DX0916-TC-ENG-V1

2016 - 2017

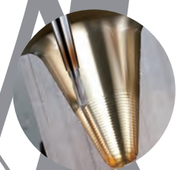
DINOX NC TOOLING SYSTEM

DINOX, we process your dream

DINOX
NC TOOLING SYSTEM

2016~2017







DINE

DINE

Head office (15118) 24, MTV 26-ro, Siheung-si, Gyeonggi-do, Korea | T.+82-31-488-6203 F. +82-31-432-0583

Branch Office in China : 21F, Shandong Minyingkeji Building A, Shiling Road 39 Laoshan District, Qingdao City, China
+86-532-8588-5907 F.+86-532-8588-5082

Homepage : www.dine.co.kr E-mail : dine@dine.co.kr facebook : www.facebook.com/DINE0701


DINE

DINOX,
we process your dream



ACQUIRED ISO QUALITY
MANAGEMENT SYSTEM
KS Q ISO 9001 : 2009 / ISO 9001 : 2008



ACQUIRED ISO ENVIRONMENTAL
MANAGEMENT SYSTEM
KS I ISO 14001 : 2009 / ISO 14001 : 2004







BT	59
S(T)	141
HSK	149
SK	163
NT	181
cBN/PCD	185
OTHER	205

DINOX,
we process your dream



DINE

Dinox is the one surpassing over technology and quality in global market with customer's trust.

We contribute to the industry of automobiles, electronics, machinery, plant with supplies of good quality item to customer. We try our best to inform primacy of korea's tools with a range of exports.

Head office (15118) 24, MTV 26-ro, Siheung-si, Gyeonggi-do, Korea | T.+82-31-488-6203 F. +82-31-432-0583

Branch Office in China : 21F, Shandong Minyingkeji Building A, Shiling Road 39 Laoshan District, Qingdao City, China
T.+86-532-8588-5907 F.+86-532-8588-5082

Homepage : www.dine.co.kr E-mail : dine@dine.co.kr facebook: www.facebook.com/DINE0701



HISTORY

1975.	07	Established as HAN-JU TRADING CO.(sales of imported cemented carbide cutting tools)
1988.	07	Conversion of corporation and transformed to DINE / inauguration of mr. Lim, sangjin as C.O.O
1989.	02	Started manufacturing holders & locators and supplying to korloy as OEM
1989.	11	Started manufacturing cBN and PCD cutting tools
1990.	04	Technically tied up with kyoritsu seiki corp., Japan for manufactuing tooling system for 3years
1990.	12	Started manufacuturing tool holders on nc tooling system
1994.	08	Technically tied up with sumitomo electric ind ltd., Japan for manufactuing cbn cutting tools
1995.	12	Moved a factory for tooling system to sihwa ind. Zone
1997.	03	Moved a factory for cbn/pcd to sihwa industrial zone
1997.	09	Promoting domestic production of unified angular head made by kyoritsu seiki, japan
1998.	11	Moved a head office to sihwa ind. Zone 2da-705, 1257-4, jeongwang-dong, siheung-city, kyungki-do
1999.	08	Acceded to ilsin inc. And pretos inc. And transformed to dine inc.
2000.	02	Nominated as a family company by the industrial bank of korea
2000.	08	Selected as issuing company of a loyal commercial paper by the industrial bank of korea
2001.	07	Acquired ISO 9001:2000 certificate by SMCC
2001.	11	Awarded the "THREE MILLION DOLLARS TOWER" on the 38th trade day by korea international trade association
2003.	03	Applied for patent of "MILLING CHUCK" improving clamping accuracy
2004.	07	Passed a renewal examination of ISO 9001:2000 certificate
2004.	11	Awarded the "FIVE MILLION DOLLARS TOWER" on the 41st trade day by korea international trade association
2005.	01	Registered as a family company by korea polytechnic university
2006.	01	Set up the 2nd plant in sihwa ind. Zone
2006.	04	Selected as a target company of learning organization activities for small and medium enterprises
2006.	06	Established branch office in qingdao, china / 高耐大因刀具商貿(青島)有限公司
2006.	09	Established industrial R&D center of DINE
2006.	10	Authorized establishment of industrial R&D center of DINE by korea industrial technology association
2006.	11	Awarded the "TEN MILLION DOLLARS TOWER" on the 43rd trade day
2006.	12	Nominated as an innovation business(=inno-biz) company by smba
2007.	01	Opened knowledge management system called "DAIAN"
2007.	04	"The milling chuck preventing something foreign from going into the interior and having a steady structure" (no. 10-1060687 Given by korean intellectual property office)"
2007.	08	Acquired a promising small and medium-sized enterprise certificate for 5 years
2007.	10	Established manufacturing corporation in china / 高耐大因工具制造(青島)有限公司
2007.	12	Awarded the "presidential award" on the day of machine tool (Mrs. Yun, hyesub / chirman of DINE INC.)
2008.	07	Groundbreaking ceremony of manufacturing corporation in china / twice achievement of a goal for zero accident
2008.	10	Three times achievement of a goal for no disaster
2008.	12	"Awarded the ""TWENTY MILLION DOLLARS TOWER"" on the 45th trade day by korea international trade association / awarded the ""grand prize of exportation"" by GSBC"
2009.	12	Contracted MOU with a bonded area in qingdao / building completion ceremony of manufacturing corporation in china
2010.	02	Applied for patent of "TOOL HOLDER CLAMPING SYSTEM" (No. 10-2010-0012422)
2010.	05	Registered as a family company by gyeonggi college of science and technology
2010.	06	Contracted a skill support agreement with human resources development service of korea
2010.	09	Selected as the best HRD company
2010.	11	"Confirmation of productivity management system(PMs) / awarded "the EXPORT TOWER" by industrial bank of korea / nominated as a management innovation business(=main-biz) company by SMBA"
2011.	03	Awarded the "the most giorious trader of this month" (Mrs. Yun, hyesub / chirman of DINE Inc.)
2011.	08	"The cutting tool module with a double pitch screw for fine adjustment of machine tools (no. 10-1060687 Given by korean intellectual property office) "
2011.	09	Acquired ISO 14001 certificate
2011.	11	Zero accident purpose achievement certificate for a head office and for a factory
2011.	12	Awarded the "THIRTY MILLION DOLLARS TOWER" on the 41st trade day by korea international trade association
2012.	04	Acquired 'green-biz' certificate by SMBA(GRADE A)
2012.	05	Selected as the company for 'hidden champion' by the export-import bank of korea
2012.	08	Contracted "REHABILITATION SOCIAL CONTRIBUTION" with the city hall of siheung
2013.	03	Awarded on the 40th commerce and industry day by the ministry of knowledge economy (Mrs. Yun, hyesub/ chairman of DINE Inc.)
2013.	04	Awarded on the 12th fair trade day by fair business trade commission (mrs. Yun, hyesub/ chairman of DINE Inc.)
2013.	07	Reacquired iso9001
2013.	09	Awarded "certification of manpower resource development"
2013.	12	Awarded "corporation sponsored siheung 1% welfare foundation" by the
2014.	06	Awarded "corporation sponsored SIHEUNG 1% welfare foundation" by the mayor of SIHEUNG City Hall
2015.	12	Relocation of head office and factory - siheung smatr hub MTV
2016.	11	Industrial complex
		Awarded the "FIFTY MILLION DOLLARS TOWER" on the 53st trade day by Korea international trade association

NEW PRODUCTS



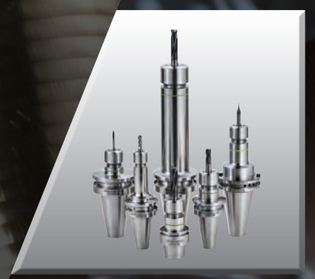
NEW **DST**

Feature 37page



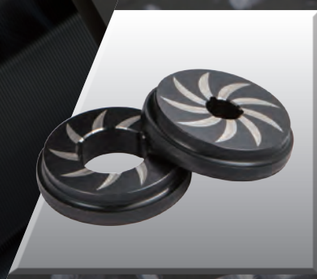
ROT NEW

Feature 57page



GSK NEW

Feature 33page



RTJW NEW

Feature 30page



FBH/B NEW

Feature 42page



DCJ NEW

Feature 28page

FOR SAFETY GUIDE IN USE

Please read followings prior to tool using
User also should note the precaution of Each Tooling for safety use.

Please be aware of safety guidance first written below, prior to DINE products using.
For common pre-caution and an individual guidance, please refer to the contents written above.
The following guidance is to handle DINE products in a right way and to prevent operators from an injury. According to a level of risk and seriousness of an injury caused by wrong operation, safety guidance is divided into three steps: Danger, Warning and Pre-caution. Since all guidance include very important information about safety, please surely follow the rules.

DANGER	It means that operators should be seriously injured or should court death caused by abusing tools at in-appropriate condition.
WARNING	It means that operators could be seriously injured or could court death caused by abusing tools at in-appropriate condition.
PRECAUTION	It means that operators might get injured or could get physical damages caused by abusing tools at in-appropriate condition.

Please obey the occupation safety & health acts and other safety regulations.
Note that it might bring more serious results than the fact mentioned on 'Pre-caution' by circumstances. Since all guidance include very important information about safety, please surely follow the rules.

WARNING

PLEASE CHOOSE CORRECT TOOLING

The Tooling items on the catalogue are applied to various conditions. After working required analysis and inspection, Machine operator and system desinger should check whether the tooling can be used on the current system or not.

Responsibility of estimated performance and Safety for system is belonged to who have decided suitability of Tooling to the current system. From now, please review all specification on the newest catalogue & data when you work the system.

Also, please consider several conditions causing any malfuntion on the machine.

OPERATION BY ONE WHO HAVE EXPERIENCED ENOUGH WITH NECESSARY TECHNICAL KNOWLEDGE

Please read carefully this Catalogue and Manuals before use.
Wrong or improper use might cause wound or property damage. Tooliing is designed for Machine and Tool, and Both Machine and Tooling should be operated by an operator with proper maintenanece knowledge.

TOOLING IS DESIGNED FOR MACHINE TOOL. DO NOT USE THESE TOOLING WITH OTHER MACHINES OR DEVICES.

COMMON PRE-CAUTION FOR TOOLING.

Please read followings prior to tool using.
User also should note the precaution of Each Tooling for safety use.

WHEN CHOOSE TOOLING

WARNING

Please check the size of machine spindle and Tooling Shank.

If the size and shape doesn't fit, it leads to incomplete installation, so may cause tool separation, or damage on machine spindle or cutting tool due to vibration coming from Revolution.

Please do choose proper size and shape on Clamping parts of Tooling.

If cutting tool doesn't fit with clamping parts of Tooling, it may cause bound by loosen tool or tool separation.

Please operate with proper cutting condition,.

In case of excessive use much more than tool performance, it causes damage on Cutting tool and Tooling.

WHEN OPERATE THE TOOLING

WARNING

When you convey the tooling or take it out from the case please be careful not to be bounced or felt.

There is a risk of harmful damage.

When you move a few number of packaged Tools or heavy Tooling, please do give proper attention.

(Use a conveying machine or devices if needs)

Please don't convert or disassemble tooling.

Function and performance might be getting worse. If you need to convert or to disassemble it, please discuss the matter with a maker.

PRECAUTION

Please pay attention to that the clamping part should not be scratched, grooved or any cutting powder & rust on the product.

It might be a reason of damage on Cutting tools or irregular Run-out coming from less cylindercity and clamping force.

Please do not touch the thread of screw by your hand.

Not finished Thread of screw and screw is sharp and therefore, it could give damage.

WHEN INSTALL THE CUTTING TOOL

WARNING

Please wear a protection helmet and gloves to install the cutting tool on Tooling.

Sharp cutting blade on a Cutting Tool could be damageable on the user who is not wearing a protection helmet and gloves.

When installing Cutting tool, please do absolute clamping.

Please use clamping spanner supplied by a maker only. Put the spanner on the tooling correctly, then do screwing slowly. It is not recommendable to use a Hammer or other devices for tightening clamping.

WHEN INSTALL THE TOOLING ON A MACHINE

WARNING

Please read a manual prior to use tools.

Please previously read and understand a manual and then do installation and use it. A user should place the manual nearby a machine for case.

PRECAUTION

When do tooling installation, please remove dust, scratches and rust on a Machine Cylinder, Tool Shank and clamping parts.

These could affect the Run-out.

Please check Run-Out or Accuracy regularly.

Check Run-Out of Machine Cylinder and Tool clamping parts with a Test bar.

Pull-Stud is a kind of consumptive parts and the user should replace it regularly.

Fatigue-Broken could cause damages on a Machine, Cutting Tool and Tooling. (Fatigue-Broken may occur after 5 months)

WHEN IT IS IN OPERATION

WARNING

Do not touch while operating of Tooling.

If users touch the Tooing or tools during operation, they will get injury or their clothing would be sucked into the machine.

Do not operate the machine without Cutting tool on Tooling.

Idle R.P.M. could make the scattering of nuts and screws by looseness. If Idle R.P.M. needs, firstly check each part and then install non scattering devices or a Test bar.

Be careful not to be counterturn.

If counterturn, there could be a risk of cutting tool damaged or parts scattering.

Please wear Protection kit (a Helmet, a Goggle and gloves) during operation.

There would be risks that burn or stab caused by cutting powders or chips with high-temperature.

When installing the high-pressure coolant devices, never place your hands or a body at the end of Cutting tools.

Cutting tools could be scattered by wrong operation

FOR SAFETY GUIDE IN USE

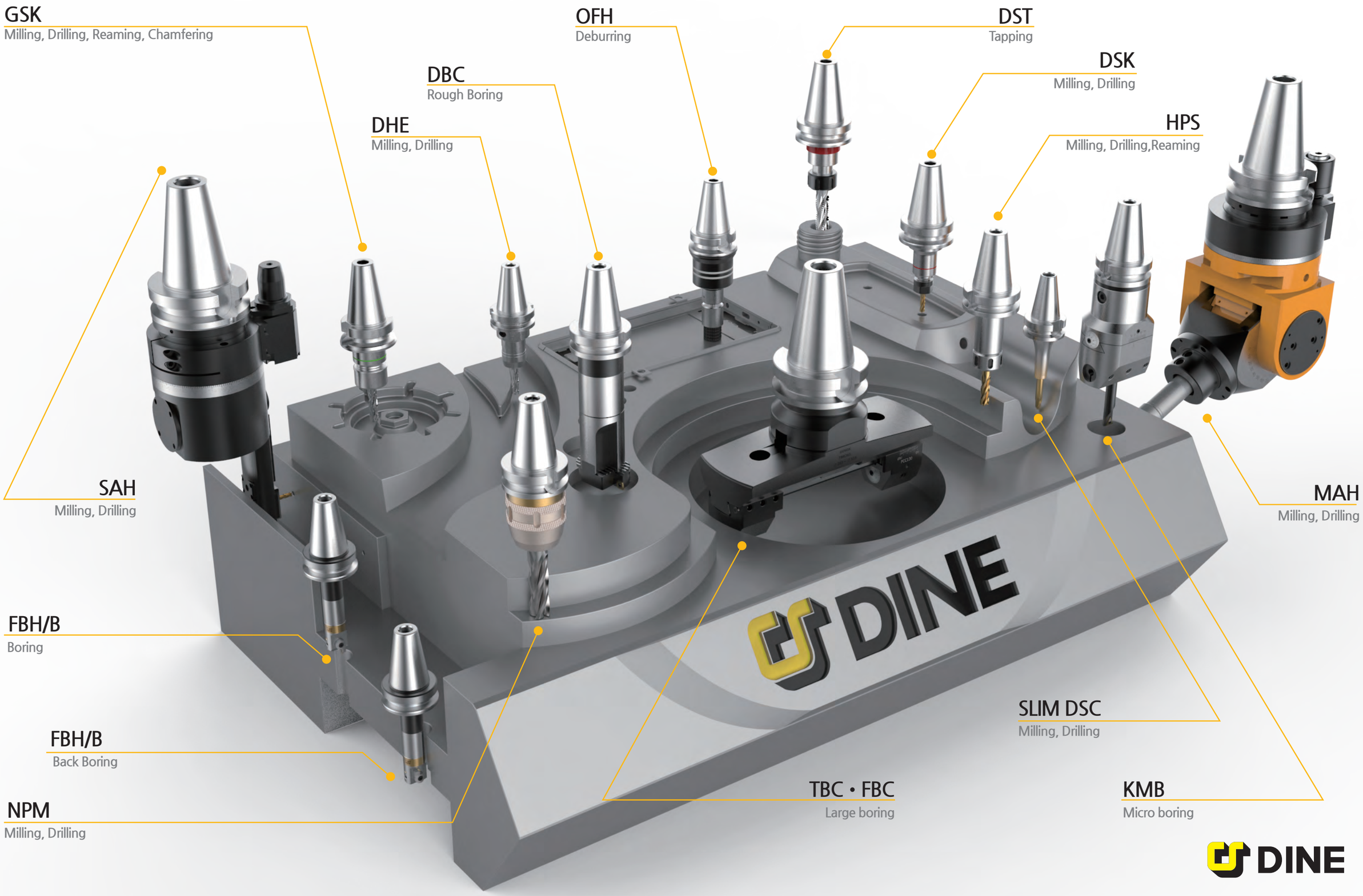
WARNING

Please put the products in the place which you can keep them without scratches after you clean off cutting powders and chips of tooling and rub with rust-preventing oil.

Please keep the cutting tool separetely in case you want to keep the tool holder for a long time.

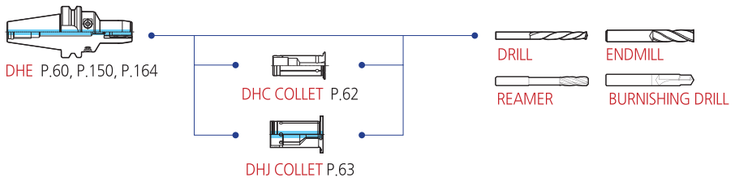
"The product's clamping force will be reduced in case you keep the product installed with the cutting tool. If the product installed with the cutting tool have been stored for a long time, please do clamping and unclamping before you use it."

DINOX TOOL APPLICATION

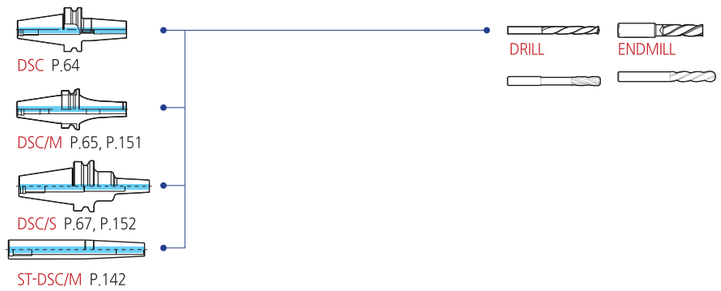


DINOX MAP NC TOOLING SYSTEM

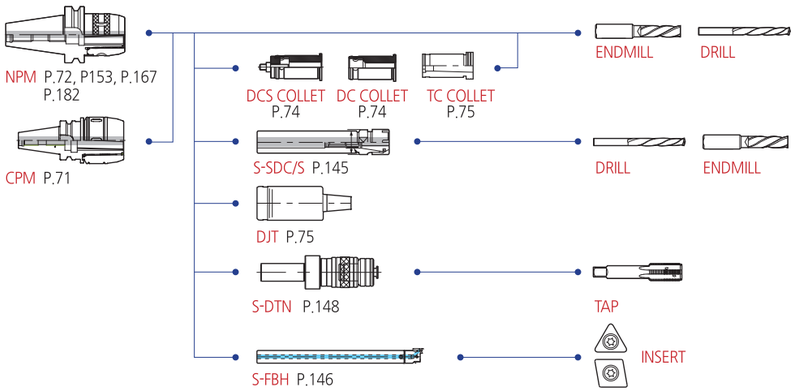
1. Hydraulic expansion chuck



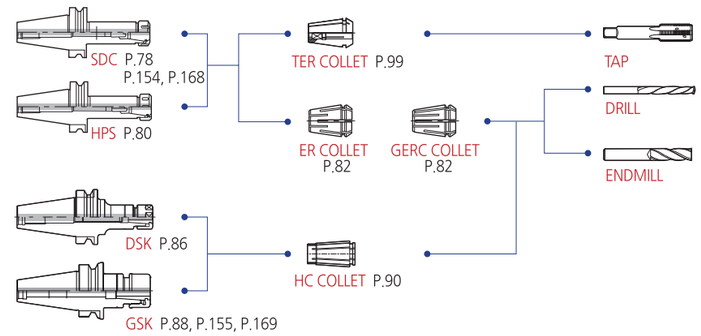
2. Shrinking chuck



3. Milling chuck



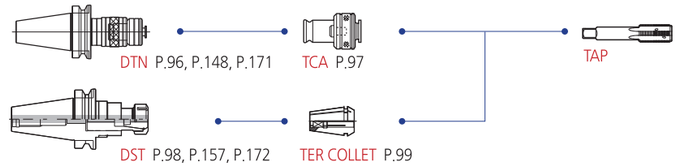
4. Collet chuck



5. Drill chuck



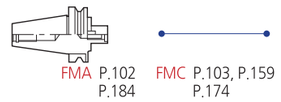
6. Tapping holder



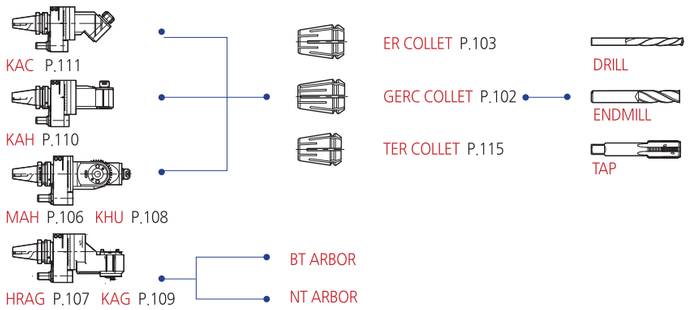
7. Side lock arbor



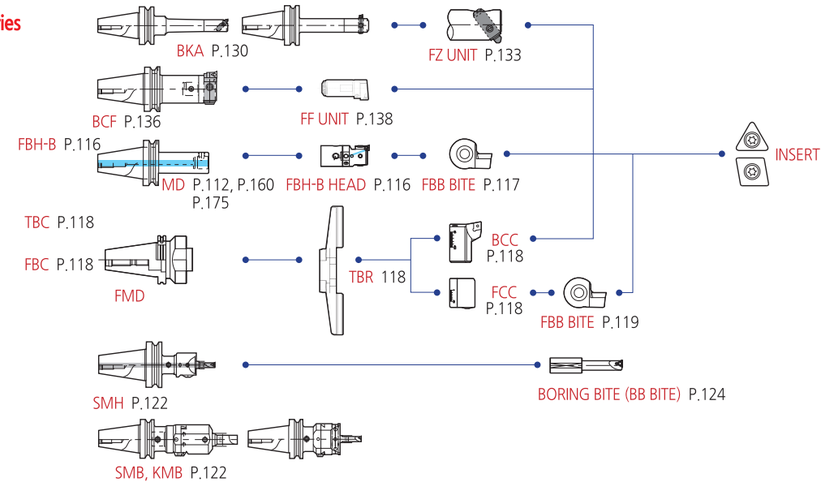
8. Face mill arbor



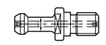
9. Angular head



10. Boring series



11. Pull stud bolt



MASTER INDEX

C This symbol means built-in through coolant system
C This symbol means optional through coolant system
C This symbol means unavailable with through coolant system

CHUCK



DHE
Hydraulic expansion chuck
BT shank 60 **HSK** shank 150
SK shank 164 Features 29



DSC
Shrinking chuck
BT shank 64 **ST** shank 142
HSK shank 151 **SK** shank 165
Features 24



CPM
Champion milling chuck
BT shank 71 Features 27

CHUCK



NPM
New power milling chuck
BT shank 72 **HSK** shank 153
SK shank 167 **NT** shank 182
Features 26



SDC
ER Collet chuck
BT shank 78 **S** shank 144
HSK shank 154 **SK** shank 168
Features 31



HPS
High speed ER collet chuck
BT shank 80 Features 31

CHUCK



DSK
Slim type collet chuck
BT shank 86 Features 34



GSK
Great speed slim collet chuck
BT shank 88 **HSK** shank 155
SK shank 169 Features 33



NPU
Drill chuck
BT shank 94 **HSK** shank 156
SK shank 170

CHUCK



DTN
Tapping holder
BT shank 96 **S** shank 148
SK shank 171 Features 36



DST
High speed synchro tapping chuck
BT shank 98 **HSK** shank 157
SK shank 172 Features 37



OFH
Floating holder for brush
Features 35

CHUCK



SLA
Side lock arbor
BT shank 100 **HSK** shank 158
SK shank 173



FMA
Face mill arbor
BT shank 102 **NT** shank 184



FMC
Face mill arbor
BT shank 103 **HSK** shank 159
SK shank 174

ANGULAR HEAD



SAH
Slim angular head
Features 39



MAH
Reinforced type angular head (0°- 90°)
BT shank 106 Features 40



HRAG
Reinforced type angular head (90° fixed)
BT shank 107 Features 41

ANGULAR HEAD



KHU
Collet type angular head (0°- 90°)
BT shank 108 Features 40



KAG
Angular head (90° fixed)
BT shank 109 Features 41



KAH
Collet type angular head (90° fixed)
BT shank 110 Features 40

ANGULAR HEAD



KAC
Collet type angular head (45° fixed)
BT shank 111 Features 41

MODULAR



MD
Modular arbor
BT shank 112 **HSK** shank 160
SK shank 175



EXT
Extension bar
Spec 114

MASTER INDEX

C This symbol means built-in through coolant system
C This symbol means optional through coolant system
C This symbol means unavailable with through coolant system

MODULAR



RDC
Reducer bar
Spec 114

BORING



FBH/B
Micro boring bar (balanced type)
BT shank 116 **S** shank 146
SK shank 177 Features 42



FBH
Small micro boring bar (balanced type)
S shank 147

BORING



FBC/TBC
Balance cut tool for rough boring
BT shank 118 **SK** shank 178
Features 43



DBC
Balance cut tool(Modular type)
BT shank 120 **HSK** shank 161
SK shank 179



KMB
Micro boring
BT shank 122 **HSK** shank 162
SK shank 180 Features 45

BORING



SMB
Small micro boring bar
BT shank 122 **HSK** shank 162
SK shank 180 Features 45



SMH
Small micro boring bar (High accuracy type)
BT shank 122 **HSK** shank 162
SK shank 180 Features 45



BSA
Square boring bar
BT shank 126

BORING



BH
Square boring Bite for BSA
Spec 129



BKA
FZ micro boring bar (Finishing)
BT shank 130



FZ UNIT
FZ micro boring Unit
Spec 133

BORING



BCF
Micro boring bar
BT shank 136

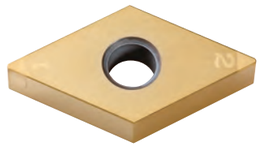


FF
FF Unit
Spec 138

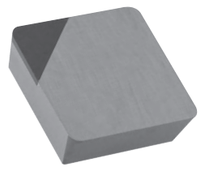


PULL STUD BOLT
Pull stud bolt
Spec 140

cBN/PCD



cBN
cBN Insert (Negative/Positive)
Spec 190 Features 46



PCD
PCD Insert (Negative/Positive)
Spec 202

OTHER



DH2000
DINE high frequency induction heating device
Features 25

OTHER



ROT
Run-out tester
Spec 57



NEW 3D-Taster
Spec 58



TOOL MASTER Quadra
Tool presetter
Spec 206

OTHER



TOOL MASTER BASIC
Tool presetter
Spec 207

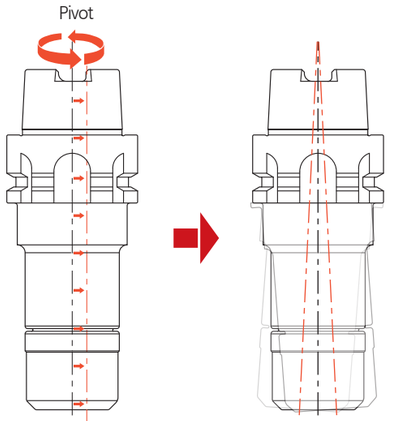


HT-100, DZH, DZP
Height gavge
Spec 208



PART
Spec 216

Balancing



※ The phenomenon is that the center of gravity in tool keeps off from a pivot

The cause of unbalancing

The occurrence of unbalancing from run-out is caused by spindle and assymmetry of tool's shape.

The problem of unbalancing

The vibration in the tool by centrifugal force leads to noise and deterioration of surface roughness and tool life.

The necessity of balancing work

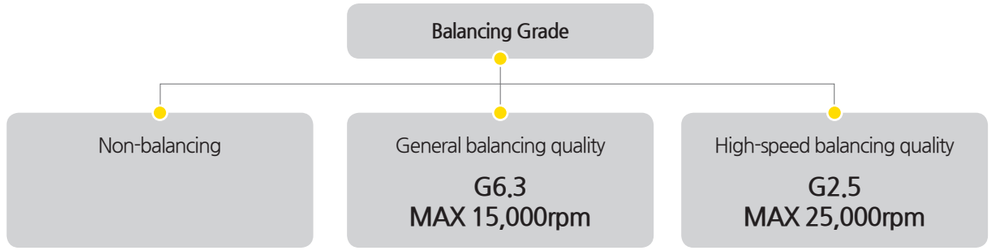
Balancing work is necessary for better surface roughness, accuracy and tool life.

BALANCING SYSTEM

The most optimal accuracy at high speed.

1. Keep high accuracy and rigidity without bending of rotating product due to unbalanced load
2. Excellent balance(≤G2.5 or 0.5 g·mm/kg)
3. Improve tool life, surface finish, dimension of accuracy and productivity at high speed

Balance control



The possibility of multiple balancing's quality



BT, HSK, SK Shank	Balancing type with hole

DBT Series PAT.

2 face constrained BT type spindle system

DBT spindle system

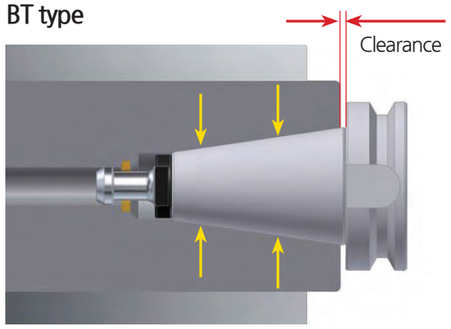
2 Face contact type (taper and flange face)
for high speed, roughing, finishing and surface roughness

The advantage of 2 sides contact type

- Stable machining under high speed.
- Improvement of tool-life for machine spindle and cutting tool.
- Corrosion prevention in the taper
- Vibration prevention of spindle
- High accuracy

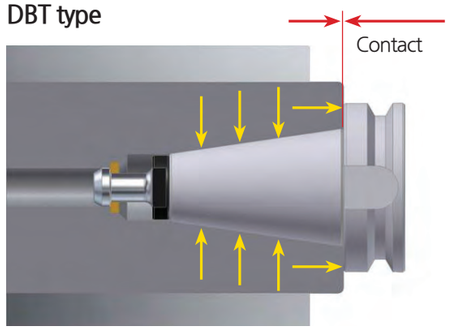


BT type



The clearance between spindle and flange face

DBT type

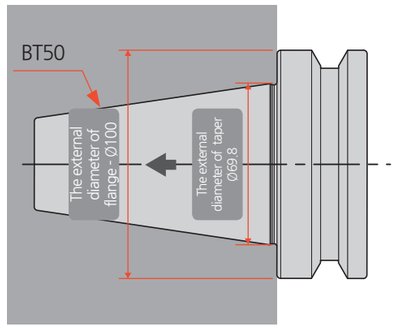


Perfect contact of both faces : better clamping

Powerful clamping

Unlike BT, DBT shank has better clamping force because of contact both the taper and flange - faces

Shank	External diameter of taper	External diameter of flange
BT30	Ø31.7 →	Ø46
BT40	Ø44.4 →	Ø63
BT50	Ø69.8 →	Ø100

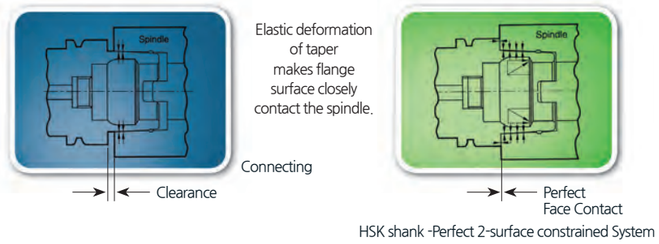


HSK TOOLING SYSTEM

DIN69893-1, ISO 12164-1 : 201

HSK : 2 Face Constrained Tool holder

The 7/24 taper shank for multi-purpose has been pointed out that its performance is inappropriate in terms of repeatability, joint stiffness and high speed machining. Drawbacks of 7/24 taper shank had been eliminated by using new two face contact.

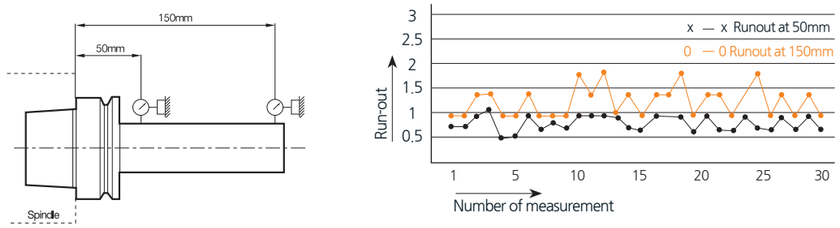


HSK shank -Perfect 2-surface constrained System

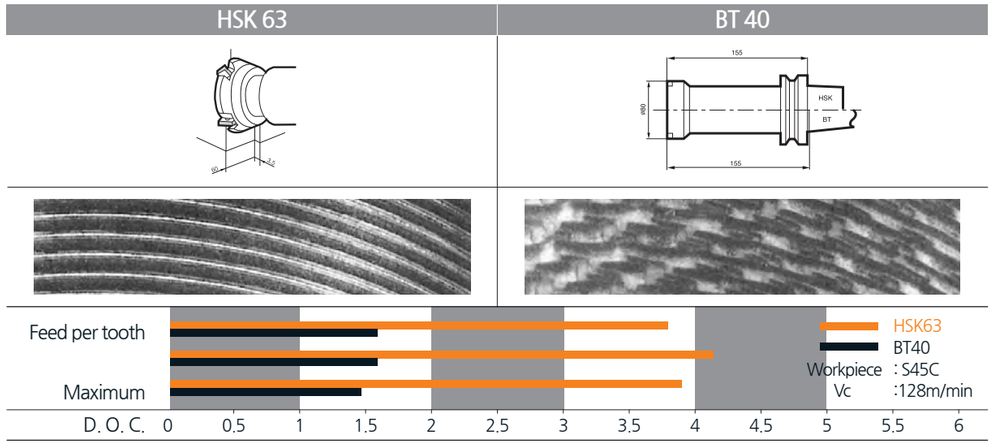


Runout

As taper of holder elastically deform following the profile of the spindle shape, there is no eccentricity between the spindle and holder. Also, due to perfect face contacts between flange of the holder and spindle face, bending strength of the holder becomes very high, It decides run out accuracy



Comparison (HSK63 VS BT40)



DSC NEW

Shrinking chuck



G2.5	25,000	3㎛	C				
G value	Max RPM	Run-out	Coolant system	Milling	Drilling	Reaming	Chamfering

Feature

- Run out = 3㎛
- Special heat treatment : prolonged tool life
- Excellent machining & assembling with high accuracy
- Minimized tool extension in the deep part : long tool life
- Tool dia : Ø3~32

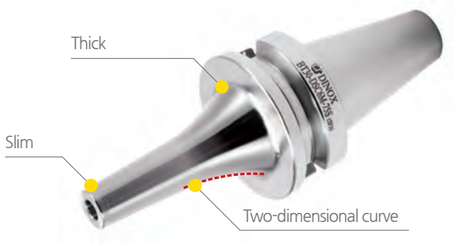


Nominal designation

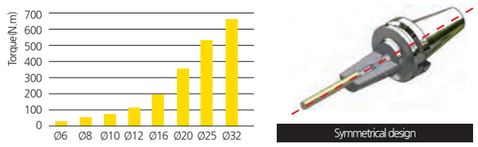
BT50	–	DSC	6	–	S	–	165	–	S
Shank shape		Holder type	Tool dia.		Type		Length		Special
BT HSK SK ST CS CM		DSC : Shrinking chuck SLK : 2piece holder Collet			S : Slim M : Middle NONE : General				S : Curve type NONE : General

Mono curve type NEW

- Great accuracy and rigidity
- Long but rigid design of holder

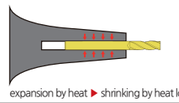
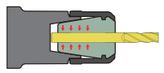


Clamping force



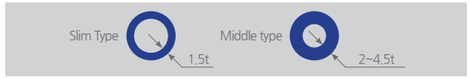
Symmetrical design

· 30% better clamping force than hydraulic chuck
· Secure power transmission

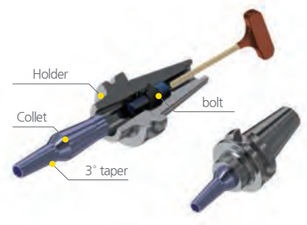
Shrinking Chuck	Collet chuck
Clamping the tool by thermal contraction	Damping the tool by elasticity of collet
	
expansion by heat ▶ shrinking by heat lost	The transformation of a elasticity
Super powerful Clamping force	Powerful clamping force

Mono type

Figure	Accuracy
	
3° taper	Run-out 3㎛



2-piece type

Figure	Accuracy
	
Holder, Collet, bolt, 3° taper	Run-out 5㎛



C This symbol means built-in through coolant system

● BT : 64P S : 142P HSK : 151P SK : 165P

DH2000 NEW

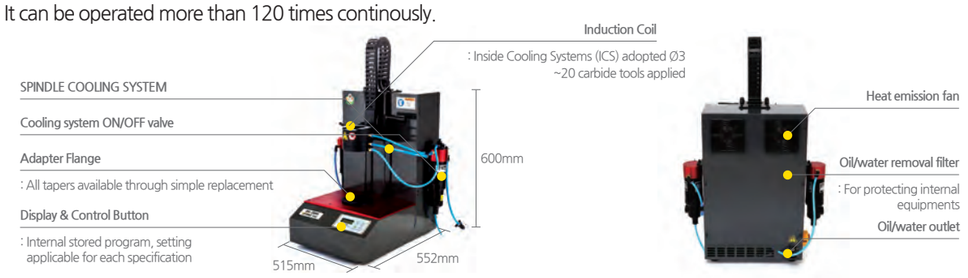
Dine high frequency induction heating device



	6sec	10KW	380V	Ø3~Ø32
Cooling	Time	Power	Voltage	Shank Dia.

Feature

- Shrinking device for mass-production line
- It can be operated more than 120 times continously.



Model Name	Size W x D x H(mm)	Weight	Operation range of head	Available dia' of tool	Power supply	POWER
DH-2000	515x552x600	45kg	330mm	Ø3-Ø32(HM)	3-AC380V 50~60Hz+3P+PE	10KW

Improvements



① Cooling air supply : Water/oil removed
② Induction coil circulation cooling
③ Hot air emission
④ Cooling air supply : Water/oil removed
⑤ Heatsink cooling
⑥ Hot air emission: Rear fan

Comparison with competitor

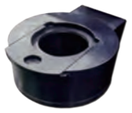
	Competitor	Former product	DH-2000
Voltage	-	220V	380V
Tightening time - Based on Ø6	6 ~ 15 sec.	15 sec.	6 sec.
Continuous use	About 30 cycles (Continuous heating impossible))	System down in 30 cycles (Continuous heating impossible)	Continuous heating over 120 cycles (based on external temperature of 20℃)
Extra functions	-	-	- Inside / head cooling - Temperature sensors for protecting oil/ water filtering system(2EA)

Detailed Specifications

Stop Ring



Induction Coil



Adapter Flange



Name	Designation	Spec	Remark
Stop ring	SR6	Ø3-6	Included
Stop ring	SR12	Ø7-12	Included
Stop ring	SR20	Ø14-20	Included
Stop ring	SR32	Ø25-32	Included
Induction coil ISO 20	STH32	Ø3-32	Optional
Induction coil ISO 20	STH20	Ø3-20	Included
ISO 20	AFB20	Shank 20	Optional
ISO 30	AFB30	Shank 30	Optional
ISO 40	AFB40	Shank 40	Optional
ISO 50	AFB50	Shank 50	Included
HSK	AFH63 (HSK63)	HSK63	Optional

NPM
New power milling chuck

15㎛ Run-out | C Coolant system | Milling | Drilling



Feature

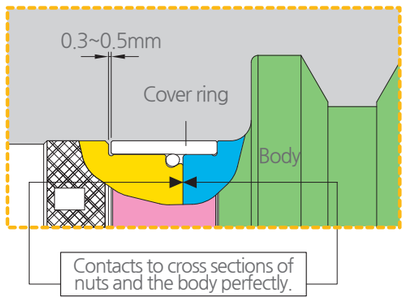
- Clamping force : 350kgf· m(NPM32), 500kgf· m(NPM42)
- Protecting the inside from dust by dust block system
- 2 ways of coolant way : Jet / through coolant
- Run out = 15㎛(L/D=3)
- Tool dia : Ø6~42

Nominal designation

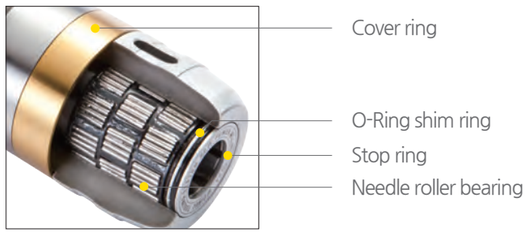
BT40	–	NPM	32	–	110
Spindle		New power milling chuck	Max. chucking dia.		Length



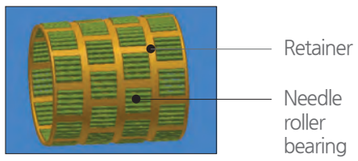
Durability improvement by prevention of minute dust, chips and coolant. PAT.



Adopted stop ring on head parts
- Preventing from minute dust & o-ring.



Needle roller bearing
〈NPM20〉



- Specially designed steel bearing for damage prevention
- Strong clamping by spreading the force

Stable machining from heavy to fine milling

Perfect face contact and powerful clamping force strengthen both cutting force and absorbtion of vibration.





Depth of cut (Rd)=1.0mm | Depth of cut (Rd)=2.5mm | Depth of cut (Rd)=3.5mm | Depth of cut (Rd)=5.0mm | Depth of cut (Rd)=8.0mm

C This symbol means optional through coolant system

● BT : 72P NT : 182P HSK : 153P SK : 167P

CPM
Champion milling chuck

15㎛ Run-out | C Coolant system | Milling | Drilling



Feature

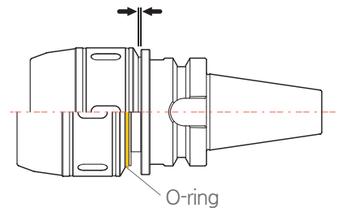
- The prevention of grease leakage and mixing with foreign substance by o-ring.
- Available through coolant system with CTC set
- Tool length is controllable by insertion of adjustment screw.
- Stable cutting with perfect face contact
- Tool dia : Ø6~32

Nominal designation

BT40	–	CPM	32	–	105
Spindle		Champion milling chuck	Max. chucking dia.		Length



Stable cutting and the prevention of mixing with foreign substance by cross section contact

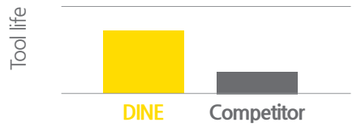


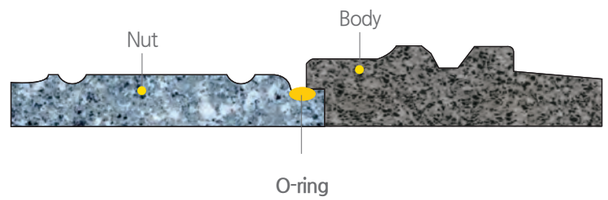
Prevention of oil leakage and dust

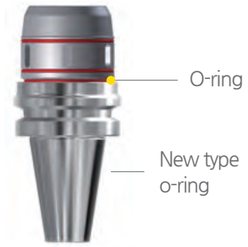
CPM is durable and stable by attaching o-ring on the nut which can absorb the vibration of cutting, so that it can improve the life of tool by the prevention of mixing with foreign substance inside of CPM.

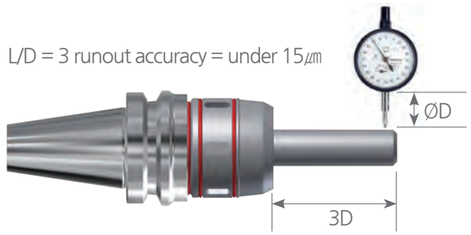
Blocking lubricant leaking and dust

Prolonged tool life by anti-dust system









C This symbol means optional through coolant system

● BT : 71P

DCJ NEW

DINE Jet coolant collet (Milling chuck)



Jet coolant | Inside coolant

Feature

- Prevent chips sticking on the tool and enhance tool life
- Improvement of chip evacuation by strong jet spray.
- Quick change over to through coolant or jet coolant type by changing collet



NPM+Jet coolant collet

Chip evacuation

Rapid cooling effect

Enhanced tool life

Easy clamping



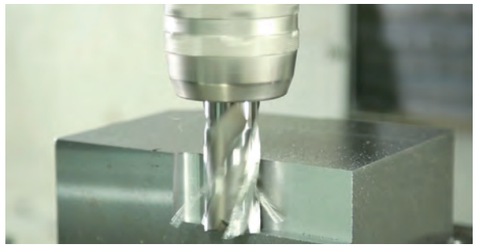
Coolant type

- Jet coolant



- Through coolant





Chip evacuation performance

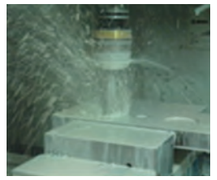
- Outside coolant

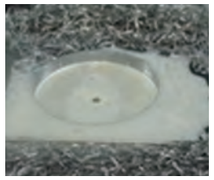




Piled chips in pocket

- JET coolant





Removed chip from the pocket

DHE

Hydraulic expansion chuck



G6.3 G value | 15,000 Max RPM | 5㎛ Run-out | C Coolant system | Milling | Drilling

Feature

- Suitable for mold / automobile / fine milling with high accuracy
- Better surface roughness by reducing vibration
- Convenience
  - Easy clamping by T-wrench - Minimize fatigue of operator
  - Short lead time
- Tool dai : Ø3~32



Nominal designation

BT40	–	DHE	20	–	140
Spindle		Hydraulic expansion chuck	Max. chucking dia.		Length

Feature

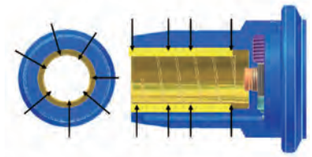
High accuracy provides long tool life because of wear reduced and hydraulic chamber enhances surface roughness by lessening vibrations.

- Run out : under 5㎛
- L/D=3
- Shank tolerance : h6



Sealing structure(Durability)

- Internal sealing system protects the chuck from dust, cutting oil, and chips going inside



Shank	Grade	Max.rpm
BT50, SK50,HSK100A	G6.3	8,000
BT40, SK40, HSK63A	G6.3	10,000
BT30, HSK50A, SK30	G6.3	15,000
HSK40A	-	15,000



C This symbol means built-in through coolant system

C This symbol means optional through coolant system (HSK Shank)

Easy clamping

- Clamping structure for easy operation



Stable clamping

Fixing a tool by hydraulic force



- BT : 60P ↗ HSK : 150P ↗ SK : 164P ↗

RTJW NEW

Jet coolant disk



Jet coolant | Inside coolant

Feature

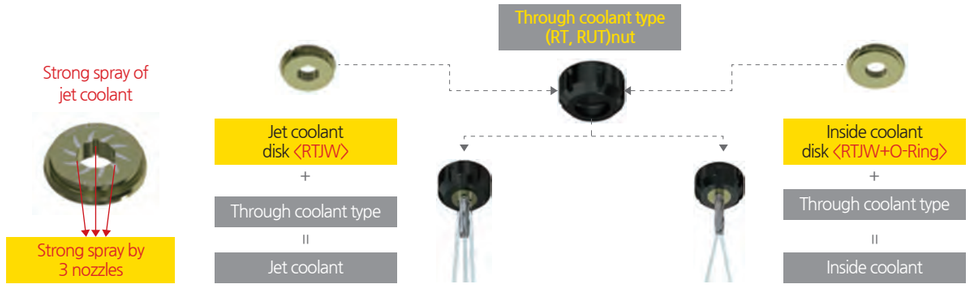
- Prevent chips sticking on the tool and enhance cutting tool life
- Improvement of chip evacuation by strong JET spray

Application

- Multi-coolant way for ER collet chuck
- Easy changing coolant way by replacing o-ring
- Powerful jet coolant without scattering under high speed condition



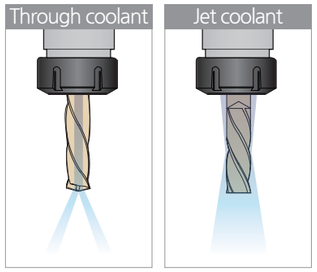
Application



Comparison

	Pocket machining	After machining	Remark
JET COOLANT			▶ Perfect chip evacuation
OUTSIDE COOLANT			▶ Left chips on the pocket

Through coolant | Jet coolant



Coolant system

2 coolant way
- Through coolant
- Jet coolant

● SPEC : 77P

HPS

High speed collet chuck



G6.3 G value | 15,000 Max RPM | Ø20 Max Dia | C Coolant system | Drilling | Milling | Reaming | Tapping | Chamfering

Feature

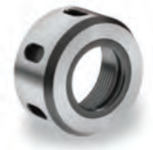
- Balance : G6.3/ Max 15,000RPM
- Suitable for high speed machining
  with applying excellent sleeve nut and balancing work
- Tool dia : Ø0.5~20

Nominal designation

BT40	–	HPS	10	–	90
Spindle		High speed collet chuck	Max. chucking dia.		Length



Variety nuts



HPS
(Standard type)

● BT : 80P

SDC

Collet chuck



8,000 Max RPM | Ø26 Max Dia | C Coolant system | Tapping | Drilling | Milling

Feature

- Standard ER collet chuck
- Tool dia : Ø0.5~26

Nominal designation

BT40	–	SDC	10	–	135
Spindle		Collet chuck	Max. chucking dia.		Length



Easy clamping



Special hardening





SDC
(Low speed type)

● BT : 78P HSK : 154P SK : 168P
ST : 144P

GERC NEW

GERC collet_ER coated collet



General 5㎛ Run-out | Precision 2㎛ Run-out | Waterproof

Feature

- The prevention of corrosion in micro size
- Latest coating techology provides high accuracy and quality
- Maintaining high accuracy and best quality with coating technology
- Prolonged tool life

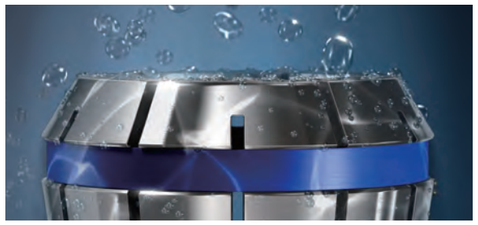


Nominal designation

GERC	–	16	6,0	–	HP
GER Coating collet		Collet size	Clamping range		HP:Precision NONE:General

Special coating technology

Unlike GERC collet as below conventional collet has feature. Uncoated collet is easily corrorded by many factors(moisture, cutting oil, washier, salt, gas). It can be influenced to not only collet quaility but also entire cutting.



