
 v_c – Cutting speed (m/min)
 v_f – Feed speed (mm/min)
 z – No. of teeth

Effective No. of teeth (z_0)

The effective No. of teeth (z_0) 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_0) is equal to the No. of teeth in the cutter (z), but for some of the cutters z_0 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.

TECHNICAL GUIDE

Standard Keyway And Pin Hole Figures

FIG.1



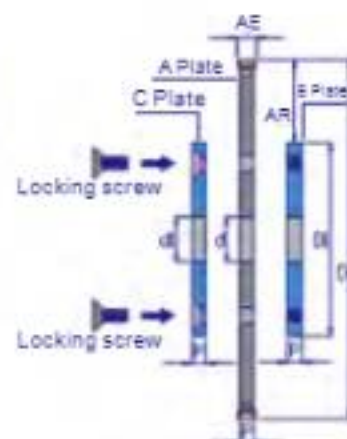
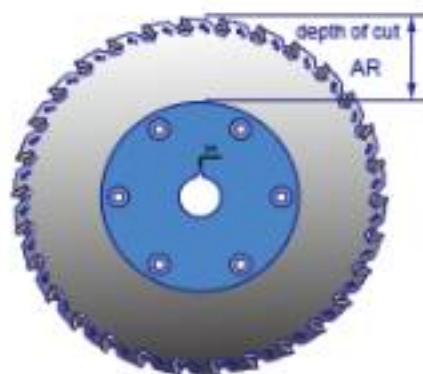
FIG.2



FIG.3



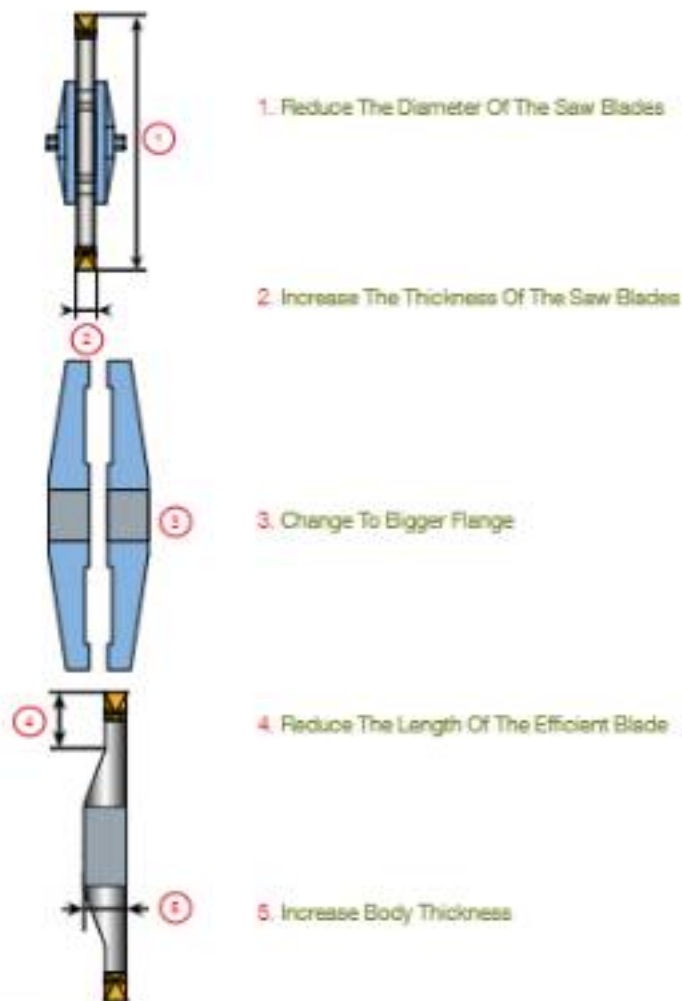
Vibrations Solution



- Improve The Stability of Cutter and Workpiece
- Minimize Tool Overhang
- Minimize The Dia of Cutter
- Increase The Thickness of Cutter

Trouble Shooting

The Strategy For Vibrations And Unstable Machining

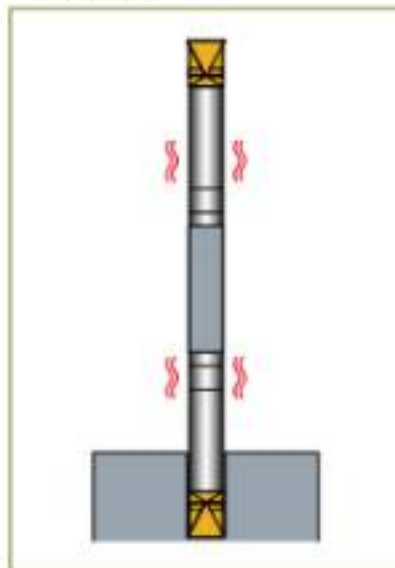


Attention :