If collet became rusty, tool life and accuracy are getting worse. Surface coating in microunit size provides reliable collet quality for a long time.



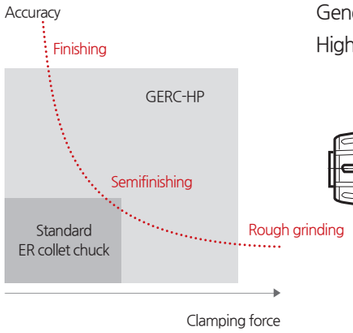
After 4 months
Uncoated collet(Left), coated collet(Right)

GERC-HP (Accuracy type)

Precision collet is a little bit more expensive than standard type, but it is more efficient in the long term. Tolerance with maximum accuracy makes better quaility and minimize cost to rework.

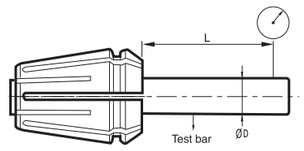


Precision collet 2㎛



High accuracy (L/D=3)

General type = 5㎛
High accuracy type = 2㎛



SPEC : 82P

GSK NEW

Great speed slim collet chuck



G2.5 G value | 25,000 Max RPM | Ø25 Max Dia | C Coolant system | Milling | Drilling | Reaming | Chamfering

Feature

- Balance : G2.5/ Max 25,000RPM
- Better productivity at high speed machining
- Minimum vibration by 8°collet
- Tool dia : Ø1.8~25

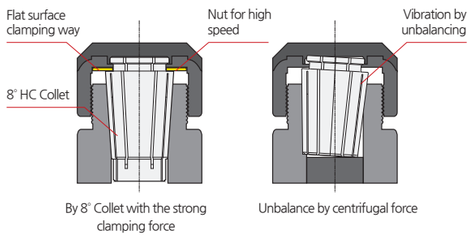


Nominal designation

BT40	–	GSK	10	–	90
Spindle		Great speed silm collet chuck	Max shucking dia.		Length

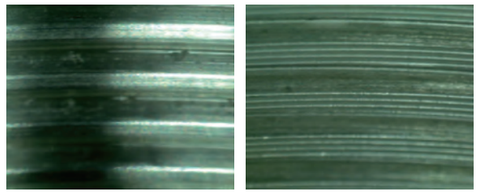
Exclusive design

GSK	Competitor



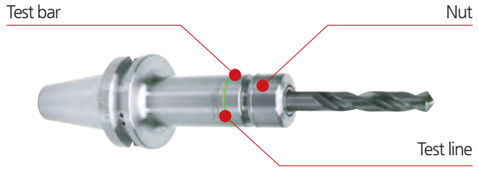
Comparison of grinding quality on nut threaded

GSK	Competitor



Special design

GSK can be used as test bar by high quality grinding



C This symbol means optional through coolant system

Spanner (optional)

Spanner



Designation	Chuck
GSK6 SPANNER	GSK6
GSK10 SPANNER	GSK10
GSK13 SPANNER	GSK13
GSK16 SPANNER	GSK16
GSK20 SPANNER	GSK20
GSK25 SPANNER	GSK25

BT : 88P HSK : 155P SK : 169P

DSK

Slim type collet chuck



G6.3 G value | 15,000 Max RPM | Ø25 Max Dia | C Coolant system | Drilling | Milling

Feature

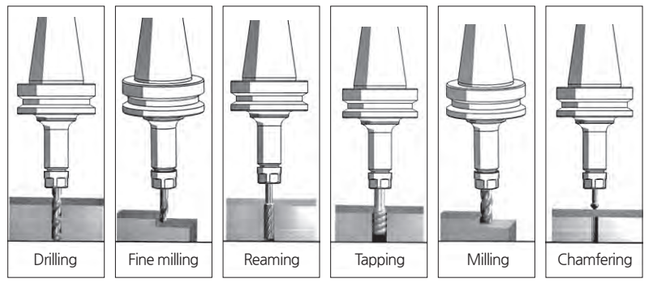
- Balance : G6.3/ Max 15,000RPM
- Ensure excellent high accuracy with strong clamping force with collet in 8°
- Optimization of working stability by using excellent nut.
- Tool dia : Ø1.8~25



Nominal designation

BT30	–	DSK	10	–	90
Spindle		Slim type collet chuck	Max. clamping dia.		Length

Multi-purpose application



Collet

General type & accuracy type	Designation	Max chacking	Runout
	HC6 - ød	6.0	General type 5μm Accuracy type 3μm
	HC10 - ød	10.0	
	HC13 - ød	13.0	
	HC16 - ød	16.0	
	HC20 - ød	20.0	
	HC25 - ød	25.0	

8° HC Collet



HC collet minimizse vibration

Spanner (optional)

	Designation	Chuck
	DSS - 6	DSK 6
	DSS - 10	DSK 10
	DSS - 13	DSK 13
	DSS - 16	DSK 16
	DSS - 20	DSK 20
	DSS - 25	DSK 25

Spanner

Collet extractor (Basic)

	Designation	Chuck
	DSS - 6CE	DSK 6
	DSS - 10CE	DSK 10
	DSS - 13CE	DSK 13
	DSS - 16CE	DSK 16
	DSS - 20CE	DSK 20
	DSS - 25CE	DSK 25

Collet extractor

C This symbol means optional through coolant system

● BT : 86P

OFH NEW

Floating holder for brush



G6.3 G value | 15,000 Max RPM | 2~8N Load | Deburring

Feature

- Floating arbor with steady pressure : consecutive usage without calibration
- Balance : G6.3/Max 15,000rpm
- Prolonged brush tool life(50% longer vs collet chuck)
- Short lead time & improved productivity
- Various arbors (ISO30,40,50 / HSK)
- Various sleeve and brushes



Nominal designation

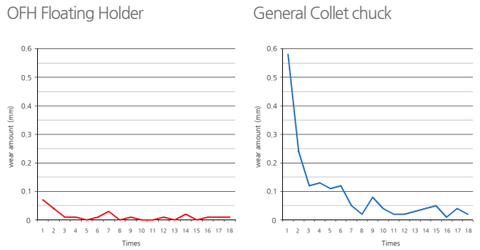
BT30	–	OFH	10	–	90
Spindle		Floating holder for brush	Max. clamping dia.		Length

Designation
BT30-OFH06-75

Application



Wear performance comparison of brush.

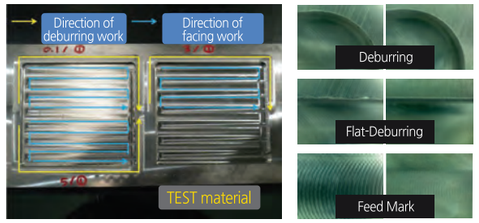


Constant abrasion

Rapid abrasion

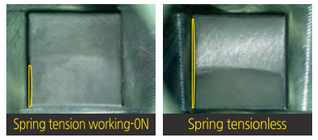
Deburring work for aluminum

Pocket

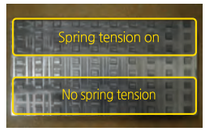


Surface roughness : 4 times improved.
0.906㎛(Before) > 0.179㎛(After)

Boss



Abnormal wear
About 2.5 times less



Brush abrasion : About 3 times less
(* Based on abrasion loss in whole area)
=> (Spring tension on) 0.18mm
=> (No spring tension) 0.59mm

DTN

Tapping holder



C Coolant system | Tapping

Feature

- Quick and easy for tool changing .
- Tool protection by applying torque safety device (TCA tap adapter)
- Tap range: M3~M38

Nominal designation

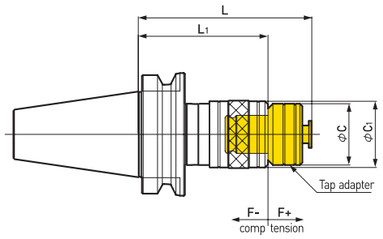
BT40	–	DTN	22	–	130
Spindle		Tapping holder	Max. chucking dia.		Length



Easy TCA(Tap adapter) changing

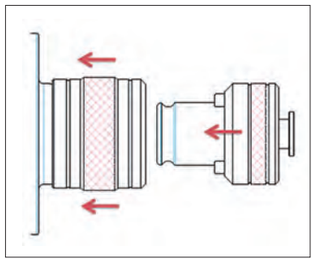
Easy adapter changing, tension and contract in floating way in axial direction.





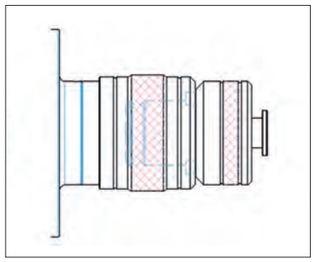
TAP Adaptor

Before installation



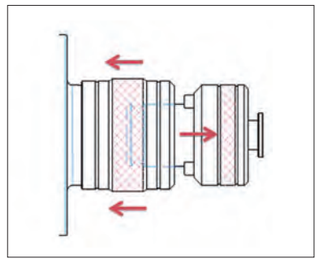
1. Press down the cover of tap holder and insert the TCA
2. Assemble TCA to fit with the key way and press until it clicks

After installation



1. The cover of the tab holder comes up to the normal position

Disassembly



1. Press the cover of tap holder and remove the TCA.

C This symbol means unavailable with through coolant system

● BT : 96P S : 148P SK : 171P

DST PAT. NEW

High speed synchro tapping chuck



G6.3 G value | C Coolant system | Tapping

Feature

- Tapping chuck for high speed tapping
- Minimize synchronization error by special design
- Through coolant is applicable
- Tap range : M1~M22

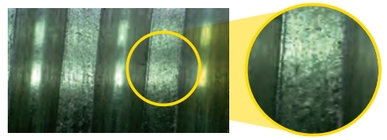


Nominal designation

BT40	–	DST	22	–	100
Spindle		Tapping holder	Max. tapping range		Length

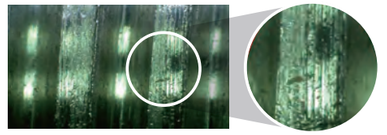
Tast

Comparison of thread shape

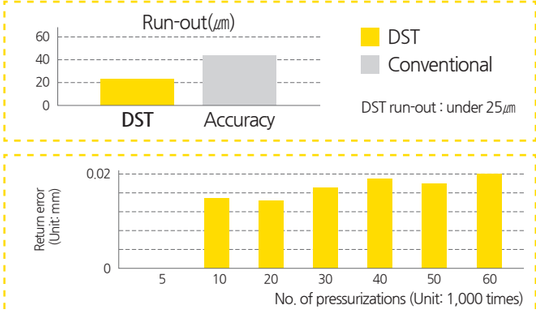


DST22 (V=100 m/min)

Excellent surface



Former product

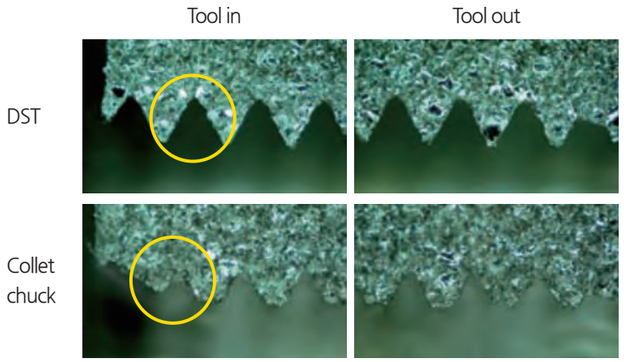




Exclusive collet for tapping

- TER collet
- DST3 = ER11 collet

Comparison of thread shape



DST

Guarantee good shape of thread

Collet chuck

Breakage of thread due to synchronization error

C This symbol means optional through coolant system

● BT : 98P HSK : 157P SK : 172P

ANGULAR HEAD



Slope machining | Flank machining | Innerside | Free angle

Feature

- One machine can function as two machines
- Maching at various angles
- Light weight by aluminum body



Nominal designation

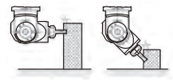
BT50	–	KHU	10	–	195
Spindle		Angular head	Max. chucking dia.		Length

Angular head parts (MAH)

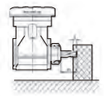


Application

Free angle angular head (MAH, KHU)



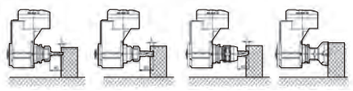
90° fixed angular head (KAH)



45° fixed angular head (KAC)



Angular head (HRAG, KAG)



Componets



SAH NEW

Slim angular head



3,500
Max RPM

Feature

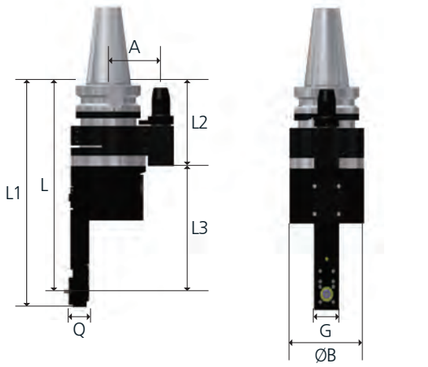
- Suitable for small hole and side miling
- Max. 3,500RPM / Torque rate(IN:OUT) 1:1.37
- Tool dia : Ø3, Ø4, Ø6



Nominal designation

BT50	–	SAH	6	–	277
Spindle		Slim angular head	Max. chucking dia.		Length

Feature



Application



Min.Ø40hole (Except the overhang of E/M)

Min.32mm clearance (Except the overhang of E/M)

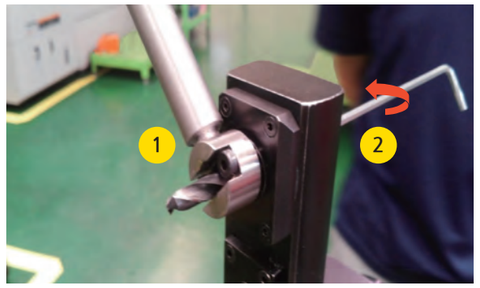
Shank	L	L1	L2	L3	A	Q	G	ØB	Torque rate (IN:OUT)	Direction of rotation	Max.RPM	W (kg)
BT50-SAH6-277	277	298	183.5	93.5	80(110)	31.5	40	76	1:1.37	CW:CW	3,500rpm	14

Clamping force

	Measure	(N-m)			
Clamp torque	2	2.5	3	3.5	4
Clamping force	Unmeasurable	5.5	6.5	7	7

※ Ideal clamping torque : 3.5N-m

Clamping



1. Combination SAH and clamping vise.
2. Rotating the bolt with wrench.



MAH

Universal type MAH (Free angle - Reinforced series)

Corner Rounding | Copy Machining | Inclined Face | Drilling | Milling

Reinforced universal type for mold machining
- A stable work for large mold working.
- Tool : Ø32 Endmill

BT : 106P

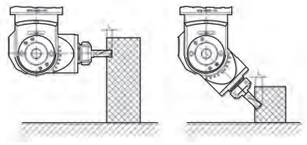


KHU

Universal type KHU(Free angle)

Corner Rounding | Copy Machining | Inclined Face | Drilling | Milling

Adjustable angle : 0°- 90°
- HSK, SK, CAT, GOST type : order to make



BT50-KHU20-195

BT : 108P

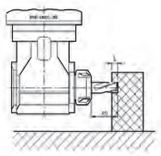


KAH

Modular type KAH(90 ° type)

Drilling | Tapping | Milling

Adjustable angle : 360 ° in horizontal direction
- Please contact before using exclusive tap collet
- HSK, SK, CAT, GOST type : order to make



BT50-KAH20-200

BT : 110P



HRAG

Attachment type HRAG(Attachment - Reinforced type)

Drilling | Milling | Facing

200% upgraded hardness from KAG
- Face mill cutter purpose

BT : 107P

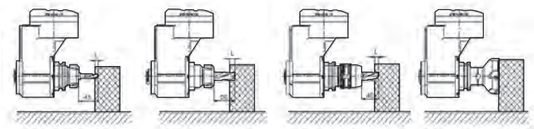


KAG

Attachment type KAG

Drilling | Milling | Facing

Adjustable angle : 360 in horizontal direction
- BT40, BT30 tool mountable
- HSK, SK, CAT, GOST type : order to make



BT40-SDC20-60 (Ø12 E/M)
NT40-SDC20-60 (Ø20 E/M)
BT40-NPM20-85 (Ø20 E/M)
BT40-FMA25.4-45 (Ø80 Shoulder Mill)

BT : 109P



KAC

Modular type KAC(45 ° type)

Drilling | Milling

Adjustable angle : 360 ° in horizontal direction
- HSK, SK, CAT, GOST type : order to make

BT : 111P

FBH/B

FBH back boring & balanced type



G2,5 — G value
C — Coolant system
Boring

Feature

- High speed boring & back boring
- Balance : G2.5
- Adjustable range : 2㎛

Nominal designation

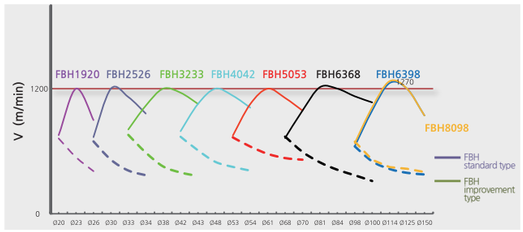
FBH	32	33	B
Fine boring head	MD No.	Minimum Boring dia	Balance type



Max. speed by dia

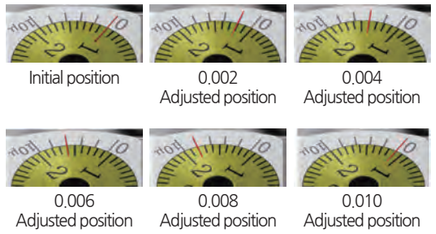
FBH allowed speed

HOLDER : HSK63A (G2,5)



Adjustment

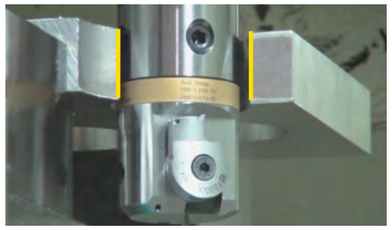
2㎛ boring range



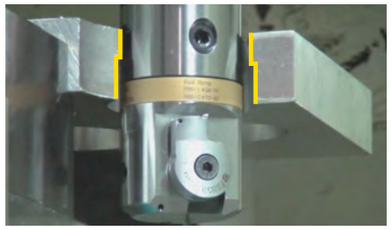
Initial position
0.002 Adjusted position
0.004 Adjusted position
0.006 Adjusted position
0.008 Adjusted position
0.010 Adjusted position

Back boring

Before cutting



After cutting



Changing cutting direction



Boring cutting — Back Boring cutting

It is easy to change cutting direction

C This symbol means built-in through coolant system

● BT : 116P S : 146P SK : 177P

TBC

Balance cut tool for rough boring



Boring

Feature

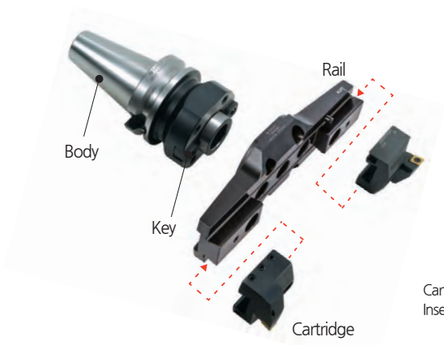
- Wide boring range for big diameters : Ø130 ~ Ø540mm
- Stable structure against cutting load
  - Assembly in dove-tail structure
- Interchangeable headset with FBC
  - Common boring head and rail and different cartridge
- Light-weight



Nominal designation

BT50	–	FMD50	–	85	+	TBC	130S
Body						Head set	

Structure

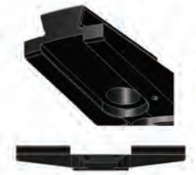




Cartridge : BCC1348
Insert : CCMT1204○○
CNMG1204○○



Less weight and more margin for chip evacuation



Enhanced strength and weight

TBC Boring Tool Cutting condition

Work-piece	SPEC.	Cutting condition		
		Grade	Vc (m/min.)	Feed f(mm/rev.)
AL	ADC12	"N" class	200~500	0.08~0.25
Mild steel	SS41(HB160)	"P" class	100~250	0.08~0.20
Steel	S45C(H250)	"P" class	80~200	0.08~0.25
Stainless Steel	SUS304	"M" class	80~150	0.05~0.15
Cast-iron	FC25(HB250)	"K" class	100~300	0.08~0.25

Boring range

Designation	Boring Dia(ø)		Body	Head Set	Insert
	min	max			
TBC130	130	180	FMD50	TBC130S	CCMT1204○○
TBC175	175	225	FMD50	TBC175S	CCMT1204○○
TBC220	220	270	FMD50	TBC220S	CCMT1204○○
TBC265	265	315	FMD50	TBC265S	CCMT1204○○
TBC310	310	390	FMD50	TBC310S	CCMT1204○○
TBC385	385	465	FMD50	TBC385S	CCMT1204○○
TBC460	460	540	FMD50	TBC460S	CCMT1204○○

● BT : 118P SK : 178P

FBC

Balance cut tool for fine boring



Boring

Feature

- Wide boring range for big diameters
  - Ø130 ~ Ø540mm.
- Interchangeable headset with TBC
  - Common boring head and rail and different cartridge [micro cartridge + balancing block]
- Various Insert
  - Applicable insert : CCMT09T3/1204, TPMT1103

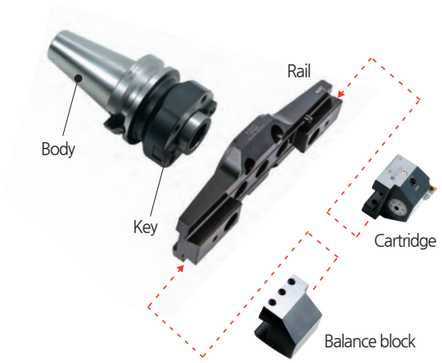


Nominal designation

BT50 – FMD50 – 85 + FBC 130S

Body | Head set

Structure





Cartridge: FCC130
Insert : CCGT09T3○○
CCMT1204○○
TPGT1103○○



Balancing block : FCB130

FBC boring range

Designation	Boring Dia(ø)		Head Set	Insert
	min	max		
FBC130	130	180	FBC130S(TBR130+FCC130+FCB130)	FBB130-C09 (CCMT09T3OO, CCGT09T3OO FBB130-C12 (CCMT1204OO) FBB130-T11 (TPMT1103OO,TPGT1103OOL)
FBC175	175	225	FBC175S(TBR175+FCC130+FCB130)	
FBC220	220	270	FBC220S(TBR220+FCC130+FCB130)	
FBC265	265	315	FBC265S(TBR265+FCC130+FCB130)	
FBC310	310	390	FBC310S(TBR310+FCC310+FCB310)	
FBC385	385	465	FBC385S(TBR385+FCC310+FCB310)	
FBC460	460	540	FBC460S(TBR460+FCC310+FCB310)	

● BT : 118P SK : 178P

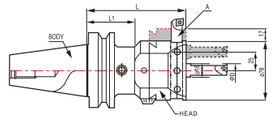
KMB

Micro boring



C Coolant system | Boring





1DIV = ø0.02mm

- Modular type micro boring head
- Adjustable range : 20㎛
- Boring range : Ø8.0~Ø101.0mm
- Adjustable length : 17mm
- Applicable shank : HSK, BT, SK

C This symbol means unavailable with through coolant system

● BT : 122P HSK : 162P SK : 180P

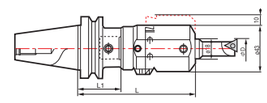
SMB

Small micro boring bar



C Coolant system | Boring





1DIV = ø0.02mm

- Modular type micro boring head
- Adjustable range : 20㎛
- Boring range : Ø8.0~Ø38.0mm
- Adjustable length(Small and deep) : 10mm
- Applicable shank : HSK, BT, SK, NT

C This symbol means unavailable with through coolant system

● BT : 122P HSK : 162P SK : 180P

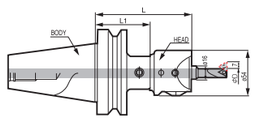
SMH

Small micro boring bar



C Coolant system | Boring





1DIV = ø0.01mm

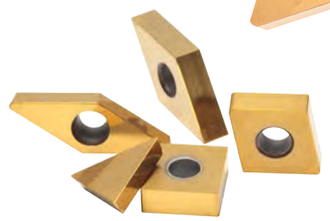
- Modular type micro fine boring head
- Adjustable range : 10㎛
- Boring range : Ø5.5~Ø33.0mm
- Adjustable length : 7mm
- Applicable shank : HSK, BT, SK

C This symbol means optional through coolant system

● BT : 122P HSK : 162P SK : 180P

Advantages

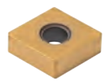
cBN has excellent hardness and thermal resistance. It is sintered with extremely high pressure and temperature after adding a special ceramic binder into the main material of cBN. DINOX cBN has excellent solidity and wear resistance making it optimal for cast iron and hardened steel. The best choice for productivity improvement.



cBN Insert type

Multi corner type coating





2NU-CNGA120408

- Simple corner management
- Special PVD coating
- Longer tool life

One use type

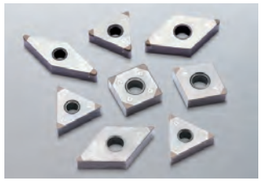


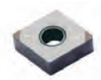


NU-CNGA120408

- Economical price
- Simple management
- Stable cutting performance by strong welding
- Various series

Multi corner type

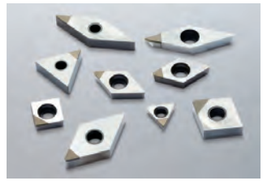




4NU-CNGA120408

- Multiple cBN corners in 1 insert
- Multiple application is available
- Cost down

Regrinding type





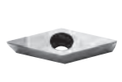
CNMA120408

- Stable long Tool life
- Excellent wear resistance and hardness
- Tool cost saving : 3~4 times of re-grinding

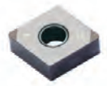
cBN type



Regrinding type



One use type



Multi corner type



Multi corner type (coated)



Solid Type



Special Type

Uses of product and structure features

Features	cBN Content	Hardness	Grade	Work piece	Features
	High ▼ Low	44 ▼ 21	KB370 KB800 KB7000 KB7500	Carbide alloy Chilled iron Ni-hard iron Heat-resistant alloy, cast	• High contnet of cBN, Strong binding among cBN particles • Great performance in cutting of super-hard materials such as cast iron, alloy and carbide alloy
			KB1000 KB320 KB2000 KB335 KB410 KB350 KB420 DNC100 KB425 DNC250 KB210 DNC350	Alloy, Cement Steel, Carbon tool steel, Bearing steel, Dies steel, Ductile cast iron	• Strong binding of CBN particle withspecial ceramic binde • Great wear resistance and endurance in cutting of heat treated steel and cast iron by high cBN content

Characteristics

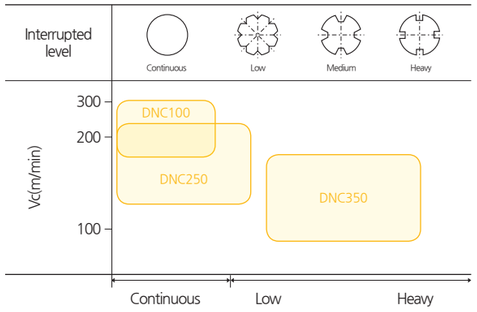
Categorization		Grade	Structure	Binder	cBN Content (%)	Particle Size (㎛)	Hardness HV	TRS (Gpa)
	Coated	DNC100		TiN	50 - 55	2	31 - 34	1.05 - 1.15
	Coated	DNC250		TiC	65 - 70	4	32 - 34	1.00 - 1.10
	Coated	DNC350		TiN	60 - 65	1	33 - 35	1.20 - 1.30
H Heat treated steel		KB410		TiCN	40 - 45	3	27 - 31	0.80 - 0.90
H Heat treated steel		KB1000		TiCN	40 - 45	1	27 - 31	0.90 - 1.00
H Heat treated steel		KB420		TiN	55 - 60	3	31 - 33	0.95 - 1.10
H Heat treated steel		KB425		TiN	65 - 70	4	29 - 31	1.00 - 1.10
H Heat treated steel		KB320		TiN	50 - 55	2	31 - 34	1.00 - 1.10
H Heat treated steel		KB2000		TiN	50 - 55	2	31 - 34	1.05 - 1.15
H Heat treated steel		KB335		TiN	60 - 65	1	33 - 35	1.20 - 1.30
Sintered parts		KB370		CO Compound	90 - 95	2	40 - 43	1.20 - 1.30
K Cast iron		KB370		CO Compound	90 - 95	2	40 - 43	1.20 - 1.30
K Cast iron		KB350		TiC	65 - 70	6	32 - 34	1.00 - 1.10

cBN material features and cutting condition

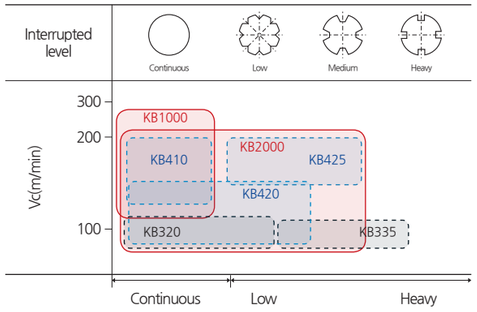
Material type			Insert color	Use	Cutting condition		
Categori-zation	Coated status	Grade			Vc (m/min) 0 50 100 150 200 250	feed	ap
H Hardened steel	Coated	DNC100	Dark brown color	Continuous	180 – 300	0.03 -0.30	0.03 -0.3
		DNC250	Gold color	Continuous high speed cutting	120 – 220	0.05 -0.30	0.05 -0.3
		DNC350	Dark brown color	Medium~heavy interrupted cutting	90 – 150	0.05 -0.30	0.05 -0.25
	Non coated	KB410		Continuous high speed cutting	150 – 200	0.03 -0.13	0.03 -0.2
		KB1000		Continuous high speed cutting	130 – 250	0.03 -0.15	0.03 -0.2
		KB420		High performance cutting	120 – 150	0.03 -0.30	0.03 -0.5
		KB425		High speed interrupted cutting	150 – 200	0.03 -0.30	0.03 -0.5
		KB320		Low ~ medium interrupted cutting	80 – 120	0.03 -0.20	0.03 -0.3
		KB2000		Low ~ medium interrupted cutting	80 – 200	0.03 -0.20	0.03 -0.3
		KB335		Heavy interrupted cutting	80 – 110	0.03 -0.20	0.03 -0.3

Application

Coating



None coating



Use and features of cBN materials

Material type			Insert color	Use	Features
Categorization	Coated status	Grade			
K Cast iron	Non coated	KB370		High speed cutting of FC/Milling cutting of FC Cutting of Hardened iron parts Hard material roll cutting/ Heat resistant alloy cutting	High percentage of cBN. Material with high solidity and heat conductivity by optimizing small connective tissue
		KB350		FC, FCD cutting, Hard VSR cutting, Hard roll finishing cutting	Optimal structure of small connective tissue of cBN for cast iron cutting. Excellent wear resistance and fracture resistance
		KB800		High depth cutting, finishing processing high precision	Solid structure enabling use of whole insert as cutting edge. Great performance in rough machining which was difficult for previous brazing type. Also available for high speed surface cutting

Processing test cases

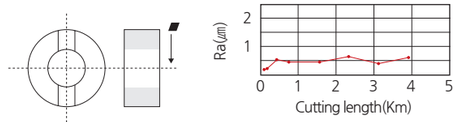
KB350 TEST RESULT

Parts name and work piece material	Grade	KB350	Competitor cBN
	Insert	SPGN090308	SPGN090308
Crank bore FC250 = FCD450 Inner boring	Vc (m/min)	150	
	Fn (mm/rev)	0.15	
	D.O.C (mm)	0.5	
	Dry/Wet	Wet type	



KB350 TEST RESULT

Parts name and work piece material	Grade	KB350	Ceramic
	Insert	CNMA120412	
Compressor comp. FC250 Facing, Interrupted	Vc (m/min)	400	
	Fn (mm/rev)	0.07	
	D.O.C (mm)	0.15	
	Dry/Wet	Wet type	



KB350 : under 0.8㎛, Ceramic : over 1.5㎛

KB370 TEST RESULT

Parts name and work piece material	Grade	KB370	Competitor cBN
	Insert	Special bite	
VSR intake Hv250-330 Plunge cutting	Vc (m/min)	95	
	Fn (mm/rev)	0.08	
	D.O.C (mm)	0.2	
	Dry/Wet	Dry type	



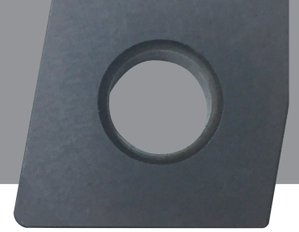
KB370 TEST RESULT

Parts name and work piece material	Grade	KB370	Competitor cBN
	Insert	SPGN090308	TNGA150408
Fly wheel FC300 Facing	Vc (m/min)	600	
	Fn (mm/rev)	0.15	
	D.O.C (mm)	0.2	
	Dry/Wet	Wet type	



DNC100 NEW

Coating cBN

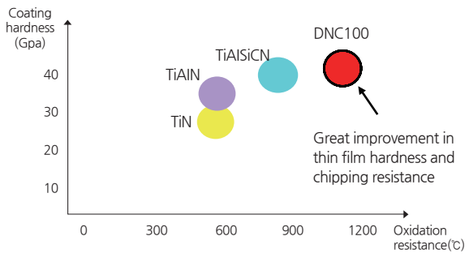


Continuous | 0.3mm Max depth

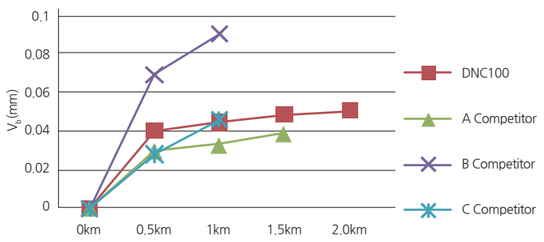
Feature

- High hardness Coating
- Excellent wear and Oxidation resistance for high speed and continuous cutting

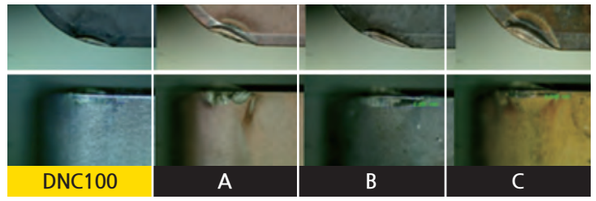




Wear



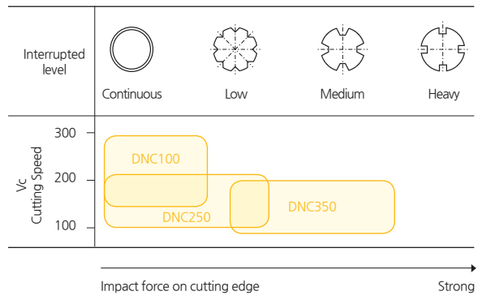
Test



Condition

Insert = 2NU-CNGA120408
Holder = DCLNL2525-M12
Material = SCM415 (58~62HrC)
Cutting speed = 300m/min
Feed = 0.1mm/rev
D.O.C. = 0.1mm
Dry/ Continuous

Application

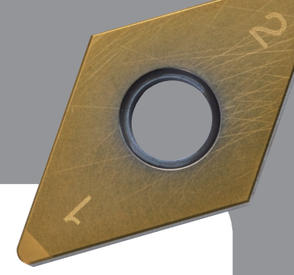


Recommended cutting condition

Vc (m/min)	DNC100	180	300
Fn (mm/rev)	DNC100	0.03	0.3
D.O.C (mm)	DNC100	0.03	0.3

DNC250

Coating cBN

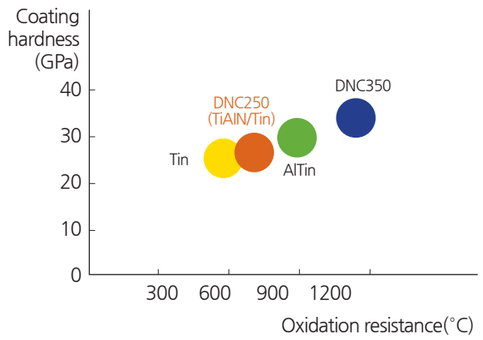


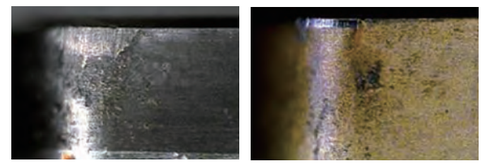
Continuous | Moderately | 0.3mm Max depth

Feature

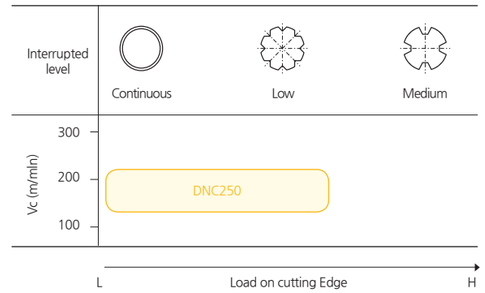
- New PVD Coating
- Excellent wear resistance







Application area

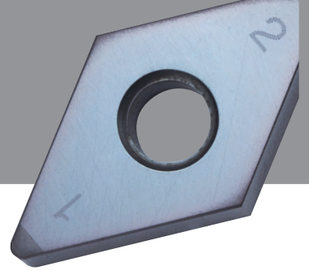


Recommended cutting condition

Vc (m/min)	120	220
Fn (mm/rev)	0.05	0.3
D.O.C (mm)	0.05	0.3

DNC350

Coating cBN

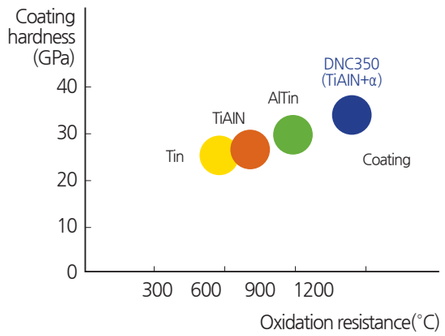


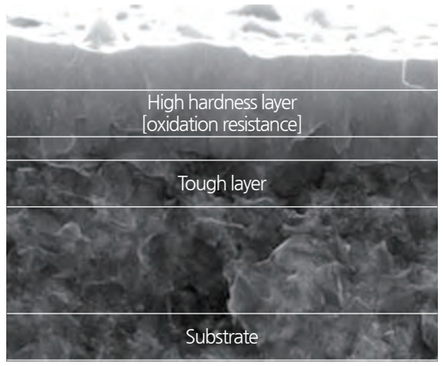
Moderately | 0.3mm Max depth

Feature

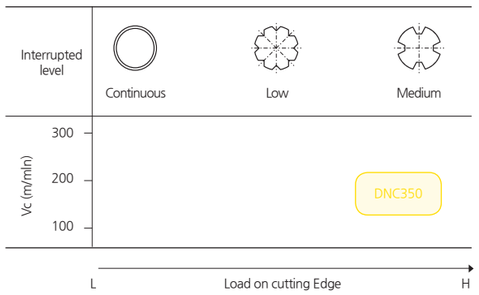
- New coated cBN grade for medium interrupted
- New PVD coating [TiAlN+α]
- TiAlN coating provides overall chipping and wear resistance
- Tough cBN substrate offers prolonged tool life







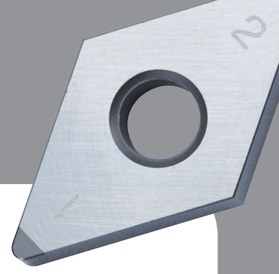
Application



Recommended cutting condition

Vc (m/min)	120	150
Fn (mm/rev)	0.05	0.3
D.O.C (mm)	0.05	0.25

KB1000



Continuous | 0.2mm Max depth

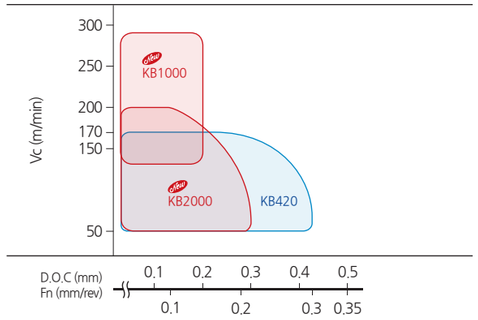
Feature

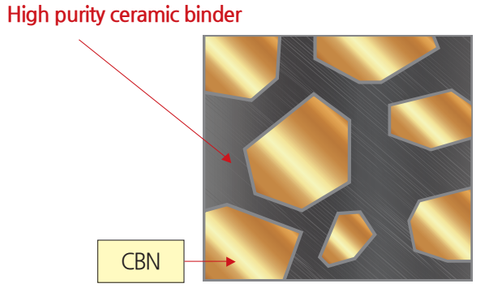
- Stable tool life in continuous and low interrupted of hardened steel
- Great wear resistance using high purity ceramic binder



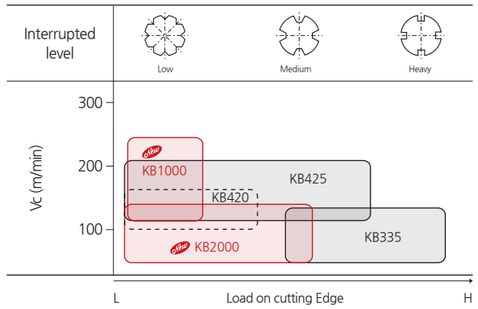
Application

Continuous cutting

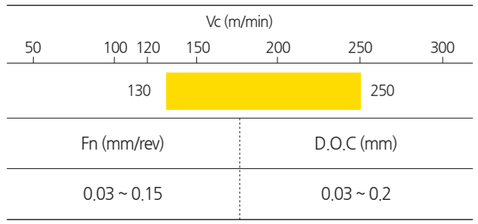




Interrupted cutting of hardened steel

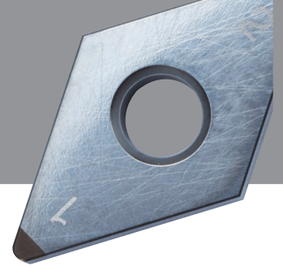


Recommerded cutting condition



※ Cutting oil : Continuous cutting : Dry, Wet
Interuppted cutting : Dry

KB2000



Continuous | Moderately | Max depth 0.3mm

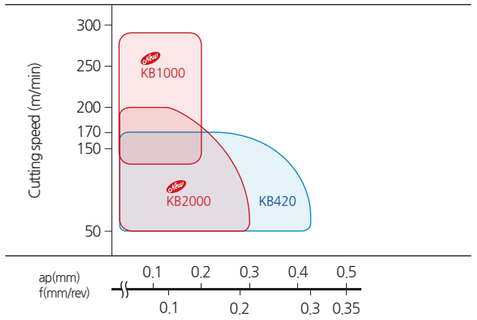
Feature

- Stable tool life in low~medium interrupted of hardened steel
- Great chipping resistance using high purity ceramic binder

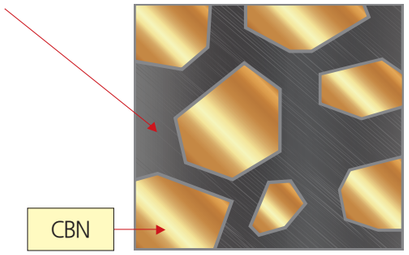


Application

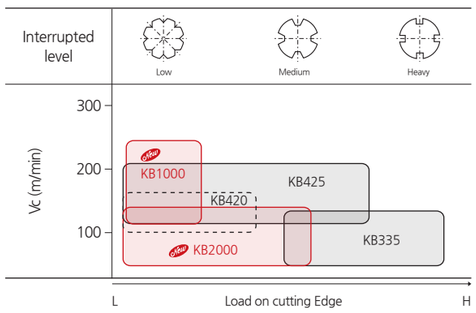
Continuous cutting



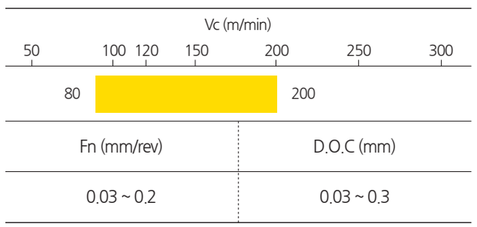
High purity ceramic binder



Interrupted cutting of Hardened steel



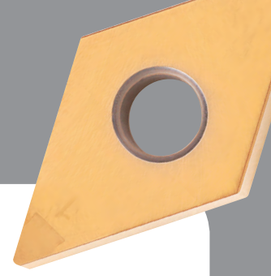
KB2000



※ Cutting oil : Continuous cutting : Dry, Wet
Interuppted cutting : Dry

DNC400 NEW

Solid type coating cBN



Continuous | Moderately | Max depth 0.5mm

Feature

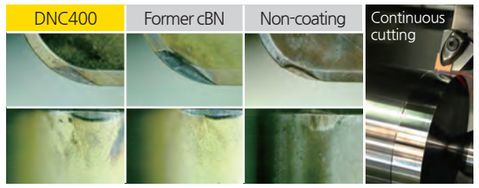
- Max.D.O.C = 0.5mm
- Excellent tool-life : new PVD coating

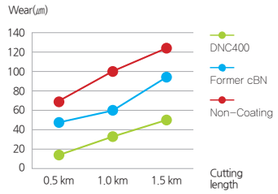


Advantage

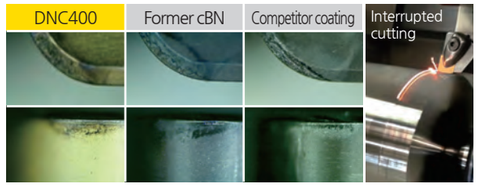
- Enhanced productivity by high spped and more depth
- Excellent on carburized part and welded part
- Stability by 3 side brazing

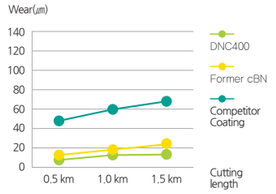
Test





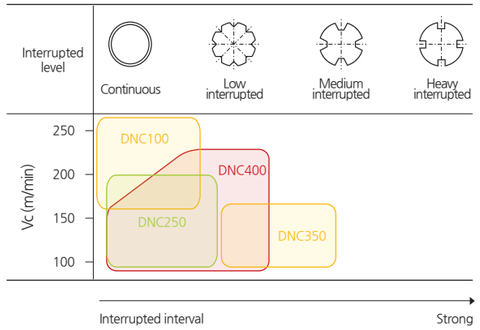
Cutting condition
Insert = CNGA120408
Material= SUJ2 (Hardness HrC 58~62)
Vc = 150 m/min
Fn = 0.10mm / rev
D.O.C = 0.1mm
Dry





Cutting condition
Insert = CNGA120408
Material= SUJ2 (Hardness HrC 58~62)
Vc = 150 m/min
Fn = 0.10mm / rev
D.O.C = 0.3mm
Dry

Application

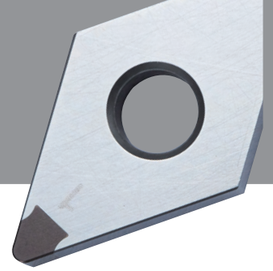


Comparison

Fn (mm/rev)	DNC400	0.05	0.30
	DNC250	0.05	0.30
	DNC350	0.05	0.30
D.O.C (mm)	DNC400	0.05	0.50
	DNC250	0.05	0.30
	DNC350	0.05	0.30

KB400

Solid type cBN



Continuous | Moderately | 0.5mm Max depth

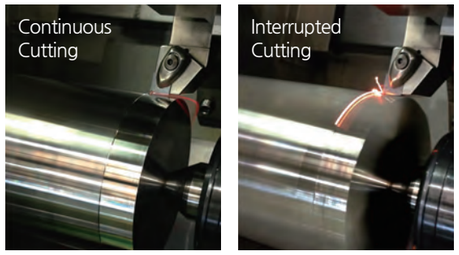
Feature

- Solid corner type
- Max. D.O.C. = 0.5mm
- Excellent wear resistance and fracture resistance

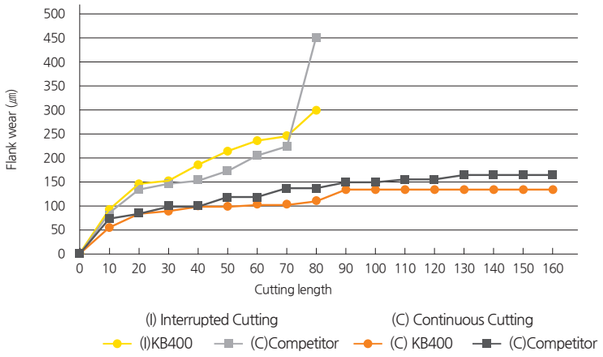


Test

Vc (m/min)	150 m/min.
Fn (mm/rec)	0.10 mm/rev
Insert	2NS-CNGA120408
Material	SCM440(H)
Hardness	55~60 HRc
Coolant	Dry



Type	KB400	Competitor cBN
Continuous Cutting		
Interrupted Cutting		



Recommended cutting condition

Vc (m/min)	120	220
Fn (mm/rev)	0.1	0.3
D.O.C (mm)		0.5

ROT

Run-out tester



ISO Shank | 200mm=3㎛

Feature

- Various shanks compatible, plus wide lineup
  - Applicable from ISO 30 to ISO50 (ISO: BT,SK,NT,CAT)
- General type available at affordable price, and multi type for measuring both edge heightand outerdiameter at once



Designation

ROTS	ROTM
ROTS-ISO30	ROTM-ISO30
ROTS-ISO40	ROTM-ISO40
ROTS-ISO50	ROTM-ISO50

Part list

BASIC				OPTION		
Shank	Body	Housing	Retainer	Test bar	Arm	Indicator
ISO50	ROTM-BD (Multi type) ROTS-BD General type)	ROT-HS-ISO50	ROT-RT-ISO50	BTN50-50-300	MB -1030-2	DIAL GAUGE (0.002mm)
ISO40		ROT-HS-ISO40	ROT-RT-ISO40	BTN40-50-300		
ISO30		ROT-HS-ISO30	ROT-RT-ISO30	BTN30-30-200		

Easy measurement

Mounting and spinning,
that's all to run-out measurement.



① Put the tool in



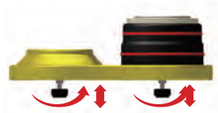
② Check R/O by turning tool

Easy control for horizontal level (ROTM)

Easy adjustedment with anti-vibration pad

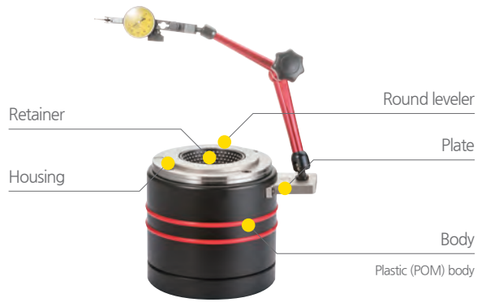


① Check level with Leveler



② For adjusting level,
please turn the Leveling foot.

ROTS-General type (~Ø150)



ROTM-Multi type (~Ø400)



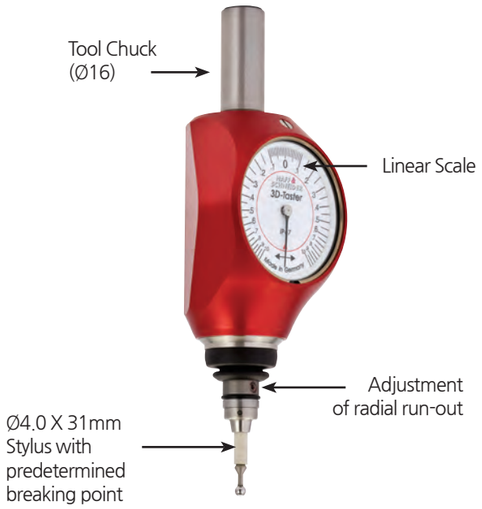
NEW 3D-TASTER

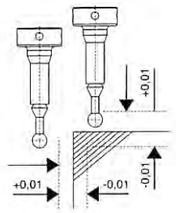
Feature

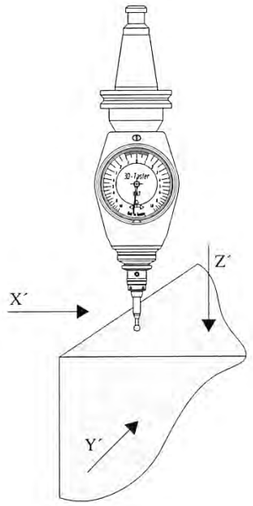
- High measuring accuracy : 0.01mm
- Waterproof and anti-vibration structure.
- Prevention of stylus loss by the shock and vibration on stylus in screw clamping system
- Simple and accurate measurement of radius run-out, and measuring radius run-out directly by lower scaning arm.
- Measurment in radial and axial direction by an indicator.



Standard type Long type



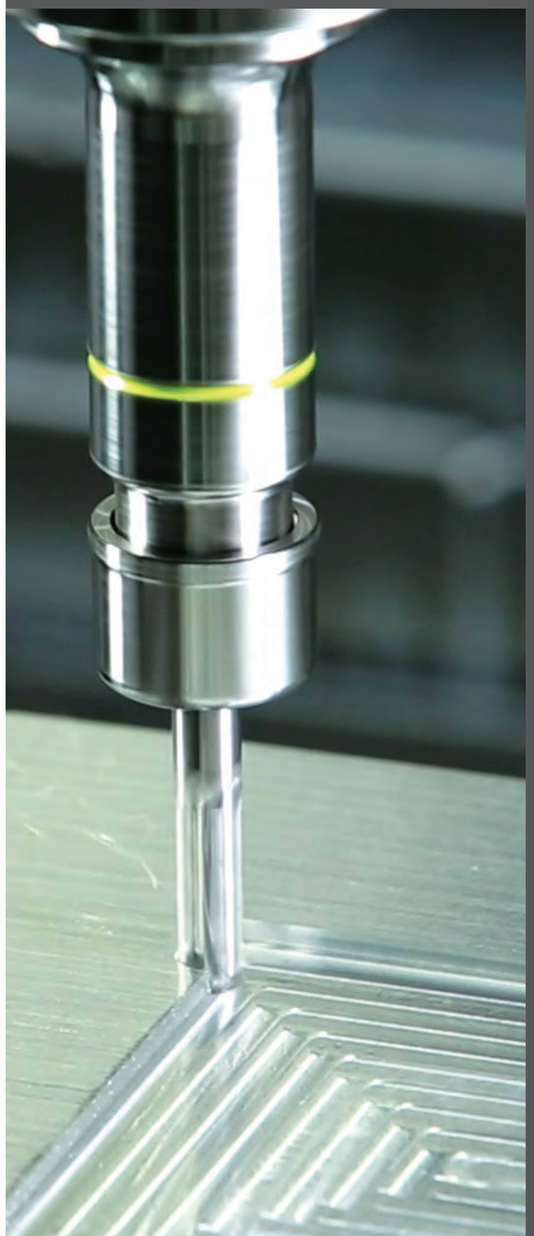




축	Tolerance
X	(+/-)0.01
Y	(+/-)0.01
Z	(+/-)0.01

BT SHANK





DHE ---------- 60
DHC Collet(General type) --- 62
DHC Collet(Through Coolant type) -- 62
DHJ COLLET (Jet Coolant) --- 63
DHE SPARE PART ---------- 63
DSC ---------- 64
DSC/M MONO CURVE TYPE ----- 65
DSC/M MONO MIDDLE TYPE ---- 66
DSC/S MONO SLIM TYPE -------- 67
CS/CM 2PIECES TYPE ---------- 68
SLK 2PIECES TYPE ---------- 69
DSC SPARE PART ---------- 70
CPM ---------- 71
NPM ---------- 72
NPM SET ---------- 73
DCS ---------- 74
DC ---------- 74
TC ---------- 75
DJT ---------- 75
NPM SPARE PART ---------- 76
RTJW ---------- 77
SDC ---------- 78
HPS ---------- 80
GERC COLLET ---------- 82
ER COLLET ---------- 82
GERC COLLET SET ---------- 83
ER COLLET SET ---------- 83
SDC SPARE PART ---------- 84
HPS SPARE PART ---------- 85
DSK ---------- 86
GSK ---------- 88
HC COLLET ---------- 90
DSK SPARE PART ---------- 92
GSK SPARE PART ---------- 93
NPU ---------- 94
NPU SPARE PART ---------- 95
DTN ---------- 96
TCA ---------- 97
DST ---------- 98
TER ---------- 99
SLA ---------- 100
SLA SPARE PART ---------- 101
FMA ---------- 102
FMC ---------- 103
FMA, FMC SPARE PART ---- 104
MAH ---------- 106
HRAG ---------- 107
KHU ---------- 108
KAG ---------- 109
KAH ---------- 110
KAC ---------- 111
MD ---------- 112
EXT ---------- 114
RDC ---------- 114
MD SPARE PART ---------- 115
FBH/B ---------- 116
FBH/B SPARE PART ---------- 117
FBC/TBC ---------- 118
FBC/TBC SPARE PART ------- 119
FBB For FBC ---------- 119
DBC ---------- 120
DBC SPARE PART ---------- 121
KMB ---------- 122
SMB ---------- 122
SMH ---------- 122
SMH SET ---------- 123
BB BITE ---------- 124
KMB SPARE PART ---------- 125
SMB SPARE PART ---------- 125
SMH SPARE PART ---------- 125
BSA ---------- 126
BSA SPARE PART ---------- 128
BH ---------- 129
BKA ---------- 130
BKA SPARE PART ---------- 132
FZ UNIT ---------- 133
FZ UNIT SPARE PART -------- 134
INSERT ---------- 135
BCF ---------- 136
FF ---------- 138
FF UNIT SPARE PART -------- 139
PULL STUD BOLT ---------- 140

BT-DHE

Hydraulic expansion chuck



MAS 403-BT	G6.3	15,000	5㎛	C			
Shank	G value	Max RPM	Run-out	Coolant system	Reaming	Milling	Chamfering

Fig.1

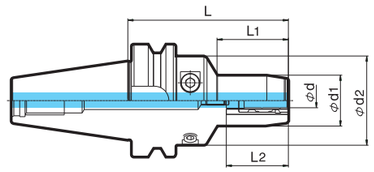
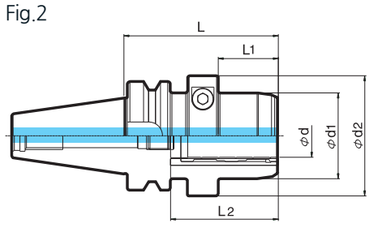


Fig.2



C This symbol means built-in through coolant system

L2 : tool insertion depth(Min.~Max)

- Features, see page29 29P
- Collet, see page62 62P
- Spare part, see page63 63P

BT30, BT40

Designation	Ød	L	Ød1	Ød2	L1	L2	ADJ SCREW	Fig.	kg
BT30-DHE6-65	6	65	29	46	33	30~39.8	M5	1	0.7
BT30-DHE8-65	8	65	31	46	33	30~39.8	M5	1	0.7
BT30-DHE10-65	10	65	33	46	34	35~44.8	M10	1	0.7
BT30-DHE12-65	12	65	35	46	34	41~50.8	M10	1	0.7
BT30-DHE14-90	14	90	36	46	40	43~52.8	M10	1	0.9
BT30-DHE16-90	16	90	40	46	45	46~55.8	M10	1	1.0
BT30-DHE18-90	18	90	42	46	40	49~58.8	M10	1	1.0
BT30-DHE20-90	20	90	44	46	45	49~58.8	M10	1	1.1
BT40-DHE6-90	6	90	29	50	40	30~39.8	M5	1	1.4
BT40-DHE6-140	6	140	29	50	40	30~39.8	M5	1	2.2
BT40-DHE8-90	8	90	31	50	40	30~39.8	M5	1	1.4
BT40-DHE8-140	8	140	31	50	40	30~39.8	M5	1	2.2
BT40-DHE10-90	10	90	33	50	40	35~44.8	M5	1	1.5
BT40-DHE10-140	10	140	33	50	40	35~44.8	M5	1	2.2
BT40-DHE12-90	12	90	35	50	40	41~50.8	M10	1	1.5
BT40-DHE12-140	12	140	35	50	40	41~50.8	M10	1	2.3
BT40-DHE14-90	14	90	36	50	40	43~52.8	M10	1	1.5
BT40-DHE14-140	14	140	36	50	40	43~52.8	M10	1	2.3
BT40-DHE16-90	16	90	40	50	45	46~55.8	M10	1	1.5
BT40-DHE16-140	16	140	40	50	45	46~55.8	M10	1	2.3
BT40-DHE18-90	18	90	42	50	45	49~58.8	M10	1	1.5
BT40-DHE18-140	18	140	42	50	45	49~58.8	M10	1	2.3
BT40-DHE20-90	20	90	44	50	47	49~58.8	M10	1	1.5
BT40-DHE20-140	20	140	44	50	47	49~58.8	M10	1	2.3
BT40-DHE25-90	25	90	50	70	35	58~67.8	M16	2	1.9
BT40-DHE32-90	32	90	63	80	35	58~67.8	M16	2	2.0

BT-DHE

Hydraulic expansion chuck



MAS 403-BT	G6.3	15,000	5㎛	C			
Shank	G value	Max RPM	Run-out	Coolant system	Reaming	Milling	Chamfering

Fig.1

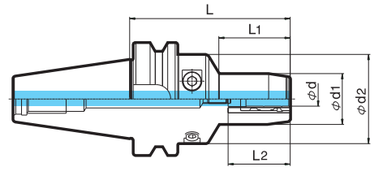
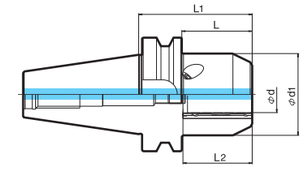


Fig.2



C This symbol means built-in through coolant system

L2 : tool insertion depth(Min.~Max)

- Features, see page29 29P
- Collet, see page62 62P
- Spare part, see page63 63P

BT50

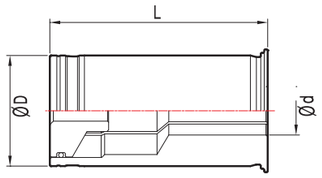
Designation	Ød	L	Ød1	Ød2	L1	L2	ADJ SCREW	Fig.	kg
BT50-DHE6-90	6	90	29	50	34	30~39.8	M5	1	3.9
BT50-DHE6-140	6	140	29	50	34	30~39.8	M5	1	4.5
BT50-DHE8-90	8	90	31	50	34	30~39.8	M5	1	3.9
BT50-DHE8-140	8	140	31	50	34	30~39.8	M5	1	4.5
BT50-DHE10-90	10	90	33	50	34	35~44.8	M5	1	3.9
BT50-DHE10-140	10	140	33	50	34	35~44.8	M5	1	4.5
BT50-DHE12-90	12	90	35	50	34	41~50.8	M10	1	4.0
BT50-DHE12-140	12	140	35	50	34	41~50.8	M10	1	4.6
BT50-DHE14-90	14	90	36	50	34	43~52.8	M10	1	4.0
BT50-DHE14-140	14	140	36	50	34	43~52.8	M10	1	4.6
BT50-DHE16-90	16	90	40	50	34	46~55.8	M10	1	4.1
BT50-DHE16-140	16	140	40	50	34	46~55.8	M10	1	4.7
BT50-DHE18-90	18	90	42	50	34	49~58.8	M10	1	4.1
BT50-DHE18-140	18	140	42	50	34	19~58.8	M10	1	4.7
BT50-DHE20-90	20	90	44	50	34	49~58.8	M10	1	4.2
BT50-DHE20-140	20	140	44	50	34	49~58.8	M10	1	4.7
BT50-DHE25-90	25	90	66	-	52	58~67.8	M16	2	4.7
BT50-DHE32-90	32	90	72	-	52	58~67.8	M16	2	4.8

DHC COLLET(GENERAL TYPE)

Collet(General type)



5㎛ Run-out | C Coolant system



● Except for below sizes, other size is made by order.

C This symbol means unavailable with through coolant system

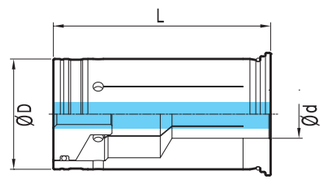
Designation	ØD	Ød	L
DHC12 - 3, 4, 5, 6, 8	12	3, 4, 5, 6, 8	47
DHC20 - 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 16	20	3, 4, 5, 6, 7, 9, 8, 10, 11, 12, 14, 16	52
DHC32 - 6, 8, 10, 12, 14, 16, 18, 19, 20, 25	32	6, 8, 10, 12, 14, 16, 18, 19, 20, 25	63

DHC COLLET(THROUGH COOLANT TYPE)

Coolant collet(accuracy type)



3㎛ Run-out | C Coolant system



C This symbol means built-in through coolant system

● Except for below sizes, other size is made by order.

Designation	ØD	Ød	L
DHC12 - 3(P), 4(P), 5(P), 6(P), 8(P)	12	3, 4, 5, 6, 8	47
DHC20 - 3(P), 4(P), 5(P), 6(P), 7(P), 8(P), 9(P), 10(P), 11(P), 12(P), 14(P), 16(P)	20	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 16	52
DHC32 - 6(P), 8(P), 10(P), 12(P), 14(P), 16(P), 18(P), 19(P), 20(P), 25(P)	32	6, 8, 10, 12, 14, 16, 18, 19, 20, 25	63

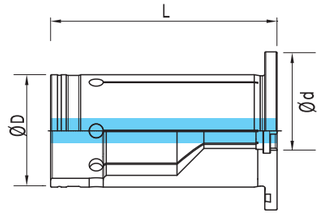
C This symbol means built-in through coolant system

DHJ COLLET (JET COOLANT)

DHJ Jet coolant collet (Accuracy type)



3㎛ Run-out | C Coolant system



C This symbol means built-in through coolant system

Designation	ØD	Ød	L
DHJ20- 6, 8, 10, 12, 14, 16	20	6, 8, 10, 12, 14, 16	47

DHE SPARE PART

Hydraulic expansion chuck spare part

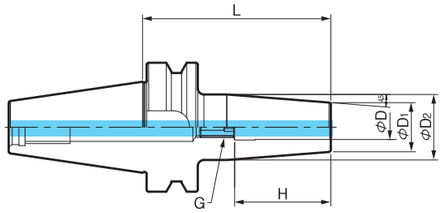
Spare Part

Basic					
Chuck		Clamp bolt	Wrench	Chuck	Adjust screw
Type				Type	
BT30 / SK30 / HSK50	DHE 6, 8, 10, 12	DHE-M8(C)	DHETW-4	DHE 6, 8, 10	DHE-M5 (ADJ)
	DHE 14, 16, 18, 20	DHE-M10(C)	DHETW-5		
BT40 / BT50 / SK40 / SK50 / HSK63A / HSK100A	DHE 6, 8, 10, 12, 14, 16, 18, 20	DHE-M10(C)	DHETW-5	DHE 12, 14, 16, 18, 20	DHE-M10 (ADJ)
	DHE 25, 32	DHE-M12(C)	DHETW-6	DHE 25, 32	DHE-M16 (ADJ)

BT-DSC
Shrinking chuck



MAS 403-BT	G2.5	25,000	3㎛	C				
Shank	G value	Max RPM	Run-out	Coolant system	Drilling	Reaming	Milling	Chamfering



C This symbol means built-in through coolant system

● Features, see page 24 24P

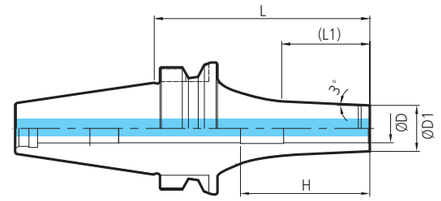
● Adjust screw, see page 70 70P

	Designation	ØD	L	ØD1	ØD2	H	G	kg	RPM
BT30, BT40	BT30-DSC3-60	3	60	11	18.5	82	-	0.6	25,000
	BT30-DSC4-60	4	60	13	20.5	82	-	0.6	25,000
	BT40-DSC6-90	6	90	21	27	36	M5	1.2	20,000
	BT40-DSC6-120	6	120	21	27	36	M5	1.2	20,000
	BT40-DSC6-160	6	160	21	27	36	M5	1.4	20,000
	BT40-DSC8-90	8	90	21	27	36	M5	1.2	20,000
	BT40-DSC8-120	8	120	21	27	36	M5	1.2	20,000
	BT40-DSC8-160	8	160	21	27	36	M5	1.4	20,000
	BT40-DSC10-90	10	90	24	32	42	M8	1.2	20,000
	BT40-DSC10-120	10	120	24	32	42	M8	1.2	20,000
	BT40-DSC10-160	10	160	24	32	42	M8	1.6	20,000
	BT40-DSC12-90	12	90	24	32	47	M8	1.2	20,000
	BT40-DSC12-120	12	120	24	32	48	M8	1.2	20,000
	BT40-DSC12-160	12	160	24	32	49	M8	1.6	20,000
	BT40-DSC16-90	16	90	27	34	50	M12	1.3	20,000
	BT40-DSC16-120	16	120	27	34	50	M12	1.3	20,000
	BT40-DSC16-160	16	160	27	34	50	M12	1.7	20,000
	BT40-DSC20-90	20	90	33	42	52	M12	1.3	20,000
	BT40-DSC20-120	20	120	33	42	52	M12	1.5	20,000
	BT40-DSC20-160	20	160	33	42	52	M12	2.1	20,000

BT-DSC/M MONO CURVE TYPE NEW
Shrinking chuck



MAS 403-BT	G2.5	25,000	3㎛	C				
Shank	G value	Max RPM	Run-out	Coolant system	Drilling	Reaming	Milling	Chamfering



C This symbol means built-in through coolant system

● Features, see page24. 24P

※ Do not use adjust screw

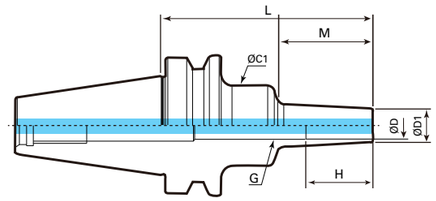
	Designation	ØD	L	L1	ØD1	ØC1	H	G	kg	RPM
BT30	BT30-DSC3M-75S	3	75	29.8	8	25	97	-	0.6	25,000
	BT30-DSC4M-75S	4	75	31.8	10	25	97	-	0.6	25,000
	BT30-DSC6M-75S	6	75	28.9	12	30	97	-	0.6	25,000
	BT30-DSC8M-75S	8	75	28.9	14	32	97	-	0.6	25,000
	BT30-DSC10M-75S	10	75	30.66	16	32	45	-	0.6	25,000

BT-DSC/M MONO MIDDLE TYPE

Shrinking chuck



MAS 403-BT	G2.5	25,000	3㎛	C				
Shank	G value	Max RPM	Run-out	Coolant system	Drilling	Reaming	Milling	Chamfering



C This symbol means built-in through coolant system

● Features, see page 24 24P

● Adjust screw, see page 70 70P

BT40, BT50

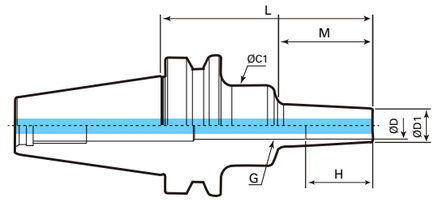
Designation	ØD	L	ØD1	ØC1	M	H	G	kg	RPM
BT40-DSC6M-95	6	95	10	26	42	18	M5	1.2	20,000
BT40-DSC6M-120	6	120	10	26	67	18	M5	1.2	20,000
BT40-DSC6M-160	6	160	10	36	97	18	M5	1.5	20,000
BT40-DSC8M-95	8	95	13	36	42	24	M5	1.2	20,000
BT40-DSC8M-120	8	120	13	36	67	24	M5	1.2	20,000
BT40-DSC8M-160	8	160	13	36	97	24	M5	1.5	20,000
BT40-DSC10M-95	10	95	16	36	42	30	M8	1.2	20,000
BT40-DSC10M-120	10	120	16	36	67	30	M8	1.2	20,000
BT40-DSC10M-160	10	160	16	36	97	30	M8	1.5	20,000
BT40-DSC12M-95	12	95	19	36	42	30	M8	1.2	20,000
BT40-DSC12M-120	12	120	19	36	67	30	M8	1.2	20,000
BT40-DSC12M-160	12	160	19	36	97	30	M8	1.5	20,000
BT40-DSC16M-95	16	95	24	50	42	32	M12	1.2	20,000
BT40-DSC16M-120	16	120	24	50	67	32	M12	1.2	20,000
BT40-DSC16M-160	16	160	24	50	97	32	M12	1.5	20,000
BT40-DSC20M-95	20	95	29	50	42	40	M12	1.2	20,000
BT40-DSC20M-120	20	120	29	50	67	40	M12	1.2	20,000
BT40-DSC20M-160	20	160	29	50	97	40	M12	1.5	20,000
BT50-DSC6M-110	6	110	10	26	42	18	M5	3.5	15,000
BT50-DSC6M-160	6	160	10	36	97	18	M5	4	15,000
BT50-DSC8M-110	8	110	13	36	42	24	M5	3.5	15,000
BT50-DSC8M-160	8	160	13	36	97	24	M5	4	15,000
BT50-DSC10M-110	10	110	16	36	42	30	M8	3.5	15,000
BT50-DSC10M-160	10	160	16	36	97	30	M8	4	15,000
BT50-DSC12M-110	12	110	19	36	42	30	M8	3.5	15,000
BT50-DSC12M-160	12	160	19	50	97	30	M8	4	15,000
BT50-DSC16M-110	16	110	24	50	42	32	M12	3.5	15,000
BT50-DSC16M-160	16	160	24	50	97	32	M12	4	15,000
BT50-DSC20M-110	20	110	29	50	42	40	M12	3.5	15,000
BT50-DSC20M-160	20	160	29	50	97	40	M12	4	15,000

BT-DSC/S MONO SLIM TYPE

Shrinking chuck



MAS 403-BT	G2.5	25,000	3㎛	C				
Shank	G value	Max RPM	Run-out	Coolant system	Drilling	Reaming	Milling	Chamfering



C This symbol means built-in through coolant system

● Features, see page24. 24P

※ Do not use adjust screw

BT30, BT40, BT50

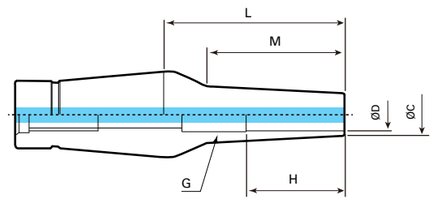
Designation	ØD	L	ØD1	M	H	kg	RPM
BT30-DSC6S-60	6	60	9	20	22	0.7	25,000
BT30-DSC6S-80	6	80	9	20	42	0.7	25,000
BT30-DSC6S-120	6	120	9	25	67	0.9	25,000
BT40-DSC6S-95	6	95	9	26	42	1.2	20,000
BT40-DSC6S-120	6	120	9	26	67	1.2	20,000
BT40-DSC6S-160	6	160	9	36	97	1.5	20,000
BT40-DSC8S-95	8	95	11	36	42	1.2	20,000
BT40-DSC8S-120	8	120	11	36	67	1.2	20,000
BT40-DSC8S-160	8	160	11	36	97	1.5	20,000
BT40-DSC10S-95	10	95	13	36	42	1.2	20,000
BT40-DSC10S-120	10	120	13	36	67	1.2	20,000
BT40-DSC10S-160	10	160	13	36	97	1.5	20,000
BT40-DSC12S-95	12	95	15	36	42	1.2	20,000
BT40-DSC12S-120	12	120	15	36	67	1.2	20,000
BT40-DSC12S-160	12	160	15	36	97	1.5	20,000
BT50-DSC6S-110	6	110	9	26	42	3.5	15,000
BT50-DSC6S-160	6	160	9	36	97	4	15,000
BT50-DSC8S-110	8	110	11	36	42	3.5	15,000
BT50-DSC8S-160	8	160	11	36	97	4	15,000
BT50-DSC10S-110	10	110	13	36	42	3.5	15,000
BT50-DSC10S-160	10	160	13	36	97	4	15,000
BT50-DSC12S-110	12	110	15	36	42	3.5	15,000
BT50-DSC12S-160	12	160	15	36	97	4	15,000

CS/CM 2PIECES TYPE

Shrinking chuck



5㎛ Run-out | C Coolant system | Drilling | Reaming | Milling | Chamfering



● Features, see page24 24P

※ Do not use adjust screw

C This symbol means built-in through coolant system

CS

Designation	ØD	ØC	L	M	H
CS12-6-35	6	9	35	22	18
CS12-6-55	6	9	55	42	18
CS12-6-80	6	9	80	67	18
CS12-6-110	6	9	110	97	18
CS12-8-35	8	11	35	22	24
CS12-8-55	8	11	55	42	24
CS12-8-80	8	11	80	67	24
CS12-8-110	8	11	110	97	24
CS12-10-35	10	13	35	22	30
CS12-10-55	10	13	55	42	30
CS12-10-80	10	13	80	67	30
CS12-10-110	10	13	110	97	30
CS12-12-35	12	15	35	22	30
CS12-12-55	12	15	55	42	30
CS12-12-80	12	15	80	67	30
CS12-12-110	12	15	110	97	30

● Features, see page24 24P

● Adjust screw, see page 70 70P

C This symbol means built-in through coolant system

CM

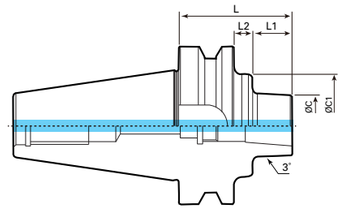
Designation	ØD	ØC	L	M	H
CM12-6-35	6	12	35	22	18
CM12-6-55	6	12	55	42	18
CM12-6-80	6	12	80	67	18
CM12-8-35	8	14	35	22	24
CM12-8-55	8	14	55	42	24
CM12-8-80	8	14	80	67	24
CM12-10-35	10	16	35	22	30
CM12-10-55	10	16	55	42	30
CM12-10-80	10	16	80	67	30
CM12-12-35	12	20	35	22	30
CM12-12-55	12	20	55	42	30
CM12-12-80	12	20	80	67	30

BT-SLK 2PIECES TYPE

Shrinking chuck



MAS 403-BT Shank | G2.5 G value | 25,000 Max RPM | 5㎛ Run-out | C Coolant system



● Features, see page24 24P

※ BT30-SLK12-35 need exclusive pull stud bolt.

C This symbol means built-in through coolant system

BT30, BT40, BT50

Designation	L	ØC	L1	L2	ØC1
BT30-SLK12-35	35	38	13	-	-
BT40-SLK12-45	45	38	18	-	-
BT40-SLK12-45F	45	41	18	-	-
BT40-SLK12-75	75	38	48	-	-
BT40-SLK12-75F	75	41	48	-	-
BT40-SLK12-135F	135	41	108	-	-
BT50-SLK12-75	75	38	25	12	65
BT50-SLK12-75F	75	41	25	12	65
BT50-SLK12-105F	105	41	55	12	65
BT50-SLK12-135F	135	41	85	12	65
BT50-SLK12-225	225	38	150	37	65
BT50-SLK12-315	315	38	150	127	90

DSC SPARE PART

Shrinking chuck spare part

BASIC

Adjust screw

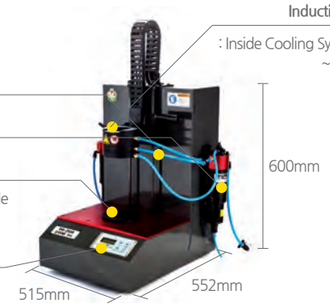


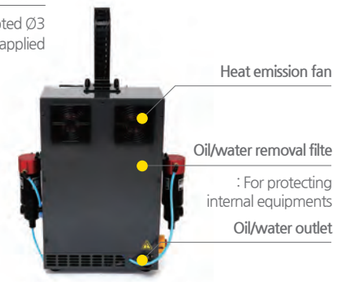
Basic										
Type	DSC6	DSC8	DSC10	DSC12	DSC14	DSC16	DSC18	DSC20	DSC25	DSC32
Adjust screw	M520C		M820C		M1230C					

OPTIONAL

HEATING DEVICE _ DH-2000

- Shirniking device for mass-production line
- It can be operated more than 120 times continuously





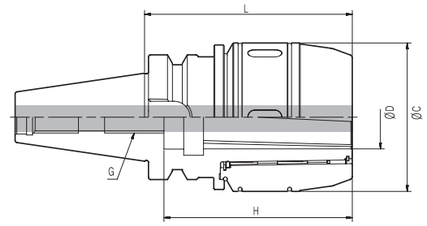
● Features, see page 25 25P

BT-CPM

Champion milling chuck



MAS 403-BT Shank | 15㎛ Run-out | 130~500 kgf·m Clamping Force | C Coolant system | Drilling | Reaming



● Features, see page 27 27P

※ Set. can be made by order

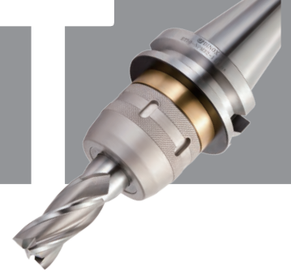
C This symbol means optional through coolant system

BT30, BT40, BT50

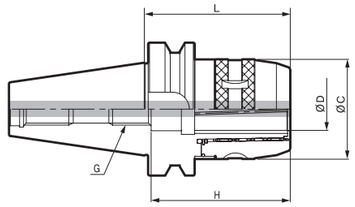
Designation	Ød	L	ØC	H	G	COLLET	kg
BT30-CPM20-80	20	80	54	85	M16	DC20, DCS20	1.1
BT40-CPM20-90	20	90	54	85	M16	DC20, DCS20	2.3
BT40-CPM32-90	32	90	75	85	M16	DC32, DCS32	2.8
BT40-CPM32-105	32	105	75	95	M16	DC32, DCS32	2.9
BT50-CPM32-105	32	105	75	105	M24	DC32, DCS32	5.0
BT50-CPM32-135	32	135	75	105	M24	DC32, DCS32	5.8
BT50-CPM32-165	32	165	75	105	M24	DC32, DCS32	6.8

BT-NPM

New power milling chuck



MAS 403-BT Shank | 15㎛ Run-out | 130~500 kgf·m Clamping Force | C Coolant system | Drilling | Milling



- Features, see page 26 — 26P
- Straight collet DCS ,DC type, see page 74 — 74P
- Taper collet(TC type), see page 75 — 75P
- Spare part, see page76 — 76P

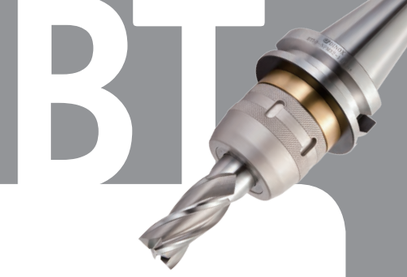
C This symbol means optional through coolant system

BT30, BT40, BT50

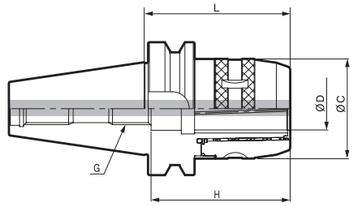
Designation	Ød	L	ØC	H	G	COLLET	kg
BT30-NPM20-85	20	85	54	85	M16	DC20, DCS20	1.1
BT40-NPM20-85	20	85	54	85	M16	DC20, DCS20	2.3
BT40-NPM20-100	20	100	54	85	M16	DC20, DCS20	2.3
BT40-NPM25-85	25	85	61	83.2	M16	DC25	2.5
BT40-NPM32-90	32	90	75	85	M16	DC32, DCS32	2.8
BT40-NPM32-110	32	110	75	95	M16	DC32, DCS32	2.9
BT40-NPM32-135	32	135	75	95	M16	DC32, DCS32	3.5
BT50-NPM20-95	20	95	54	85	M16	DC20, DCS20	4.3
BT50-NPM20-125	20	125	54	85	M16	DC20, DCS20	4.8
BT50-NPM20-165	20	165	54	85	M16	DC20, DCS20	5.3
BT50-NPM32-110	32	110	75	105	M24	DC32, DCS32	5.0
BT50-NPM32-135	32	135	75	105	M24	DC32, DCS32	5.8
BT50-NPM32-165	32	165	75	105	M24	DC32, DCS32	6.8
BT50-NPM42-110	42	110	90	125	M24	DC42, DCS42	5.4
BT50-NPM42-135	42	135	90	125	M24	DC42, DCS42	6.6
BT50-NPM42-165	42	165	90	125	M24	DC42, DCS42	8.0

NPM SET

New power milling chuck set.



MAS 403-BT Shank | 15㎛ Run-out | 130~500 kgf·m Clamping Force | C Coolant system | Drilling | Milling



C This symbol means optional through coolant system

- HSK,SK / B set can be made by order

BT40,BT50

Designation	body	Collet	Spanner
BT40-NPM32-110(A)	BT40-NPM32-110	DC32-6, 8, 10, 12, 16, 20, 25	75-79
BT50-NPM32-110(A)	BT50-NPM32-110	DC32-6, 8, 10, 12, 16, 20, 25	75-79
BT50-NPM42-110(A)	BT50-NPM42-110	DC42-6, 8, 10, 12, 16, 20, 25, 32	92-96

- MT and DJT collets are included in the B set.



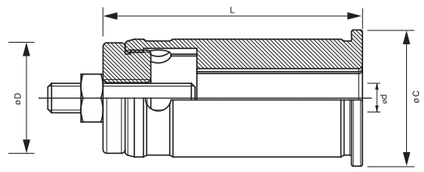
A Set



B Set

DCS
Straight collet

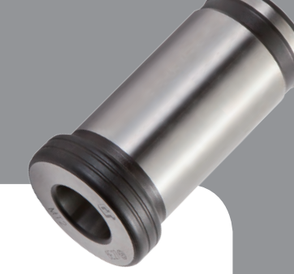


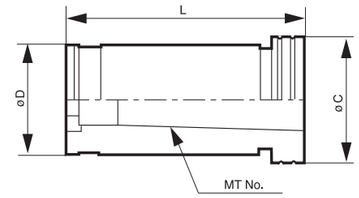


- Inch size is made by order.
- Length adjustment is avaiable with adjust screw

Designation	ØD	Ød	ØC	L	kg
DCS20- 6, 8, 10, 12, 16	20	6, 8, 10, 12, 16	26	55	0.2
DCS32- 6, 8, 10, 12, 14, 16, 19, 20, 25	32	6, 8, 10, 12, 14, 16, 19, 20, 25	38	70	0.4
DCS42- 6, 8, 10, 12, 16, 20, 25, 32	42	6, 8, 10, 12, 16, 20, 25, 32	48	75	0.7

TC
Taper collet



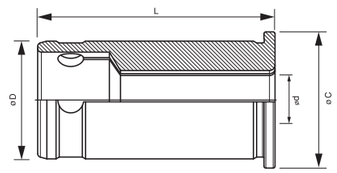


Designation	MT No.	ØD	ØC	L
TC20-1	MT1	20	26	60
TC20-2	MT2	20	26	72
TC25-1	MT1	25	32	60
TC25-2	MT2	25	32	72
TC32-1	MT1	32	38	60
TC32-2	MT2	32	38	72

Designation	MT No.	Ød	ØC	L
TC32-3	MT3	32	38	90
TC42-1	MT1	42	48	60
TC42-2	MT2	42	48	72
TC42-3	MT3	42	48	90
TC42-4	MT4	42	48	112.5

DC
Straight collet



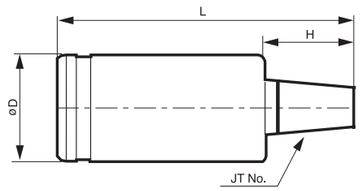


- Inch size is made by order.

Designation	ØD	Ød	ØC	L	kg
DC20- 6, 8, 10, 12, 14, 16	20	6, 8, 10, 12, 14, 16	26	55	0.2
DC25- 6, 8, 10, 12, 16, 20	25	6, 8, 10, 12, 16, 20	29	61.5	0.3
DC32- 6, 8, 10, 12, 14, 16, 19, 20, 25	32	6, 8, 10, 12, 14, 16, 19, 20, 25	38	70	0.4
DC42- 6, 8, 10, 12, 16, 20, 25, 32	42	6, 8, 10, 12, 16, 20, 25, 32	48	75	0.7

DJT
Drill chuck arbor





Designation	JT No.	ØD	L	H
DJT20-6	JT6	30	83	28
DJT32-6	JT6	32	83	28
DJT42-6	JT6	42	83	28

NPM SPARE PART

New power milling chuck



OPTIONAL (BT/SK)

Spare part

	Optional		
	Coolant system (BT/SK)	Collet	Spanner
			
NPM20	CTC20-20	DCS20, DC20	57-60
NPM32	CTC32-32	DCS32, DC32	75-79
NPM42	CTC42-42	DCS42, DC42	92-96

OPTIONAL (HSK)

Spare part

Optional
Coolant type for through



Shank	
HSK50	HSK50A-CNS
HSK63	HSK63A-CNS
HSK100	HSK100A-CNS

RTJW

Jet coolant disk



Jet coolant | Inside coolant



RTJW16, RTJW20, RTJW25, RTJW32, RTJW40

Designation	ER Size	Diameter
RTJW16-5	16	5
RTJW16-6	16	6
RTJW16-7	16	7
RTJW16-8	16	8
RTJW20-6	20	6
RTJW20-7	20	7
RTJW20-8	20	8
RTJW20-9	20	9
RTJW20-10	20	10
RTJW25-6	25	6
RTJW25-7	25	7
RTJW25-8	25	8
RTJW25-9	25	9
RTJW25-10	25	10
RTJW25-11	25	11
RTJW25-12	25	12
RTJW25-13	25	13
RTJW25-14	25	14
RTJW25-15	25	15
RTJW25-16	25	16

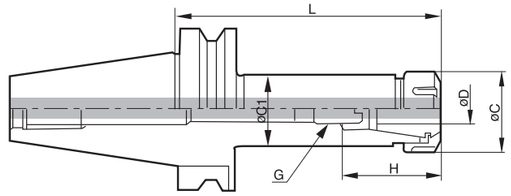
Designation	ER Size	Diameter
RTJW32-6	32	6
RTJW32-7	32	7
RTJW32-8	32	8
RTJW32-9	32	9
RTJW32-10	32	10
RTJW32-11	32	11
RTJW32-12	32	12
RTJW32-13	32	13
RTJW32-14	32	14
RTJW32-15	32	15
RTJW32-16	32	16
RTJW32-17	32	17
RTJW32-18	32	18
RTJW32-19	32	19
RTJW32-20	32	20
RTJW40-18	40	18
RTJW40-19	40	19
RTJW40-20	40	20
RTJW40-21	40	21
RTJW40-22	40	22
RTJW40-23	40	23
RTJW40-24	40	24

BT-SDC

ER Collet chuck



MAS 403-BT Shank | Ø26 Max Dia | C Coolant system | Drilling | Milling | Tapping



- Please use the exact size of collet for oil hole type.
- C This symbol means optional through coolant system

- Features, see page 31 — 31P
- Collet, see page 82 — 82P
- Spare part, see page 84 — 84P

BT30, BT40

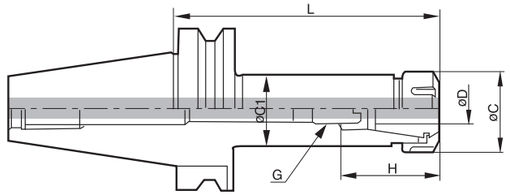
Designation	ØD (Clamping range)	L	H	Collet/Step	G	ØC	ØC1	kg
BT30-SDC7-50	1.0~7.0	50	33	GERC11/0.5	M7	19	19	0.5
BT30-SDC7-75	1.0~7.0	75	33	GERC11/0.5	M7	19	19	0.5
BT30-SDC7-105	1.0~7.0	105	33	GERC11/0.5	M7	19	19	0.6
BT30-SDC10-50	1.0~10.0	50	44.5	GERC16/1.0	M10	28	28	0.5
BT30-SDC10-75	1.0~10.0	75	44.5	GERC16/1.0	M10	28	28	0.5
BT30-SDC10-105	1.0~10.0	105	44.5	GERC16/1.0	M10	28	28	0.6
BT30-SDC13-50	1.0~13.0	50	49	GERC20/1.0	M13	35	35	0.5
BT30-SDC13-75	1.0~13.0	75	49	GERC20/1.0	M13	35	35	0.6
BT30-SDC13-105	1.0~13.0	105	49	GERC20/1.0	M13	35	35	0.7
BT30-SDC16-50	1.0~16.0	50	50	GERC25/1.0	M18	42	42	0.6
BT30-SDC16-75	1.0~16.0	75	50	GERC25/1.0	M18	42	42	0.7
BT30-SDC16-105	1.0~16.0	105	50	GERC25/1.0	M18	42	42	0.8
BT30-SDC20-60	1.0~20.0	60	60	GERC32/1.0	M22	50	44	0.5
BT30-SDC20-90	1.0~20.0	90	60	GERC32/1.0	M22	50	44	0.8
BT30-SDC20-120	1.0~20.0	120	60	GERC32/1.0	M22	50	44	1.0
BT40-SDC7-60	1.0~7.0	60	33	GERC11/0.5	M7	19	19	1.0
BT40-SDC7-90	1.0~7.0	90	33	GERC11/0.5	M7	19	19	1.1
BT40-SDC7-135	1.0~7.0	135	33	GERC11/0.5	M7	19	19	1.2
BT40-SDC10-60	1.0~10.0	60	44.5	GERC16/1.0	M10	28	28	1.1
BT40-SDC10-90	1.0~10.0	90	44.5	GERC16/1.0	M10	28	28	1.2
BT40-SDC10-135	1.0~10.0	135	44.5	GERC16/1.0	M10	28	28	1.4
BT40-SDC13-60	1.0~13.0	60	49	GERC20/1.0	M13	35	35	1.1
BT40-SDC13-90	1.0~13.0	90	49	GERC20/1.0	M13	35	35	1.3
BT40-SDC13-120	1.0~13.0	120	49	GERC20/1.0	M13	35	35	1.5
BT40-SDC13-150	1.0~13.0	150	49	GERC20/1.0	M13	35	35	1.8
BT40-SDC16-60	1.0~16.0	60	50	GERC25/1.0	M18	42	42	1.2
BT40-SDC16-90	1.0~16.0	90	50	GERC25/1.0	M18	42	42	1.4
BT40-SDC16-120	1.0~16.0	120	50	GERC25/1.0	M18	42	42	1.6
BT40-SDC20-60	1.0~20.0	60	60	GERC32/1.0	M22	50	44	1.1
BT40-SDC20-90	1.0~20.0	90	60	GERC32/1.0	M22	50	44	1.4
BT40-SDC20-120	1.0~20.0	120	60	GERC32/1.0	M22	50	44	1.7
BT40-SDC26-90	3.0~26.0	90	71	GERC40/1.0	M28	63	54	2.4

BT-SDC

ER Collet chuck



MAS 403-BT Shank | Ø26 Max Dia | C Coolant system | Drilling | Milling | Tapping



- Please use the exact size of collet for oil hole type.
- C This symbol means optional through coolant system

- Features, see page 31 — 31P
- Collet, see page 82 — 82P
- Spare part, see page 84 — 84P

BT50

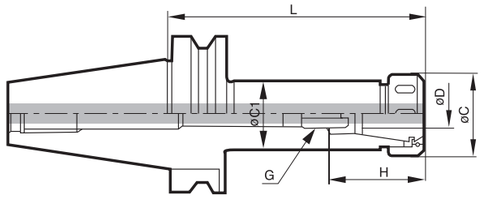
Designation	ØD (Clamping range)	L	H	Collet/Step	G	ØC	ØC1	kg
BT50-SDC10-90	1.0~10.0	90	44.5	GERC16/1.0	M10	28	28	3.8
BT50-SDC10-120	1.0~10.0	120	44.5	GERC16/1.0	M10	28	28	4.0
BT50-SDC10-165	1.0~10.0	165	44.5	GERC16/1.0	M10	28	28	4.2
BT50-SDC13-105	1.0~13.0	105	49	GERC20/1.0	M13	35	35	3.9
BT50-SDC13-135	1.0~13.0	135	49	GERC20/1.0	M13	35	35	4.1
BT50-SDC13-165	1.0~13.0	165	49	GERC20/1.0	M13	35	35	4.5
BT50-SDC16-105	1.0~16.0	105	50	GERC25/1.0	M18	42	42	4.1
BT50-SDC16-165	1.0~16.0	165	50	GERC25/1.0	M18	42	42	4.4
BT50-SDC20-75	1.0~20.0	75	60	GERC32/1.0	M22	50	44	4.0
BT50-SDC20-105	1.0~20.0	105	60	GERC32/1.0	M22	50	44	4.3
BT50-SDC20-135	1.0~20.0	135	60	GERC32/1.0	M22	50	44	4.9
BT50-SDC20-165	1.0~20.0	165	60	GERC32/1.0	M22	50	44	5.0
BT50-SDC20-180	1.0~20.0	180	60	GERC32/1.0	M22	50	44	5.0
BT50-SDC26-165	3.0~26.0	165	70	GERC40/1.0	M28	63	54	6.0

BT-HPS

High speed ER collet chuck



MAS 403-BT	G6.3	15,000	Ø20	C			
Shank	G value	Max RPM	Max Dia	Coolant system	Drilling	Milling	Tapping



- Please use the exact size of collet for oil hole type.
- C This symbol means optional through coolant system

- Features, see page 31 — 31P
- Collet see page 82 — 82P
- Spare part, see page 85 — 85P