1. Please Follow The Trouble Shooting Above In Order To Obtain Better Cutting Surfaces
2. Must Conform To THE Speed Factor

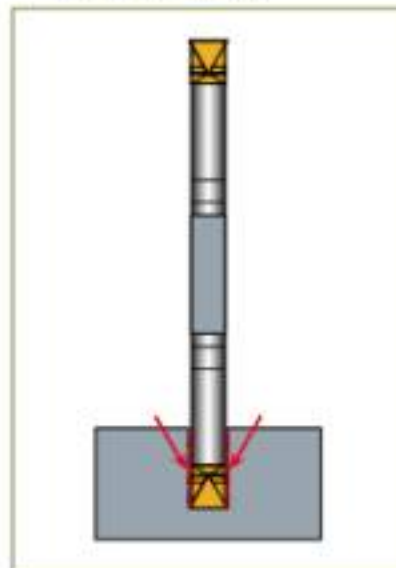
Trouble Shooting

Vibrations



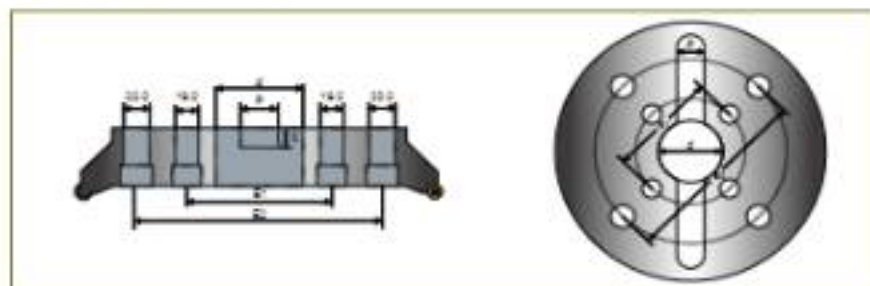
- Improve The Stability Of Cutter And Workpiece
- Change Cutter Positioning
- Minimize Tool Overhang
- Reduce The Cutting Speed
- Increase The Feed Rate
- Reduce The Depth Of Cut

Poor Surface Finish



- Improve The Stability Of Cutter And Workpiece
- Minimize Tool Overhang
- Reduce The Feed Rate
- Increase The Cutting Speed
- Use A Coolant
- Use Wiper Insert

Technical Guide



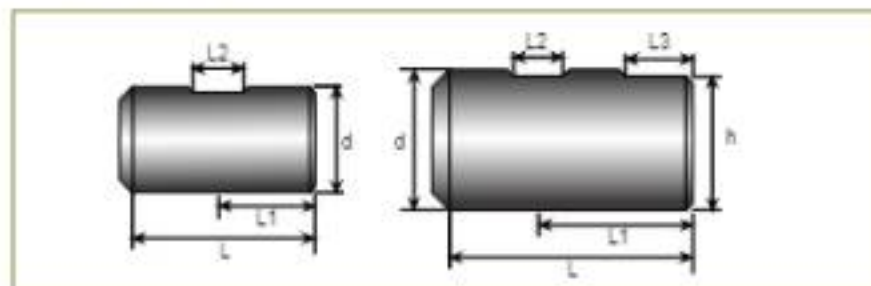
Dimensions Of Mounting Metric Size

Dimensions In mm				
d	p	q	E1	E2
18	8.7	7	-	-
22	10.7	7.8	-	-
27	12.7	8	-	-
32	14.7	8	-	-
40	16.7	10	-	-
60	26	12	101.8	-
80	26	12	101.8	177.8

Dimensions Of Mounting Inch Size

Dimensions In mm				
d	p	q	E1	E2
20.6	10.3	7	-	-
21.75	12	8	-	-
28.1	15.3	11	-	-
80.8	19.3	12	-	-
67.825	26.7	18	101.8	-
67.825	26.7	18	101.8	177.8

Technical Guide



Dimensions Of Mounting Metric Size

Dimensions In mm					
d	L	L1	L2	L3	h
6	35	18	1.2	-	-
8	35	18	2.5	-	-
10	40	20	7	-	-
12	48	22.8	8	-	-
18	68	26	10	-	14.3
20	80	28	11	-	18.3
28	88	32	12	17	23
32	80	28	14	18	30
40	70	40	14	18	38

Climb & Conventional Milling