BT30, BT40

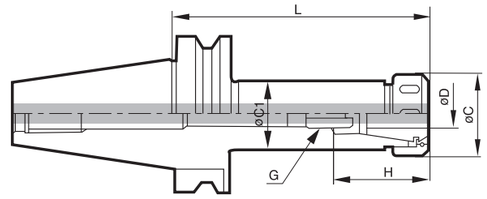
Designation	ØD (Clamping range)	L	H	Collet/Step	G	ØC	ØC1	kg	MAX RPM
BT30-HPS7-50	1.0~7.0	50	33	GERC11/0.5	M7	19	19	0.5	15,000
BT30-HPS7-75	1.0~7.0	75	33	GERC11/0.5	M7	19	19	0.5	15,000
BT30-HPS7-105	1.0~7.0	105	33	GERC11/0.5	M7	19	19	0.6	15,000
BT30-HPS10-50	1.0~10.0	50	44.5	GERC16/1.0	M10	28	28	0.5	15,000
BT30-HPS10-75	1.0~10.0	75	44.5	GERC16/1.0	M10	28	28	0.5	15,000
BT30-HPS10-105	1.0~10.0	105	44.5	GERC16/1.0	M10	28	28	0.6	15,000
BT30-HPS13-50	1.0~13.0	50	49	GERC20/1.0	M13	35	35	0.5	15,000
BT30-HPS13-75	1.0~13.0	75	49	GERC20/1.0	M13	35	35	0.6	15,000
BT30-HPS13-105	1.0~13.0	105	49	GERC20/1.0	M13	35	35	0.7	15,000
BT30-HPS16-50	1.0~16.0	50	50	GERC25/1.0	M18	42	42	0.6	15,000
BT30-HPS16-75	1.0~16.0	75	50	GERC25/1.0	M18	42	42	0.7	15,000
BT30-HPS16-105	1.0~16.0	105	50	GERC25/1.0	M18	42	42	0.8	15,000
BT30-HPS20-60	1.0~20.0	60	60	GERC32/1.0	M22	50	44	0.5	15,000
BT30-HPS20-90	1.0~20.0	90	60	GERC32/1.0	M22	50	44	0.8	15,000
BT30-HPS20-120	1.0~20.0	120	60	GERC32/1.0	M22	50	44	1.0	15,000
BT40-HPS7-60	1.0~7.0	60	33	GERC11/0.5	M7	19	19	1.0	10,000
BT40-HPS7-90	1.0~7.0	90	33	GERC11/0.5	M7	19	19	1.1	10,000
BT40-HPS7-135	1.0~7.0	135	33	GERC11/0.5	M7	19	19	1.2	10,000
BT40-HPS10-60	1.0~10.0	60	44.5	GERC16/1.0	M10	28	28	1.1	10,000
BT40-HPS10-90	1.0~10.0	90	44.5	GERC16/1.0	M10	28	28	1.2	10,000
BT40-HPS10-135	1.0~10.0	135	44.5	GERC16/1.0	M10	28	28	1.4	10,000
BT40-HPS13-60	1.0~13.0	60	49	GERC20/1.0	M13	35	35	1.1	10,000
BT40-HPS13-90	1.0~13.0	90	49	GERC20/1.0	M13	35	35	1.3	10,000
BT40-HPS13-120	1.0~13.0	120	49	GERC20/1.0	M13	35	35	1.5	10,000
BT40-HPS13-150	1.0~13.0	150	49	GERC20/1.0	M13	35	35	1.8	10,000
BT40-HPS16-60	1.0~16.0	60	50	GERC25/1.0	M18	42	42	1.2	10,000
BT40-HPS16-90	1.0~16.0	90	50	GERC25/1.0	M18	42	42	1.4	10,000
BT40-HPS16-120	1.0~16.0	120	50	GERC25/1.0	M18	42	42	1.6	10,000
BT40-HPS20-60	1.0~20.0	60	60	GERC32/1.0	M22	50	44	1.1	10,000
BT40-HPS20-90	1.0~20.0	90	60	GERC32/1.0	M22	50	44	1.4	10,000
BT40-HPS20-120	1.0~20.0	120	60	GERC32/1.0	M22	50	44	1.7	10,000

BT-HPS

High speed ER collet chuck



MAS 403-BT	G6.3	15,000	Ø20	C			
Shank	G value	Max RPM	Max Dia	Coolant system	Drilling	Milling	Tapping



- Please use the exact size of collet for oil hole type.
- C This symbol means optional through coolant system

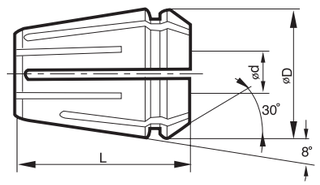
- Features, see page 31 — 31P
- Collet see page 82 — 82P
- Spare part, see page 85 — 85P

BT50

Designation	ØD (Clamping range)	L	H	Collet/Step	G	ØC	ØC1	kg	MAX RPM
BT50-HPS10-90	1.0~10.0	90	44.5	GERC16/1.0	M10	28	28	3.8	8,000
BT50-HPS10-120	1.0~10.0	120	44.5	GERC16/1.0	M10	28	28	4.0	8,000
BT50-HPS10-165	1.0~10.0	165	44.5	GERC16/1.0	M10	28	28	4.2	8,000
BT50-HPS13-105	1.0~13.0	105	49	GERC20/1.0	M13	35	35	3.9	8,000
BT50-HPS13-135	1.0~13.0	135	49	GERC20/1.0	M13	35	35	4.1	8,000
BT50-HPS13-165	1.0~13.0	165	49	GERC20/1.0	M13	35	35	4.5	8,000
BT50-HPS16-105	1.0~16.0	105	50	GERC25/1.0	M18	42	42	4.1	8,000
BT50-HPS16-165	1.0~16.0	165	50	GERC25/1.0	M18	42	42	4.4	8,000
BT50-HPS20-75	1.0~20.0	75	60	GERC32/1.0	M22	50	44	4.0	8,000
BT50-HPS20-105	1.0~20.0	105	60	GERC32/1.0	M22	50	44	4.3	8,000
BT50-HPS20-165	1.0~20.0	165	60	GERC32/1.0	M22	50	44	5.0	8,000

GERC COLLET

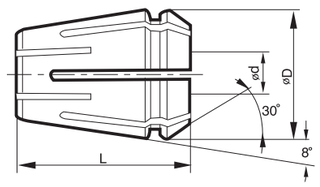
GERC Collet (Accuracy type , High accuracy type)



Designation	ER Size	ØD	L	Ød MAX.	Range	Accuracy type	Highaccuracy type (HP)
GERC11-Ød(HP)	11	11.5	18.0	7.0	0.5	5㎛	2㎛
GERC16-Ød(HP)	16	17.0	27.5	10.0	1.0	5㎛	2㎛
GERC20-Ød(HP)	20	21.0	31.5	13.0	1.0	5㎛	2㎛
GERC25-Ød(HP)	25	26.0	34.0	16.0	1.0	5㎛	2㎛
GERC32-Ød(HP)	32	33.0	40.0	20.0	1.0	5㎛	2㎛
GERC40-Ød(HP)	40	41.0	46.0	26.0	1.0	5㎛	2㎛

ER COLLET

ER Collet (Accuracy type , Through Coolant type)



Designation	ER Size	ØD	L	Ød Max.	Ø Min.	Range	High accuracy type
ER11-Ød	11	11.5	18.0	7.0	-	0.5	10㎛
ER16-Ød(C)	16	17.0	27.5	10.0	4.0	1.0	10㎛
ER20-Ød(C)	20	21.0	31.5	13.0	6.0	1.0	10㎛
ER25-Ød(C)	25	26.0	34.0	16.0	6.0	1.0	10㎛
ER32-Ød(C)	32	33.0	40.0	20.0	8.0	1.0	10㎛

GERC COLLET SET

GERC Collet (Accuracy type)



Designation	Ød	Range	Quantity	High accuracy type
GERC11(SET)	1.0-7.0	0.5	13pcs	5㎛
GERC16(SET)	1.0-10.0	1.0	10pcs	5㎛
GERC20(SET)	2.0-13.0	1.0	12pcs	5㎛
GERC25(SET)	2.0-16.0	1.0	15pcs	5㎛
GERC32(SET)	3.0-20.0	1.0	18pcs	5㎛
GERC40(SET)	4.0-26.0	1.0	23pcs	5㎛

ER COLLET SET

ER Collet (Accuracy type)



Designation	Ød	Range	Quantity	High accuracy type
ER11(SET)	1.5-7.0	0.5	12pcs	10㎛
ER16(SET)	2.0-10.0	1.0	10pcs	10㎛
ER20(SET)	2.0-13.0	1.0	12pcs	10㎛
ER32(SET)	3.0-20.0	1.0	18pcs	10㎛

SDC SPARE PART

ER collet chuck spare part



BASIC

Spare part

Chuck	Basic			
	Nut			Adjust screw
Type				
SDC7	R11	-	-	BN0716F
SDC10	R16	-	-	BN1025F
SDC13	-	RU20 - SDC13	-	BN1325F
SDC16	-	RU25 - SDC16	-	BN1830F
SDC20	-	RU32 - SDC20	-	BN2230F
SDC26	-	RU40 - SDC26	-	BN2838F
SDC34	-	RU50 - SDC34	-	BN3638F
SDC7S	-	-	R11M	BN0716F
SDC10S	-	-	R16M	BN1025F
SDC13S	-	-	R20M	BN1325F
SDC16S	-	-	R25M	BN1830F

OPTIONAL

Spare part

Chuck	Optional			
	Spanner			GERC/ER
Type				
SDC7	S-17	-	-	GERC/ER 11-ØD
SDC10	S-25	-	-	GERC/ER 16-ØD
SDC13	-	35-38	-	GERC/ER 20-ØD
SDC16	-	42-46	-	GERC/ER 25-ØD
SDC20	-	48-52	-	GERC/ER 32-ØD
SDC26	-	62-65	-	GERC/ER 40-ØD
SDC34	-	75-79	-	GERC/ER 50-ØD
SDC7S	-	-	M11M	GERC/ER11-ØD
SDC10S	-	-	M16M	GERC/ER16-ØD
SDC13S	-	-	M20M	GERC/ER20-ØD
SDC16S	-	-	M25M	GERC/ER25-ØD

HPS SPARE PART

High speed ER collet chuck spare part



BASIC

Spare part

Chuck	Basic	
	Sleeve bearing nut	Adjust screw
Type		
HPS7	RN11	BN0716F
HPS10	RN16	BN1025F
HPS13	RN20	BN1325F
HPS16	RN25	BN1830F
HPS20	RN32	BN2230F

OPTIONAL

Spare part

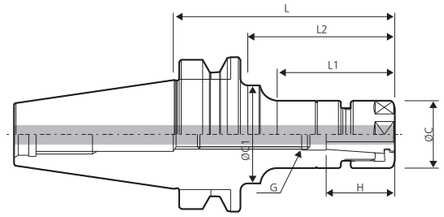
Chuck	Optional	
	Spanner	GERC/ER
Type		
HPS7	20-22	GERC/ER 11-ØD
HPS10	32-35	GERC/ER 16-ØD
HPS13	35-38	GERC/ER 20-ØD
HPS16	42-46	GERC/ER 25-ØD
HPS20	48-52	GERC/ER 32-ØD

BT-DSK

Slim type collet chuck



MAS 403-BT	G6.3	15,000	Ø25	C		
Shank	G value	Max RPM	Max Dia	Coolant system	Drilling	Milling



- Coolant system needs exclusive coolant collet
- C This symbol means optional through coolant system

- Features, see page 34. 34P
- Collet, see page 90. 90P
- Spare part, see page 92. 92P

BT30, BT40

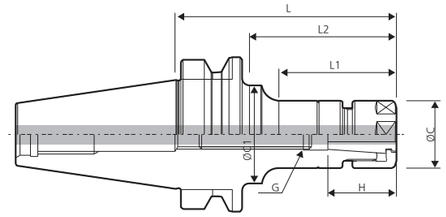
Designation	ØD (Clamping range)	L	L1	L2	H	Collet/ Step	G	ØC	ØC1	kg	MAX RPM
BT30-DSK6-60	1.0~6.0	60	33	33	35	HC6/1.0	M8	19.5	19.5	0.7	15,000
BT30-DSK6-90	1.0~6.0	90	56	65	35	HC6/1.0	M8	19.5	32	0.8	15,000
BT30-DSK10-60	2.0~10.0	60	35	35	50	HC10/1.0	M12	27.5	27.5	0.9	15,000
BT30-DSK10-90	2.0~10.0	90	65	65	50	HC10/1.0	M12	27.5	27.5	1.0	15,000
BT30-DSK13-60	3.0~13.0	60	36	36	43	HC13/1.0	M12	33	33	0.6	15,000
BT30-DSK16-60	3.0~16.0	60	37	37	60	HC16/1.0	M12	40	40	1.1	15,000
BT30-DSK16-90	3.0~16.0	90	67	67	60	HC16/1.0	M18	40	40	1.2	15,000
BT30-DSK25-90	16.0~25.0	90	67.5	67.5	63.5	HC25/1.0	M12	55	55	1.1	15,000
BT40-DSK6-90	1.0~6.0	90	51	61	35	HC6/1.0	M8	19.5	32	1.1	10,000
BT40-DSK6-120	1.0~6.0	120	60	90	35	HC6/1.0	M8	19.5	32	1.4	10,000
BT40-DSK6-150	1.0~6.0	150	60	120	35	HC6/1.0	M8	19.5	25	1.5	10,000
BT40-DSK10-90	2.0~6.0	90	48	60	50	HC10/1.0	M12	27.5	40	1.2	10,000
BT40-DSK10-120	2.0~6.0	120	73	90	50	HC10/1.0	M12	27.5	40	1.4	10,000
BT40-DSK10-150	2.0~6.0	150	73	118	50	HC10/1.0	M12	27.5	34.5	1.6	10,000
BT40-DSK13-90	3.0~13.0	90	59	59	43	HC13/1.0	M15	33	33	1.4	10,000
BT40-DSK16-90	3.0~16.0	90	58	58	60	HC16/1.0	M18	40	40	1.5	10,000
BT40-DSK16-120	3.0~16.0	120	88	88	60	HC16/1.0	M18	40	40	1.7	10,000
BT40-DSK16-150	3.0~16.0	150	118	118	60	HC16/1.0	M18	40	40	1.9	10,000
BT40-DSK20-90	4.0~20.0	90	60	60	70	HC20/1.0	M22	48	48	1.6	10,000
BT40-DSK20-120	4.0~20.0	120	90	90	70	HC20/1.0	M22	48	48	2.0	10,000
BT40-DSK25-90	16.0~25.0	90	61	61	75	HC25/1.0	M28	55	55	1.8	10,000
BT40-DSK25-120	16.0~25.0	120	91	91	85	HC25/1.0	M28	55	55	2.0	10,000

BT-DSK

Slim type collet chuck



MAS 403-BT	G6.3	15,000	Ø25	C		
Shank	G value	Max RPM	Max Dia	Coolant system	Drilling	Milling



- Coolant system needs exclusive coolant collet
- C This symbol means optional through coolant system

- Features, see page 34. 34P
- Collet, see page 90. 90P
- Spare part, see page92. 92P

BT50

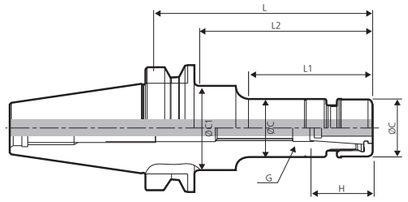
Designation	ØD (Clamping range)	L	L1	L2	H	Collet/ Step	G	ØC	ØC1	kg	MAX RPM
BT50-DSK6-105	1.0~6.0	105	55	64	35	HC6/1.0	M8	19.5	32	3.8	8,000
BT50-DSK6-135	1.0~6.0	135	60	92	35	HC6/1.0	M8	19.5	32	3.9	8,000
BT50-DSK6-165	1.0~6.0	165	60	114	35	HC6/1.0	M8	19.5	32	4.0	8,000
BT50-DSK10-105	2.0~10.0	105	57	57	50	HC10/1.0	M12	27.5	27.5	3.8	8,000
BT50-DSK10-135	2.0~10.0	135	70	92	50	HC10/1.0	M12	27.5	32	4.0	8,000
BT50-DSK10-165	2.0~10.0	165	75	114	50	HC10/1.0	M12	27.5	36	4.2	8,000
BT50-DSK13-135	3.0~13.0	135	92	92	43	HC13/1.0	M15	33	33	4.2	8,000
BT50-DSK16-105	3.0~16.0	105	62	62	60	HC16/1.0	M18	40	40	4.1	8,000
BT50-DSK16-135	3.0~16.0	135	92	92	60	HC16/1.0	M18	40	40	4.3	8,000
BT50-DSK16-165	3.0~16.0	165	40	122	60	HC16/1.0	M18	40	50	4.5	8,000
BT50-DSK20-105	4.0~20.0	105	62	62	70	HC20/1.0	M22	48	40	4.3	8,000
BT50-DSK20-135	4.0~20.0	135	92	92	70	HC20/1.0	M22	48	40	4.6	8,000
BT50-DSK20-165	4.0~20.0	165	122	122	70	HC20/1.0	M22	48	40	5.0	8,000
BT50-DSK25-105	16.0~25.0	105	62	62	85	HC25/1.0	M28	55	55	4.8	8,000
BT50-DSK25-135	16.0~25.0	135	92	92	85	HC25/1.0	M28	55	55	5.2	8,000
BT50-DSK25-165	16.0~25.0	165	122	122	85	HC25/1.0	M28	55	55	5.6	8,000

BT-GSK

Great speed slim type collet chuck



MAS 403-BT	G2.5	25,000	Ø25	C		
Shank	G value	Max RPM	Max Dia	Coolant system	Drilling	Milling



- Coolant system needs exclusive coolant collet
- C This symbol means optional through coolant system

- Features, see page 33. 33P
- Collet, see page 90. 90P
- Spare part, see page 93. 93P

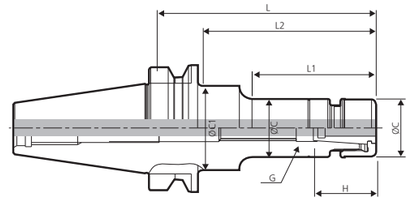
	Designation	ØD (Clamping range)	L	L1	L2	H	Collet/ Step	G	ØC	ØC1	kg	MAX RPM
BT30, BT40	BT30-GSK6-60	1.0~6.0	60	33	33	35	HC6/1.0	M8	19.5	19.5	0.7	25,000
	BT30-GSK6-90	1.0~6.0	90	56	65	35	HC6/1.0	M8	19.5	32	0.8	25,000
	BT30-GSK10-60	2.0~10.0	60	35	35	50	HC10/1.0	M12	27.5	27.5	0.9	25,000
	BT30-GSK10-90	2.0~10.0	90	65	65	50	HC10/1.0	M12	27.5	27.5	1.0	25,000
	BT30-GSK13-60	3.0~13.0	60	36	36	43	HC13/1.0	M12	33	33	0.6	25,000
	BT30-GSK16-60	3.0~16.0	60	37	37	60	HC16/1.0	M12	40	40	1.1	25,000
	BT30-GSK16-90	3.0~16.0	90	67	67	60	HC16/1.0	M18	40	40	1.2	25,000
	BT30-GSK25-90	16.0~25.0	90	67.5	67.5	63.5	HC25/1.0	M12	55	55	1.1	25,000
	BT40-GSK6-90	1.0~6.0	90	51	61	35	HC6/1.0	M8	19.5	32	1.1	20,000
	BT40-GSK6-120	1.0~6.0	120	60	90	35	HC6/1.0	M8	19.5	32	1.4	20,000
	BT40-GSK6-150	1.0~6.0	150	60	120	35	HC6/1.0	M8	19.5	25	1.5	20,000
	BT40-GSK10-90	2.0~6.0	90	48	60	50	HC10/1.0	M12	27.5	40	1.2	20,000
	BT40-GSK10-120	2.0~6.0	120	73	90	50	HC10/1.0	M12	27.5	40	1.4	20,000
	BT40-GSK10-150	2.0~6.0	150	73	118	50	HC10/1.0	M12	27.5	34.5	1.6	20,000
	BT40-GSK13-90	3.0~13.0	90	59	59	43	HC13/1.0	M15	33	33	1.4	20,000
	BT40-GSK16-90	3.0~16.0	90	58	58	60	HC16/1.0	M18	40	40	1.5	20,000
	BT40-GSK16-120	3.0~16.0	120	88	88	60	HC16/1.0	M18	40	40	1.7	20,000
	BT40-GSK16-150	3.0~16.0	150	118	118	60	HC16/1.0	M18	40	40	1.9	20,000
	BT40-GSK20-90	4.0~20.0	90	60	60	70	HC20/1.0	M22	48	48	1.6	20,000
	BT40-GSK20-120	4.0~20.0	120	90	90	70	HC20/1.0	M22	48	48	2.0	20,000
	BT40-GSK25-90	16.0~25.0	90	61	61	75	HC25/1.0	M28	55	55	1.8	20,000
	BT40-GSK25-120	16.0~25.0	120	91	91	85	HC25/1.0	M28	55	55	2.0	20,000

BT-GSK

Great speed slim type collet chuck



MAS 403-BT	G2.5	25,000	Ø25	C		
Shank	G value	Max RPM	Max Dia	Coolant system	Drilling	Milling



- Coolant system needs exclusive coolant collet
- C This symbol means optional through coolant system

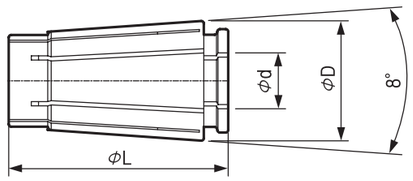
- Features, see page 33. 33P
- Collet, see page 90. 90P
- Spare part, see page 93. 93P

	Designation	ØD (Clamping range)	L	L1	L2	H	Collet/ Step	G	ØC	ØC1	kg	MAX RPM
BT50	BT50-GSK6-105	1.0~6.0	105	55	64	35	HC6/1.0	M8	19.5	32	3.8	15,000
	BT50-GSK6-135	1.0~6.0	135	60	92	35	HC6/1.0	M8	19.5	32	3.9	15,000
	BT50-GSK6-165	1.0~6.0	165	60	114	35	HC6/1.0	M8	19.5	32	4.0	15,000
	BT50-GSK10-105	2.0~10.0	105	57	57	50	HC10/1.0	M12	27.5	27.5	3.8	15,000
	BT50-GSK10-135	2.0~10.0	135	70	92	50	HC10/1.0	M12	27.5	32	4.0	15,000
	BT50-GSK10-165	2.0~10.0	165	75	114	50	HC10/1.0	M12	27.5	36	4.2	15,000
	BT50-GSK13-135	3.0~13.0	135	92	92	43	HC13/1.0	M15	33	33	4.2	15,000
	BT50-GSK16-105	3.0~16.0	105	62	62	60	HC16/1.0	M18	40	40	4.1	15,000
	BT50-GSK16-135	3.0~16.0	135	92	92	60	HC16/1.0	M18	40	40	4.3	15,000
	BT50-GSK16-165	3.0~16.0	165	40	122	60	HC16/1.0	M18	40	50	4.5	15,000
	BT50-GSK20-105	4.0~20.0	105	62	62	70	HC20/1.0	M22	48	40	4.3	15,000
	BT50-GSK20-135	4.0~20.0	135	92	92	70	HC20/1.0	M22	48	40	4.6	15,000
	BT50-GSK20-165	4.0~20.0	165	122	122	70	HC20/1.0	M22	48	40	5.0	15,000
	BT50-GSK25-105	16.0~25.0	105	62	62	85	HC25/1.0	M28	55	55	4.8	15,000
	BT50-GSK25-135	16.0~25.0	135	92	92	85	HC25/1.0	M28	55	55	5.2	15,000
	BT50-GSK25-165	16.0~25.0	165	122	122	85	HC25/1.0	M28	55	55	5.6	15,000

HC COLLET

HC Slim collet





General & Accuracy type

Designation	ØD	L	Ød MAX.	Range	Accuracy type	High accuracy type(P)
HC6-Φd(P)	10.5	25.0	6.0	1.0	5㎛	3㎛
HC10-Φd(P)	15.6	30.5	10.0	1.0	5㎛	3㎛
HC13-Φd(P)	20.1	39.0	13.0	1.0	5㎛	3㎛
HC16-Φd(P)	24.6	45.0	16.0	1.0	5㎛	3㎛
HC20-Φd(P)	29.2	54.3	20.0	1.0	5㎛	3㎛
HC25-Φd(P)	35.7	57.0	25.0	1.0	5㎛	3㎛



HC COLLET

HC Slim collet



HC6-Ød	Clamping range
HC6-3.0	2.8-3.0
HC6-4.0	3.6-4.0
HC6-5.0	4.6-5.0
HC6-6.0	5.6-6.0

HC10-Ød	Clamping range
HC10-2.0	1.75-2.0
HC10-3.0	2.8-3.0
HC10-4.0	3.6-4.0
HC10-5.0	4.6-5.0
HC10-6.0	5.6-6.0
HC10-7.0	6.6-7.0
HC10-8.0	7.6-8.0
HC10-9.0	8.6-9.0
HC10-10.0	9.6-10.0

HC13-Ød	Clamping range
HC13-3.0	2.75-3.0
HC13-4.0	3.6-4.0
HC13-5.0	4.6-5.0
HC13-6.0	5.6-6.0
HC13-7.0	6.6-7.0
HC13-8.0	7.6-8.0
HC13-9.0	8.6-9.0
HC13-10.0	9.6-10.0
HC13-11.0	10.6-11.0
HC13-12.0	11.6-12.0
HC13-13.0	12.6-13.0

HC16-Ød	Clamping range
HC16-3.0	2.75-3.0
HC16-4.0	3.6-4.0
HC16-5.0	4.6-5.0
HC16-6.0	5.6-6.0
HC16-7.0	6.6-7.0
HC16-8.0	7.6-8.0
HC16-9.0	8.6-9.0
HC16-10.0	9.6-10.0
HC16-11.0	10.6-11.0
HC16-12.0	11.6-12.0
HC16-13.0	12.6-13.0
HC16-14.0	13.6-14.0
HC16-15.0	14.6-15.0
HC16-16.0	15.6-16.0

HC20-Ød	Clamping range
HC20-4.0	3.6-4.0
HC20-5.0	4.6-5.0
HC20-6.0	5.6-6.0
HC20-7.0	6.6-7.0
HC20-8.0	7.6-8.0
HC20-9.0	8.6-9.0
HC20-10.0	9.6-10.0
HC20-11.0	10.6-11.0
HC20-12.0	11.6-12.0
HC20-13.0	12.6-13.0
HC20-14.0	13.6-14.0
HC20-15.0	14.6-15.0
HC20-16.0	15.6-16.0
HC20-17.0	16.6-17.0
HC20-18.0	17.6-18.0
HC20-19.0	18.6-19.0
HC20-20.0	19.6-20.0

HC25-Ød	Clamping range
HC25-8.0	7.6-8.0
HC25-9.0	8.6-9.0
HC25-10.0	9.6-10.0
HC25-11.0	10.6-11.0
HC25-12.0	11.6-12.0
HC25-13.0	12.6-13.0
HC25-14.0	13.6-14.0
HC25-15.0	14.6-15.0
HC25-16.0	15.6-16.0
HC25-17.0	16.6-17.0
HC25-18.0	17.6-18.0
HC25-19.0	18.6-19.0
HC25-20.0	19.6-20.0
HC25-21.0	20.6-21.0
HC25-22.0	21.6-22.0
HC25-23.0	22.6-23.0
HC25-24.0	23.6-24.0
HC25-25.0	24.6-25.0

DSK SPARE PART

Slim collet chuck spare part



BASIC

Spare part

	Basic		
	Nut	Adjust screw	Collet ejector
Type			
DSK 6	DN 6	M820C	DSK-6CE
DSK 10	DN 10	M1230C	DSK-10CE
DSK 13	DN 13	BN1530F	DSK-13CE
DSK 16	DN 16	BN1830F	DSK-16CE
DSK 20	DN 20	BN2230F	DSK-20CE
DSK 25	DN 25	BN2838F	DSK-25CE

OPTIONAL

Spare part

	Optional
	Spanner
Type	
DSK 6	DSS-6
DSK 10	DSS-10
DSK 13	DSS-13
DSK 16	DSS-16
DSK 20	DSS-20
DSK 25	DSS-25

GSK SPARE PART

Great speed slim type collet chuckk



BASIC

Spare part

	Basic		
	Nut	Adjust screw	Collet ejector
Type			
GSK 6	GN 6	M820C	DSK-6CE
GSK 10	GN 10	M1230C	DSK-10CE
GSK 13	GN 13	BN1530F	DSK-13CE
GSK 16	GN 16	BN1830F	DSK-16CE
GSK 20	GN 20	BN2230F	DSK-20CE
GSK 25	GN 25	BN2838F	DSK-25CE

OPTIONAL

Spanner (optional)

Optional		
Type		
Designation	GSK6	GSK6 SPANNER
	GSK10	GSK10 SPANNER
	GSK13	GSK13 SPANNER
	GSK16	GSK16 SPANNER
	GSK20	GSK20 SPANNER
	GSK25	GSK25 SPANNER

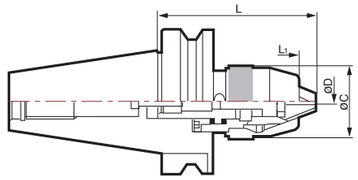
BT-NPU

Drill chuck

MAS 403-BT
Shank

C
Coolant system

Drilling



C This symbol means unavailable with through coolant system

● Spare part, see page 95 95P

BT30, BT40, BT50

Designation	ØD (Clamping range)	ØC	L	L1	kg
BT30-NPU8-97	0~8	38	97	8.5	0.8
BT30-NPU13-125	1~13	50	125	12.5	1.5
BT40-NPU8-87	0~8	38	87	8.5	1.3
BT40-NPU13-105	1~13	50	105	12.5	1.7
BT40-NPU13-130	1~13	50	130	12.5	2.0
BT50-NPU13-130	1~13	52	130	12.5	4.6
BT50-NPU13-190	1~13	53	190	12.5	5.4

NPU SPARE PART

Drill chuck spare part

BASIC

Spare part

	Basic	
	Drill chuck head	Bolt
Type		
NPU8	NPU08	BX0820
NPU13	NPU13	BX0825

OPTIONAL

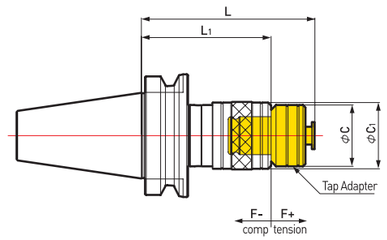
Spare part

	Optional
	Spanner
Type	
NPU8	NPU0836
NPU13	NPU1348

BT-DTN

Tapping holder

MAS 403-BT Shank | C Coolant system | Tapping



C This symbol means unavailable with through coolant system

● Features, see page 36. 36P
● Tap adapter(TCA), see page 97. 97P

BT30, BT40, BT50

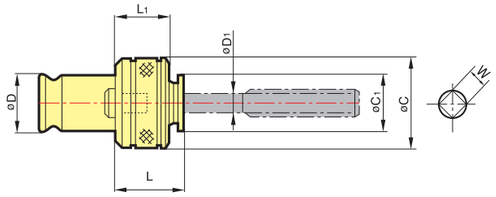
Designation	Tap size	L	L1	ØC	ØC1	Adapter	F-	F+	kg
BT30-DTN12-85	M3~M12	85	60	32	39	TCA1-M	4	10	0.7
BT40-DTN12-90	M3~M12	90	65	32	39	TCA1-M	4	10	1.2
BT40-DTN12-120	M3~M12	120	95	32	39	TCA1-M	4	10	1.4
BT40-DTN22-130	M8~M22	130	96	50	56	TCA2-M	12.5	12.5	1.7
BT40-DTN22-160	M8~M22	160	126	50	56	TCA2-M	12.5	12.5	2.1
BT50-DTN12-100	M3~M12	100	75	32	39	TCA1-M	4	10	3.7
BT50-DTN12-130	M3~M12	130	105	32	39	TCA1-M	4	10	3.9
BT50-DTN22-140	M8~M22	140	104	50	56	TCA2-M	12.5	12.5	4.2
BT50-DTN22-170	M8~M22	170	134	50	56	TCA2-M	12.5	12.5	4.7
BT50-DTN38-185	M16~M38	185	140	72	81	TCA3-M	20	20	5.7
BT50-DTN38-215	M16~M38	215	170	72	81	TCA3-M	20	20	6.6

TCA

Tap adapter



C Coolant system



C This symbol means unavailable with through coolant system

※ DIN standard : Order to make

TCA1, TCA2, TCA3

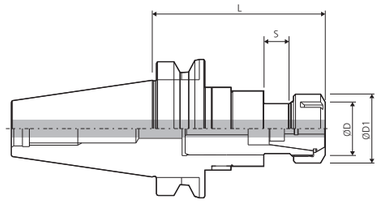
Designation	ØD (Clamping range)	ØC	L	L1	kg
TCA1-M3	4	3.2	24	22	0.2
TCA1-M4	5	4	24	22	0.2
TCA1-M5	5.5	4.5	24	22	0.2
TCA1-M6, 1/4U	6	4.5	24	22	0.2
TCA1-M8	6.2	5	25	22	0.2
TCA1-M10, 3/8U	7	5.5	25	22	0.2
TCA1-M11	8	6	39	22	0.2
TCA1-M12	8.5	6.5	26	22	0.2
TCA2-M8	6.2	5	38	28	0.6
TCA2-M10	7	5.5	38	28	0.6
TCA2-M12	8.5	6.5	39	28	0.6
TCA2-M14, 3/4U	10.5	8	41	28	0.6
TCA2-P1/4	11	9	31	28	0.6
TCA2-M16	12.5	10	43	28	0.6
TCA2-M18, P3/8	14	11	44	28	0.6
TCA2-M20	15	12	45	28	0.6
TCA2-M22	17	13	46	28	0.6
TCA2-P1/2	18	14	36	28	0.6
TCA2-M24	19	15	46	28	1.8
TCA3-M16	12.5	10	35	37	1.8
TCA3-M18	14	11	37	37	1.8
TCA3-M20	15	12	37	37	1.8
TCA3-M22	17	13	38	37	1.8
TCA3-M24	19	15	44	37	1.8
TCA3-M27, 1U	20	15	62	37	1.8
TCA3-M30, P3/4	23	17	62	37	1.8
TCA3-M33	25	19	66	37	1.8
TCA3-M36, M38	28	21	68	37	1.8

BT-DST

High speed synchro tapping chuck



MAS 403-BT (Shank) | G6.3 (G value) | C (Coolant system) | Tapping



- Features, see page 37. 37P
- ER Collet, see page 82. 82P
- TER Collet, see page 99. 99P

C This symbol means optional through coolant system

BT30, BT40, BT50

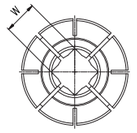
Designation	ØD	ØD1	L	S	Use collet	Tap size	F-	F+
BT30-DST3-70	26	19	70	6	ER11	M1~M3	0.5	0.5
BT30-DST10-100	40.4	28	100	11	TER16	M3~M10	0.5	0.5
BT40-DST10-100	40.4	28	100	11	TER16	M3~M10	0.5	0.5
BT40-DST22-110	60	49.5	110	18	TER32	M6~M22	0.7	0.7
BT50-DST10-110	60	49.5	110	11	TER16	M3~M10	0.5	0.5
BT50-DST22-130	60	49.5	125	18	TER32	M6~M22	0.7	0.7

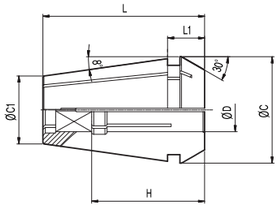
TER

Tap ER collet









- Coolant operation with RTJW & RUT (limitted to point spec.)

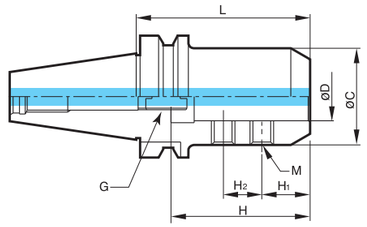
TER16, TER20, TER25, TER32

Designation	Use tap	ØD	W	ØC	ØC1	L	L1	H
TER16-4x3.2	M3	4	3.2	16.74	10.1	27.5	6.3	18
TER16-5x4	M4	5	4	16.74	10.1	27.5	6.3	18
TER16-5.5x4.5	M5	5.5	4.5	16.74	10.1	27.5	6.3	18
TER16-6x4.5	M6,U1/4	6	4.5	16.74	10.1	27.5	6.3	18
TER16-6.2x5	M7, M8	6.2	5	16.74	10.1	27.5	6.3	18
TER16-7x5.5	M9, M10, U3/8	7	5.5	16.74	10.1	27.5	6.3	18
TER20-5x4	M4	5	4	20.74	13.2	31.5	7.2	18
TER20-5.5x4.5	M5	5.5	4.5	20.74	13.2	31.5	7.2	18
TER20-6x4.5	M6,U1/4	6	4.5	20.74	13.2	31.5	7.2	18
TER20-6.2x5	M7, M8	6.2	5	20.74	13.2	31.5	7.2	18
TER20-7x5.5	M9, M10, U3/8	7	5.5	20.74	13.2	31.5	7.2	18
TER20-8x6	M11, U7/16, P1/8	8	6	20.74	13.2	31.5	7.2	22
TER20-8.5x6.5	M12	8.5	6.5	20.74	13.2	31.5	7.2	22
TER25-5x4	M4	5	4	25.74	17.6	34	7.5	18
TER25-5.5x4.5	M5	5.5	4.5	25.74	17.6	34	7.5	18
TER25-6x4.5	M6	6	4.5	25.74	17.6	34	7.5	18
TER25-6.2x5	M7, M8	6.2	5	25.74	17.6	34	7.5	18
TER25-7x5.5	M9, M10, U3/8	7	5.5	25.74	17.6	34	7.5	18
TER25-8.5x6.5	M12	8.5	6.5	25.74	17.6	34	7.5	22
TER32-6x4.5	M6,U1/4	6	4.5	32.74	23.1	40	8.2	18
TER32-6.2x5	M7, M8	6.2	5	32.74	23.1	40	8.2	18
TER32-7x5.5	M9, M10, U3/8	7	5.5	32.74	23.1	40	8.2	18
TER32-8X6	M11, U7/16, P1/8	8	6	32.74	23.1	40	8.2	22
TER32-8.5x6.5	M12	8.5	6.5	32.74	23.1	40	8.2	22
TER32-10.5x8	M14, U9/16	10.5	8	32.74	23.1	40	8.2	25
TER32-12.5x10	M16	12.5	10	32.74	23.1	40	8.2	25
TER32-14x11	M18, P3/8	14	11	32.74	23.1	40	8.2	25
TER32-15x12	M20	15	12	32.74	23.1	40	8.2	25
TER32-17x13	M22, U7/8	17	13	32.74	23.1	40	8.2	25
TER32-11x9	P1/4	11	9	32.74	23.1	40	8.2	25
TER32-12x9	U5/8	12	9	32.74	23.1	40	8.2	25
TER32-9x7	U1/2	9	7	32.74	23.1	40	8.2	22

BT-SLA

Side lock arbor

MAS 403-BT Shank | C Coolant system | Drilling | Milling



C This symbol means built-in through coolant system

● Spare part, see page 101 101P

BT30, BT40, BT50

Designation	ØD	L	ØC	H	H1	H2	M	G	kg
BT30-SLA16-90	16	90	40	70	25	20	M10	M12	1.1
BT30-SLA20-90	20	90	50	70	25	20	M12	M12	1.2
BT30-SLA25-90	25	90	50	70	25	20	M12	M12	1.2
BT40-SLA16-90	16	90	40	70	25	20	M10	M12	1.5
BT40-SLA20-90	20	90	50	70	25	20	M12	M12	1.8
BT40-SLA25-90	25	90	50	70	25	20	M12	M12	2.0
BT40-SLA32-90	32	90	60	80	25	25	M14	M12	2.2
BT40-SLA32-105	32	105	60	80	25	25	M14	M12	2.4
BT40-SLA40-105	40	105	80	80	25	25	M16	M12	2.4
BT50-SLA20-105	20	105	50	70	25	20	M12	M12	4.4
BT50-SLA25-105	25	105	50	70	25	20	M12	M12	4.4
BT50-SLA32-105	32	105	60	80	25	25	M14	M12	4.8
BT50-SLA40-105	40	105	90	80	25	25	M16	M12	5.2
BT50-SLA42-105	42	105	90	80	25	25	M16	M12	5.8

SLA SPARE PART

Side lock arbor spare part

BASIC

Spare part

	Basic	
	Set screw	Adjust screw
Type		
	BT type	HSK / SK type
SLA16	BTF1010	BTF1414 - 1.5	M1230C
SLA20	BTF1212-1.5	BTF1616 - 1.5	M1230C
SLA25	BTF1212-1.5	BTF1818 - 1.5	M1230C
SLA32	BTF1414-1.5	BTF2020 - 1.5	M1230C
SLA40	BTF1624-1.5	BTF2020 - 1.5	M1230C
SLA42	BTF1624-1.5	BTF2020 - 1.5	M1230C

OPTIONAL

Spare part

	Optional	
	Wrench	
Type		
	BT type	HSK / SK type
SLA16	LW - 5	LW - 6
SLA20	LW - 6	LW - 8
SLA25	LW - 6	LW - 8
SLA32	LW - 6	LW - 10
SLA40	LW - 8	LW - 10
SLA42	LW - 8	LW - 10

BT-FMA

Face mill arbor



MAS 403-BT Shank | C Coolant system | Facing

Fig. 1

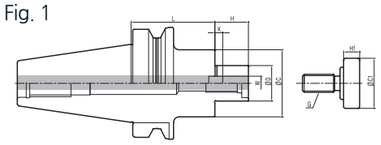


Fig. 2

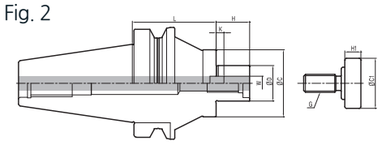


Fig. 3

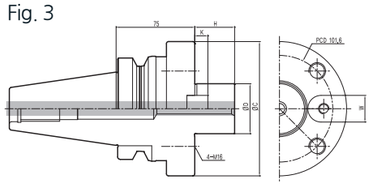
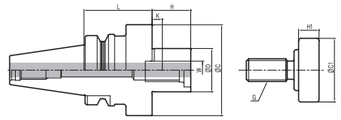


Fig. 4



C This symbol means optional through coolant system

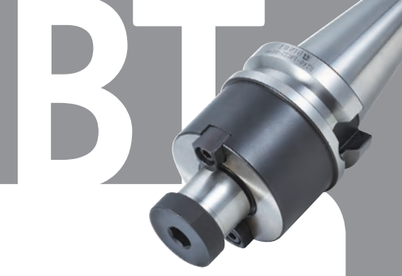
- Spare part, see page 104. 104P
- Clamp bolt, see page 217. 217P

BT30, BT40, BT50

Designation	Cutter diameter	ØD	L	ØC	H	W	K	G	kg	Fig.
BT30-FMA25.4-45	80	25.4	45	50	22	9.5	5	M12	1.2	4
BT40-FMA25.4-45	80	25.4	45	50	22	9.5	5	M12	1.4	1
BT40-FMA25.4-90	80	25.4	90	50	22	9.5	5	M12	3.1	1
BT40-FMA31.75-45	100	31.75	45	60	30	12.7	7	M16	1.6	1
BT40-FMA31.75-90	100	31.75	90	60	30	12.7	7	M16	3.0	1
BT40-FMA38.1-60	125	38.1	60	80	34	15.87	9	M20	2.9	4
BT50-FMA25.4-45	80	25.4	45	50	22	9.5	5	M12	3.8	1
BT50-FMA25.4-90	80	25.4	90	50	22	9.5	5	M12	4.5	1
BT50-FMA25.4-150	80	25.4	150	50	22	9.5	5	M12	5.5	2
BT50-FMA31.75-45	100	31.75	45	60	30	12.7	7	M16	4.6	1
BT50-FMA31.75-75	100	31.75	75	60	30	12.7	7	M16	5.2	1
BT50-FMA31.75-105	100	31.75	105	60	30	12.7	7	M16	6.0	2
BT50-FMA38.1-45	125	38.1	45	80	34	15.87	9	M20	4.3	1
BT50-FMA38.1-75	125	38.1	75	80	34	15.87	9	M20	5.5	1
BT50-FMA50.8-45	160	50.8	45	100	36	19.05	10	M24	4.8	1
BT50-FMA50.8-75	160	50.8	75	100	36	19.05	10	M24	6.8	1
BT50-FMA47.625-75	200	47.625	75	128	38	25.4	12.5	-	7.5	3

BT-FMC

Face mill arbor



MAS 403-BT Shank | C Coolant system | Facing

Fig. 1

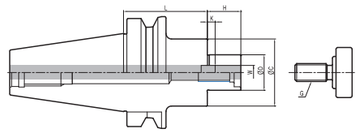


Fig. 2

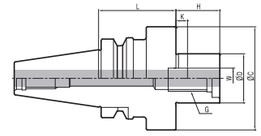
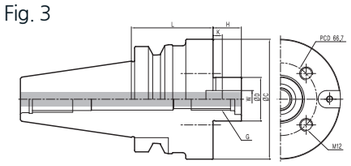


Fig. 3



C This symbol means optional through coolant system

- Clamp bolt, see page 217. 217P
- Spare part, see page 105. 105P

BT30, BT40, BT50

Designation	Cutter diameter	ØD	L	ØC	H	W	K	G	kg	Fig.
BT30-FMC16-45	40	16	45	38	17	8	5.0	M8	0.7	1
BT30-FMC22-45	50/63	22	45	48	19	10	5.6	M10	0.8	2
BT30-FMC27-50	80	27	50	60	21	12	6.3	M12	1.2	2
BT40-FMC16-60	40	16	60	38	17	8	5.0	M8	1.2	1
BT40-FMC22-45	50/63	22	45	48	19	10	5.6	M10	1.2	1
BT40-FMC22-90	50/63	22	90	48	19	10	5.6	M10	1.2	1
BT40-FMC27-60	80	27	60	60	21	12	6.3	M12	1.8	2
BT40-FMC27-90	80	27	90	60	21	12	6.3	M12	3.2	2
BT40-FMC32-60	100	32	60	78	24	14	7.0	M16	2.3	2
BT40-FMC40-50	125/160	40	50	89	27	15.87	8.0	M20	3.3	3
BT50-FMC16-60	40	16	60	38	17	8	5.0	M8	3.9	1
BT50-FMC22-60	50/63	22	60	48	19	10	5.6	M10	4.1	1
BT50-FMC27-40	80	27	40	60	21	12	6.3	M12	4.1	1
BT50-FMC27-90	80	27	90	60	21	12	6.3	M12	5.5	1
BT50-FMC27-150	80	27	150	60	21	12	6.3	M12	6.1	1
BT50-FMC32-45	100	32	45	78	24	14	7.0	M16	4.2	1
BT50-FMC32-75	100	32	75	78	24	14	7.0	M16	4.2	1
BT50-FMC32-105	100	32	105	78	24	14	7.0	M16	4.2	1
BT50-FMC40-50	125/160	40	50	89	27	15.87	8.0	M20	4.6	3

FMA,FMC SPARE PART

Face mill spare part



BASIC

FMA Spare part

	Basic			
	Key	MBA bolt	Key bolt	Clamp bolt
Type				
FMA25.4	K9.5	MBA-M12	BX0412	BX1230
FMA31.75	K12.7	MBA-M16	BX0516	-
FMA38.1	K15.87	MBA-M20	BX0616	-
FMA50.8	K19.05	MBA-M24	BX0820	-
FMA47.625	K25.4	-	BX1020	BX1645

FMA Spare part

	Optional
	Wrench
Type	
FMA25.4	LW-10
FMA31.75	LW-14
FMA38.1	LW-17
FMA50.8	LW-19
FMA47.625	-
S-FMA25.4	LW-10
S-FMA31.75	LW-14

FMA,FMC SPARE PART

Face mill spare part



OPTIONAL

FMC Spare part

	Basic			
	Key	MBA bolt	Key bolt	Clamp bolt
Type				
FMC16	K8.0	-	BX0310	BX0830
FMC22	K10.0	-	BX0412	BX1030
FMC27	K12.0	MBA - M12	BX0616	-
FMC32	K14.0	MBA - M16	BX0616	-
FMC40	K15.87	MBA - M20	BX0616	-

FMC Spare part

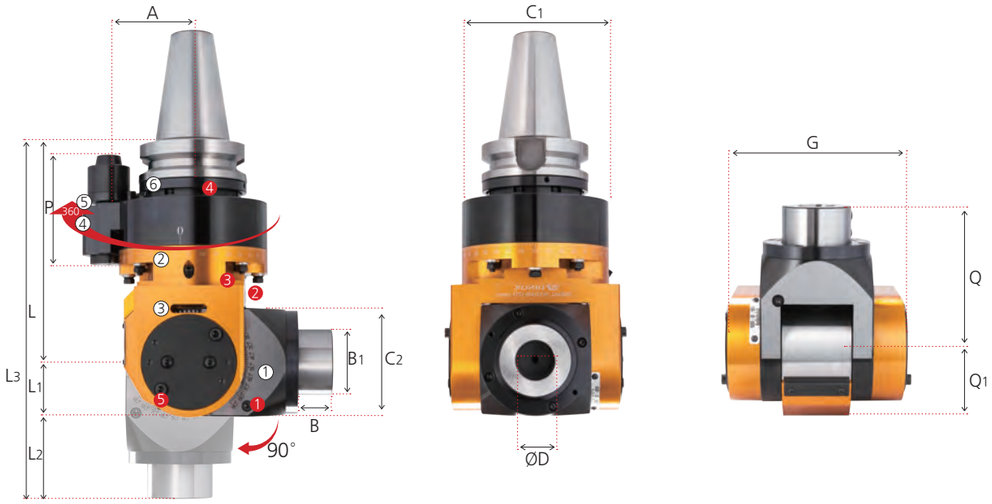
	Optional
	Wrench
Type	
FMC16	LW - 6
FMC22	LW - 8
FMC27	LW - 10
FMC32	LW - 14
FMC40	LW - 17

BT-MAH

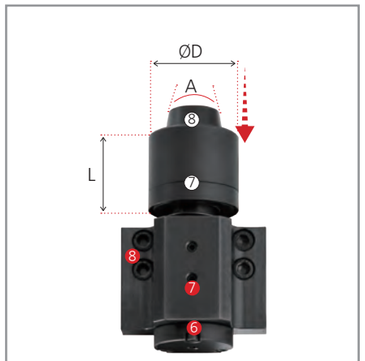
MAH for mold(0°- 90°)_Reinforced type(0°- 90°)



Corner Rounding | Copy Machining | Inclined Face | Drilling | Milling



Positioning pin



Shank size	L	A	ØD
BT50	56.5	20°	ø40

NO	Name
①	Inclination angle gradation (Axial positioning in 0°~90°)
②	Rotating angle graduation (free radius position in 360°)
③	Head
④	Positioning pin part
⑤	Jaw key
⑥	Positioning ring
⑦	Positioning pin cover
⑧	Positioning pin

NO	Part name	Designation
❶	Inclination angle gradation Screw	BT1216
❷	Head fixed bolts	BT0645
❸	Rotating angle graduation screw	BT0640
❹	Positioning ring set screw	MSST5-12
❺	Tilt axies fixing bolts	BH0616
❻	Positioning pin height control bolt	BT0516
❼	Positioning pin set screw	BT0512
❽	Body position block set screw	BX0516

Designation	ØD	L	L1	L2	L3	C	C1	G	C2	Q	Q1	B	B1	P	A	MAX RPM	Install tool	kg
BT50-MAH32-200	32	200	47	78	325	136	95	154	95	125	63	31	60	95	80	3,000	SIDE LOCK	19

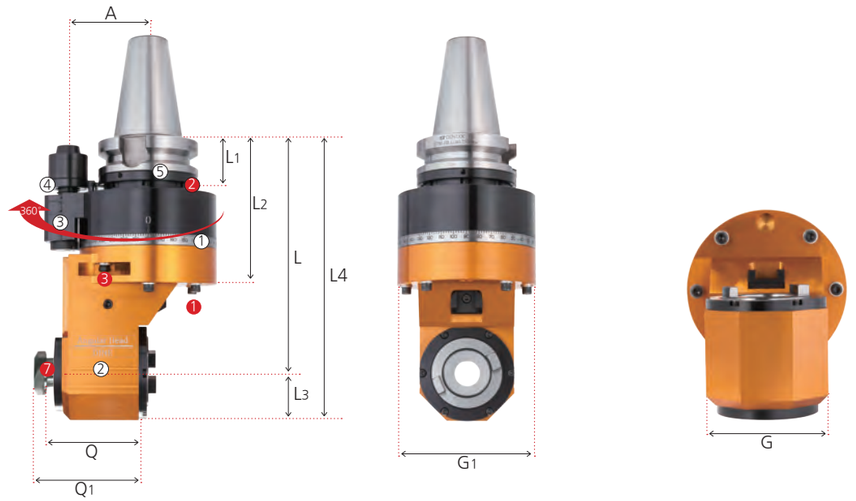
● Features, see page 40. 40P
● Positioning block, see page 220. 220P

BT-HRAG

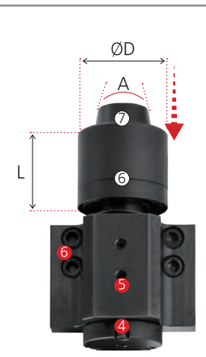
HRAG(90° fixd)_Reinforced type(90° fixed)



Drilling | Milling | Facing



Positioning pin



Shank size	L	A	ØD
BT50	56.5	20°	ø40

NO	Name
①	Rotating angle graduation (free radius position in 360°)
②	Head
③	Positioning pin part
④	Jaw key
⑤	Positioning ring
⑥	Positioning pin cover
⑦	Positioning pin

NO	Part name	Designation
❶	Head fixed bolts	BX0660
❷	Positioning ring set screw	MSST5-12
❸	Rotating angle graduation screw	BT0648
❹	Positioning pin height control bolt	BT0516
❺	Positioning pin set screw	BT0512
❻	Body position block set screw	BX0516
❼	BT / NT bolt	

Designation	L	L1	L2	L3	L4	Q	Q1	A	G	G1	MAX RPM	Tool	kg
BT50-HRAG40-230	230	56.5	145	46.5	276.5	89	101	80	93	136	3,000	BT40/NT40	15.8

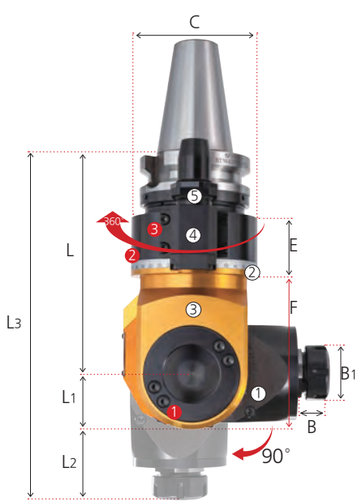
● Features, see page 41. 41P
● Positioning block, see page 220. 220P

BT-KHU

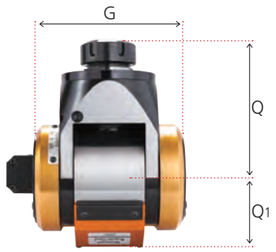
KHU(Free angle)_collet type(0°- 90°)



Corner Rounding | Copy Machining | Inclined Face | Drilling | Milling







Positioning pin



Shank size	L	L1	A	ØD
BT40	Max : 32 Min : 26	10	20°	Ø19.6
BT50	Max : 35 Min : 29	15	20°	Ø28

NO	Name
①	Inclination angle gradation (Axial positioning in 0°~90°)
②	Rotating angle graduation (free radius position in 360°)
③	Head
④	Positioning pin part
⑤	Jaw key
⑥	Height control wrench hole

NO	Part name	Designation
❶	Tilt Axies fixing bolts	BH0630
❷	Bracket angle fixing bolt	BX0630
❸	Position block fixing bolt	BX0512
❹	Set screw	BT0404
❺	Fixing bolts	BX05630

Designation	ØD (Clamping range)	ØD1	L	L1	L2	L3	B	B1	E	F	C	A	G	Q	Q1	Torque rate (IN:OUT)	Direction of rotation (IN:OUT)	MAX RPM	Collet	kg
BT40-KHU10-160	1.0~10.0	58	160	33	54	247	22	28	51	98	96	65	90	87	40	1:2	CW:CW	6,000	GERC16	6.4
BT50-KHU10-180	1.0~10.0	58	180	33	54	267	22	28	53	103	114	80	90	87	40	1:2	CW:CW	6,000	GERC16	10.5
BT50-KHU20-195	2.0~20.0	84	195	47	73	315	29	50	53	132	114	80	124	120	63	1:1	CW:CW	3,000	GERC32	15.8

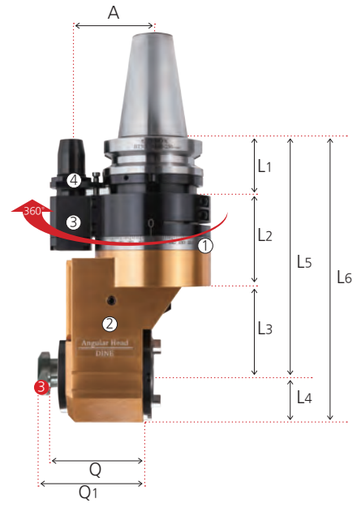
- Features, see page 40. 40P
- Positioning block, see page 220. 220P

BT-KAG

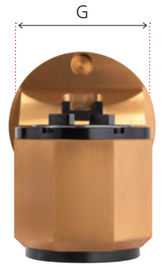
KAG(90° Fixed type)_Angular head(90° Fixed type)



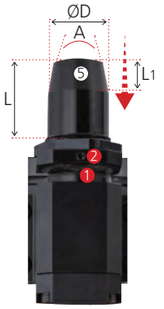
Drilling | Milling | Facing







Positioning pin



Shank Size	L	L1	A	ØD
BT40	Max : 32 Min : 26	10	20°	Ø19.6
BT50	Max : 35 Min : 29	15	20°	Ø28

NO	Name
①	Rotating angle graduation (free radius position in 360°)
②	Head
③	Positioning pin part
④	Jaw key
⑤	Height control wrench hole

NO	Part name	Designation
❶	Set screw	BT0404
❷	Fixing bolts	BX50630
❸	BT / NT bolt	

Designation	L1	L2	L3	L4	L5	L6	Q	Q1	A	C	G	Torque rate (IN:OUT)	Direction of rotation (IN:OUT)	MAX RPM	Shank	kg
BT40-KAG30-195	44	86	65	37.5	195	232.5	66	70	65	96	75	1:1	CW:CW	4,000	BT30/NT30	6.4
BT50-KAG40-230	57	88	85	46.5	230	276.5	89	94	80	114	93	1:1	CW:CW	3,000	BT40/NT40	10.5

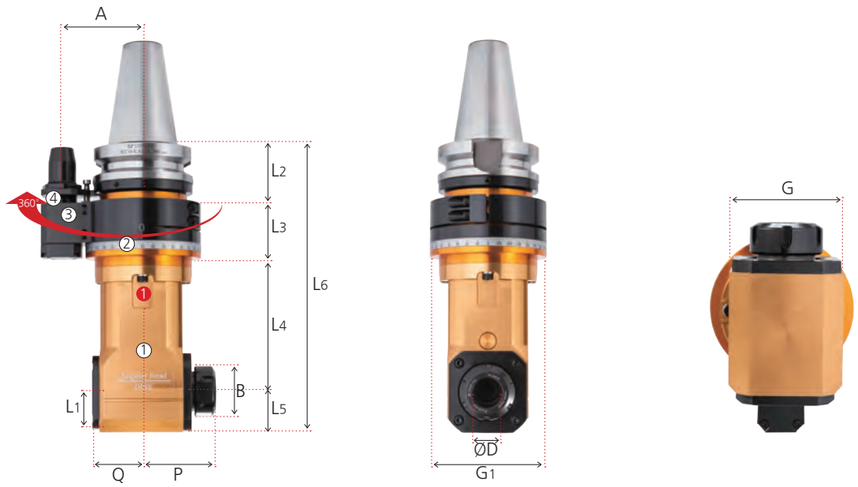
- Features, see page 41. 41P
- Positioning Block, see page 220. 220P

BT-KAH

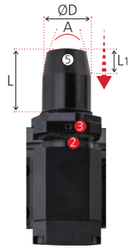
HRAG(90° fixed)_Collet type (90° fixed)



Flank machining | Innerside | Milling | Tapping | Drilling



Positioning pin



Shank size	L	L1	A	ØD
BT40	Max : 32 Min : 26	10	20°	Ø19.6
BT50	Max : 35 Min : 29	15	20°	Ø28

NO	Name
①	Head
②	Rotating angle graduation (free radius position in 360°)
③	Positioning pin part
④	Jaw key
⑤	Height control wrench hole

NO	Part name	Designation
❶	Head fixing bolts	BX0618
❷	Set screw	BT0404
❸	Fixing bolts	BX50630

Designation	ØD	L	L1	L2	L3	L4	L5	L6	B	A	P	Q	G	G1	Torque rate (IN:OUT)	MAX RPM	Collet	kg
BT40-KAH7-170	1.0~7.0	170	20	44	71	55	20	190	19	65	37	24.5	40	96	1:1	5,000	GERC11	4.6
BT40-KAH10-195	1.0~10.0	195	25	44	71	80	25	220	28	65	46	32	58	96	1:1	5,000	GERC16	5.8
BT40-KAH13-165	1.0~13.0	165	28	44	71	50	28	193	35	65	53	35	60	96	1:1	5,000	GERC20	5.7
BT40-KAH20-180	2.0~20.0	180	38	44	71	65	38	218	50	65	71	49	76	96	1:1	3,500	GERC32	6.7
BT50-KAH07-220	1.0~7.0	220	20	57	54	109	20	240	19	80	37	24.5	40	96	1:1	5,000	GERC11	9.8
BT50-KAH10-215	1.0~10.0	215	25	57	54	104	25	240	28	80	46	32	58	96	1:1	5,000	GERC16	10.7
BT50-KAH10-260	1.0~10.0	260	25	57	54	149	25	285	28	80	46	32	58	96	1:1	5,000	GERC16	11
BT50-KAH13-260	1.0~13.0	260	28	57	54	149	28	288	35	80	53	35	60	96	1:1	5,000	GERC20	11.2
BT50-KAH20-200	2.0~20.0	200	38	57	54	89	38	238	50	80	71	49	76	96	1:1	3,500	GERC32	11.6
BT50-KAH20-240	2.0~20.0	240	38	57	54	129	38	278	50	80	71	49	76	96	1:1	3,500	GERC32	12.4

● Features, see page 40. 40P
● Positioning block, see page 220. 220P

BT-KAC

KAC(45° fixed)_Collet type(45° fixed)



Slope machining | Milling



Positioning pin



Shank Size	L	L1	A	ØD
BT40	Max : 32 Min : 26	10	20°	Ø19.6
BT50	Max : 35 Min : 29	15	20°	Ø28

NO	Name
①	Head
②	Rotating angle graduation (free radius position in 360°)
③	Positioning pin part
④	Jaw key
⑤	Height control wrench hole

NO	Part name	Designation
❶	Head fixing bolts	BX0618
❷	Set screw	BT0404
❸	Fixing bolts	BX50630

Designation	ØD (Clamping range)	L	L1	L2	L3	B	G	G1	P	Q	A	MAX RPM	Collet	kg
BT40-KAC10-220	1.0~10.0	220	44	71	105	28	60	96	25	54	65	5,000	GERC16	5.3
BT40-KAC13-220	1.0~13.0	220	44	71	105	28	60	96	25	54	65	5,000	GERC20	5.5
BT40-KAC20-230	2.0~20.0	230	44	71	115	50	72	96	30	60	65	3,500	GERC32	6.8
BT50-KAC10-240	1.0~10.0	240	57	54	129	28	60	96	25	54	80	5,000	GERC16	10.2
BT50-KAC13-240	1.0~13.0	240	57	54	129	28	60	96	25	54	80	5,000	GERC20	10.4
BT50-KAC20-250	2.0~20.0	250	57	54	139	50	72	96	30	60	80	3,500	GERC32	11.7

● Features, see page 41. 41P
● Positioning block, see page 220. 220P

BT-MD
Modular arbor

MAS 403-BT — Shank
G6.3 — G value
C — Coolant system

Fig. 1

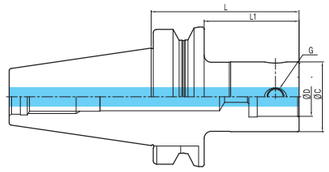
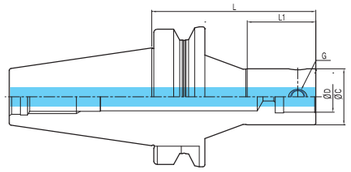


Fig. 2



C This symbol means built-in through coolant system

● Spare part, see page 115 115P

BT30, BT40

Designation	ØC	ØD	L	L1	G	kg	Fig.
BT30-MD19F-70	19	11	70	45	M5	0.4	1
BT30-MD25F-90	25	14	90	63	M6	0.3	1
BT30-MD32F-80	32	18	80	55	M8	0.4	1
BT30-MD40F-45	40	22	45	22	M8	0.4	1
BT30-MD40F-60	40	22	60	36	M10	0.5	1
BT30-MD40F-80	40	22	80	56	M10	0.5	1
BT30-MD50F-70	50	28	70	48	M12	0.8	1
BT40-MD19F-70	19	11	70	40	M5	1.8	1
BT40-MD25F-95	25	14	95	63	M6	1.9	1
BT40-MD25F-105R	25	14	105	40	M6	1.9	2
BT40-MD32F-100	32	18	100	70	M8	2.3	1
BT40-MD32F-115R	32	18	115	45	M8	2.4	2
BT40-MD40F-60	40	22	60	31	M10	2.7	1
BT40-MD40F-110R	40	22	110	60	M10	2.7	2
BT40-MD40F-115	40	22	115	83	M10	2.7	1
BT40-MD50F-105	50	28	105	73	M12	2.7	1
BT40-MD63F-64	63	36	64	37	M16	3.3	1
BT40-MD63F-110	63	36	110	83	M16	3.6	1
BT40-MD63F-135	63	36	135	108	M16	4.6	1
BT40-MD80F-100	80	45	100	73	M16	4.8	1

BT-MD
Modular arbor

MAS 403-BT — Shank
G6.3 — G value
C — Coolant system

Fig. 1

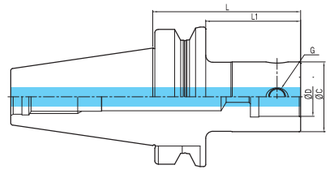
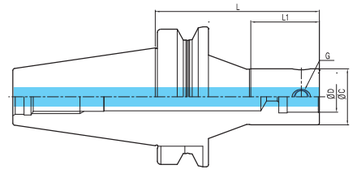


Fig. 2



C This symbol means built-in through coolant system

● Spare part, see page 115 115P

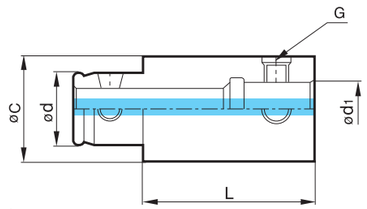
BT50

Designation	ØC	ØD	L	L1	G	kg	Fig.
BT50-MD19F-85	19	11	85	44	M5	4.3	1
BT50-MD25F-105	25	14	105	62	M6	4.5	1
BT50-MD25F-120R	25	14	120	40	M6	4.7	2
BT50-MD32F-110	32	18	110	67	M8	5.1	1
BT50-MD32F-115R	32	18	115	45	M8	5.1	2
BT50-MD32F-235R	32	18	235	115	M8	5.3	2
BT50-MD40F-60	40	22	60	22	M10	5.0	1
BT50-MD40F-195	40	22	195	152	M10	5.4	1
BT50-MD40F-230R	40	22	230	180	M10	5.6	2
BT50-MD50F-125	50	28	125	82	M12	6.0	1
BT50-MD50F-225	50	28	225	182	M12	6.4	1
BT50-MD50F-250R	50	28	250	81	M12	6.5	2
BT50-MD63F-75	63	36	75	35	M16	6.0	1
BT50-MD63F-130	63	36	130	87	M16	6.8	1
BT50-MD63F-195	63	36	195	152	M16	8.0	1
BT50-MD63F-230	63	36	230	187	M16	8.4	1
BT50-MD80F-75	80	45	75	36	M16	9.1	1
BT50-MD80F-110	80	45	110	69	M16	9.4	1
BT50-MD80F-175	80	45	175	134	M16	9.5	1
BT50-MD90F-75	90	45	75	34	M16	9.3	1
BT50-MD90F-145	90	45	145	104	M16	9.9	1
BT50-MD90F-195	90	45	195	154	M16	10.2	1

EXT
Extension bar



C Coolant system



C This symbol means built-in through coolant system

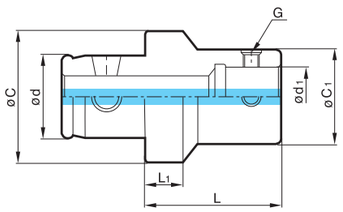
EXT

Designation	ØC	Ød	L	Ød1	G	kg
EXT1930F	19	11	30	11	M5	0.1
EXT1950F	19	11	50	11	M5	0.1
EXT2530F	25	14	30	14	M6	0.1
EXT2550F	25	14	50	14	M6	0.2
EXT3235F	32	18	35	18	M8	0.2
EXT3260F	32	18	60	18	M8	0.4
EXT4040F	40	22	40	22	M10	0.4
EXT4090F	40	22	90	22	M10	0.9
EXT5050F	50	28	50	28	M12	0.8
EXT50100F	50	28	100	28	M12	0.8
EXT6360F	63	36	60	36	M16	1.3
EXT63120F	63	36	60	36	M16	3
EXT8070F	80	45	70	45	M16	2.6
EXT80120F	80	45	120	45	M16	4.5
EXT9080F	90	45	80	45	M16	3.8
EXT90130F	90	45	130	45	M16	6.4

RDC
Reducer bar



C Coolant system



C This symbol means built-in through coolant system

RDC

Designation	Ød	ØC1	Ød1	ØC	L	L1	G	kg
RDC3225F	18	25	14	32	30	9	M6	0.1
RDC4025F	22	25	14	40	30	9	M6	0.2
RDC4032F	22	32	18	40	30	9	M8	0.2
RDC5025F	28	25	14	50	30	9	M6	0.3
RDC5032F	28	32	18	50	40	9	M8	0.3
RDC5040F	28	40	22	50	30	10	M10	0.4
RDC6325F	36	25	14	63	30	9	M6	0.6
RDC6332F	36	32	18	63	40	9	M8	0.6
RDC6340F	36	40	22	63	45	10	M10	0.8
RDC6350F	36	50	28	63	30	10	M12	0.9
RDC8040F	45	40	22	80	40	10	M10	1.2
RDC8050F	45	50	28	80	45	10	M12	1.3
RDC8063F	45	63	36	80	50	13	M16	1.6

MD SPARE PART

BASIC

Spare part	Optional
	Taper screw
Type	
MD19F	BTT0506F
MD25F	BTT0608F
MD32F	BTT0810F
MD40F	BTT1013F
MD50F	BTT1215F
MD63F	BTT1620F
MD80F	BTT1626F
MD90F	BTT1631F

OPTIONAL

Spare part	Optional
	Wrench
Type	
MD19F	LW-2.5
MD25F	LW-3
MD32F	LW-4
MD40F	LW-5
MD50F	LW-6
MD63F	LW-8
MD80F	LW-8
MD90F	LW-8

OPTIONAL

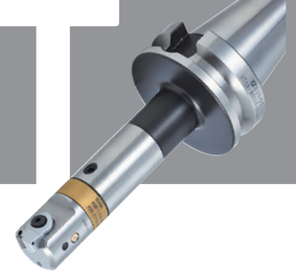
Spare part	Optional
	Coolant type for through coolant system
	
Shank type	
HSK50	HSK50A-CNS
HSK63	HSK63A-CNS
HSK100	HSK100A-CNS

● Taper Screw, see page 216 216P

BT-FBH/B

Micro boring bar (balanced type)

BT



G G value | C Coolant system | Boring

Fig. 1

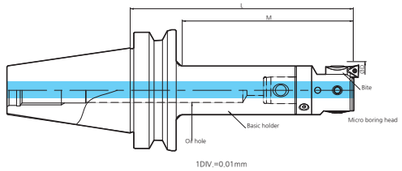
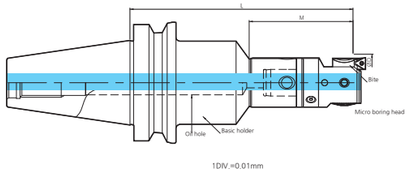


Fig. 2



C This symbol means built-in through coolant system

- Features, see page 42 — 42P
- Spare part, see page 117 — 117P

BT30, BT40, BT50

Designation			Boring range		L	Max. Boring head depth M	kg	Fig.
Head designation	Bite designation	Body designation	min	max				
FBH1920B	FBB20N-O-OO	BT30-MD19F-70	20(24)	26(30)	103	60	0.5	2
FBH2526B	FBB26N-O-OO	BT30-MD25F-90	26(32)	34(40)	127	80	0.7	2
FBH3233B	FBB33N-O-OO	BT30-MD32F-80	33(40)	43(50)	121	80	0.8	2
FBH4042B	FBB42N-O-OO	BT30-MD40F-80	42(50)	54(62)	127	96	1.1	2
FBH5053B	FBB53N-O-OO	BT30-MD50F-70	53(65)	70(82)	127	97	1.7	1
FBH1920B	FBB20N-O-OO	BT40-MD19F-70	20(24)	26(30)	103	45	1.9	2
FBH2526B	FBB26N-O-OO	BT40-MD25F-95	26(32)	34(40)	133	59	2	2
FBH3233B	FBB33N-O-OO	BT40-MD32F-100	33(40)	43(50)	141	77	2.5	2
FBH4042B	FBB42N-O-OO	BT40-MD40F-115	42(50)	54(62)	162	107	3.1	2
FBH5053B	FBB53N-O-OO	BT40-MD50F-105	53(65)	70(82)	162	135	3.5	1
FBH6368B	FBB68N-O-OO	BT40-MD63F-110	68(90)	100(122)	181	154	6.3	1
FBH6398B	FBB68N-O-OO	BT40-MD63F-135	98(120)	150(172)	206	179	7.1	1
FBH8098B	FBB68N-O-OO	BT40-MD80F-100	98(120)	150(172)	171	144	8.3	1
FBH1920B	FBB20N-O-OO	BT50-MD19F-85	20(24)	26(30)	118	80	5.2	1
FBH2526B	FBB26N-O-OO	BT50-MD25F-105	26(32)	34(40)	142	59	5.8	2
FBH3233B	FBB33N-O-OO	BT50-MD32F-110	33(40)	43(50)	151	77	6	2
FBH4042B	FBB42N-O-OO	BT50-MD40F-195	42(50)	54(62)	242	130	6.3	2
FBH5053B	FBB53N-O-OO	BT50-MD50F-225	53(65)	70(82)	282	182	6.6	2
FBH6368B	FBB68N-O-OO	BT50-MD63F-230	68(90)	100(122)	301	220	7.2	2
FBH6398B	FBB68N-O-OO	BT50-MD63F-195	98(120)	150(172)	266	191	8.5	2
FBH8098B	FBB68N-O-OO	BT50-MD80F-175	98(120)	150(172)	246	208	12.8	1

- Boring depth can be changed by variety of MD arboor and extension bar.
- Variety bites

  FBBOON, FBBOON-1 : TPGT, TPGW0802OOL

  FBBOON-O-C : CCMT,CCGT0602OOL

  FBBOON-O-C09 : CCMT,CCGT09T3OOL

  FBBOON-O-T11 : TPGT1103OOL

FBH/B SPARE PART

Micro boring bar (balanced type) spare part



BASIC

Spare part

TYPE(FBH)	Lock screw	Clamp screw
FBH1920B	BTF0404	BXC0304
FBH2526B	BTF0505	BXC0405
FBH3233B	BTF0606	BXC0506
FBH4042B	BTF0808	BXC0610
FBH5053B	BTF0812	BXC0610
FBH6368B	BTF1016	BXC0810
FBH6398B	BTF1012	BXC0810
FBH8098B	BTF1014	BXC0810

OPTIONAL

Spare part

Designation	Boring range	Insert screw	Clamp bolt
FBB15C	Ø15 ~ Ø18㎜	BFTX01604N	BFTX02506N
	Ø18 ~ Ø22㎜		
FBB20N	Ø20 ~ Ø26㎜	BFTX0204A	BXC0304
FBB20N-C		BFTX0204N	
FBB20N-1	Ø24 ~ Ø30㎜	BFTX0204A	
FBB20N-1-C		BFTX0204N	
FBB26N	Ø26 ~ Ø34㎜	BFTX0204A	BXC0405
FBB26N-C		BFTX0204N	
FBB26N-1	Ø32 ~ Ø40㎜	BFTX0204A	
FBB26N-1-C		BFTX0204N	
FBB33N	Ø33 ~ Ø43㎜	BFTX0204A	BXC0506
FBB33N-C		BFTX02506N	
FBB33N-1	Ø41~ Ø50㎜	BFTX0204A	
FBB33N-1-C		BFTX02506N	
FBB42N	Ø42~ Ø54㎜	BFTX0204A	BXC0610
FBB42N-		BFTX02506N	
FBB42N-11		BFTX0307A	
FBB42N-1	Ø50~ Ø62㎜	BFTX0204A	
FBB42N-1-C		BFTX02506N	
FBB42N-1-T11		BFTX0307A	
FBB53N	Ø53~ Ø70㎜	BFTX0204A	
FBB53N-C		BFTX02506N	
FBB53N-11		BFTX0307A	
FBB53N-1	Ø65~ Ø82㎜	BFTX0204A	
FBB53N-1-C		BFTX02506N	
FBB53N-1-C09		BFTX0409N	
FBB53N-1-T11		BFTX0307A	
FBB68N	Ø68~ Ø100㎜ Ø98~ Ø150㎜	BFTX0204A	BXC0810
FBB68N-C		BFTX0409N	
FBB68N-11		BFTX0307A	
FBB68N-1	Ø90~ Ø122㎜ Ø120~ Ø172㎜	BFTX0204A	
FBB68N-1-C09		BFTX0409N	
FBB68N-1-T11		BFTX0307A	

FBC/TBC

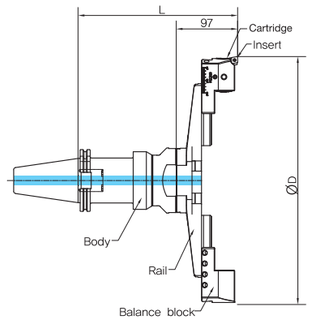
Balance cut tool for rough/fine boring

BT



MAS 403-BT
Shank

C
Coolant system



C This symbol means built-in through coolant system

- Features, see page 43 — 43P
- Spare part, see page 119 — 119P

BT50

Designation								Boring range	
Body	kg	Rough boring(TBC)			Fine boring(FBC)				
		TBC HEAD SET (Rail+Cartridge)	L	kg	FBC HEAD SET (Rail+Cartridge+Balancing block)	L	kg	min	max
BT50-FMD50-85	5.9	TBC130S(TBR130+BCC1348)	175	3.5	FBC130S(TBR130+FCC130+FCB130)	182	3.8	130	180
BT50-FMD50-155	7.9	TBC130S(TBR130+BCC1348)	245	3.5	FBC130S(TBR130+FCC130+FCB130)	252	3.8	130	180
BT50-FMD50-205	9.7	TBC130S(TBR130+BCC1348)	295	3.5	FBC130S(TBR130+FCC130+FCB130)	302	3.8	130	180
BT50-FMD50-255	10.4	TBC130S(TBR130+BCC1348)	345	3.5	FBC130S(TBR130+FCC130+FCB130)	352	3.8	130	180
BT50-FMD50-85	5.9	TBC175S(TBR175+BCC1348)	175	3.9	FBC175S(TBR175+FCC130+FCB130)	182	4.1	175	225
BT50-FMD50-155	7.9	TBC175S(TBR175+BCC1348)	245	3.9	FBC175S(TBR175+FCC130+FCB130)	252	4.1	175	225
BT50-FMD50-205	9.7	TBC175S(TBR175+BCC1348)	295	3.9	FBC175S(TBR175+FCC130+FCB130)	302	4.1	175	225
BT50-FMD50-255	10.4	TBC175S(TBR175+BCC1348)	345	3.9	FBC175S(TBR175+FCC130+FCB130)	352	4.1	175	225
BT50-FMD50-85	5.9	TBC220S(TBR220+BCC1348)	175	4.3	FBC220S(TBR220+FCC130+FCB130)	182	4.5	220	270
BT50-FMD50-155	7.9	TBC220S(TBR220+BCC1348)	245	4.3	FBC220S(TBR220+FCC130+FCB130)	252	4.5	220	270
BT50-FMD50-205	9.7	TBC220S(TBR220+BCC1348)	295	4.3	FBC220S(TBR220+FCC130+FCB130)	302	4.5	220	270
BT50-FMD50-255	10.4	TBC220S(TBR220+BCC1348)	345	4.3	FBC220S(TBR220+FCC130+FCB130)	352	4.5	220	270
BT50-FMD50-85	5.9	TBC265S(TBR265+BCC1348)	175	4.5	FBC265S(TBR265+FCC130+FCB130)	182	4.6	265	315
BT50-FMD50-155	7.9	TBC265S(TBR265+BCC1348)	245	4.5	FBC265S(TBR265+FCC130+FCB130)	252	4.6	265	315
BT50-FMD50-205	9.7	TBC265S(TBR265+BCC1348)	295	4.5	FBC265S(TBR265+FCC130+FCB130)	302	4.6	265	315
BT50-FMD50-255	10.4	TBC265S(TBR265+BCC1348)	345	4.5	FBC265S(TBR265+FCC130+FCB130)	352	4.6	265	315
BT50-FMD50-85	5.9	TBC310S(TBR310+BCC1354)	175	5.5	FBC310S(TBR310+FCC130+FCB130)	182	5.5	310	390
BT50-FMD50-155	7.9	TBC310S(TBR310+BCC1354)	245	5.5	FBC310S(TBR310+FCC130+FCB130)	252	5.5	310	390
BT50-FMD50-205	9.7	TBC310S(TBR310+BCC1354)	295	5.5	FBC310S(TBR310+FCC130+FCB130)	302	5.5	310	390
BT50-FMD50-255	10.4	TBC310S(TBR310+BCC1354)	345	5.5	FBC310S(TBR310+FCC130+FCB130)	352	5.5	310	390
BT50-FMD50-85	5.9	TBC385S(TBR385+BCC1354)	175	5.8	FBC385S(TBR385+FCC130+FCB130)	182	5.8	385	465
BT50-FMD50-155	7.9	TBC385S(TBR385+BCC1354)	245	5.8	FBC385S(TBR385+FCC130+FCB130)	252	5.8	385	465
BT50-FMD50-205	9.7	TBC385S(TBR385+BCC1354)	295	5.8	FBC385S(TBR385+FCC130+FCB130)	302	5.8	385	465
BT50-FMD50-255	10.4	TBC385S(TBR385+BCC1354)	345	5.8	FBC385S(TBR385+FCC130+FCB130)	352	5.8	385	465
BT50-FMD50-85	5.9	TBC460S(TBR460+BCC1354)	175	12.8	FBC460S(TBR460+FCC130+FCB130)	182	12.8	460	540
BT50-FMD50-155	7.9	TBC460S(TBR460+BCC1354)	245	12.8	FBC460S(TBR460+FCC130+FCB130)	252	12.8	460	540
BT50-FMD50-205	9.7	TBC460S(TBR460+BCC1354)	295	12.8	FBC460S(TBR460+FCC130+FCB130)	302	12.8	460	540
BT50-FMD50-255	10.4	TBC460S(TBR460+BCC1354)	345	12.8	FBC460S(TBR460+FCC130+FCB130)	352	12.8	460	540

FBC/TBC SPARE PART

Balance cut tool for rough spare part



Spare part

	Basic								
	Rail	Cartridge (Rough boring)	Cartridge (Fine boring)	Clamp bolt	Clamp bolt	Balancing block	Wrench	Clamp screw	Torx wrench
Head Set									
TBC130S	TBR130	BCC1348	-	BX0820	BT0645	-	LW-3	BFTX0511N	TW20
TBC175S	TBR175	BCC1348	-	BX0820	BT0645	-	LW-3	BFTX0511N	TW20
TBC220S	TBR220	BCC1348	-	BX0820	BT0645	-	LW-3	BFTX0511N	TW20
TBC265S	TBR265	BCC1348	-	BX0820	BT0645	-	LW-3	BFTX0511N	TW20
TBC310S	TBR310	BCC1354	-	BX0820	BT0660	-	LW-3	BFTX0511N	TW20
TBC385S	TBR385	BCC1354	-	BX0820	BT0660	-	LW-3	BFTX0511N	TW20
TBC460S	TBR460	BCC1354	-	BX0820	BT0660	-	LW-3	BFTX0511N	TW20
FBC130S	TBR130	-	FCC130	BX0820	BT0645	FCB130	LW-3	-	-
FBC175S	TBR175	-	FCC130	BX0820	BT0645	FCB130	LW-3	-	-
FBC220S	TBR220	-	FCC130	BX0820	BT0645	FCB130	LW-3	-	-
FBC265S	TBR265	-	FCC130	BX0820	BT0645	FCB130	LW-3	-	-
FBC310S	TBR310	-	FCC310	BX0820	BT0660	FCB310	LW-3	-	-
FBC385S	TBR385	-	FCC310	BX0820	BT0660	FCB310	LW-3	-	-
FBC460S	TBR460	-	FCC310	BX0820	BT0660	FCB310	LW-3	-	-

FBB

FBB Bite (Use FBC)





Designation	Insert
FBB130-C09	CCMT09T3○○, CCGT09T3○○
FBB130-C12	CCMT1204○○
FBB130-T11	TPMT1103○○, TPGT1103○○

BT-DBC

Balance cut tool(Modular type)

BT



Coolant system | Boring

Fig. 1

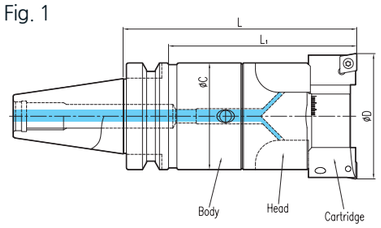
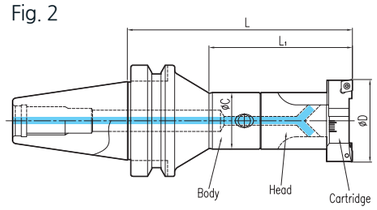


Fig. 2



- Boring depth can be changed by variety of MD arboor and extension bar.

C This symbol means built-in through coolant system

- MD Arbor, see page 112 112P
- Spare part, see page 121 121P

BT30, BT40, BT50

Designation				Boring range		L	Max. Boring depth M	Fig.
Head Set. designation	kg	Body designation	kg	min	max			
DBC2528S	0.3	BT30-MD25F-90	0.4	28	35	150	93	2
DBC3235S	0.4	BT30-MD32F-80	0.4	35	46	145	114	2
DBC4046S	0.6	BT30-MD40F-80	0.5	46	58	150	119	2
DBC5058S	1.1	BT30-MD50F-70	0.8	58	74	150	128	1
DBC2528S	0.3	BT40-MD25F-105R	1.9	28	35	165	100	2
DBC3235S	0.4	BT40-MD32F-115R	2.4	35	46	180	110	2
DBC4046S	0.6	BT40-MD40F-110R	2.7	46	58	180	130	2
DBC5058S	1.1	BT40-MD50F-105	2.7	58	74	185	130	1
DBC6374S	2.0	BT40-MD63F-110	3.6	74	94	200	150	2
DBC8094S	3.5	BT40-MD80F-100	4.8	94	120	200	173	2
DBC2528S	0.3	BT50-MD25F-120R	4.7	28	35	180	100	2
DBC3235S	0.4	BT50-MD32F-235R	5.3	35	46	300	180	2
DBC4046S	0.6	BT50-MD40F-230R	5.6	46	58	300	250	2
DBC5058S	1.1	BT50-MD50F-250R	6.5	58	74	330	280	2
DBC6374S	2.0	BT50-MD63F-230	8.4	74	94	320	280	2
DBC8094S	3.5	BT50-MD80F-175	9.5	94	120	275	225	1
DBC120S	5.3	BT50-MD80F-175	9.5	120	175	275	235	1

DBC SPARE PART

Balance cut tool(Modular type) spare part



BASIC

Spare part

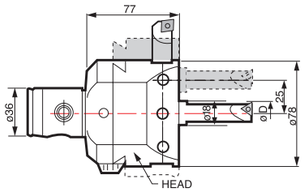
	Basic								
	Head	Spring pin	Wrench bolt	Wrench	Cartridge	SET screw	Wrench	Clamp screw	Torx wrench
Head set									
DBC2528S	DBC2528	SP0308	BX0415	LW-3	BCC28	BT0306	LW-1.5	FTKA02565	TRX7
DBC3235S	DBC3235	SP0410	BX0515	LW-4	BCC35	BT0308	LW-1.5	FTKA02565	TRX7
DBC4046S	DBC4046	SP0516	BX0620	LW-5	BCC46	BT0410	LW-2	FTNA0408	TRX15
DBC5058S	DBC5058	SP0616	BX0620	LW-5	BCC58	BT0412	LW-2	FTNA0408	TRX15
DBC6374S	DBC6374	SP1018	BX0830	LW-6	BCC74	BT0516	LW-2.5	BFTX0511N	TRX20
DBC8094S	DBC8094	SP1020	BX1035	LW-8	BCC94	BT0620	LW-3	BFTX0511N	TRX20
DBC120S	DBC120N	SP1020	BX0830	LW-6.0	BCC120	BT0830	LW-4	BFTX0511N	TRX20

BT-KMB

Micro boring



Coolant system | Boring



1DIV = ø0.02mm

C This symbol means unavailable with through coolant system

- Boring range, see page 124 124P
- Spare part, see page 125 125P

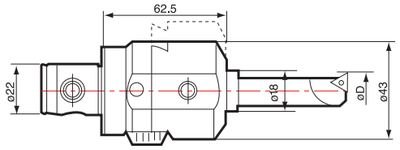
Boring head	Bite	MD NO.	L (Head length)	kg
KMB6336	BB18-O(S)	BTOO-MD63F	77	2.2

BT-SMB

Small micro boring bar



Coolant system | Boring



1DIV = ø0.02mm

C This symbol means unavailable with through coolant system

- Boring range, see page 124 124P
- Spare part, see page 125 125P

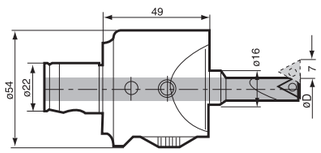
Boring head	Bite	MD NO.	L (Head length)	kg
SMB4022	BB18-O(S)	BTOO-MD40F	62.5	0.6

BT-SMH

Small micro boring bar



Coolant system | Boring



1DIV = ø0.01mm

C This symbol means optional through coolant system

- Boring range, see page 124 124P
- Spare part, see page 125 125P

Boring head	Bite	MD NO.	L (Head length)	kg
SMH4022	BB16-O(S)	BTOO-MD40F	49	0.7

SMH SET

Small micro boring Set.



SMH(SET1)



SMH(SET2)



SMHW(SET3)



SMH(SET4)



SET NUMBER

	Designation	SMH (SET1)	SMH (SET2)	SMHW (SET3)	SMH (SET4)	Insert
Boring head	SMH4022	1	1	1	1	
Body	BT40-MD40F-60	1				
Body	BT50-MD40F-60		1			
BB Bite (STEEL)	BB16-0624(S)	1	1		1	WBGT060102L
BB Bite (STEEL)	BB16-0832(S)	1	1		1	WBGT020102L
BB Bite (STEEL)	BB16-1040(S)	1	1		1	TPGT080202L
BB Bite (STEEL)	BB16-1253(S)	1	1		1	TPGT080202L
BB Bite (STEEL)	BB16-1668(S)	1	1		1	TPGT110304L
BB Bite (STEEL)	BB16-2083(S)	1	1		1	TPGT110304L
BB Bite (STEEL)	BB16-2590(S)	1	1		1	TPGT110304L
BB Bite(STEEL)	BB16-3090(S)	1	1		1	TPGT110304L
Carbide bite	JB8-1S			1		
Carbide bite	JB8-4S			1		
Carbide bite	CB6-5S-95			1		WBGT060102L
Carbide bite	CB8-9S-115			1		TPGT080202L
Carbide bite	CB12-14S-140			1		TPGT110304L
Carbide bite	CB16-195175			1		TPGT110304L
Sleeve	SMH-CS06			1		
Sleeve	SMH-CS08			1		
Sleeve	SMH-CS12			1		
Screw	BFTX0203A	2	2	2	2	
Screw	BFTX0204A	2	2	2	2	
Screw	BFTX0307A	2	2	2	2	
Wrench	LW-3	1	1	1	1	
Wrench	LW-5	1	1	1	1	
Wrench	TW06	1	1	1	1	
Wrench	TW10	1	1	1	1	

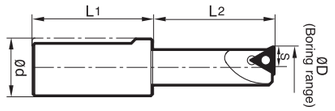
BB BITE

BB Bite(SMB, SMH, KMB)

BT

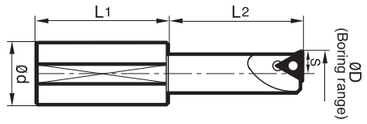


Boring bite : BB type(for KMB)



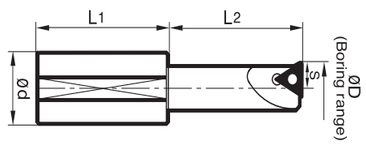
Designation	Boring range(Center)		Boring range(Side)		S	L1	L2	Insert	Insertscrew
	min	max	min	max					
BB18-7(S)	7	40	43	91	3.5	30	30	TBGT0601OOL	BFTX0204A
BB18-9(S)	9	42	45	93	4.5	30	40	TBGT0802OOL	BFTX0204A
BB18-11(S)	11	44	47	95	5.5	30	45	TPGT1103OOL	BFTX0307A
BB18-13(S)	13	46	49	97	6.5	40	45	TPGT1103OOL	BFTX0307A
BB18-15(S)	15	48	51	99	7.5	40	50	TPGT1103OOL	BFTX0307A
BB18-17(S)	17	50	53	101	8.5	40	50	TPGT1103OOL	BFTX0307A

Boring bite : BB type(for SMB)



Designation	Boring range		S	L1	L2	Insert	Insertscrew
	min	max					
BB18-7(S)	7	27	3.5	30	30	TBGT0601OOL	BFTX0204A
BB18-9(S)	9	29	4.5	30	40	TBGT0802OOL	BFTX0204A
BB18-11(S)	11	31	5.5	30	45	TPGT1103OOL	BFTX0307A
BB18-13(S)	13	33	6.5	40	45	TPGT1103OOL	BFTX0307A
BB18-15(S)	15	35	7.5	40	50	TPGT1103OOL	BFTX0307A
BB18-17(S)	17	37	8.5	40	50	TPGT1103OOL	BFTX0307A

Boring bite : BB type(for SMH)



Designation	Boring range		S	L1	L2	Insert	Insert screw	Wrench
	min	max						
BB16-5(S)	5.5	19	2.75	34	20	WBGT0601OOL	BFTX0203A	TRX06
BB16-7(S)	7	21	3.5	34	30	TBGT0601OOL	BFTX0204A	TRX06
BB16-9(S)	9	23	4.5	34	40	TPGT0802OOL	BFTX0204A	TRX06
BB16-11(S)	11	25	5.5	34	45	TPGT1103OOL	BFTX0307A	TRX10
BB16-15(S)	15	29	7.5	34	50	TPGT1604OOL	BFTX0307A	TRX10
BB16-19(S)	19	33	9.5	34	60	TPGT1103OOL	BFTX0410A	TRX15

KMB SPARE PART

Micro boring spare part



Spare part

	Basic			Optional	
	Boring head	Taper screw	Wrench	Boring bite	MD arbor
Type					
KMB	KMB6336	BTT1620F	LW-8	BB18	MD63F

SMB SPARE PART

Small micro boring bar spare part



Spare part

	Basic			Optional	
	Boring head	Taper screw	Wrench	Boring bite	MD arbor
Type					
SMB	SMB4022	BTT1013F	LW-5	BB18	MD40F

SMH SPARE PART

Small micro boring bar spare part



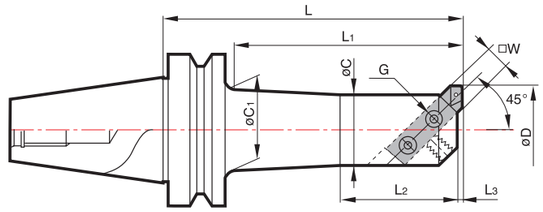
Spare part

	Basic			Optional	
	Boring head	Taper screw	Wrench	Boring bite	MD arbor
Type					
SMH	SMH4022	BTT1013F	LW-5	BB16	MD40F

BT-BSA

Square boring bar

MAS 403-BT Shank | C Coolant system | Boring



C This symbol means unavailable with through coolant system

- Bite is option.
- Spare part, see page 128 128P

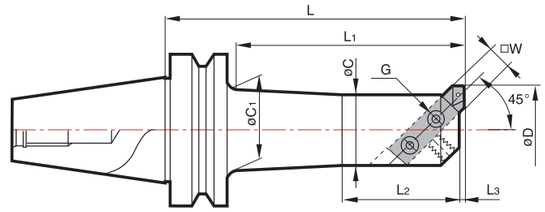
BT40

Designation	Boring range MIN	Boring range MAX	L	L1	L2	L3	ØC	ØC1	W	G	kg
BT40-BSA25-135	25	38	135	103	35	1	20	22	8	M6	1.4
BT40-BSA30-135	30	42	135	103	40	1.6	24	26	8	M6	1.6
BT40-BSA38-165	38	52	165	133	50	2.6	30	33	10	M8	2.9
BT40-BSA42-180	42	56	180	150	60	2	34	37	10	M8	2.4
BT40-BSA50-165	50	65	165	133	65	3	40	44	13	M10	3.7
BT40-BSA50-210	50	65	210	178	65	3	40	44	13	M10	3.2
BT40-BSA62-165	62	90	165	133	80	2	50	50	16	M10	4.9

BT-BSA

Square boring bar

MAS 403-BT Shank | C Coolant system | Boring



C This symbol means unavailable with through coolant system

- Bite is option.
- Spare part, see page 128 128P

BT50

Designation	Boring range MIN	Boring range MAX	L	L1	L2	L3	ØC	ØC1	W	G	kg
BT50-BSA25-135	25	38	135	92	35	1	20	22	8	M6	4.2
BT50-BSA30-165	30	42	165	122	40	1.6	24	26	8	M6	4.4
BT50-BSA38-180	38	52	180	137	50	2.6	30	33	10	M8	4.8
BT50-BSA42-210	42	56	210	167	60	2	34	37	10	M8	5
BT50-BSA50-180	50	65	180	137	65	3	40	46	13	M10	5.4
BT50-BSA50-240	50	65	240	197	65	3	40	44	13	M10	5.7
BT50-BSA62-195	62	90	195	152	80	2	50	56	16	M10	6.2
BT50-BSA62-270	62	90	270	227	80	2	50	56	16	M10	7.6
BT50-BSA72-195	72	110	195	152	95	2.4	60	66	19	M12	7
BT50-BSA72-285	72	110	285	242	95	2.4	60	66	19	M12	9.3
BT50-BSA90-210	90	125	210	167	110	4	75	80	19	M12	9.2
BT50-BSA105-195	105	160	195	154	130	3	90	-	25	M12	10.7

BSA SPARE PART

Boring bar spare part



BASIC

Spare part	Basic
	SET screw
Type	
BSA25	BTF0606
BSA30	BTF0606
BSA38	BTF0808
BSA42	BTF0808
BSA50	BTF1012
BSA62	BTF1016
BSA72	BTF1216
BSA90	BTF1220
BSA105	BTF1220

OPTIONAL

Spare part	Optional	
	Bite	Wrench
Type		
BSA25	BH408	LW-3
BSA30	BH408	LW-4
BSA38	BH410	LW-4
BSA42	BH410	LW-5
BSA50	BH413	LW-5
BSA62	BH416	LW-5
BSA72	BH419	LW-5
BSA90	BH419	LW-6
BSA105	BH425	LW-6

BH

Square boring bite for BSA



Boring

BH400 series for BSA

Fig. 1

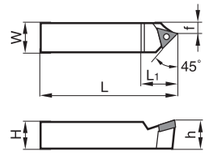
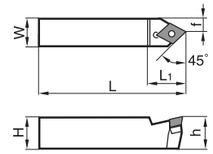


Fig. 2

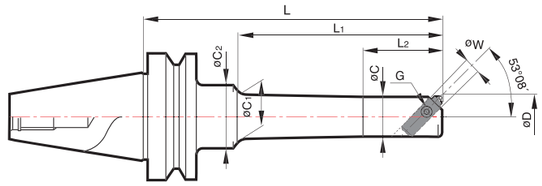


Series	Designation	Fig.	W=H	h	L	L1	f	Insert	Screw	Wrench
BH400 Series	BH408	1	8	7.8	40	9	3.2	TPGT0802OOL	BFTX0204A	TRX06
	BH410	2	10	9.8	50	10	4.2	CPMT0602OO	BFTX02056N	TRX08
	BH413	2	13	12.8	60	14	6.2	CPMT0803OO	BFTX0307N	TRX10
	BH416	2	16	15.8	80	18	7.3	CPMT0903OO	BFTX0407A	TRX15
	BH419	2	19	18.8	95	22	10.3	CPMH1204OO	BFTX0511N	TRX20
	BH425	2	25	24.8	125	26	14.2	CPMH1604OO	BFX611R	TRX-3

BT-BKA

FZ Micro boring bar

MAS 403-BT Shank | C Coolant system | Boring



1DIV. =ø0.02mm

※ Please refer to FZ unit spec. table.

C This symbol means unavailable with through coolant system

- Boring unit is option
- Unit, see page 133 133P

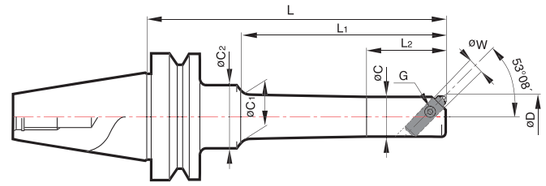
BT30, BT40

Designation	Boring unit	L	L1	L2	ØC	ØC1	W	G	kg
BT30-BKA28-150	FZ10-OO-3(S)	150	125	-	-	-	10	M6	0.9
BT30-BKA36-150	FZ12-OO-3(S)	150	125	-	-	-	12	M8	1.3
BT30-BKA45-150	FZ16-OO-3(S)	150	128	-	-	-	16	M10	1.7
BT40-BKA23-150	FZ8-OO-3	150	95	40	20	22	8	M6	1.6
BT40-BKA23-225	FZ8-OO-3	225	95	40	20	22	8	M6	2.8
BT40-BKA28-165	FZ10-OO-3(S)	165	122	50	25	26	10	M6	1.8
BT40-BKA28-225	FZ10-OO-3(S)	225	125	50	25	26	10	M6	2.7
BT40-BKA36-165	FZ12-OO-3(S)	165	133	60	32	35	12	M8	2
BT40-BKA36-225	FZ12-OO-3(S)	225	193	60	32	35	12	M8	2.8
BT40-BKA45-165	FZ16-OO-3(S)	165	133	70	40	44	16	M10	2.4
BT40-BKA45-225	FZ16-OO-3(S)	225	208	70	40	44	16	M10	3
BT40-BKA56-165	FZ20-OO-3(S)	165	-	70	50	54	20	M12	3
BT40-BKA56-240	FZ20-OO-3(S)	240	-	70	50	54	20	M12	4.3
BT40-BKA72-165	FZ25-OO-3(S)	165	-	-	63	-	25	M16	4
BT40-BKA72-240	FZ25-OO-3(S)	240	-	-	63	-	25	M16	5.7
BT40-BKA90-165	FZ32-OO-3(S)	165	-	100	80	-	32	M20	5
BT40-BKA90-240	FZ32-OO-3(S)	240	-	100	80	-	32	M20	6.8

BT-BKA

FZ Micro boring bar

MAS 403-BT Shank | C Coolant system | Boring



1DIV. =ø0.02mm

※ Please refer to FZ unit spec. table.

C This symbol means unavailable with through coolant system

- Boring unit is option
- Unit, see page 133 133P

BT50

Designation	Boring unit	L	L1	L2	ØC	ØC1	W	G	kg
BT50-BKA23-150	FZ8-OO-3	150	95	40	20	22	8	M6	4.3
BT50-BKA23-225	FZ8-OO-3	225	95	40	20	22	8	M6	5.4
BT50-BKA28-165	FZ10-OO-3(S)	165	122	50	25	26	10	M6	4.4
BT50-BKA28-225	FZ10-OO-3(S)	225	125	50	25	26	10	M6	5.2
BT50-BKA36-165	FZ12-OO-3(S)	165	122	60	32	35	12	M8	4.5
BT50-BKA36-225	FZ12-OO-3(S)	225	151	60	32	35	12	M8	5
BT50-BKA45-165	FZ16-OO-3(S)	165	122	70	40	44	16	M10	5
BT50-BKA45-225	FZ16-OO-3(S)	225	182	70	40	44	16	M10	5.7
BT50-BKA56-165	FZ20-OO-3(S)	165	122	70	50	54	20	M12	5.6
BT50-BKA56-240	FZ20-OO-3(S)	240	197	70	50	54	20	M12	6.1
BT50-BKA72-165	FZ25-OO-3(S)	165	122	80	63	68	25	M16	6.7
BT50-BKA72-240	FZ25-OO-3(S)	240	197	80	63	68	25	M16	8.6
BT50-BKA90-165	FZ32-OOO-3(S)	165	122	-	80	-	32	M20	8
BT50-BKA90-240	FZ32-OOO-3(S)	240	197	-	80	-	32	M20	11
BT50-BKA110-270	FZ32-OOO-3(S)	270	-	-	100	-	32	M20	14.8

BKA SPARE PART

FZ Micro boring spare part



BASIC

Spare part

Chuck	BASIC
	SET screw
Type	
BKA23	BTF0606
BKA28	BTF0606
BKA36	BTF0808
BKA45	BTF1010
BKA56	BTF1212
BKA72	BTF1616
BKA90	BTF2020
BKA110	BTF2020

OPTIONAL

Spare part

Chuck	Optional		
	Unit		Wrench
Type			
BKA23	FZ 8-23-3(P100, K10)		LW-3
BKA28	FZ10-28-3(S)	FZ10-32-3(S)	LW-3
BKA36	FZ12-36-3(S)	FZ12-40-3(S)	LW-4
BKA45	FZ16-45-3(S)	FZ16-50-3(S)	LW-5
BKA56	FZ20-56-3(S)	FZ20-64-3(S)	LW-4
BKA72	FZ25-72-3(S)	FZ25-80-3(S)	LW-8
BKA90	FZ32-90-3(S)	FZ32-100-3(S)	LW-10
BKA110	FZ32-110-3(S)	FZ32-125-3(S)	LW-10

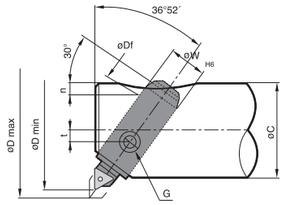
FZ UNIT

FZ Unit Inclined mounting type



C Coolant system

Boring



※ Adjustable range : Ø0.02mm / 1 scale

C This symbol means unavailable with through coolant system

● Insert, see page 135 135P

Designation	Boring range		Insert holder	Insert	ØC	n	ØDf	t	G	W
	MIN	MAX								
FZ8-23-3(P10,K10)	23	29(32)	8Z3(Brazed tip)	-	20	3	8	1.5	M6	8
FZ8-26-3(P10,K10)	26	32(34)	8Z3(Brazed tip)	-	20	3	8	1.5	M6	8
FZ10-28-3(S)	28	34(38)	U10Z3S	TBGT0601OOL	25	3.5	8	2	M6	10
FZ10-32-3(S)	32	38(44)	U10Z3S	TBGT0601OOL	25	3.5	8	2	M6	10
FZ12-36-3(S)	36	44(48)	U12Z3S	TBGT0601OOL	32	4	10	2.5	M8	12
FZ16-45-3(S)	45	54(60)	U16Z3S	TPGT0802OOL	40	6.5	12	3	M10	16
FZ16-50-3(S)	50	59(68)	U16Z3S	TPGT0802OOL	40	6.5	12	3	M10	16
FZ20-56-3(S)	56	68(78)	U20Z3S	TPGT0802OOL	50	7	16	5	M12	20
FZ20-64-3(S)	64	76(90)	U20Z3S	TPGT0802OOL	50	7	16	5	M12	20
FZ25-72-3(S)	72	88(100)	U25Z3S	TPGT1103OOL	63	8	20	4	M16	25
FZ25-80-3(S)	80	96(114)	U25Z3S	TPGT1103OOL	63	8	20	4	M16	25
FZ32-90-3(S)	90	114(126)	U32Z3S	TPGT1103OOL	80	10	25	6	M20	32
FZ32-100-3(S)	100	124(140)	U32Z3S	TPGT1103OOL	80	10	25	6	M20	32
FZ32-110-3(S)	110	134(150)	U32Z3S	TPGT1103OOL	100	10	25	12	M20	32
FZ32-125-3(S)	125	149(175)	U32Z3S	TPGT1103OOL	100	10	25	12	M20	32

FZ UNIT SPARE PART

FZ Unit spare part



BASIC

Spare part

Chuck	Basic		
	Housing	Spindle	Insert screw
Type			
FZ8-23, 26-3, P10	8-23, 26-3	8Z3(P10)	-
FZ8-23, 26-3, K10	8-23, 26-3	8Z3(P10)	-
FZ10-28, 32-3(S)	10-28, 32-3	U10Z3(S)	BFTX0204A
FZ12-36, 40-3(S)	12-36, 40-3	U12Z3(S)	BFTX0204A
FZ16-45, 50-3(S)	16-45, 50-3	U16Z3(S)	BFTX0204A
FZ20-56, 64-3(S)	20-56, 64-3	U20Z3(S)	BFTX0204A
FZ25-72, 80-3(S)	25-72, 80-3	U25Z3(S)	BFTX0307A
FZ32-90, 100, 110, 125-3(S)	32-90, 100-3	U32Z3(S)	BFTX0307A

Optional

Spare part

Chuck	Optional		
	Torx wrench	L- wrench	Torx wrench
Type			
FZ8-23, 26-3, P10	-	LW-1.5	R0/N0
FZ8-23, 26-3, K10	-	LW-1.5	R0/N0
FZ10-28, 32-3(S)	TW06	LW-2	R2/N1
FZ12-36, 40-3(S)	TW06	LW-2.5	R2A/N2
FZ16-45, 50-3(S)	TW06	LW-3	N3
FZ20-56, 64-3(S)	TW06	LW-3	R4/N4
FZ25-72, 80-3(S)	TW10	LW-4	ZV25
FZ32-90, 100, 110, 125-3(S)	TW10	LW-5	R5/N5

INSERT

FZ Unit, FF Unit

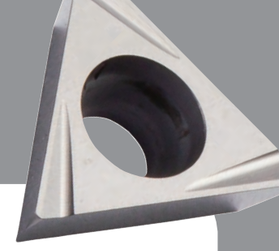
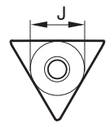
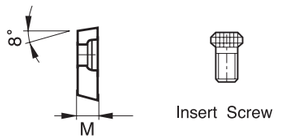


Fig. 1 (With chip breaker)



Fig. 2 (Without chip breaker)





(mm)

Fig.	Grade of Insert	Workpiece
1	K10(W.C)	Cast iron, Aluminum
1	P10(W.C)	Steel, Stainless steel
1	CN1000 or CN2000(Cermet)	Steel
2	K10(W.C)	Exclusive for Cast Iron

General inserts complying with ISO standard

Insert	Fig.	J	R	M	E	Insert screw	Wrench
TBGT0601○○L	1	3.97	0.2	1.59	2.2	BFTX0204A	TW06
TPGT0802○○L	1	4.76	0.2	2.38	2.4	BFTX0204A	TW06
TPGT1103○○L	1	6.35	0.4	3.18	2.8	BFTX0207A	TW10



Grade of Insert

- Coated : PC8110, PC9030 : Stainless steel, heat treatment steel
- W.C : G10E : Cast-iron
- Cermet : CN2000, CC115(Korloy)

BT-BCF
Micro boring bar



MAS 403-BT Shank | C Coolant system | Boring

Fig. 1

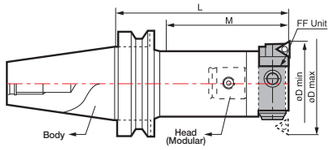
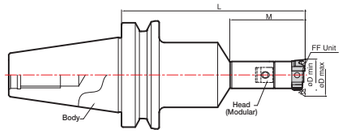


Fig. 2



1DIV. =Ø0.02mm

- Boring unit is option.
- Insert, see page 138 138P
- Spare part, see page 112 112P

C This symbol means unavailable with through coolant system

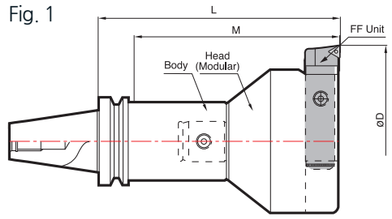
Designation		Boring range		kg	Basic holder	L	kg	Boring depth	Fig.
Head	Boring unit	Min	MAX						
BCF2530	FF10-30(S)	29.5	42	0.3	BT30-MD25F-90R	140	0.4	93	2
BCF3239	FF12-39(S)	39	50	0.4	BT30-MD32F-80R	140	0.4	99	2
BCF4047	FF16-47(S)	47	66	0.6	BT30-MD40F-110R	170	0.8	109	2
BCF5058	FF20-58(S)	58	83	1	BT30-MD50F-55	125	0.7	98	1
BCF2530	FF10-30(S)	29.5	42	0.3	BT40-MD25F-95R	145	1.9	72	2
BCF3239	FF12-39(S)	39	50	0.4	BT40-MD32F-100R	160	2.3	96	2
BCF4047	FF16-47(S)	47	66	0.6	BT40-MD40F-115R	175	2.7	120	2
BCF5058	FF20-58(S)	58	83	1	BT40-MD50F-105	175	2.7	143	1
BCF6379	FF25-79(S)	79	108	1.3	BT40-MD63F-110	180	4.6	148	1
BCF100	FF32-100(S)	100	141	1.4	BT40-MD80F-100	200	4.8	168	1
BCF2530	FF10-30(S)	29.5	42	0.3	BT50-MD25F-105R	155	4.5	72	2
BCF3239	FF12-39(S)	39	50	0.4	BT50-MD32F-110R	170	5.1	96	2
BCF4047	FF16-47(S)	47	66	0.6	BT50-MD40F-195	255	5.4	143	2
BCF5058	FF20-58(S)	58	83	1	BT50-MD50F-225R	295	6.4	195	2
BCF6379	FF25-79(S)	79	108	1.3	BT50-MD63F-195R	265	8	222	2
BCF100	FF32-100(S)	100	141	1.4	BT50-MD80F-175	275	9.5	232	1

BT-BCF
Micro boring bar



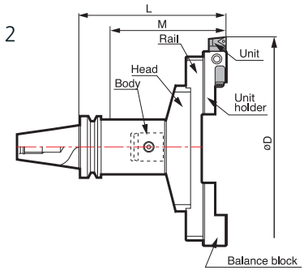
MAS 403-BT Shank | C Coolant system | Boring

Fig. 1



1DIV. =Ø0.02mm

Fig. 2



- Boring unit is option.
- Insert, see page 138 138P
- Spare part, see page 112 112P

C This symbol means unavailable with through coolant system

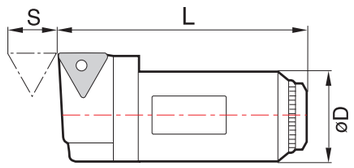
Designation		Boring range		Head length	kg	MD NO.	Fig.
Head	Boring unit	Min	MAX				
BCF138	FF32-138(S)	138	159	100	5.1	BT50-MD90F-OOO	1
BCF150	FF32-138(S)	150	171	100	5.4	BT50-MD90F-OOO	1
BCF170	FF32-138(S)	170	191	100	5.7	BT50-MD90F-OOO	1
BCF190	FF32-138(S)	190	211	100	6	BT50-MD90F-OOO	1
BCF210	FF32-138(S)	210	231	100	6.4	BT50-MD90F-OOO	1
BCF230	FF32-138(S)	230	251	100	8.5	BT50-MD90F-OOO	1
BCF250FS	FF25-79(S)	250	355	107	9.2	BT50-MD90F-OOO	2
BCF350FS	FF25-79(S)	355	450	107	10.2	BT50-MD90F-OOO	2

FF

FF Unit



Coolant system | Boring



C This symbol means unavailable with through coolant system

Designation	ØD	L	S	Insert
FF10-30(S)	10	28.5	3.5	TBGT0601OOL
FF12-39(S)	12	37.5	3.5	TBGT0601OOL
FF16-47(S)	16	45	5	TPGT0802OOL
FF20-58(S)	20	56	7	TPGT0802OOL
FF25-79(S)	25	77.5	8	TPGT1103OOL
FF32-100(S)	32	97	11	TPGT1103OOL
FF32-138(S)	32	131	11	TPGT1103OOL

FF UNIT SPARE PART

FF Unit spare



BASIC

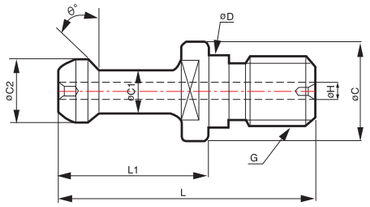
Spare part

	Basic		
	Clamp screw	Torx wrench	Wrench
Type			
FF10-30(S)	BFTX0204A	TRX06	LW-2
FF12-39(S)	BFTX0204A	TRX06	LW-2.5
FF16-47(S)	BFTX0204A	TRX06	LW-3
FF20-58(S)	BFTX0204A	TRX06	LW-3
FF25-79(S)	BFTX0307A	TRX10	LW-4
FF32-100(S)	BFTX0307A	TRX10	LW-5

PULL STUD BOLT

Pull stud bolt

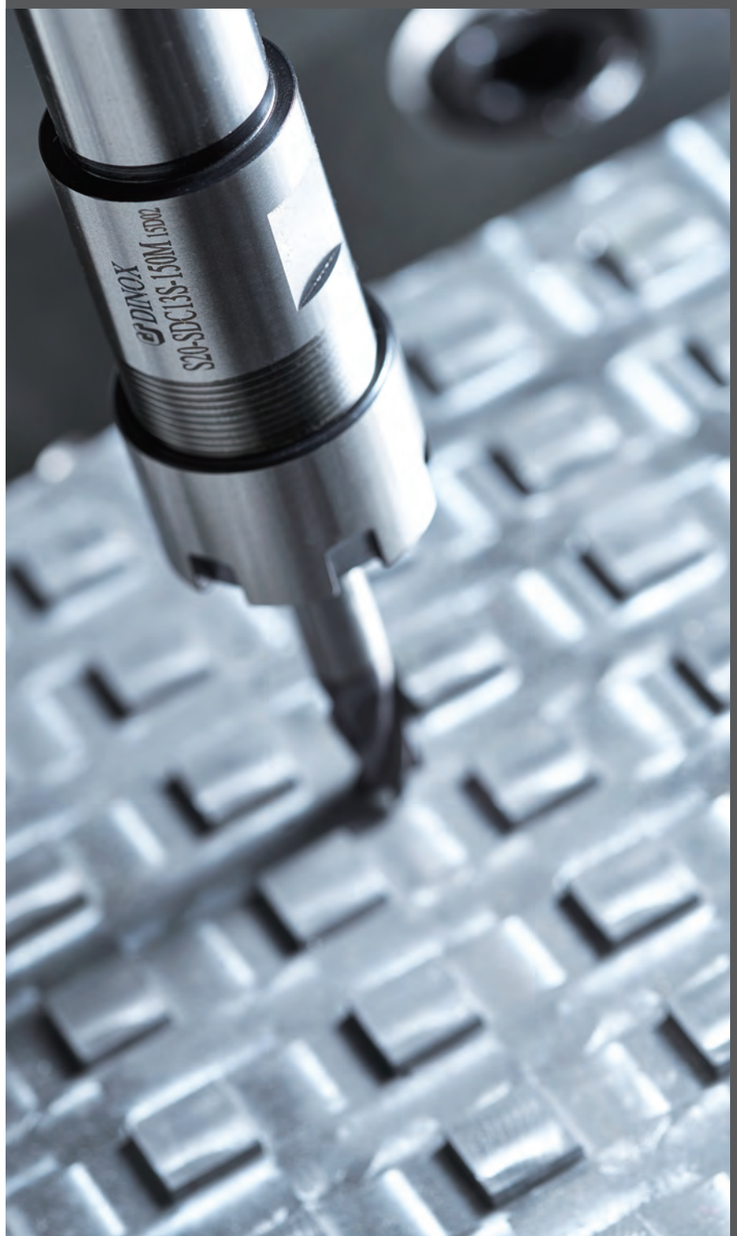




Designation	ØD	ØC	ØC1	ØC2	L1	L	θ	G	ØH
P20T-1	8.5	12	6	8.5	17.5	31.5	15°	M8	
P30T-1	12.5	16.5	7	11	23	43	45°	M12	
P30T-1(Ø2.5)	12.5	16.5	7	11	23	43	45°	M12	Ø2.5
P30T-2	12.5	16.5	7	11	23	43	30°	M12	
P30T-2(2.5)	12.5	16.5	7	11	23	43	30°	M12	Ø2.5
P40T-1	17	23	10	15	35	60	45°	M16	
P40T-1(3)	17	23	10	15	35	60	45°	M16	Ø3
P40T-2	17	23	10	15	35	60	30°	M16	
PS40-3F	17	23	10	15	35	60	0°	M16	
PS-G51	17	22	12.45	18.8	19.11	44.11	45°	M16	Ø7
DIN69872-A40	17	23	14	19	26	54	15°	M16	Ø7
DIN69872-B40	17	23	14	19	26	54	15°	M16	
JISB6339-A40(PS806)	17	23	14	19	29	54	15°	M16	Ø7
JISB6339-B40(PS-805)	17	23	14	19	29	54	15°	M16	
P50T-1	25	38	17	23	45	85	45°	M24	
P50T-1(7)	25	38	17	23	45	85	45°	M24	Ø7
P50T-2	25	38	17	23	45	85	30°	M24	
PS50-1F	25	38	17	23	45	85	0°	M24	
PS50-1FH	25	38	17	23	45	85	0°	M24	Ø8
PS-G41	25	37	20.83	28.96	25.2	65.2	45°	M24	Ø10
DIN69872-A50	25	36	21	28	34	74	15°	M24	Ø11.5
P50T-1HS	25	38	17	23	45	85	45°	M24	Ø5.7

S(T) SHANK



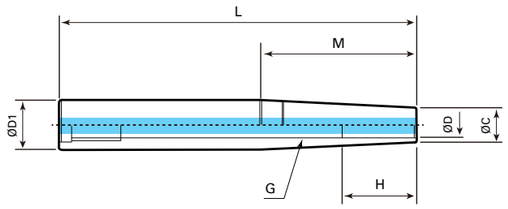


DSC/M ---------- 142
DSC/S ---------- 143
SDC ---------- 144
SDC/S ---------- 145
FBH ---------- 146
FBH(MINI) ---------- 147
DTN ---------- 148

ST-DSC/M

Straight shank shrinking chuck

3μm Run-out | C Coolant system | Drilling | Reaming | Milling | Chamfering



C This symbol means built-in through coolant system

- Features, see page 24 — 24P
- Spare part, see page 70 — 70P

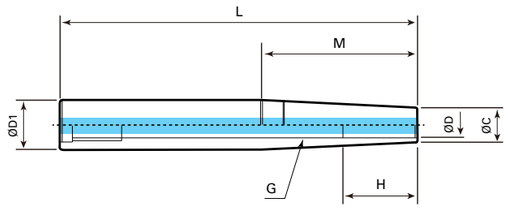
ST16, ST20, ST25, ST32

Designation	ØD	ØC	L	M	ØD1	H	G
ST16-DSC6M-115	6	10	115	50	16	18	M5
ST16-DSC6M-140	6	10	140	60	16	18	M5
ST20-DSC6M-175	6	10	175	95	20	18	M5
ST20-DSC8M-145	8	13	145	70	20	24	M5
ST20-DSC10M-120	10	16	120	50	20	30	M8
ST25-DSC8M-175	8	13	175	105	25	24	M5
ST25-DSC10M-145	10	16	145	70	25	30	M8
ST25-DSC10M-175	10	16	175	105	25	30	M8
ST25-DSC12M-120	12	19	120	50	25	30	M8
ST25-DSC12M-150	12	19	150	80	25	30	M8
ST25-DSC16M-175	16	24	175	50	25	32	M12
ST32-DSC20M-175	20	29	175	50	32	40	M12

ST-DSC/S

Straight shank shrinking chuck

3μm Run-out | C Coolant system | Drilling | Reaming | Milling | Chamfering



C This symbol means built-in through coolant system

- Features, see page 24 — 24P
- Spare part, see page 70 — 70P

ST16, ST20, ST32

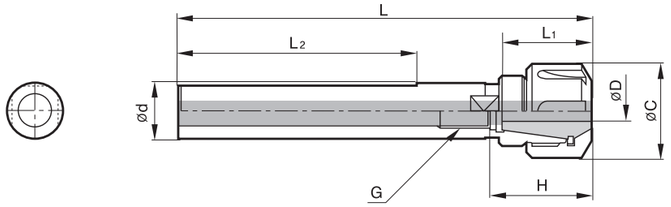
Designation	ØD	ØC	L	M	ØD1	H
ST16-DSC6S-115	6	9	115	55	16	18
ST16-DSC6S-140	6	9	140	70	16	18
ST16-DSC8S-115	8	11	115	50	16	24
ST20-DSC6S-175	6	9	175	105	20	18
ST20-DSC8S-175	8	11	175	85	20	24
ST20-DSC10S-145	10	13	145	75	20	30
ST20-DSC12S-120	12	15	120	50	20	30
ST32-DSC12S-315	12	15	315	185	32	30

S-SDC

Straight shank collet chuck



Ø20 Shank Dia. | C Coolant system | Drilling | Milling | Tapping | Chamfering



- Features, see page 31 31P
- Collet, see page 82 82P
- Spare part, see page 84 84P

C This symbol means optional through coolant system

S16, S20, S25, S32

Designation	ØD (Clamping range)	Ød	ØC	L	L1	L2	H	Collet/step	G	kg
S16-SDC7-120M	1.0~7.0	16	19	120	-		33	GERC11/0.5	M7	0.2
S16-SDC7-120T	1.0~7.0	16	19	120	-	73	33	GERC11/0.5	M7	0.2
S16-SDC10-150T	1.0~10.0	16	28	150	46.5	83	34.5	GERC16/1.0	M10	0.2
S20-SDC10-150M	1.0~10.0	20	28	150	26.5		34.5	GERC16/1.0	M10	0.3
S20-SDC10-150T	1.0~10.0	20	28	150	26.5	83	34.5	GERC16/1.0	M10	0.3
S20-SDC13-150M	1.0~13.0	20	35	150	50		49	GERC20/1.0	M13	0.3
S20-SDC13-150T	1.0~13.0	20	35	150	50	83	49	GERC20/1.0	M13	0.3
S25-SDC10-150M	1.0~10.0	25	28	150	-		34.5	GERC16/1.0	M10	0.5
S25-SDC10-150T	1.0~10.0	25	28	150	-	83	34.5	GERC16/1.0	M10	0.5
S25-SDC13-150M	1.0~13.0	25	35	150	-		49	GERC20/1.0	M13	0.5
S25-SDC13-150T	1.0~13.0	25	35	150	-	83	49	GERC20/1.0	M13	0.5
S32-SDC13-150M	1.0~13.0	32	35	150	-		49	GERC20/1.0	M13	0.7
S32-SDC13-150T	1.0~13.0	32	35	150	-	83	49	GERC20/1.0	M13	0.7
S32-SDC20-165M	2.0~20.0	32	50	165	-		60	GERC32/1.0	M22	0.7
S32-SDC20-165T	2.0~20.0	32	50	165	-	83	60	GERC32/1.0	M22	0.7

S-SDC/S

Straight shank collet chuck slim type



Ø16 Shank Dia. | C Coolant system | Drilling | Milling | Tapping | Chamfering

Fig. 1

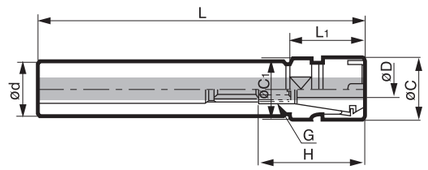
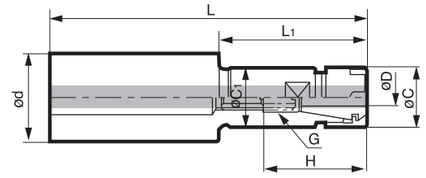


Fig. 2



- Features, see page 31 31P
- Collet, see page 82 82P
- Spare part, see page 84 84P

C This symbol means built-in through coolant system

S16, S20, S25, S32

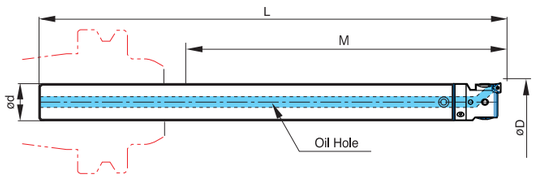
Designation	ØD (Clamping range)	Ød	ØC	L	L1	H	Collet/step	G	kg
S16-SDC7S-100M	1.0~7.0	16	16	100	21	33	GERC11/0.5	M7	0.2
S16-SDC7S-150M	1.0~7.0	16	16	150	21	33	GERC11/0.5	M7	0.2
S16-SDC10S-100M	1.0~10.0	16	22	100	50	44.5	GERC16/1.0	M10	0.3
S16-SDC10S-150M	1.0~10.0	16	22	150	50	44.5	GERC16/1.0	M10	0.3
S20-SDC7S-100M	1.0~7.0	20	16	100	30	35	GERC11/0.5	M7	0.3
S20-SDC7S-150M	1.0~7.0	20	16	150	80	35	GERC11/0.5	M7	0.3
S20-SDC10S-100M	1.0~10.0	20	22	100	50	44.5	GERC16/1.0	M10	0.3
S20-SDC10S-150M	1.0~10.0	20	22	150	50	44.5	GERC16/1.0	M10	0.3
S20-SDC10S-200M	1.0~10.0	20	22	200	50	44.5	GERC16/1.0	M10	0.4
S20-SDC13S-100M	1.0~13.0	20	28	100	50	49	GERC20/1.0	M13	0.3
S20-SDC13S-150M	1.0~13.0	20	28	150	50	49	GERC20/1.0	M13	0.3
S25-SDC7S-100M	1.0~7.0	25	16	100	30	33	GERC11/0.5	M7	0.4
S25-SDC7S-150M	1.0~7.0	25	16	150	80	33	GERC11/0.5	M7	0.4
S25-SDC10S-100M	1.0~10.0	25	22	100	30	44.5	GERC16/1.0	M10	0.4
S25-SDC10S-150M	1.0~10.0	25	22	150	80	44.5	GERC16/1.0	M10	0.4
S25-SDC13S-100M	1.0~13.0	25	28	100	50	49	GERC20/1.0	M13	0.5
S25-SDC13S-150M	1.0~13.0	25	28	150	50	49	GERC20/1.0	M13	0.5
S25-SDC16S-100M	1.0~16.0	25	35	100	50	50	GERC25/1.0	M18	0.5
S25-SDC16S-150M	1.0~16.0	25	35	150	50	50	GERC25/1.0	M18	0.5
S25-SDC16S-200M	1.0~16.0	25	35	200	50	50	GERC25/1.0	M18	0.7
S32-SDC16S-120M	1.0~16.0	32	35	120	50	50	GERC25/1.0	M18	1
S32-SDC16S-150M	1.0~16.0	32	35	150	50	50	GERC25/1.0	M18	1

S-FBH/B

Small micro boring bar with carbide/steel



C Coolant system | Boring



● Features, see page 42 42P
● Spare part, see page 117 117P

C This symbol means built-in through coolant system

S19W, S25W, S32W, S19, S25, S32

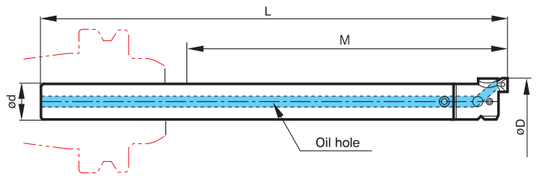
Designation	Ød	ØD min	ØD max	L	M (Max. boring depth)	Designation Shank	Designation Boring head	Designation Bite	kg
S19W-FBH20B-120	19	20	26	190	120	S19W-MD19F-157	FBH1920B	FBB20N	0.6
S19W-FBH20B-140	19	20	26	210	140	S19W-MD19F-177	FBH1920B	FBB20N	0.7
S19W-FBH20B-160	19	20	26	230	160	S19W-MD19F-197	FBH1920B	FBB20N	0.8
S25W-FBH26B-150	25	26	34	235	150	S25W-MD25F-197.5	FBH2526B	FBB26N	1.4
S25W-FBH26B-175	25	26	34	260	175	S25W-MD25F-222.5	FBH2526B	FBB26N	1.6
S25W-FBH26B-200	25	26	34	285	200	S25W-MD25F-247.5	FBH2526B	FBB26N	2
S32W-FBH33B-180	32	33	43	280	180	S32W-MD32F-239	FBH3233B	FBB33N	2.8
S32W-FBH33B-240	32	33	43	340	240	S32W-MD32F-299	FBH3233B	FBB33N	3.5
S19-FBH20B-40	19	20	26	110	40	S19-MD19F-77	FBH1920B	FBB20N	0.1
S19-FBH20B-80	19	20	26	150	80	S19-MD19F-117	FBH1920B	FBB20N	0.2
S25-FBH26B-50	25	26	34	135	50	S25-MD25F-97.5	FBH2526B	FBB26N	0.4
S25-FBH26B-100	25	26	34	185	100	S25-MD25F-147.5	FBH2526B	FBB26N	0.6
S32-FBH33B-90	32	33	43	190	90	S32-MD32F-149	FBH3233B	FBB33N	1.1
S32-FBH33B-120	32	33	43	220	120	S32-MD32F-179	FBH3233B	FBB33N	1.2

S-FBH

Small micro boring bar with carbide/steel



C Coolant system | Boring



C This symbol means built-in through coolant system

● Spare part, see page 117 117P

S14W, S16W, S14, S16

Designation	Ød	ØD min	ØD max	L	M (Max. boring depth)	Designation Shank	Designation Boring head	Designation Bite	kg
S14W-FBH15-85	14	15	18	155	85	S14W-M6-123	FBH15	FBB15-C	0.2
S14W-FBH15-110	14	15	18	180	110	S14W-M6-148	FBH15	FBB15-C	0.3
S16W-FBH18-95	16	18	22	165	95	S16W-M8-128	FBH18	FBB15-C	0.3
S16W-FBH18-125	16	18	22	195	120	S16W-M8-158	FBH18	FBB15-C	0.4
S14-FBH15-40	14	15	18	110	40	S14-M6-78	FBH15	FBB15-C	0.1
S16-FBH18-45	16	18	22	115	45	S16-M8-78	FBH18	FBB15-C	0.1

Spare Part

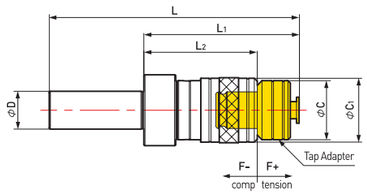
Type (FBH)	Lock screw	Type (FBB)	Clamp screw
FBH15	BT02503	FBB15-C	BFTX02506
FBH18	BT02504	FBB15-C	BFTX02506

S-DTN

Straight shank tapping hoder



Coolant system | Tapping



C This symbol means unavailable with through coolant system

- Features, see page 36 — 36P
- Tapping range(TCA), see page 97 — 97P

S32

Designation	Tapping range	ØD	L	L1	L2	ØD	ØD	F-	F+	Adapter
S32-DTN12-90	M3-M12	32	170	90	65	32	39	4	10	TCA1
S32-DTN22-130	M8-M24	32	210	130	96	50	56	12.5	12.5	TCA2

HSK SHANK





DHE ---------- 150
DSC/M MONO MIDDLE TYPE -- 151
DSC/S MONO SLIM TYPE ----- 152
NPM ---------- 153
SDC ---------- 154
GSK ---------- 155
NPU ---------- 156
DST ---------- 157
SLA ---------- 158
FMC ---------- 159
MD ---------- 160
DBC ---------- 161
KMB ---------- 162
SMB ---------- 162
SMH ---------- 162

HSK-DHE

Hydraulic expansion chuck



DIN 69893-1 Shank | G6.3 G value | 15,000 Max RPM | 5㎛ Run-out | C Coolant system | Reaming | Milling | Chamfering

Fig. 1

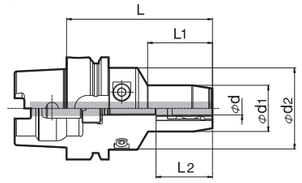
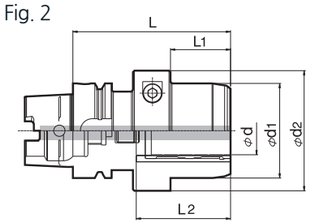


Fig. 2



L2: tool insertion depth(Min.~Max)

C This symbol means optional through coolant system

- Features, see page 29 — 29P
- Collet, see page 62 — 62P
- Spare part, see page 63 — 63P

HSK63A, HSK100A

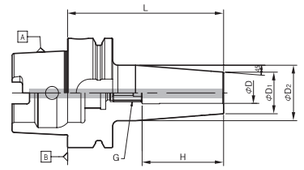
Designation	Ød	L	Ød1	Ød2	L1	L2	Adjscrew	Fig.	kg
HSK63A-DHE6-75	6	75	29	50	34	30~39.8	M5	1	1.0
HSK63A-DHE8-75	8	75	31	50	34	30~39.8	M5	1	1.0
HSK63A-DHE10-85	10	85	33	50	34	35~44.8	M5	1	1.2
HSK63A-DHE12-90	12	90	35	50	40	41~50.8	M10	1	1.2
HSK63A-DHE16-95	16	95	40	50	45	46~55.8	M10	1	1.3
HSK63A-DHE20-100	20	100	44	50	50	49~58.8	M10	1	1.4
HSK63A-DHE20-150	20	150	44	50	50	49~58.8	M10	1	2.0
HSK63A-DHE25-110	25	110	50	70	48	56~67.8	M16	2	1.9
HSK63A-DHE32-110	32	110	63	80	48	56~67.8	M16	2	2.3
HSK100A-DHE20-105	20	105	44	50	50	49~58.8	M10	1	2.8
HSK100A-DHE25-115	25	90	50	63	62	58~67.8	M16	1	3.3
HSK100A-DHE32-115	32	90	63	75	62	58~67.8	M16	1	3.8

HSK-DSC/M MONO MIDDLE TYPE

Shrinking chuck



DIN 69893-1 Shank | G2.5 G value | 25,000 Max RPM | 3㎛ Run-out | C Coolant system | Drilling | Reaming | Milling | Chamfering



C This symbol means optional through coolant system

- Features, see page 24 — 24P

※ Do not use adjust screw

HSK63A

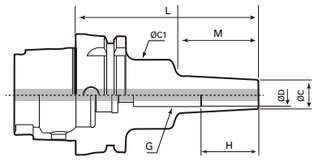
Designation	ØD	L	ØD1	ØC1	M	H	G
HSK63A-DSC6M-95	6	95	10	26	42	18	M5
HSK63A-DSC8M-95	8	95	13	36	42	24	M5
HSK63A-DSC10M-120	10	120	16	36	67	30	M8
HSK63A-DSC12M-120	12	120	19	36	67	30	M8
HSK63A-DSC16M-120	16	120	24	50	67	32	M12

HSK-DSC/S MONO SLIM TYPE

Shrinking chuck



DIN 69893-1	G2.5	25,000	3㎛	C				
Shank	G value	Max RPM	Run-out	Coolant system	Drilling	Reaming	Milling	Chamfering



● Will be stock

C This symbol means optional through coolant system

● Features, see page 24 24P

※ Do not use adjust screw

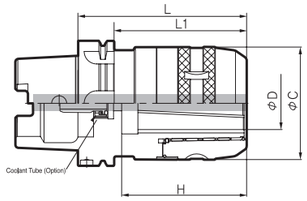
	Designation	ØD	L	ØD1	ØC1	M	H	Will be stock
HSK63A	HSK63A-DSC6S-95	6	95	9	26	42	18	●
	HSK63A-DSC6S-120	6	120	9	26	67	18	●
	HSK63A-DSC8S-95	8	95	11	36	42	24	●
	HSK63A-DSC8S-160	8	160	11	36	97	24	●
	HSK63A-DSC10S-95	10	95	13	36	42	30	●
	HSK63A-DSC10S-160	10	160	13	36	97	30	●
	HSK63A-DSC12S-95	12	95	15	36	42	30	●
	HSK63A-DSC12S-160	12	160	15	36	97	30	●

HSK-NPM

New power milling chuck



DIN 69893-1	15㎛	C		
Shank	Run-out	Coolant system	Drilling	Milling



● Straight Collet DCS ,DC type, see page 74. 74P

C This symbol means optional through coolant system

● Features, see page 26 26P

● Taper collet(TC type), see page 75 75P

● Spare part, see page 76 76P

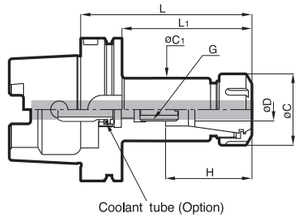
	Designation	ØD	L	L1	ØC	H	G	COLLET	kg
HSK63A, HSK100A	HSK63A-NPM20-100	20	95	74	54	85	M16	DCS20, DC20	2.5
	HSK63A-NPM32-120	32	110	84	75	95	M16	DCS32, DC32	2.9
	HSK100A-NPM32-130	32	130	101	75	105	M24	DCS32, DC32	4.0

HSK-SDC

Collet chuck



DIN 69893-1 (Shank) | Ø20 (Max Dia) | C (Coolant system) | Drilling | Milling | Tapping



- Please use a collet with point spec to use through coolant
- Will be stock
- C This symbol means optional through coolant system

- Features, see page 31 31P
- Collet, see page 82 82P
- Spare part, see page 84 84P

HSK63A, HSK100A

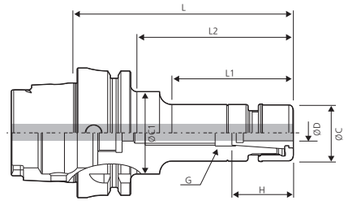
Designation	ØD (Clamping range)	L	H	Collet/Step	G	ØC	ØC1	kg	Will be stock
HSK63A-SDC10-95	1.0~10.0	95	44.5	GERC16/1.0	M10	28	28	1.0	●
HSK63A-SDC13-95	1.0~13.0	95	49	GERC20/1.0	M13	35	35	1.2	●
HSK63A-SDC16-100	1.0~16.0	90	50	GERC25/1.0	M18	42	42	1.3	●
HSK63A-SDC20-110	1.0~20.0	110	60	GERC32/1.0	M13	50	44	1.4	●
HSK100A-SDC16-110	1.0~16.0	110	50	GERC25/1.0	M18	42	42	3.2	●
HSK100A-SDC20-120	2.0~20.0	120	60	GERC32/1.0	M10	50	44	3.4	●

HSK-GSK

Great slim type collet chuck



DIN 69893-1 (Shank) | 20,000 (Max RPM) | G2.5 (G value) | Ø25 (Max Dia) | C (Coolant system) | Drilling | Milling



- Please use an waterproof collet to use through coolant
- C This symbol means optional through coolant system

- Features, see page 33 33P
- Collet, see page 90 90P
- Spare part, see page 93 93P

HSK63A, HSK100A

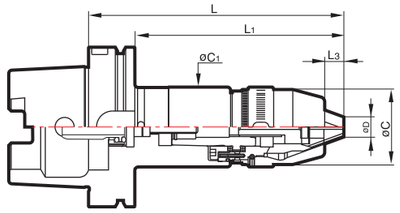
Designation	ØD (Clamping range)	L	L1	L2	H	Collet/Step	G	ØC	ØC1	MAX RPM
HSK63A-GSK6-100	1.0~6.0	100	51	61	35	HC6/0.5	M8	19.5	32	20,000
HSK63A-GSK10-105	2.0~6.0	105	73	118	50	HC10/0.5	M12	27.5	34.5	20,000
HSK63A-GSK16-120	3.0~16.0	120	58	58	60	HC16/0.5	M18	40	40	20,000
HSK63A-GSK20-120	4.0~20.0	120	60	60	70	HC20/0.5	M22	48	48	20,000
HSK100A-GSK6-120	1.0~6.0	120	55	64	35	HC6/0.5	M8	19.5	32	15,000
HSK100A-GSK10-120	2.0~10.0	120	57	57	50	HC10/0.5	M12	27.5	27.5	15,000
HSK100A-GSK16-140	3.0~16.0	140	62	62	60	HC16/0.5	M18	40	40	15,000
HSK100A-GSK25-155	16.0~25.0	155	62	62	85	HC25/0.5	M28	55	55	15,000

HSK-NPU

Drill chuck



DIN 69893-1 Shank | C Coolant system | Drilling



C This symbol means unavailable with through coolant system

● Spare part, see page 95 95P

HSK63A, HSK100A

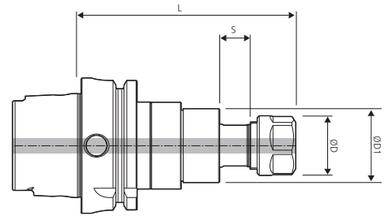
Designation	ØD (Clamping range)	ØC	L	L1	kg
HSK63A-NPU13-175	1~13	50	175	12.5	1.7
HSK100A-NPU13-180	1~13	50	180	12.5	4.2

HSK-DST

High speed synchro tapping chuck



DIN 69893-1 Shank | C Coolant system | G6,3 G value | Tapping



C This symbol means optional through coolant system

● Features, see page 37 37P

● Collet, see page 99 99P

HSK63A

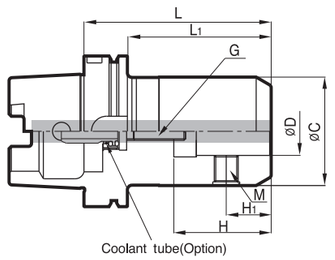
Designation	ØD	ØD1	L	S	Collet	Range	F-	F+
HSK63A-DST10-100	40.4	28	100	11	TER16	M3~M10	0.5	0.5
HSK63A-DST22-130	60	49.5	130	18	TER32	M6~M22	0.7	0.7

HSK-SLA

Side lock arbor



DIN 69893-1 Shank | C Coolant system | Drilling | Milling



C This symbol means optional through coolant system

● Spare part, see page 101 101P

HSK63A, HSK100A

Designation	Ød	L	ØC	H	H1	M	G	kg
HSK63A-SLA20-100	20	100	52	51	25	M16	M12	2.0
HSK63A-SLA25-105	25	105	65	59	25	M18	M12	2.7
HSK63A-SLA32-105	32	105	72	63	30	M20	M12	2.9
HSK100A-SLA20-105	20	105	52	51	25	M16	M12	3.9
HSK100A-SLA25-110	25	110	65	59	25	M18	M12	4.0
HSK100A-SLA32-125	32	125	72	63	30	M20	M12	4.3

HSK-FMC

Face mill arbor



DIN 69893-1 Shank | C Coolant system | Facing

Fig. 1

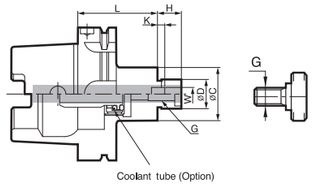


Fig. 2

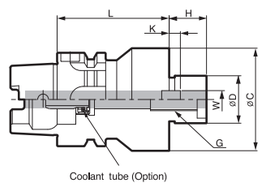
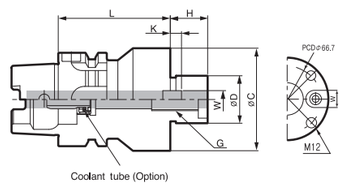


Fig. 3



C This symbol means optional through coolant system

● Spare part, see page 105 105P

HSK50A, HSK63A

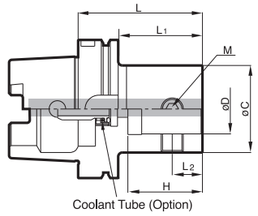
Designation	Cutter diameter	ØD	L	ØC	H	W	K	G	kg	Fig.
HSK50A-FMC16-40	40	16	40	38	17	8	5	M8	0.8	1
HSK50A-FMC22-50	50/63	22	50	48	19	10	5.6	M10	0.9	1
HSK63A-FMC16-50	40	16	50	38	17	8	5.0	M8	1.1	1
HSK63A-FMC22-50	50/63	22	50	48	19	10	5.6	M10	1.2	1
HSK63A-FMC27-60	80	27	60	60	21	12	6.3	M12	1.4	1
HSK63A-FMC32-60	100	32	60	78	24	14	7.0	M16	1.8	2
HSK63A-FMC40-60	125/160	40	60	89	27	15.87	8.0	M20	2	3

HSK-MD

Basic holder



DIN69871 -1A/B — Shank
G6.3 — G value
C — Coolant system



C This symbol means optional through coolant system

● Spare part, see page 115 115P

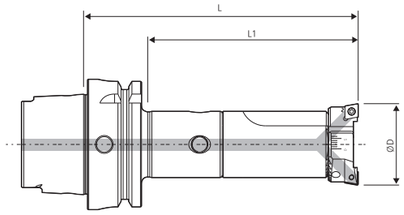
HSK63A Designation	ØC	ØD	L	L1	L2	H	M	kg
HSK63A-MD19F-60	19	11	60	34	6.5	15.5	M5	
HSK63A-MD25F-60	25	14	60	31	8	18.5	M6	
HSK63A-MD32F-65	32	18	65	31	11	23.5	M8	
HSK63A-MD40F-70	40	22	70	41	13	29	M10	
HSK63A-MD50F-85	50	28	85	58	17	36	M12	
HSK63A-MD63F-95	63	36	95	69	22	54	M16	

HSK-DBC

Balance cut tool(Modular type)



DIN69871 -1A/B — Shank
C — Coolant system
Boring



C This symbol means optional through coolant system

● Boring depth can be changed by variety of MD arboor and extension bar.

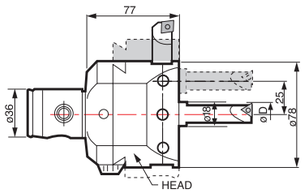
HSK63A Designation				Boring range ØD		L	Boring depth(L1)
Head Set (Head+Cartridge)	kg	Body (Basic holder)	kg	Min	Max		
DBC2528S	0.3	HSK63A-MD25F-60	1.8	28	35	120	90
DBC3235S	0.4	HSK63A-MD32F-65	2.3	35	46	130	100
DBC4046S	0.6	HSK63A-MD40F-70	2.6	46	58	140	110
DBC5058S	1.1	HSK63A-MD50F-85	2.7	58	74	165	135
DBC6374S	2.0	HSK63A-MD63F-95	3.3	74	94	185	155

HSK

HSK-KMB
Micro boring



DIN69871 -1A/B Shank | C Coolant system | Boring



1DIV = ø0.02mm

C This symbol means unavailable with through coolant system

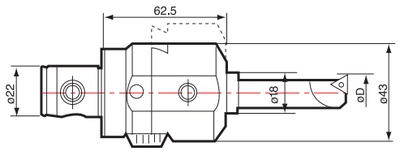
- Boring range, see page 124 124P
- Spare part, see page125 125P

Boring head	Bite	ØC	L	kg
KMB6336	BB18-O(S)	HSKOO-MD63F	77	2.2

HSK-SMB
Small micro boring bar



DIN69871 -1A/B Shank | C Coolant system | Boring



1DIV = ø0.02mm

C This symbol means unavailable with through coolant system

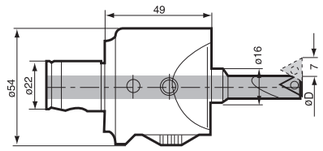
- Boring range, see page 124 124P
- Spare part, see page 125 125P

Boring head	Bite	ØC	L	kg
SMB4022	BB18-O(S)	HSKOO-MD40F	62.5	0.6

HSK-SMH
Small micro boring bar



DIN69871 -1A/B Shank | C Coolant system | Boring



1DIV = ø0.01mm

C This symbol means optional through coolant system

- Boring range, see page 124 124P
- Spare part, see page 125 125P

Boring head	Bite	ØC	L	kg
SMH4022	BB16-O(S)	HSKOO-MD40F	49	0.7

SK
SHANK





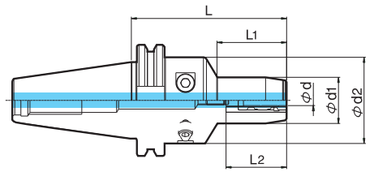
DHE ---------- 164
DSC/M MONO MIDDLE TYPE -- 165
DSC/S MONO SLIM TYPE ------ 166
NPM ---------- 167
SDC ---------- 168
GSK ---------- 169
NPU ---------- 170
DTN ---------- 171
DST ---------- 172
SLA ---------- 173
FMC ---------- 174
MD ---------- 175
MTA ---------- 176
FBH/B ---------- 177
FBC, TBC ---------- 178
DBC ---------- 179
KMB ---------- 180
SMB ---------- 180
SMH ---------- 180

SK-DHE

Hydraulic expansion chuck



DIN69871 -1A/B Shank | G6.3 G value | 15,000 Max RPM | 5㎛ Run-out | C Coolant system | Reaming | Milling | Chamfering



● Will be stock

C This symbol means built-in through coolant system

● Features, see page 29 29P
● Collet, see page 62 62P
● Spare part, see page 63 63P

SK30, SK40, SK50

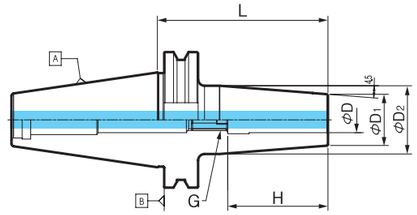
Designation	Ød	L	Ød1	Ød2	L1	L2	Adjscrew	Fig.	kg	Will be stock
SK30-DHE20-90	20	90	44	90	45	49~58.8	M10	1	1.1	
SK40-DHE6-90	6	90	29	49.5	40	30~39.8	M5	1	1.4	
SK40-DHE8-90	8	90	31	49.5	40	30~39.8	M5	1	1.4	
SK40-DHE10-90	10	90	33	50	40	35~44.8	M5	1	1.5	
SK40-DHE12-90	12	90	35	50	40	41~50.8	M10	1	1.5	
SK40-DHE12-140	12	140	35	50	40	41~50.8	M10	1	2.3	
SK40-DHE14-90	14	90	36	50	40	43~52.8	M10	1	1.5	
SK40-DHE16-90	16	90	40	50	45	46~55.8	M10	1	1.5	
SK40-DHE18-90	18	90	42	50	45	49~58.8	M10	1	1.5	
SK40-DHE20-90	20	90	44	50	47	49~58.8	M10	1	1.5	
SK40-DHE20-140	20	140	44	50	47	49~58.8	M10	1	2.3	
SK50-DHE12-90	12	90	35	50	34	41~50.8	M10	1	4.0	
SK50-DHE12-140	12	140	35	50	34	41~50.8	M10	1	4.6	●
SK50-DHE14-90	14	90	36	50	34	43~52.8	M10	1	4.0	
SK50-DHE16-90	16	90	40	50	34	46~55.8	M10	1	4.1	
SK50-DHE18-90	18	90	42	50	34	49~58.8	M10	1	4.1	
SK50-DHE20-90	20	90	44	50	34	49~58.8	M10	1	4.2	
SK50-DHE20-140	20	140	44	50	34	49~58.8	M10	1	4.7	●

SK-DSC/M MONO MIDDLE TYPE

Shrinking chuck



DIN69871 -1A/B Shank | G6.3 G value | 3㎛ Run-out | C Coolant system | Drilling | Reaming | Milling | Chamfering



C This symbol means built-in through coolant system

● Features, see page 24 24P
※ Adjust screw, see page 70 70P

SK40

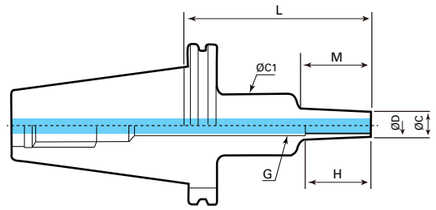
Designation	ØD	L	Ød1	Ød2	M	H	G
SK40-DSC6M-95	6	95	10	26	42	18	M5
SK40-DSC6M-120	6	120	10	26	67	18	M5
SK40-DSC8M-95	8	95	13	36	42	24	M5
SK40-DSC8M-120	8	120	13	36	67	24	M5
SK40-DSC10M-95	10	95	16	36	42	30	M8
SK40-DSC10M-120	10	120	16	36	67	30	M8
SK40-DSC12M-95	12	95	19	36	42	30	M8
SK40-DSC12M-120	12	120	19	36	67	30	M8
SK40-DSC16M-95	16	95	24	50	42	32	M12
SK40-DSC16M-120	16	120	24	50	67	32	M12
SK40-DSC20M-95	20	95	29	50	42	40	M12
SK40-DSC20M-120	20	120	29	50	67	40	M12

SK-DSC/S MONO SLIM TYPE

Shrinking chuck



DIN69871 -1A/B Shank | G6.3 G value | 20,000 Max RPM | 3㎛ Run-out | C Coolant system | Drilling | Reaming | Milling | Chamfering



● Will be stock

C This symbol means built-in through coolant system

● Features, see page 24 24P

※ Do not use adjust screw

SK30, SK40

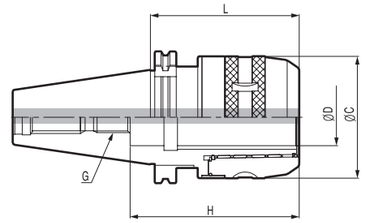
Designation	ØD	L	ØD1	ØD2	M	H	RPM	Will be stock
SK30-DSC6S-60	6	60	9	20	22	18	20,000	●
SK30-DSC6S-80	6	80	9	20	42	18	20,000	●
SK40-DSC6S-95	6	95	9	26	42	18	20,000	●
SK40-DSC6S-120	6	120	9	26	67	18	20,000	●
SK40-DSC8S-95	8	95	11	36	42	24	20,000	●
SK40-DSC8S-120	8	120	11	36	67	24	20,000	●
SK40-DSC10S-95	10	95	13	36	42	30	20,000	●
SK40-DSC10S-120	10	120	13	36	67	30	20,000	●
SK40-DSC12S-95	12	95	15	36	42	30	20,000	●
SK40-DSC12S-120	12	120	15	36	67	30	20,000	●

SK-NPM

New power milling chuck



DIN69871 -1A/B Shank | 15㎛ Run-out | 130~500 kgf·m Clamping Force | C Coolant system | Drilling | Milling



● Straight collet DCS ,DC Type, see page 74 74P

C This symbol means optional through coolant system

● Features, see page 26 26P

● Taper collet(TC type), see page 75 75P

● Spare part, see page 76 76P

SK40, SK50

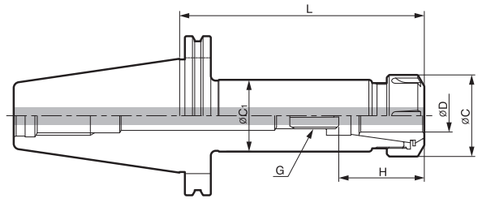
Designation	ØD	L	ØC	H	G	COLLET	kg
SK40-NPM20-95	20	95	54	85	M16	DC20, DCS20	2.5
SK40-NPM32-95	32	90	75	85	M16	DC32, DCS32	2.8
SK40-NPM32-110	32	110	75	95	M16	DC32, DCS32	2.9
SK40-NPM32-135	32	135	75	95	M16	DC32, DCS32	3.4
SK50-NPM20-100	20	100	54	85	M16	DC20, DCS20	4.3
SK50-NPM32-100	32	100	75	105	M24	DC32, DCS32	5.0
SK50-NPM32-130	32	130	75	105	M24	DC32, DCS32	5.8
SK50-NPM42-110	42	110	90	125	M24	DC42, DCS42	5.4
SK50-NPM42-135	42	135	90	125	M24	DC42, DCS42	6.6

SK-SDC

Collet chuck



DIN69871 -1A/B (Shank) | Ø20 (Max Dia) | C (Coolant system) | Drilling | Milling | Tapping



- Order make Balancing type
- Will be stock
- C This symbol means optional through coolant system
- Please use the exact size of collet for oil hole type.
- Features, see page 31 31P
- Collet, see page 82 82P
- Spare part, see page 84 84P

SK40, SK50

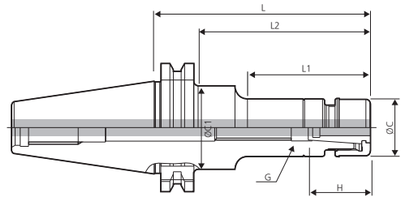
Designation	ØD (Clamping range)	L	H	Collet/Step	G	ØC	ØC1	kg	Will be stock
SK40-SDC7-60	1.0~7.0	60	33	GERC11/0.5	M7	19	19	1.0	●
SK40-SDC7-90	1.0~7.0	90	33	GERC11/0.5	M7	19	19	1.1	●
SK40-SDC10-90	1.0~10.0	90	44.5	GERC16/1.0	M10	28	28	1.2	●
SK40-SDC13-90	1.0~13.0	90	49	GERC20/1.0	M13	35	35	1.3	●
SK40-SDC13-120	1.0~13.0	120	49	GERC20/1.0	M13	35	35	1.5	●
SK40-SDC16-90	1.0~16.0	90	50	GERC25/1.0	M18	42	42	1.4	●
SK40-SDC16-120	1.0~16.0	120	50	GERC25/1.0	M18	42	42	1.6	●
SK40-SDC20-90	1.0~20.0	90	60	GERC32/1.0	M22	50	44	1.4	●
SK40-SDC20-120	1.0~20.0	120	60	GERC32/1.0	M22	50	44	1.7	●
SK50-SDC10-90	1.0~10.0	90	44.5	GERC16/1.0	M10	28	28	3.8	●
SK50-SDC10-120	1.0~10.0	120	44.5	GERC16/1.0	M10	28	28	4.0	●
SK50-SDC13-105	1.0~13.0	105	49	GERC20/1.0	M13	35	35	3.9	●
SK50-SDC13-135	1.0~13.0	135	49	GERC20/1.0	M13	35	35	4.1	●
SK50-SDC16-105	1.0~16.0	105	50	GERC25/1.0	M18	42	42	4.1	●
SK50-SDC16-165	1.0~16.0	165	50	GERC25/1.0	M18	42	42	4.4	●
SK50-SDC20-105	1.0~20.0	105	60	GERC32/1.0	M22	50	44	4.3	●
SK50-SDC20-135	1.0~20.0	135	60	GERC32/1.0	M22	50	44	4.9	●

SK-GSK

Great slim type collet chuck



DIN69871 -1A/B (Shank) | G6.3 (G value) | Ø25 (Max Dia) | C (Coolant system) | Drilling | Milling



- Coolant system needs exclusive coolant collet
- C This symbol means optional through coolant system
- Features, see page 33 33P
- Collet, see page 90 90P
- Spare part, see page 93 93P

SK40, SK50

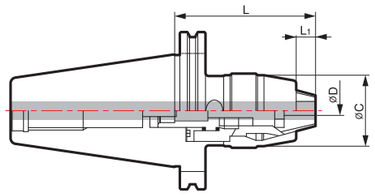
Designation	ØD (Clamping range)	L	L1	L2	H	Collet/ Step	G	ØC	ØC1	kg	MAX RPM
SK40-GSK6-60	2.8~6.0	60	-	-	34	HC6/0.5	M8	19.5	32	0.9	20,000
SK40-GSK6-90	2.8~6.0	90	51	61	35	HC6/0.5	M8	19.5	32	1.1	20,000
SK40-GSK10-90	1.75~10.0	90	48	60	50	HC10/0.5	M12	27.5	40	1.2	20,000
SK40-GSK10-150	1.75~10.0	150	73	118	50	HC10/0.5	M12	27.5	34.5	1.6	20,000
SK40-GSK16-90	2.75~16.0	90	58	58	60	HC16/0.5	M18	40	40	1.5	20,000
SK40-GSK16-150	2.75~16.0	150	118	118	60	HC16/0.5	M18	40	40	1.9	20,000
SK40-GSK20-90	3.6~20.0	90	60	60	70	HC20/0.5	M22	48	48	1.6	20,000
SK40-GSK25-90	7.6~25.0	90	61	61	75	HC25/0.5	M28	55	55	1.8	20,000
SK50-GSK6-105	2.8~6.0	105	55	64	35	HC6/0.5	M8	19.5	32	3.8	15,000
SK50-GSK6-165	2.8~6.0	165	60	114	35	HC6/0.5	M8	19.5	32	4.0	15,000
SK50-GSK10-105	1.75~10.0	105	57	57	50	HC10/0.5	M12	27.5	27.5	3.8	15,000
SK50-GSK10-165	1.75~10.0	165	75	114	50	HC10/0.5	M12	27.5	36	4.2	15,000
SK50-GSK16-105	2.75~16.0	105	62	62	60	HC16/0.5	M18	40	40	4.1	15,000
SK50-GSK16-165	2.75~16.0	165	40	122	60	HC16/0.5	M18	40	50	4.5	15,000
SK50-GSK20-105	1.75~10.0	105	62	62	70	HC20/0.5	M22	48	40	4.3	15,000
SK50-GSK20-165	1.75~10.0	165	122	122	70	HC20/0.5	M22	48	40	5.0	15,000
SK50-GSK25-105	7.6~25.0	105	62	62	85	HC25/0.5	M28	55	55	4.8	15,000
SK50-GSK25-165	7.6~25.0	165	122	122	85	HC25/0.5	M28	55	55	5.6	15,000

SK-NPU

Drill chuck



DIN69871 -1A/B Shank | C Coolant system | Drilling



- Order make balancing type
- C This symbol means unavailable with through coolant system
- Spare part, see page 95 95P

SK40, SK50

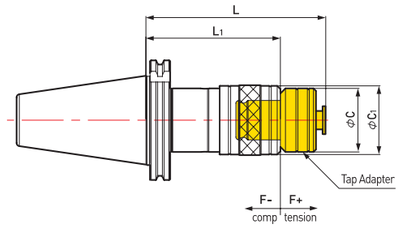
Designation	ØD (Clamping range)	ØC	L	L1	kg
SK40-NPU13-105	1~13	50	105	12.5	1.7
SK50-NPU13-111	1~13	50	111	12.5	4.2

SK-DTN

Tapping holder



DIN69871 -1A/B Shank | C Coolant system | Drilling



- C This symbol means unavailable with through coolant system
- Features, see page 36 36P
- Tap adapter(TCA), see page 97 97P

SK40, SK50

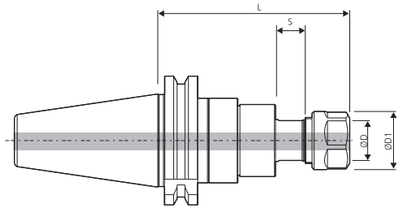
Designation	Tap size	L	L1	ØC	ØC1	Adapter	F-	F+	kg
SK40-DTN12-90	M3~M12	90	65	32	39	TCA1-M	4	10	1.2
SK40-DTN22-130	M8~M22	130	96	50	56	TCA2-M	12.5	12.5	1.7
SK50-DTN12-100	M3~M12	100	75	32	39	TCA1-M	4	10	3.7
SK50-DTN22-140	M8~M22	140	104	50	56	TCA2-M	12.5	12.5	4.2

SK-DST

High speed synchro tapping chuck



DIN69871 -1A/B — Shank
G6.3 — G value
C — Coolant system
Tapping



C This symbol means optional through coolant system

● Features, see page 37 37P
● Collet, see page 99 99P

SK40, SK50

Designation	ØD	ØD1	L	S	Collet	Range	F-	F+
SK40-DST10-110	28	40.4	110	11	TER16	M3~M10	0.5	0.5
SK40-DST22-120	49.5	60	110	18	TER32	M6~M22	0.7	0.7
SK50-DST10-110	28	40.4	110	11	TER16	M3~M10	0.5	0.5
SK50-DST22-120	49.5	60	120	18	TER32	M6~M22	0.7	0.7

SK-SLA

Side lock arbor



DIN69871 -1A/B — Shank
C — Coolant system
Drilling
Milling

Fig. 1

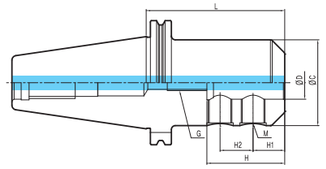
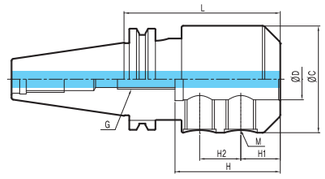


Fig. 2



C This symbol means built-in through coolant system

● Spare part, see page 101 101P

SK40, SK50

Designation	ØD	L	ØC	H	H1	H2	M	G	Fig.	kg
SK40-SLA16-75	16	75	48	49	24	-	M14	M12	-	1.5
SK40-SLA20-75	20	75	52	51	25	-	M16	M12	-	1.7
SK40-SLA25-95	25	95	65	59	24	25	M18	M12	2	2.0
SK40-SLA32-105	32	105	72	63	24	28	M20	M12	2	2.4
SK50-SLA16-90	16	90	48	49	24	-	M14	M12	-	4.2
SK50-SLA20-90	20	90	52	51	25	-	M16	M12	-	4.4
SK50-SLA25-105	25	105	65	59	24	25	M18	M12	1	4.4
SK50-SLA32-120	32	120	72	63	24	28	M20	M12	1	5.0
SK50-SLA40-120	40	120	80	73	30	32	M20	M12	1	5.4

SK-FMC

Face mill arbor



C Coolant system | Facing

Fig. 1

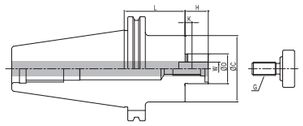


Fig. 2

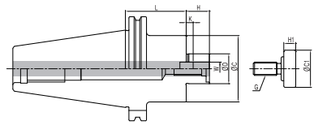
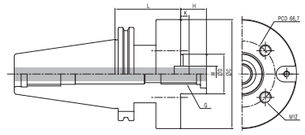


Fig. 3



C This symbol means optional through coolant system

● Spare part, see page 104 104P

SK30, SK40, SK50

Designation	Cutter dia.	ØD	L	ØC	H	W	K	G	kg	Fig.
SK30-FMC16-60	40	16	60	38	17	8	5.0	M8	0.7	1
SK30-FMC22-50	50/63	22	50	48	19	10	5.6	M10	0.8	2
SK30-FMC27-55	80	27	55	60	21	12	6.3	M12	1.2	2
SK40-FMC16-55	40	16	55	38	17	8	5.0	M8	1.2	1
SK40-FMC22-55	50/63	22	55	48	19	10	5.6	M10	1.2	1
SK40-FMC27-60	80	27	60	60	21	12	6.3	M12	1.8	2
SK40-FMC32-60	100	32	60	78	24	14	7.0	M16	2.3	2
SK40-FMC40-50	125/160	40	50	89	27	15.87	8.0	M20	3.3	3
SK50-FMC16-60	40	16	60	38	17	8	5.0	M8	3.9	1
SK50-FMC22-60	50/63	22	60	48	19	10	5.6	M10	4.1	1
SK50-FMC27-40	80	27	40	60	21	12	6.3	M12	4.1	1
SK50-FMC32-45	100	32	45	78	24	14	7.0	M16	4.2	1
SK50-FMC40-50	125/160	40	50	89	27	15.87	8.0	M20	4.6	3

SK-MD

Basic holder



DIN69871 -1A/B Shank | G6.3 G value | C Coolant system

Fig. 1

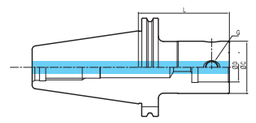


Fig. 2

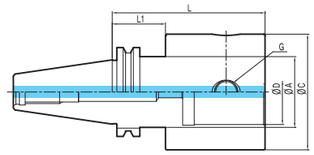
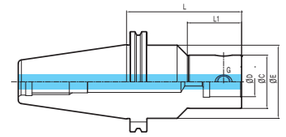


Fig. 3



C This symbol means built-in through coolant system

● Spare part, see page 115 115P

SK40, SK50

Designation	ØC	ØD	ØA	ØE	L	L1	G	kg	Fig.
SK40-MD19F-80R	19	11	-	30	80	12	M5	1.8	3
SK40-MD25F-80R	25	14	-	35	80	22	M6	1.8	1
SK40-MD32F-115R	32	18	-	42	115	36	M8	2.3	3
SK40-MD40F-60	40	22	-	-	60	36	M10	2.4	1
SK40-MD40F-100	40	22	-	-	100	36	M10	2.4	1
SK40-MD50F-75	50	28	-	-	75	36	M12	2.2	1
SK40-MD50F-100	50	28	-	-	100	36	M12	2.2	1
SK40-MD63F-70	63	36	50	-	70	36	M16	3.3	2
SK50-MD19F-85R	19	11	-	40	85	12	M5	4.2	3
SK50-MD25F-80R	25	14	-	44	80	22	M6	4.3	3
SK50-MD25F-105R	25	14	-	44	105	22	M6	4.7	3
SK50-MD32F-110	32	18	-	-	110	36	M8	5.1	1
SK50-MD32F-110R	32	18	-	50	110	36	M8	5.1	3
SK50-MD40F-100	40	22	-	-	100	36	M10	5.2	1
SK50-MD40F-145	40	22	-	-	145	36	M10	5.3	1
SK50-MD40F-220R	40	22	-	60	230	83	M10	5.5	3
SK50-MD50F-125R	50	28	-	65	125	60	M12	6.1	3
SK50-MD50F-240R	50	28	-	65	240	125	M12	6.8	3
SK50-MD63F-75	63	36	-	-	75	36	M16	5.6	1
SK50-MD63F-130	63	36	-	-	130	36	M16	5.8	1
SK50-MD63F-230R	63	36	-	80	230	149	M16	8.3	3
SK50-MD80F-95	80	45	-	-	95	36	M16	9.2	1
SK50-MD80F-150	80	45	-	-	150	36	M16	9.5	1
SK50-MD90F-115	90	45	80	-	115	58	M16	10.1	2
SK50-MD90F-165	90	45	80	-	165	113	M16	10.3	2

SK-MTA

Morse taper arbor



DIN69871 -1A/B Shank | C Coolant system | Drilling | Milling | Reaming

Fig.1

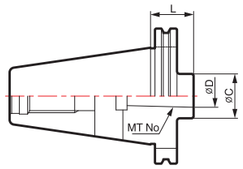
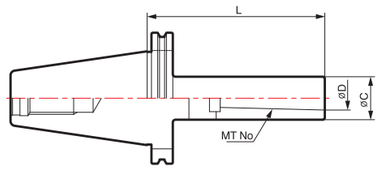


Fig.2



● Will be stock

C This symbol means unavailable with through coolant system

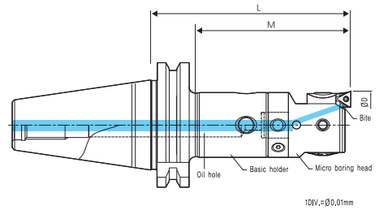
	Designation	MT No.	L	ØD	ØC	kg	Fig.	Will be stock
SK40, SK50	SK40-MTA3-75	3	75	23.825	40	1.2	1	●
	SK40-MTA4-95	4	95	31.267	50	1.4	1	●
	SK50-MTA3-45	3	45	23.825	40	3.8	1	●
	SK50-MTA3-150	3	150	23.825	40	4.6	2	●
	SK50-MTA4-75	4	75	31.267	50	3.9	1	●

SK-FBH/B

Micro boring bar (balanced type)



DIN69871 -1A/B Shank | G6.3 G value | C Coolant system | Boring



C This symbol means built-in through coolant system

● Features, see page 42 42P

● Spare part, see page 117 117P

	Designation			Boring range		L	M
	Head designation	Bite designation	Body designation	min	max		
SK40, SK50	FBH1920B	FBB20N-O-OO	SK40-MD19F-80R	20(24)	26(30)	113	45
	FBH2526B	FBB26N-O-OO	SK40-MD25F-80R	26(32)	34(40)	117	59
	FBH3233B	FBB33N-O-OO	SK40-MD32F-115R	33(40)	43(50)	156	77
	FBH4042B	FBB42N-O-OO	SK40-MD40F-100	42(50)	54(62)	147	125
	FBH5053B	FBB53N-O-OO	SK40-MD50F-100	53(65)	70(82)	157	135
	FBH6368B	FBB68N-O-OO	SK40-MD63F-70	68(90)	100(122)	141	121
	FBH6398B	FBB68N-O-OO	SK40-MD63F-70	98(120)	150(172)	141	121
	FBH1920B	FBB20N-O-OO	SK50-MD19F-85R	20(24)	26(30)	118	45
	FBH2526B	FBB26N-O-OO	SK50-MD25F-105R	26(32)	34(40)	142	59
	FBH3233B	FBB33N-O-OO	SK50-MD32F-110	33(40)	43(50)	141	128
	FBH4042B	FBB42N-O-OO	SK50MD40F-145	42(50)	54(62)	192	167
	FBH5053B	FBB53N-O-OO	SK50-MD50F-240R	53(65)	70(82)	297	182
	FBH6368B	FBB68N-O-OO	SK50-MD63F-130	68(90)	100(122)	201	178
	FBH6398B	FBB68N-O-OO	SK50-MD63F-130	98(120)	150(172)	201	178
	FBH8098B	FBB68N-O-OO	SK50-MD80F-150	98(120)	150(172)	221	198

- Boring depth can be changed by variety of MD arboor and extenosin bar.
- Variety bites

  FBBOON, FBBOON-1: TPGT, TPGW0802OOL

  FBBOON-O-C: CCMT,CCGT0602OOL

  FBBOON-O-C09:CCMT,CCGT09T3OOL

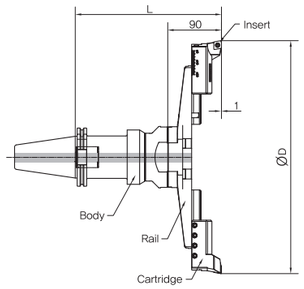
  FBBOON-O-T11:TPGT1103OOL

SK-FBC,TBC

Balance cut tool for rough /fine boring



DIN69871 -1A/B Shank | MAS 403-BT Shank | C Coolant system



C This symbol means optional through coolant system

● Features, see page 43 43P
● Spare part, see page 119 119P

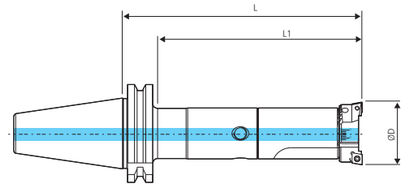
Designation								Boring range	
Body	kg	Rough boring (TBC)			Fine boring (FBC)				
		TBC HEAD SET (Rail+Cartridge)	L	kg	FBC HEAD SET (Rail+Cartridge+Balancingblock)	L	kg	min	max
SK50-FMD50-155	7.9	TBC130S (TBR130+BCC1348)	245	3.5	FBC130S (TBR130+FCC130+FCB130)	252	3.8	130	180
SK50-FMD50-255	10.4	TBC130S (TBR130+BCC1348)	345	3.5	FBC130S (TBR130+FCC130+FCB130)	352	3.8	130	180
SK50-FMD50-155	7.9	TBC175S (TBR175+BCC1348)	245	3.9	FBC175S (TBR175+FCC130+FCB130)	252	4.1	175	225
SK50-FMD50-255	10.4	TBC175S (TBR175+BCC1348)	345	3.9	FBC175S (TBR175+FCC130+FCB130)	352	4.1	175	225
SK50-FMD50-155	7.9	TBC220S (TBR220+BCC1348)	245	4.3	FBC220S (TBR220+FCC130+FCB130)	252	4.5	220	270
SK50-FMD50-255	10.4	TBC220S (TBR220+BCC1348)	345	4.3	FBC220S (TBR220+FCC130+FCB130)	352	4.5	220	270
SK50-FMD50-155	7.9	TBC265S (TBR265+BCC1348)	245	4.5	FBC265S (TBR265+FCC130+FCB130)	252	4.6	265	315
SK50-FMD50-255	10.4	TBC265S (TBR265+BCC1348)	345	4.5	FBC265S (TBR265+FCC130+FCB130)	352	4.6	265	315
SK50-FMD50-155	7.9	TBC310S (TBR310+BCC1354)	245	5.5	FBC310S (TBR310+FCC130+FCB130)	252	5.5	310	390
SK50-FMD50-255	10.4	TBC310S (TBR310+BCC1354)	345	5.5	FBC310S (TBR310+FCC130+FCB130)	352	5.5	310	390
SK50-FMD50-155	7.9	TBC385S (TBR385+BCC1354)	245	5.8	FBC385S (TBR385+FCC130+FCB130)	252	5.8	385	465
SK50-FMD50-255	10.4	TBC385S (TBR385+BCC1354)	345	5.8	FBC385S (TBR385+FCC130+FCB130)	352	5.8	385	465
SK50-FMD50-155	7.9	TBC460S (TBR460+BCC1354)	245	12.8	FBC460S (TBR460+FCC130+FCB130)	252	12.8	460	540
SK50-FMD50-255	10.4	TBC460S (TBR460+BCC1354)	345	12.8	FBC460S (TBR460+FCC130+FCB130)	352	12.8	460	540

SK-DBC

Balance cut tool(Modular type)



DIN69871 -1A/B Shank | C Coolant system | Boring



※ Boring depth can be changed by variety of MD arboor and extension bar.

C This symbol means built-in through coolant system

● MD Arbor see page 112 112P
● Spare part, see page 121 121P

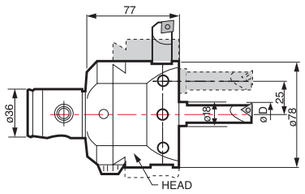
Designation				Boring range		L	L1	Fig.
Head set designation	kg	Body designation	kg	min	max			
DBC2528S	0.3	SK40-MD25F-80R	1.8	28	35	130	82	2
DBC3235S	0.4	SK40-MD32F-115R	2.3	35	46	180	91	2
DBC4046S	0.6	SK40-MD40F-100R	2.6	46	58	170	130	2
DBC5058S	1.1	SK40-MD50F-100	2.7	58	74	180	158	1
DBC6374S	2.0	SK40-MD63F-70	3.3	74	94	180	140	2
DBC2528S	0.3	SK50-MD25F-105R	4.7	28	35	155	82	2
DBC3235S	0.4	SK50-MD32F-110R	5.1	35	46	175	101	2
DBC4046S	0.6	SK50-MD40F-145	5.3	46	58	215	190	2
DBC5058S	1.1	SK50-MD50F-240R	6.8	58	74	320	205	2
DBC6374S	2.0	SK50-MD63F-130	5.8	74	94	220	197	2
DBC8094S	3.5	SK50-MD80F-150	9.5	94	120	250	229	1
DBC120S	5.3	SK50-MD80F-150	9.5	120	175	250	229	1

SK-KMB

Micro boring



Coolant system | Boring



1DIV = ø0.02mm

C This symbol means unavailable with through coolant system

- Boring range, see page 124 124P
- Spare part, see page 125 125P

Boring head	Bite	MD NO.	L (Head length)	kg
KMB6336	BB18-O(S)	SKOO-MD63F	77	2.2

SK-SMB

Small micro boring bar



Coolant system | Boring

1DIV = ø0.02mm

C This symbol means unavailable with through coolant system

- Boring range, see page 124 124P
- Spare part, see page 125 125P

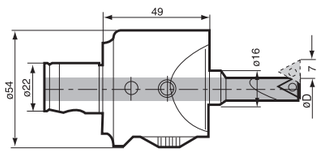
Boring head	Bite	MD NO.	L (Head length)	kg
SMB4022	BB18-O(S)	SKOO-MD40F	62.5	0.6

SK-SMH

Small micro boring bar



Coolant system | Boring



1DIV = ø0.01mm

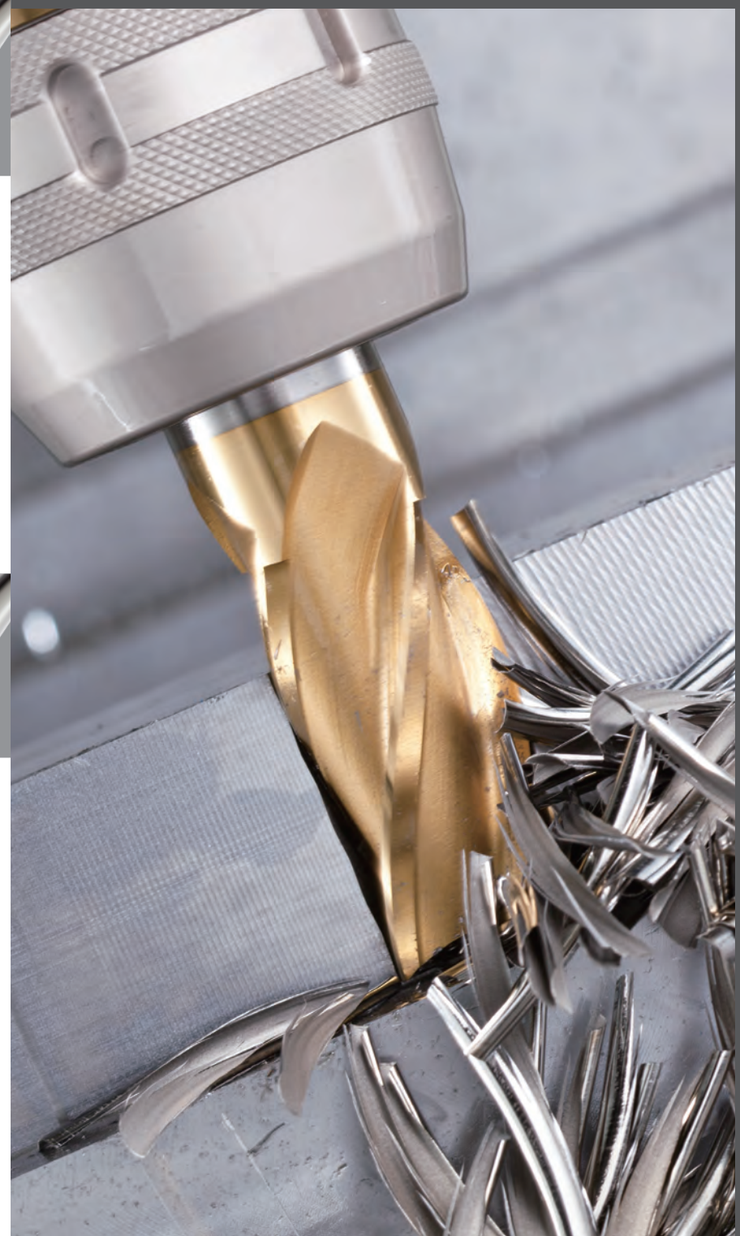
C This symbol means optional through coolant system

- Boring range, see page 124 124P
- Spare part, see page 125 125P

Boring head	Bite	MD NO.	L (Head length)	kg
SMH4022	BB16-O(S)	SKOO-MD40F	49	0.7

NT SHANK





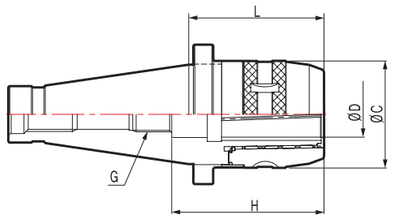
NPM ---------- 182
NPM SET ---------- 183
FMA ---------- 184

NT-NPM

New power milling chuck



DIN2080 JISB6101 Shank | 15㎛ Run-out | C Coolant system | Drilling | Milling



- Straight collet DCS ,DC type, see page 74. 74P
- Features, see page 26 26P
- Taper collet(TC type), see page 75 75P
- Spare part, see page 76 76P

C This symbol means unavailable with through coolant system

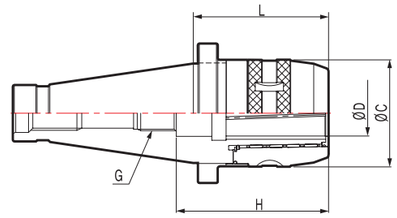
Designation	ØD	ØC	L	G	Collet	kg
NT40-NPM32-95	32	75	95	U5/8"-11	DC32,DCS32	2.9
NT50-NPM32-95	32	75	95	U1"-8	DC32,DCS32	4.4
NT50M-NPM32-95	32	75	95	M24	DC32,DCS32	4.4
NT50-NPM42-95	42	95	95	U1"-8	DC42,DCS42	4.8
NT50M-NPM42-95	42	95	95	M24	DC42,DCS42	4.8

NT-NPM SET

New power milling chuck set.



DIN2080 JISB6101 Shank | 15㎛ Run-out | C Coolant system | Drilling | Milling



C This symbol means unavailable with through coolant system

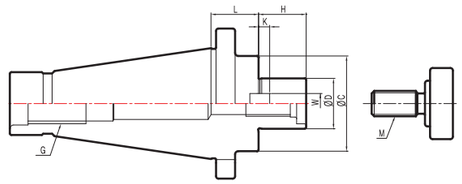
Designation	Body	Collet	MT Collet	DJT	spanner
NT40-NPM32-95(B)	NT40-NPM32-95	DC32-6, 8, 10, 12, 16, 20, 25	TC32-MT1,2,3	DJT32-6	75-79
NT50-NPM32-95(B)	NT50-NPM32-95	DC32-6, 8, 10, 12, 16, 20, 25	TC32-MT1,2,3	DJT32-6	75-79
NT50-NPM42-95(B)	NT50-NPM42-95	DC42-6, 8, 10, 12, 16, 20, 25, 32	TC42-MT1,2,3,4	DJT42-6	92-96

NT-FMA

Face mill arbor



DIN2080 JISB6101 — Shank | C — Coolant system | Facing



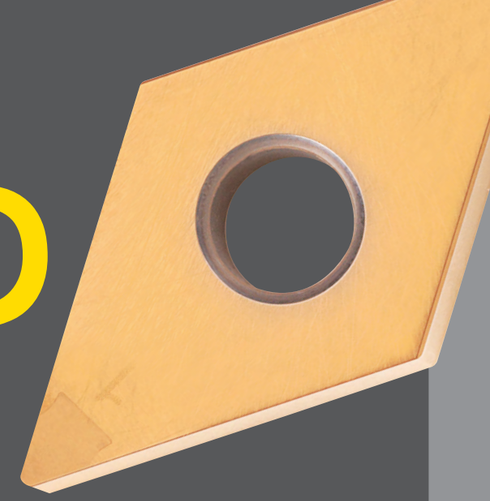
C This symbol means unavailable with through coolant system

● Spare part, see page 104 104P

NT40, NT50

Designation	Cutter dia.	ØD	L	ØC	H	M	W	K	G	kg
NT40-FMA25.4-25	80	25.4	25	50	22	M12	9.5	5	M16	1.2
NT40-FMA31.75-25	100	31.75	25	60	30	M16	12.7	7	M16	1.4
NT40-FMA38.1-25	125	38.1	25	80	34	M20	15.87	9	M16	2.0
NT40-FMA50.8-25	160	50.8	25	100	36	M24	19.05	10	M16	2.8
NT50-FMA25.4-25	80	25.4	23.2	50	22	M12	9.5	5	M24	3.0
NT50-FMA31.75-30	100	31.75	26.2	60	30	M16	12.7	7	M24	3.2
NT50-FMA38.1-30	125	38.1	25.2	80	34	M20	15.87	9	M24	3.6
NT50-FMA50.8-30	160	50.8	27.2	100	36	M24	19.05	10	M24	4.2
NT50-FMA47.625-25	200	47.625	27.2	128	38		25.4	12.5	M24	5.4

cBN/PCD SHANK





INSERT CODE SYSTEM(ISO) 186
cBN Comparison table of cBN competitors ---------- 188
cBN Series ---------- 190
PCD ---------- 201

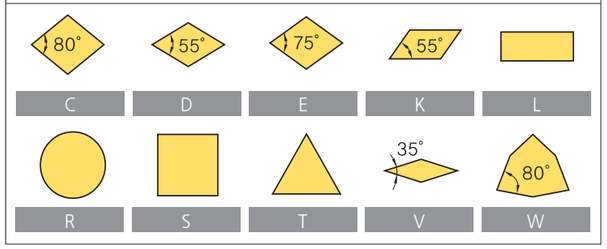
INSERT CODE SYSTEM (ISO)

INSERT CODE SYSTEM (ISO)

C	N	M	G	12	04	08
1	2	3	4	5	6	7
Insert shape	Relief angle	Tolerance	Cross sectioon type	Cutting edge length diameter of inscribed circle	Height of cutting edge	Nose radius(Nose R)

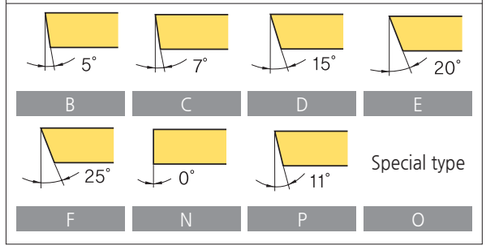
1 Insert shape

C N M G 12 04 08 - VM



2 Relief angle

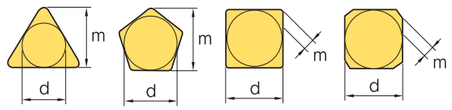
C N M G 12 04 08 - VM



3 Tolerance

C N M G 12 04 08 - VM

d : Inscribed circle
t : Thickness
m : Refer to figure



(mm)

급	d	m	t
A	±0.025	±0.005	±0.025
C	±0.025	±0.013	±0.025
H	±0.013	±0.013	±0.025
E	±0.025	±0.025	±0.025
G	±0.025	±0.025	±0.13
J *	±0.05 ~ ±0.15	±0.005	±0.025
K *	±0.05 ~ ±0.15	±0.013	±0.025
L *	±0.05 ~ ±0.15	±0.025	±0.025
M *	±0.05 ~ ±0.15	±0.08 ~ ±0.20	±0.13
N *	±0.05 ~ ±0.15	±0.08 ~ ±0.18	±0.025
U *	±0.08 ~ ±0.25	±0.13 ~ ±0.38	±0.13

* Sides are based on unground insert

Tolerance on C,E,H,M,O,P,R,S,T,W Insert Shape(Exceptional case)

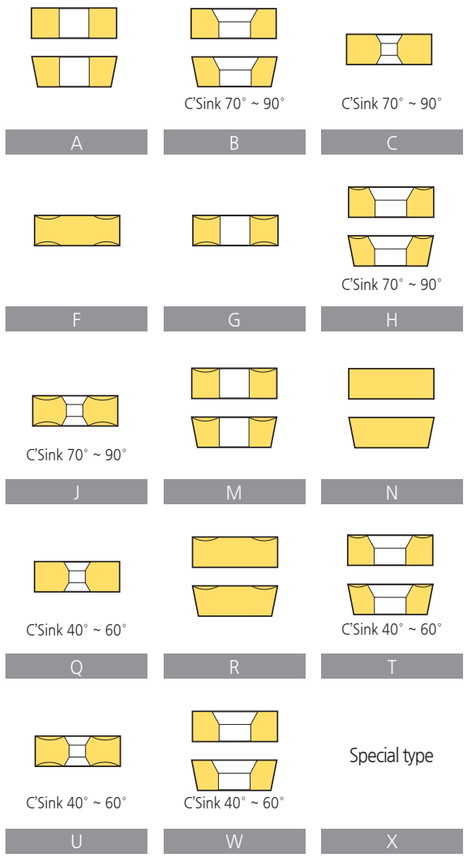
d	Tolerance on d		Tolerance on m	
	J, K, L, M, N	U	M, N	U
6.35	±0.05	±0.08	±0.08	±0.13
9.525	±0.05	±0.08	±0.08	±0.13
12.7	±0.08	±0.13	±0.13	±0.20
15.875	±0.10	±0.18	±0.15	±0.27
19.05	±0.10	±0.18	±0.15	±0.27
25.4	±0.13	±0.25	±0.18	±0.38

Olerance on D Insert Shape(Exceptional case)

d	Tolerance on d	Tolerance on m
6.35	±0.05	±0.11
9.525	±0.05	±0.11
12.7	±0.08	±0.15
15.875	±0.10	±0.18
19.05	±0.10	±0.18

4 Cross sectioon type

C N M G 12 04 08 - VM



5 Cutting edge length, Diameter of Inscribed circle

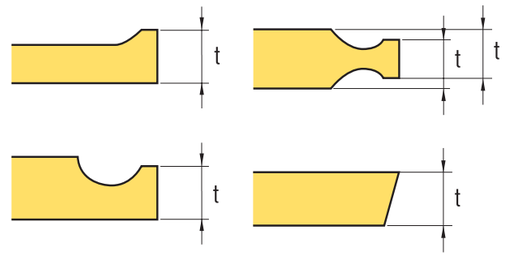
C N M G 12 04 08 - VM

Symbol							Inch	IC
C	d	S	T	R	V	W		
Metric								d(mm)
03	04	03	06	03	-	02	1.2(5)	3.97
04	05	04	08	04	08	S3	1.5(6)	4.76
05	06	05	09	05	09	03	1.8(7)	5.56
-	-	-	-	06	-	-	-	6.00
06	07	06	11	06	11	04	2	6.35
08	09	07	13	07	13	05	2.5	7.94
-	-	-	-	08	-	-	-	8.00
09	11	09	16	09	16	06	3	9.525
-	-	-	-	10	-	-	-	10.00
11	13	11	19	11	19	07	3.5	11.11
-	-	-	-	12	-	-	-	12.00
12	15	12	22	12	22	08	4	12.70
14	17	14	24	14	24	09	4.5	14.29
16	19	15	27	15	27	10	5	15.875
-	-	-	-	16	-	-	-	16.00
17	21	17	30	17	30	11	5.5	17.46
19	23	19	33	19	33	13	6	19.05
-	-	-	-	20	-	-	-	20.00
22	27	22	38	22	38	15	7	22.225
-	-	-	-	25	-	-	-	25.00
25	31	25	44	25	44	17	8	25.40
32	38	31	54	31	54	21	10	31.75
-	-	-	-	32	-	-	-	32.00

( ) Symbol for small size insert

6 Height of Cutting Edge

C N M G 12 04 08 - VM



Symbol		Height of Cutting Edge	
Metric	Inch	M, N	Inch
01	1(2)	1.59	1/16
T0	1.125	1.79	9/128
T1	1.2	1.98	5/64
02	1.5(3)	2.38	3/32
T2	1.75	2.78	7/64
03	2	3.18	1/8
T3	2.5	3.97	5/32
04	3	4.76	3/16
05	3.5	5.56	7/32
06	4	6.35	1/4
07	5	7.94	5/16
09	6	9.52	3/8
11	7	11.11	7/16
12	8	12.70	1/2

( ) Symbol for small size insert

7 Nose Radius (Nose R)

C N M G 12 04 08 - VM



Symbol		Corner radius	
Metric	Inch	M, N	Inch
01	0	0.1	0.004
02	0.5	0.2	0.008
04	1	0.4	1/64
08	2	0.8	1/32
12	3	1.2	3/64
16	4	1.6	1/16
20	5	2.0	5/64
24	6	2.4	3/32
28	7	2.8	7/64
32	8	3.2	1/8
00	-	Round Insert(Inch)	
M0	-	Round Insert(Metric)	

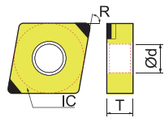
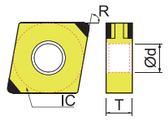
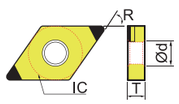


cBN Comparison table of cBN competitors

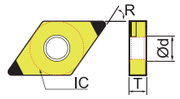
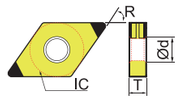
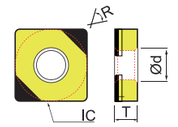
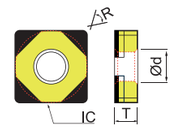
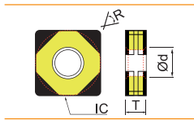
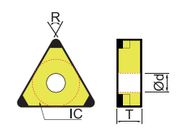
Use classification		DINE(KORLOY)	NTK	KYOCERA	TAEGU TEC
H (Hardened steel)	H01	DNC100 KB420 KB1000	B521K	KBN510 KBN05M KBN10M	
	H10	DNC250 KB320 KB2000	B521K	KBN525 KBN25M KBN05M	KB90A TB650
	H20	KB420 KB425 DNC350 KB400 DNC400	B421K B422K	KBN30M KBN35M KBN900	
	H30	KB335 DNC350	B421K B422K		
K (Cast iron)	K01	KB350	B230K	KBN60M KBN65B	KB90
	K10	KB370	B205K B300K	KBN60M KBN900 KBN65B	KB90A
	K20	KB370 KB800	B205K B300K	KBN900	KB90A
	K30	DBN800	B205K B300K		
N (Non ferrous metal)	N01	KB800			
S (Heat resistance alloy)	S01	KB370		KBN65B	
	S10	KB370			

cBN Comparison table of cBN competitors

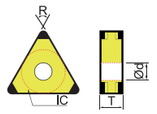
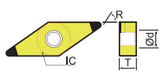
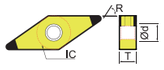
DINE(KORLOY)	SUMITOMO	TUNGALOY	SECO	MITSUBISHI	SANDVIK	KENNAMETAL
DNC100 KB420 KB1000	BN1000 BNC100	BXM10 BX310	CBN10 CBN100 CBN60K	MBC010 MB810	CB50 CB7050	PB250
DNC250 KB320 KB2000	BNC160 BNC200 BN2000	BXM10 BX330 BX530	CBN10 CBN100 CBN150 CBN60K CBN160C	MBC020 MB8025 BC8020	CB20 CB7015	KB1645 KD050 KD120 KB9610
KB420 KB425 DNC350 KB400 DNC400	BNC200 BNX20	BXM20 BX360	CBN150 CBN160C	BC8020 MB8025 MB825	CB7025 CB7035	KB5625 KB1615
KB335 DNC350	BNC300 BN350 BNX25	BXM20 BXC50 BX380		BC8020 MB835		KB9640
KB350	BNC500	BX930 BX870		MB710	CB50 CB7050	KD120 PB100
KB370	BN700 BN7000 BN7500	BX470 BX480 BX950	CBN200 CBN300 CBN300P CBN400C	MB710 MB730	CB7925 CB7525	KB1645 KB9610
KB370 KB800	BN700 BN7000 BNS800	BXC90 BX90S	CBN200 CBN300 CBN300P CBN400C	MB730 MBS140 BC5030		
DBN800	BNS800	BX90S BXC90	CBN500	MBS140 BC5030		KB9640 KB1340
KB800	BN700 BN7000					KD120 PB100
KB370	BN700 BN7000	BX950		MB730		
KB370						

Geomethy	Designation	Coating material				Non-coating material										weight	Measurement (mm)			
		DNC100	DNC250	DNC350	DNC400	KB1000	KB2000	KB320	KB335	KB350	KB360	KB370	KB400	KB410	KB420	KB425		IC(Inscribed circle)	T(Thickness)	R(Nose R)	Ød (Hole size)
	2NU-CNGA120404		●	●								●					9.85	12.7	4.76	0.4	5.16
	2NU-CNGA120408		●	●				●				●					9.85	12.7	4.76	0.8	5.16
	2NU-CNGA120412		●	●								●					9.85	12.7	4.76	1.2	5.16
	2NU-CNGA120404F		●														9.85	12.7	4.76	0.4	5.16
	2NU-CNGA120408F		●														9.85	12.7	4.76	0.8	5.16
	2NU-CNGA120412F		●														9.85	12.7	4.76	1.2	5.16
	2NU-CNGA120404T		●														9.85	12.7	4.76	0.4	5.16
	2NU-CNGA120408T		●														9.85	12.7	4.76	0.8	5.16
	2NU-CNGA120412T		●														9.85	12.7	4.76	1.2	5.16
	2NU-CNGA120404W		●														9.85	12.7	4.76	0.4	5.16
	2NU-CNGA120408W		●	●													9.85	12.7	4.76	0.8	5.16
	2NU-CNGA120412W		●														9.85	12.7	4.76	1.2	5.16
	2NU-CNGA120404WF		●														9.85	12.7	4.76	0.4	5.16
	2NU-CNGA120408WF		●														9.85	12.7	4.76	0.8	5.16
	2NU-CNGA120412WF		●														9.85	12.7	4.76	1.2	5.16
	2NU-CNGA120404WT																9.85	12.7	4.76	0.4	5.16
	2NU-CNGA120408WT																9.85	12.7	4.76	0.8	5.16
	2NU-CNGA120412WT																9.85	12.7	4.76	1.2	5.16
	T-2NU-CNGA120404																9.85	12.7	4.76	0.4	5.16
	T-2NU-CNGA120408	●															9.85	12.7	4.76	0.8	5.16
	2-NU-CNMA120408						●										9.85	12.7	4.76	0.8	5.16
	4NU-CNGA431																9.85	12.7	4.76	0.4	5.16
	4NU-CNGA432																9.85	12.7	4.76	0.8	5.16
	4NU-CNGA433																9.85	12.7	4.76	1.2	5.16
	4NU-CNGA431F																9.85	12.7	4.76	0.4	5.16
	4NU-CNGA432F																9.85	12.7	4.76	0.8	5.16
	4NU-CNGA433F																9.85	12.7	4.76	1.2	5.16
	4NU-CNGA431T																9.85	12.7	4.76	0.4	5.16
	4NU-CNGA432T																9.85	12.7	4.76	0.8	5.16
	4NU-CNGA433T																9.85	12.7	4.76	1.2	5.16
	4NU-CNGA431W																9.85	12.7	4.76	0.4	5.16
	4NU-CNGA432W																9.85	12.7	4.76	0.8	5.16
	4NU-CNGA433W																9.85	12.7	4.76	1.2	5.16
	4NU-CNGA431WF																9.85	12.7	4.76	0.4	5.16
	4NU-CNGA432WF																9.85	12.7	4.76	0.8	5.16
	4NU-CNGA433WF																9.85	12.7	4.76	1.2	5.16
	4NU-CNGA431WT																9.85	12.7	4.76	0.4	5.16
	4NU-CNGA432WT																9.85	12.7	4.76	0.8	5.16
	4NU-CNGA433WT																9.85	12.7	4.76	1.2	5.16
	2NU-DNGA150404		●	●								●					12.13	12.7	4.76	0.4	5.16
	2NU-DNGA150408		●	●								●					12.13	12.7	4.76	0.8	5.16
	2NU-DNGA150412		●	●													12.13	12.7	4.76	1.2	5.16
	2NU-DNGA150404F		●														12.13	12.7	4.76	0.4	5.16
	2NU-DNGA150408F		●														12.13	12.7	4.76	0.8	5.16
	2NU-DNGA150412F		●														12.13	12.7	4.76	1.2	5.16

※ - W : Wiper type ※ T - Designation consists of 10 units. ● : Stock

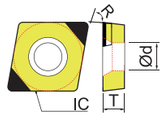
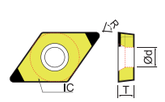
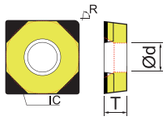
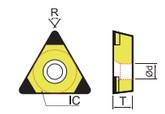
Geomethy	Designation	Coating material				Non-coating material										weight	Measurement (mm)			
		DNC100	DNC250	DNC350	DNC400	KB1000	KB2000	KB320	KB335	KB350	KB360	KB370	KB400	KB410	KB420	KB425		IC(Inscribed circle)	T(Thickness)	R(Nose R)	Ød (Hole size)
	2NU-DNGA150404T		●														12.13	12.7	4.76	0.4	5.16
	2NU-DNGA150408T		●														12.13	12.7	4.76	0.8	5.16
	2NU-DNGA150412T		●														12.13	12.7	4.76	1.2	5.16
	T-2NU-DNGA150408																12.13	12.7	4.76	0.8	5.16
	T-2NU-DNGA150412		●														12.13	12.7	4.76	1.2	5.16
	4NU-DNGA150404																12.13	12.7	4.76	0.4	5.16
	4NU-DNGA150408																12.13	12.7	4.76	0.8	5.16
	4NU-DNGA150412																12.13	12.7	4.76	1.2	5.16
	4NU-DNGA150404F																12.13	12.7	4.76	0.4	5.16
	4NU-DNGA150408F																12.13	12.7	4.76	0.8	5.16
	4NU-DNGA150412F																12.13	12.7	4.76	1.2	5.16
	4NU-DNGA150404T																12.13	12.7	4.76	0.4	5.16
	4NU-DNGA150408T																12.13	12.7	4.76	0.8	5.16
	4NU-DNGA150412T																12.13	12.7	4.76	1.2	5.16
	2NU-SNGA120404																9.88	12.7	4.76	0.4	5.16
	2NU-SNGA120408																9.88	12.7	4.76	0.8	5.16
	2NU-SNGA120412																9.88	12.7	4.76	1.2	5.16
	2NU-SNGA120404F																9.88	12.7	4.76	0.4	5.16
	2NU-SNGA120408F																9.88	12.7	4.76	0.8	5.16
	2NU-SNGA120412F																9.88	12.7	4.76	1.2	5.16
	2NU-SNGA120404T																9.88	12.7	4.76	0.4	5.16
	2NU-SNGA120408T																9.88	12.7	4.76	0.8	5.16
	2NU-SNGA120412T																9.88	12.7	4.76	1.2	5.16
	4NU-SNGA120404		●														9.88	12.7	4.76	0.4	5.16
	4NU-SNGA120408		●														9.88	12.7	4.76	0.8	5.16
	4NU-SNGA120412																9.88	12.7	4.76	1.2	5.16
	4NU-SNGA120404F																9.88	12.7	4.76	0.4	5.16
	4NU-SNGA120408F																9.88	12.7	4.76	0.8	5.16
	4NU-SNGA120412F																9.88	12.7	4.76	1.2	5.16
	4NU-SNGA120404T																9.88	12.7	4.76	0.4	5.16
	4NU-SNGA120408T																9.88	12.7	4.76	0.8	5.16
	4NU-SNGA120412T																9.88	12.7	4.76	1.2	5.16
	8NU-SNGA120404																9.88	12.7	4.76	0.4	5.16
	8NU-SNGA120408																9.88	12.7	4.76	0.8	5.16
	8NU-SNGA120412																9.88	12.7	4.76	1.2	5.16
	3NU-TNGA160404		●	●										●			7.19	9.525	4.76	0.4	3.81
	3NU-TNGA160408		●	●										●		●	7.19	9.525	4.76	0.8	3.81
	3NU-TNGA160412			●													7.19	9.525	4.76	1.2	3.81
	3NU-TNGA160404F		●														7.19	9.525	4.76	0.4	3.81
	3NU-TNGA160408F		●														7.19	9.525	4.76	0.8	3.81
	3NU-TNGA160412F																7.19	9.525	4.76	1.2	3.81
	3NU-TNGA160404T		●														7.19	9.525	4.76	0.4	3.81
	3NU-TNGA160408T		●														7.19	9.525	4.76	0.8	3.81
	3NU-TNGA160412T																7.19	9.525	4.76	1.2	3.81

※ - W : Wiper type ※ T - Designation consists of 10 units. ● : Stock

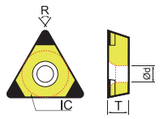
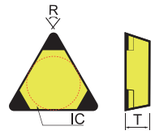
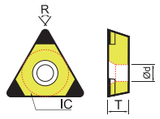
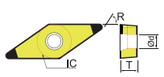
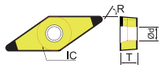
Geomethy	Designation	Coating material				Non-coating material										weight	Measurement (mm)			
		DNC100	DNC250	DNC350	DNC400	KB1000	KB2000	KB320	KB335	KB350	KB360	KB370	KB400	KB410	KB420	KB425		IC(Inscribed circle)	T(Thickness)	R(Nose R)	Ød (Hole size)
	6NU-TNGA160404																7.19	9.525	4.76	0.4	3.81
	6NU-TNGA160408																7.19	9.525	4.76	0.8	3.81
	6NU-TNGA160412																7.19	9.525	4.76	1.2	3.81
	2NU-VNGA160404		●	●								●					10.18	9.525	4.76	0.4	3.81
	2NU-VNGA160408		●	●				●				●					10.18	9.525	4.76	0.8	3.81
	2NU-VNGA160412																10.18	9.525	4.76	1.2	3.81
	2NU-VNGA160404F		●														10.18	9.525	4.76	0.4	3.81
	2NU-VNGA160408F		●														10.18	9.525	4.76	0.8	3.81
	2NU-VNGA160412F																10.18	9.525	4.76	1.2	3.81
	2NU-VNGA160404T		●														10.18	9.525	4.76	0.4	3.81
	2NU-VNGA160408T		●														10.18	9.525	4.76	0.8	3.81
	2NU-VNGA160412T																10.18	9.525	4.76	1.2	3.81
	4NU-VNGA160404																10.18	9.525	4.76	0.4	3.81
	4NU-VNGA160408																10.18	9.525	4.76	0.8	3.81
	4NU-VNGA160412																10.18	9.525	4.76	1.2	3.81
	4NU-VNGA160404F																10.18	9.525	4.76	0.4	3.81
	4NU-VNGA160408F																10.18	9.525	4.76	0.8	3.81
	4NU-VNGA160412F																10.18	9.525	4.76	1.2	3.81
	4NU-VNGA160404T																10.18	9.525	4.76	0.4	3.81
	4NU-VNGA160408T																10.18	9.525	4.76	0.8	3.81
	4NU-VNGA160412T																10.18	9.525	4.76	1.2	3.81
	2NU-CCGW060202		●														0.95	6.35	2.38	0.2	2.8
	2NU-CCGW060204		●									●					0.95	6.35	2.38	0.4	2.8
	2NU-CCGW060208																1.02	6.35	2.38	0.8	2.8
	2NU-CCGW060202F		●														0.95	6.35	2.38	0.2	2.8
	2NU-CCGW060204F		●														0.95	6.35	2.38	0.4	2.8
	2NU-CCGW060208F																1.02	6.35	2.38	0.8	2.8
	2NU-CCGW060202T		●														0.95	6.35	2.38	0.2	2.8
	2NU-CCGW060204T		●														0.95	6.35	2.38	0.4	2.8
	2NU-CCGW060208T																1.02	6.35	2.38	0.8	2.8
	2NU-CCGW060204W																0.95	6.35	2.38	0.4	2.8
	2NU-CCGW060208W																1.02	6.35	2.38	0.8	2.8
	2NU-CCGW060204WF																0.95	6.35	2.38	0.4	2.8
	2NU-CCGW060208WF																1.02	6.35	2.38	0.8	2.8
	2NU-CCGW060204WT																0.95	6.35	2.38	0.4	2.8
	2NU-CCGW060208WT																1.02	6.35	2.38	0.8	2.8
	2NU-CCGW09T304F		●														4.51	9.525	3.97	0.4	4.4
	2NU-CCGW09T304		●	●													4.51	9.525	3.97	0.4	4.4
	2NU-CCGW09T308		●	●													4.51	9.525	3.97	0.8	4.4
	2NU-CCGW09T312																4.51	9.525	3.97	1.2	4.4
	2NU-CCGW09T304		●														4.51	9.525	3.97	0.4	4.4
	2NU-CCGW09T308F		●														4.51	9.525	3.97	0.8	4.4
	2NU-CCGW09T312F																4.51	9.525	3.97	1.2	4.4

※ - W : Wiper type ※ T - Designation consists of 10 units. ● : Stock

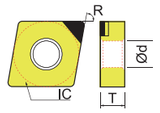
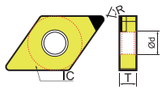
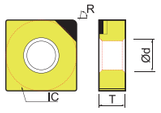
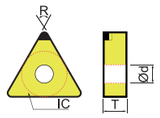
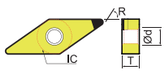
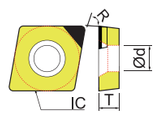
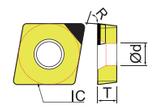
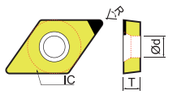
cBN Series
cBN Multi-comer type(negative/positive)

Geomethy	Designation	Coating material				Non-coating material										weight	Measurement (mm)			
		DNC100	DNC250	DNC350	DNC400	KB1000	KB2000	KB320	KB335	KB350	KB360	KB370	KB400	KB410	KB420	KB425		IC(Inscribed circle)	T(Thickness)	R(Nose R)	Ød (Hole size)
	2NU-CCGW09T304T		●														4.51	9.525	3.97	0.4	4.4
	2NU-CCGW09T308T		●														4.51	9.525	3.97	0.8	4.4
	2NU-CCGW09T312T																4.51	9.525	3.97	1.2	4.4
	2NU-CCGW09T304W																4.51	9.525	3.97	0.4	4.4
	2NU-CCGW09T308W		●														4.51	9.525	3.97	0.8	4.4
	2NU-CCGW09T312W																4.51	9.525	3.97	1.2	4.4
	2NU-CCGW09T304WF																4.51	9.525	3.97	0.4	4.4
	2NU-CCGW09T308WF		●														4.51	9.525	3.97	0.8	4.4
	2NU-CCGW09T312WF																4.51	9.525	3.97	1.2	4.4
	2NU-CCGW09T304WT																4.51	9.525	3.97	0.4	4.4
	2NU-CCGW09T308WT																4.51	9.525	3.97	0.8	4.4
	2NU-CCGW09T312WT																4.51	9.525	3.97	1.2	4.4
	2NU-DCGW070204											●					1.28	6.35	2.38	0.4	2.8
	2NU-DCGW070208																1.28	6.35	2.38	0.8	2.8
	2NU-DCGW070204F																1.26	6.35	2.38	0.4	2.8
	2NU-DCGW070208F																1.26	6.35	2.38	0.8	2.8
	2NU-DCGW070204T																1.26	6.35	2.38	0.4	2.8
	2NU-DCGW070208T																1.26	6.35	2.38	0.8	2.8
	2NU-DCGW11T302																4.82	9.525	3.97	0.2	4.4
	2NU-DCGW11T304		●	●								●					4.82	9.525	3.97	0.4	4.4
	2NU-DCGW11T308		●	●			●										4.82	9.525	3.97	0.8	4.4
	2NU-DCGW11T302F																4.82	9.525	3.97	0.2	4.4
	2NU-DCGW11T304F		●														4.82	9.525	3.97	0.4	4.4
	2NU-DCGW11T308F		●														4.82	9.525	3.97	0.8	4.4
	2NU-DCGW11T302T																4.82	9.525	3.97	0.2	4.4
	2NU-DCGW11T304T		●														4.82	9.525	3.97	0.4	4.4
	2NU-DCGW11T308T		●														4.82	9.525	3.97	0.8	4.4
	T-2NU-DCGW11T304		●														4.82	9.525	3.97	0.4	4.4
	4NU-SCGW09T304																	9.525	3.97	0.4	4.4
	4NU-SCGW09T308																	9.525	3.97	0.8	4.4
	4NU-SCGW09T312																	9.525	3.97	1.2	4.4
	4NU-SCGW09T304F																	9.525	3.97	0.4	4.4
	4NU-SCGW09T308F																	9.525	3.97	0.8	4.4
	4NU-SCGW09T312F																	9.525	3.97	1.2	4.4
	4NU-SCGW09T304T																	9.525	3.97	0.4	4.4
	4NU-SCGW09T308T																	9.525	3.97	0.8	4.4
	4NU-SCGW09T312T																	9.525	3.97	1.2	4.4
	3NU-TCGW090204		●														1.62	5.56	2.38	0.4	2.5
	3NU-TCGW090204F		●														1.62	5.56	2.38	0.4	2.5
	3NU-TCGW090204T		●														1.62	5.56	2.38	0.4	2.5

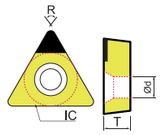
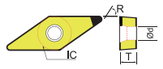
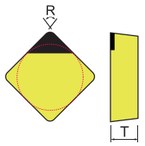
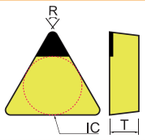
※ - W : Wiper type ※ T - Designation consists of 10 units. ● : Stock

Geomethy	Designation	Coating material				Non-coating material										weight	Measurement (mm)			
		DNC100	DNC250	DNC350	DNC400	KB1000	KB2000	KB320	KB335	KB350	KB360	KB370	KB400	KB410	KB420	KB425		IC(Inscribed circle)	T(Thickness)	R(Nose R)	Ød (Hole size)
	3NU-TPGW110304		●	●													2.3	6.35	3.18	0.4	3.4
	3NU-TPGW110308		●	●													2.3	6.35	3.18	0.8	3.4
	3NU-TPGW110304F		●														2.3	6.35	3.18	0.4	3.4
	3NU-TPGW110308F		●														2.3	6.35	3.18	0.8	3.4
	3NU-TPGW110304T		●														2.3	6.35	3.18	0.4	3.4
	3NU-TPGW110308T		●														2.3	6.35	3.18	0.8	3.4
	3NU-TPGN110304																2.3	6.35	3.18	0.4	
	3NU-TPGN110308																2.3	6.35	3.18	0.8	
	3NU-TPGN110304F																2.3	6.35	3.18	0.4	
	3NU-TPGN110308F																2.3	6.35	3.18	0.8	
	3NU-TPGN110304T																2.3	6.35	3.18	0.4	
	3NU-TPGN110304T																2.3	6.35	3.18	0.4	
	3NU-TPGN110308T		●	●													2.3	6.35	3.18	0.8	
	3NU-TPGN160304		●	●													4.8	9.525	3.18	0.4	
	3NU-TPGN160308		●	●													4.8	9.525	3.18	0.8	
	3NU-TPGN160304F																4.8	9.525	3.18	0.4	
	3NU-TPGN160308F																4.8	9.525	3.18	0.8	
	3NU-TPGN160304T																4.8	9.525	3.18	0.4	
	3NU-TPGN160308T																4.8	9.525	3.18	0.8	
	3NU-TPGB110304	●																6.35	3.18	0.4	3.4
	3NU-TPGB110308	●																6.35	3.18	0.8	3.4
	3NU-TPGB110304F	●																6.35	3.18	0.4	3.4
	3NU-TPGB110308F	●																6.35	3.18	0.8	3.4
	3NU-TPGB110304T	●																6.35	3.18	0.4	3.4
	3NU-TPGB110308T	●																6.35	3.18	0.8	3.4
	2NU-VBGW110304																8.61	6.35	3.18	0.4	2.8
	2NU-VBGW110308																8.61	6.35	3.18	0.8	2.8
	2NU-VBGW110304F																8.61	6.35	3.18	0.4	2.8
	2NU-VBGW110308F																8.61	6.35	3.18	0.8	2.8
	2NU-VBGW110304T																8.61	6.35	3.18	0.4	2.8
	2NU-VBGW110308T																8.61	6.35	3.18	0.8	2.8
	2NU-VBGW160404		●	●				●									8.61	9.525	4.76	0.4	4.4
	2NU-VBGW160408		●	●													8.61	9.525	4.76	0.8	4.4
	2NU-VBGW160404F		●														8.61	9.525	4.76	0.4	4.4
	2NU-VBGW160408F		●														8.61	9.525	4.76	0.8	4.4
	2NU-VBGW160404T		●														8.61	9.525	4.76	0.4	4.4
	2NU-VBGW160408T		●														8.61	9.525	4.76	0.8	4.4
	2NU-VCGW160404		●	●													8.61	9.525	4.76	0.4	4.4
	2NU-VCGW160408		●	●													8.61	9.525	4.76	0.8	4.4
	2NU-VCGW160404F		●														8.61	9.525	4.76	0.4	4.4
	2NU-VCGW160408F		●														8.61	9.525	4.76	0.8	4.4
	2NU-VCGW160404T		●														8.61	9.525	4.76	0.4	4.4
	2NU-VCGW160408T		●														8.61	9.525	4.76	0.8	4.4
	T-2NU-VCGW160408																8.61	9.525	4.76	0.8	4.4

※ - W : Wiper type ※ T - Designation consists of 10 units. ● : Stock

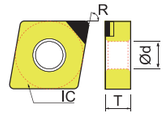
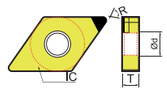
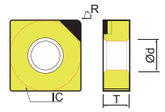
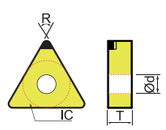
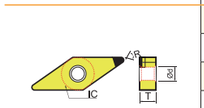
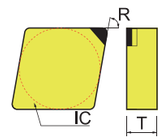
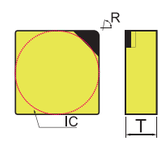
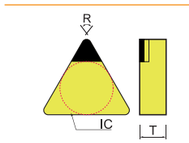
Geomethy	Designation	Coating material				Non-coating material										weight	Measurement (mm)			
		DNC100	DNC250	DNC350	DNC400	KB1000	KB2000	KB320	KB335	KB350	KB360	KB370	KB400	KB410	KB420	KB425		IC(Inscribed circle)	T(Thickness)	R(Nose R)	Ød (Hole size)
	NU-CNMA120404							●									9.89	12.7	4.76	0.4	5.16
	NU-CNMA120408							●			●			●	●		9.89	12.7	4.76	0.8	5.16
	NU-CNMA120412							●									9.89	12.7	4.76	1.2	5.16
	NU-DNMA150404							●									12.88	12.7	4.76	0.4	5.16
	NU-DNMA150408							●									12.88	12.7	4.76	0.8	5.16
	NU-DNMA150412																12.88	12.7	4.76	1.2	5.16
	NU-DNMA150604T														●		12.88	12.7	6.35	0.4	5.16
	NU-DNMA150608							●									12.88	12.7	6.35	0.8	5.16
	NU-SNMA120404																9.88	12.7	4.76	0.4	5.16
	NU-SNMA120408																9.88	12.7	4.76	0.8	5.16
	NU-SNMA120412																9.88	12.7	4.76	1.2	5.16
	NU-TNMA160404																7.19	9.525	4.76	0.4	3.81
	NU-TNMA160408							●									7.19	9.525	4.76	0.8	3.81
	NU-TNMA160412																7.19	9.525	4.76	1.2	3.81
	NU-VNMA160404							●									10.18	9.525	4.76	0.4	3.81
	NU-VNMA160408																10.18	9.525	4.76	0.8	3.81
	NU-VNMA160412																10.18	9.525	4.76	1.2	3.81
	NU-CCMW060202							●									10.18	6.35	2.38	0.2	2.8
	NU-CCMW060204							●									10.18	6.35	2.38	0.4	2.8
	NU-CCMW060208																10.18	6.35	2.38	0.8	2.8
	NU-CCMW09T302																4.62	9.525	3.97	0.2	4.4
	NU-CCMW09T304							●						●			4.62	9.525	3.97	0.4	4.4
	NU-CCMW09T308							●						●			4.62	9.525	3.97	0.8	4.4
	NU-CCGW060202							●										6.35	2.38	0.2	2.8
	NU-CCGW060204							●										6.35	2.38	0.4	2.8
	NU-CPMB080204																	7.94	2.38	0.4	3.4
	NU-CPMB080208																	7.94	2.38	0.8	3.4
	NU-CPMB090304																	9.525	3.18	0.4	4.4
	NU-CPMB090308																	9.525	3.18	0.8	4.4
	NU-DCMW070202							●							●			6.35	2.38	0.2	2.38
	NU-DCMW070204							●							●			6.35	2.38	0.4	2.38
	NU-DCMW070208																4.99	6.35	2.38	0.8	2.38
	NU-DCMW11T302							●									4.99	9.525	3.97	0.2	4.4
	NU-DCMW11T304							●							●		4.99	9.525	3.97	0.4	4.4
	NU-DCMW11T308							●									4.99	9.525	3.97	0.8	4.4
	NU-DCGW11T304							●										9.525	3.97	0.4	

※ - W : Wiper type ※ T - Designation consists of 10 units. ● : Stock

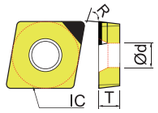
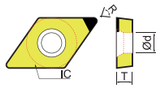
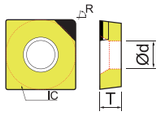
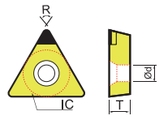
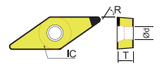
Geomethy	Designation	Coating material				Non-coating material										weight	Measurement (mm)			
		DNC100	DNC250	DNC350	DNC400	KB1000	KB2000	KB320	KB335	KB350	KB360	KB370	KB400	KB410	KB420	KB425		IC(Inscribed circle)	T(Thickness)	R(Nose R)	Ød (Hole size)
	NU-TCGW090204																1.62	5.56	2.38	0.4	2.5
	NU-TCGW090208																1.62	5.56	2.38	0.8	2.5
	NU-TCGW110202																2.3	6.35	2.38	0.2	2.8
	NU-TCGW110204																2.3	6.35	2.38	0.4	2.8
	NU-TCGW110208																2.3	6.35	2.38	0.8	2.8
	NU-TCGW16T304																5.5	9.525	3.97	0.4	4.3
	NU-TCGW16T308																5.5	9.525	3.97	0.8	4.3
	NU-TPGW080202																1.15	7.94	2.38	0.2	2.4
	NU-TPGW080204																1.15	7.94	2.38	0.4	2.4
	NU-TPGW080208																1.15	7.94	2.38	0.8	2.4
	NU-TPGW090204																	5.56	2.38	0.4	2.8
	NU-TPGW090208																	5.56	2.38	0.8	2.8
	NU-TPGW110302																2.3	6.35	3.18	0.2	3.4
	NU-TPGW110304							●									2.3	6.35	3.18	0.4	3.4
	NU-TPGW110308																2.3	6.35	3.18	0.8	3.4
	NU-TPGW160404																	9.525	4.76	0.4	4.4
	NU-TPGW160408																	9.525	4.76	0.8	4.4
	NU-VBMW110202														●			6.35	2.38	0.2	2.8
	NU-VBMW110204																	6.35	2.38	0.4	2.8
	NU-VBMW110302																	6.35	4.76	0.2	2.8
	NU-VBMW110304																	6.35	4.76	0.4	2.8
	NU-VBMW110308																	6.35	4.76	0.8	2.8
	NU-VBMW160402														●		8.91	12.7	4.76	0.2	4.4
	NU-VBMW160404														●		8.91	12.7	4.76	0.4	4.4
	NU-VBMW160408							●							●		8.91	12.7	4.76	0.8	4.4
	NU-VCMW110304																	6.35	3.18	0.4	2.8
	NU-VCMW110308																	6.35	3.18	0.8	2.8
	NU-VCMW160404																	12.7	4.76	0.4	4.4
	NU-VCMW160408																	12.7	4.76	0.8	4.4
	NU-VCMW160412																	12.7	4.76	1.2	4.4
	NU-SPGN090304																	9.525	3.18	0.4	
	NU-SPGN090308																9.99	9.525	3.18	0.8	
	NU-SPGN120304																9.99	12.7	3.18	0.4	
	NU-SPGN120308																9.99	12.7	3.18	0.8	
	NU-SPGN120404																9.99	12.7	3.18	0.4	
	NU-SPGN120408																	12.7	3.18	0.8	
	NU-TPGN110304																2.3	6.35	3.18	0.4	
	NU-TPGN110308																2.3	6.35	3.18	0.8	
	NU-TPGN160304																4.8	9.525	3.18	0.4	
	NU-TPGN160308																4.8	9.525	3.18	0.8	

※ - W : Wiper type ※ T - Designation consists of 10 units. ● : Stock

cBN Series
One-use type (negative/positive)
cBN

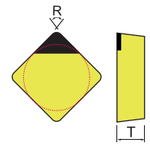
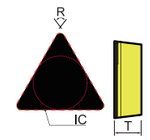
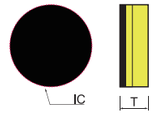
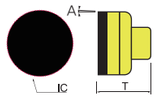
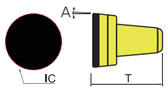
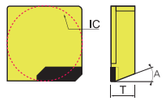
Geomethy	Designation	Coating material				Non-coating material										weight	Measurement (mm)			
		DNC100	DNC250	DNC350	DNC400	KB1000	KB2000	KB320	KB335	KB350	KB360	KB370	KB400	KB410	KB420	KB425		IC(Inscribed circle)	T(Thickness)	R(Nose R)	Ød (Hole size)
	CNMA120404							●									9.89	12.7	4.76	0.4	5.16
	CNMA120404W																9.89	12.7	4.76	0.4	5.16
	CNMA120408							●									9.89	12.7	4.76	0.8	5.16
	T-CNMA120408																9.89	12.7	4.76	0.8	5.16
	CNMA120408W																9.89	12.7	4.76	0.8	5.16
	CNMA120412							●									9.89	12.7	4.76	1.2	5.16
	CNMA120412W																9.89	12.7	4.76	1.2	5.16
	DNMA150404																12.88	12.7	4.76	0.4	5.16
	DNMA150408							●									12.88	12.7	4.76	0.8	5.16
	DNMA150412																12.88	12.7	4.76	1.2	5.16
	SNMA120404																9.88	12.7	4.76	0.4	5.16
	SNMA120408																9.88	12.7	4.76	0.8	5.16
	SNMA120412																9.88	12.7	4.76	1.2	5.16
	TNMA160404																7.19	9.525	4.76	0.4	3.81
	TNMA160408																7.19	9.525	4.76	0.8	3.81
	TNMA160412																7.19	9.525	4.76	1.2	3.81
	TNMA220404																12.95	12.7	4.76	0.4	5.16
	TNMA220408																12.95	12.7	4.76	0.8	5.16
	TNMA220412																12.95	12.7	4.76	1.2	5.16
	VNGA160404															●		9.525	4.76	0.4	3.81
	VNMA160404																10.18	9.525	4.76	0.4	3.81
	T-VNMA160404																10.18	9.525	4.76	0.4	3.81
	VNMA160408																10.18	9.525	4.76	0.8	3.81
	VNMA160412																10.18	9.525	4.76	1.2	3.81
	CNGN090304																	9.525	3.18	0.4	
	CNGN090308																	9.525	3.18	0.8	
	CNGN090312																	9.525	3.18	1.2	
	CNGN120404																	12.7	4.76	0.4	
	CNGN120408																	12.7	4.76	0.8	
	CNGN120412																	12.7	4.76	1.2	
	SNGN090304																	9.525	3.18	0.4	
	SNGN090308																	9.525	3.18	0.8	
	SNGN090312																	9.525	3.18	1.2	
	SNGN120404																	12.7	4.76	0.4	
	SNGN120408																	12.7	4.76	0.8	
	SNGN120412																	12.7	4.76	1.2	
	TNGN160404																	9.525	4.76	0.4	
	TNGN160408																	9.525	4.76	0.8	
	TNGN160412																	9.525	4.76	1.2	

※ - W : Wiper type ※ T - Designation consists of 10 units. ● : Stock

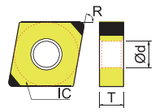
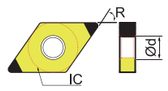
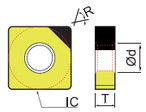
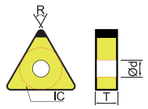
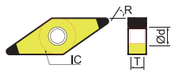
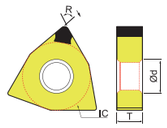
Geomethy	Designation	Coating material				Non-coating material										weight	Measurement (mm)			
		DNC100	DNC250	DNC350	DNC400	KB1000	KB2000	KB320	KB335	KB350	KB360	KB370	KB400	KB410	KB420	KB425		IC(Inscribed circle)	T(Thickness)	R(Nose R)	Ød (Hole size)
	CCMW09T304																4.51	4.5	9.525	3.97	4.4
	CCMW09T308							●									4.51	4.5	9.525	3.97	4.4
	CPGB080204																	4.5	7.94	2.38	3.4
	CPGB080208																	4.5	7.94	2.38	3.4
	CPGB090304																	4.5	9.525	3.18	4.4
	CPGB090308																	4.5	9.525	3.18	4.4
	CPGB090312																	4.4	9.525	3.18	4.4
	CPGW080204																	4.5	7.94	2.38	4.4
	CPGW080208																	4.5	7.94	2.38	4.4
	DCMW070204																1.28	6.35	2.38	0.4	4.4
	DCMW070208																1.28	6.35	2.38	0.8	4.4
	DCMW070212																1.28	6.35	2.38	1.2	4.4
	DCMW11T304							●									4.82	9.525	3.97	0.4	4.4
	DCMW11T308																4.82	9.525	3.97	0.8	4.4
	DCMW11T312																4.82	9.525	3.97	1.2	4.4
	DCGW11T304																4.82	9.525	3.97	0.4	4.4
	T-DCGW11T304																4.82	9.525	3.97	0.4	4.4
	DCGW11T308																4.82	9.525	3.97	0.8	4.4
	T-DCGW11T308																4.82	9.525	3.97	0.8	4.4
	SCMW09T304																	9.525	3.97	0.4	4.4
	SCMW09T308																	9.525	3.97	0.8	4.4
	SCMW09T312																	9.525	3.97	1.2	4.4
	TCGW110204																	6.35	2.38	0.4	2.8
	TCGW110208																	6.35	2.38	0.8	2.8
	TCGW16T304																	9.525	3.97	0.4	4.3
	TCGW16T308																	9.525	3.97	0.8	4.3
	TCGW16T312																	9.525	3.97	1.2	4.3
	VBMW110204																	6.35	2.38	0.4	2.8
	VBMW110208																	6.35	2.38	0.8	2.8
	VBMW110304																	6.35	3.18	0.4	2.8
	VBMW110308																	6.35	3.18	0.8	2.8
	VBMW160404							●									8.61	9.525	4.76	0.4	4.4
	VBMW160408							●									8.61	9.525	4.76	0.8	4.4
	VBMW160412																8.61	9.525	4.76	1.2	4.4
	VCMW160404																8.61	9.525	4.76	0.4	4.4
	VCMW160408																8.61	9.525	4.76	0.8	4.4
	VCMW160412																8.61	9.525	4.76	1.2	4.4

※ - W : Wiper type ※ T - Designation consists of 10 units. ● : Stock

cBN Series
Regrinding Type (Negative / Positive)

Geomethy	Designation	Coating material				Non-coating material										weight	Measurement (mm)			
		DNC100	DNC250	DNC350	DNC400	KB1000	KB2000	KB320	KB335	KB350	KB360	KB370	KB400	KB410	KB420	KB425		IC(Inscribed circle)	T(Thickness)	R(Nose R)	Ød (Hole size)
	SPGN090304																	9.525	3.18	0.4	
	SPGN090308																	9.525	3.18	0.8	
	SPGN090312																	9.525	3.18	1.2	
	SPGN120304																9.99	12.7	3.18	0.4	
	SPGN120308																9.99	12.7	3.18	0.8	
	SPGN120312																9.99	12.7	3.18	1.2	
	TBGN060102-B																	3.97	1.59	0.2	
	TBGN060104-B																	3.97	1.59	0.4	
	TBGN060108-B																	3.97	1.59	0.8	
	TPGN110304																	6.35	3.18	0.4	
	TPGN110308																	6.35	3.18	0.8	
	TPGN110312																	6.35	3.18	1.2	
	TPGN160304																4.8	9.525	3.18	0.4	
	TPGN160308																4.8	9.525	3.18	0.8	
	TPGN160312																4.8	9.525	3.18	1.2	
	RNGN060300-B																	12.7	4.76		
	RNGN090300-B																	6.35	3.18		
	RNGN120400-B																	9.525	3.18		
	RBG08-B																	8	6.5		
	RBG10-B																	10	9		
	RBG12-B																	12	11		
	RBG16-B																	16	13		
	RBG20-B																	23	15		
	RBG26-B																	26	15		
	RCGA0906MO																	9	6.4		
	RTGN0508MO																	5	7.5		
	RTGN0608MO																	6	7.5		
	RTGN0711MO																	7	11		
	RTGN0811MO																	8	11		
	RTGN0914MO																	9	14		
	RTGN1014MO																	10	14		
	RTGN1214MO																	12	14		
	SNEN1504ADTR																	15.875	4.76		
	SNEN1504ADTL																	15.875	4.76		
	SNEN1504DTR-W																	15.875	4.76		
	SNEN1504DTL -W																	15.875	4.76		

※ - W : Wiper type ※ T - Designation consists of 10 units. ● : Stock

Geomethy	Designation	Coating material				Non-coating material										weight	Measurement (mm)			
		DNC100	DNC250	DNC350	DNC400	KB1000	KB2000	KB320	KB335	KB350	KB360	KB370	KB400	KB410	KB420	KB425		IC(Inscribed circle)	T(Thickness)	R(Nose R)	Ød (Hole size)
	2NS-CNGA120408				●													12.7	4.76	0.8	5.16
	2NS-DNGA150408				●													12.7	4.76	0.8	5.16
	2NS-SNGA120408				●													12.7	4.76	0.8	5.16
	2NS-TNGA160408				●													9.525	4.76	0.8	3.81
	2NS-VNGA160408				●													9.525	4.76	0.8	3.81
	2NS-WNGA080408				●													12.7	4.76	0.8	5.16

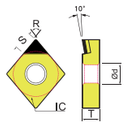
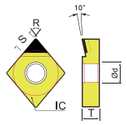
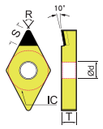
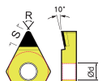
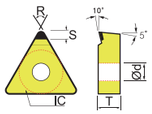
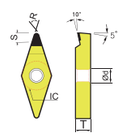
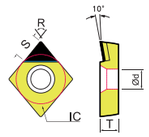
※ - W : Wiper type ※ T - Designation consists of 10 units. ● : Stock

Type	Designation	Grade	Measurement (mm)			
		KB350	Whole length	Shank diameter	Shank width	Nose R
	BNBB 03R		60	3.0	2.4	0.2
	BNBB 035R		60	3.5	2.9	0.2
	BNBB 04R		60	4.0	3.4	0.2
	BNBB 045R		60	4.5	3.9	0.2
	BNBB 05R		80	5.0	4.4	0.2
	BNBB 055R		80	5.5	4.9	0.2
	BNBB 06R		80	6.0	5.4	0.2
	BNBB 065R		80	6.5	5.9	0.2
	BNBB 07R		100	7.0	6.4	0.2
	BNBB 075R		100	7.5	6.9	0.2
	BNBB 08R		100	8.0	7.4	0.2

cBN Series

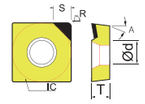
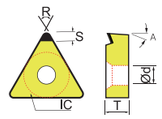
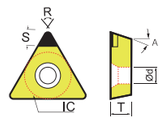
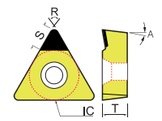
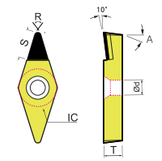
Geomethy	Designation	Grade			Measurement (mm)					Application holer
		KB320	KB335	KB420	Blade thickness	Blade length	Nose R	Whole length	Whole thickness	
	BNGNT0200L				2.0	4.0	0.2	25	6.0	BNGGL 2525-200
	BNGNT0200R				2.0	4.0	0.2	25	6.0	BNGGR 2525-200
	BNGNT0250L				2.5	4.0	0.2	25	6.0	BNGGL 2525-250
	BNGNT0250R				2.5	4.0	0.2	25	6.0	BNGGR 2525-250
	BNGNT0300L				3.0	5.0	0.4	25	6.0	BNGGL 2525-300
	BNGNT0300R				3.0	5.0	0.4	25	6.0	BNGGR 2525-300
	BNGNT0400L				4.0	6.0	0.4	26	6.0	BNGGL 2525-400
	BNGNT0400R				4.0	6.0	0.4	26	6.0	BNGGR 2525-400
	BNGNT0500L				5.0	6.0	0.4	26	6.0	BNGGL 2525-500
	BNGNT0500R				5.0	6.0	0.4	26	6.0	BNGGR 2525-500
	BNGNT0600L				6.0	7.0	0.4	27	6.0	BNGGL 2525-600
	BNGNT0600R				6.0	7.0	0.4	27	6.0	BNGGR 2525-600
	BNTT1020L				Pitch 0.039~0.079		0.13	25	2.0	BNGGL 2525-TT
	BNTT1020R				Pitch 0.039~0.079		0.13	25	2.0	BNGGR 2525-TT
	BNTT1530L				Pitch 0.059~0.118		0.13	25	2.0	BNGGL 2525-TT
	BNTT1530R				Pitch 0.059~0.118		0.13	25	2.0	BNGGR 2525-TT

※ - W : Wiper type ※ T - Designation consists of 10 units. ● : Stock

Geomethy	Designation	Grade			g	Measurement (mm)			
		DP90	DP150	DP200		IC (Inscribed circle)	T (Thickness)	R (Nose R)	Ød (Hole size)
	CNMM120404		●			12.7	4.76	0.4	5.16
	CNMM120408		●			12.7	4.76	0.8	5.16
	CNMM120412					12.7	4.76	1.2	5.16
	CNMX120404					12.7	4.76	0.4	5.16
	CNMX120408					12.7	4.76	0.8	5.16
	CNMX120412					12.7	4.76	1.2	5.16
	DNMM150404		●			12.7	4.76	0.4	5.16
	DNMM150408		●			12.7	4.76	0.8	5.16
	DNMM150412					12.7	4.76	1.2	5.16
	DNMX150404					12.7	4.76	0.4	5.16
	DNMX150408					12.7	4.76	0.8	5.16
	DNMX150412					12.7	4.76	1.2	5.16
	TNMX160404					9.525	4.76	0.4	3.81
	TNMX160408					9.525	4.76	0.8	3.81
	TNMX160412					9.525	4.76	1.2	3.81
	VNMX160404					9.525	4.76	0.4	3.81
	VNMX160408					9.525	4.76	0.8	3.81
	VNMX160412					9.525	4.76	1.2	3.81
	CCMT060202		●			6.35	2.38	0.2	3.81
	CCMT060204		●			6.35	2.38	0.4	3.81
	CCMT060208					6.35	2.38	0.8	3.81
	CCMT09T304		●			9.525	3.97	0.4	4.40
	CCMT09T308		●			9.525	3.97	0.8	4.40
	CCMT09T312					9.525	3.97	1.2	4.40
	CPMT080204					7.94	2.38	0.4	3.4
	CPMT080208					7.94	2.38	0.8	3.4
	CPMT080212					7.94	2.38	1.2	3.4
	CPMT090304					9.525	3.18	0.4	4.40
	CPMT090308					9.525	3.18	0.8	4.40
	CPMT090312					9.525	3.18	1.2	4.40
	CPMT080204					7.94	2.38	0.4	3.40
	CPMT080208					7.94	2.38	0.8	3.40
	CPMT080212					7.94	2.38	1.2	3.40

● : Stock ○ : Fade out item

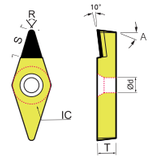
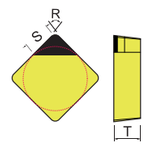
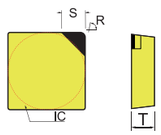
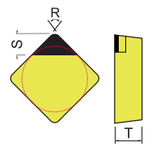
PCD Series
insert (Negative/Positive)
PCD

Geomethy	Designation	Grade			g	Measurement (mm)			
		DP90	DP150	DP200		IC (Inscribed circle)	T (Thickness)	R (Nose R)	Ød (Hole size)
	DCMT070202		●			6.35	2.38	0.2	2.80
	DCMT070204		●			6.35	2.38	0.4	2.80
	DCMT070208					6.35	2.38	0.8	2.80
	DCMT11T302					9.525	3.97	0.2	4.40
	DCMT11T304		●			9.525	3.97	0.4	4.40
	DCMT11T308		●			9.525	3.97	0.8	4.40
	TCMT090201					5.56	2.38	0.1	2.50
	TCMT090202					5.56	2.38	0.2	2.50
	TCMT090204					5.56	2.38	0.4	2.50
	TCMT110201					6.35	2.38	0.1	2.80
	TCMT110202					6.35	2.38	0.2	2.80
	TCMT110204					6.35	2.38	0.4	2.80
	TBGW060102					3.97	1.59	0.2	2.80
	TBGW060104					3.97	1.59	0.4	2.80
	TPGB080204					6.35	2.38	0.4	2.40
	TPGB080208					6.35	2.38	0.8	2.40
	TPGB090204					5.56	2.38	0.4	2.50
	TPGB090208					5.56	2.38	0.8	2.50
	TPGB110304					6.35	3.18	0.4	3.40
	TPGB110308					6.35	3.18	0.8	3.40
	TPGW080202					6.35	2.38	0.2	2.40
	TPGW080204					6.35	2.38	0.4	2.40
	TPGW090204		●			5.56	2.38	0.4	2.5
	TPGW090208		●			5.56	2.38	0.8	2.5
	TPGW110302					6.35	3.18	0.2	3.40
	TPGW110304		●			6.35	3.18	0.4	3.40
	TPGW110308		●			6.35	3.18	0.8	3.40
	TPGW160404					9.525	4.76	0.4	3.81
	TPGW160408					9.525	4.76	0.8	3.81
	TPGT110302					6.35	3.18	0.2	3.40
	TPGT110304					6.35	3.18	0.4	3.40
						6.35	3.18		3.40
	VBMT110302					6.35	3.18	0.2	3.40
	VBMT110304		●			6.35	3.18	0.4	3.40
	VBMT110308		●			6.35	3.18	0.8	3.40
	VCMT110302					6.35	3.18	0.2	3.40
	VCMT110304		●			6.35	3.18	0.4	3.40
	VCMT110308		●			6.35	3.18	0.8	3.40
	VBMT160402					9.525	4.76	0.2	4.40
	VBMT160404		●			9.525	4.76	0.4	4.40
	VBMT160408		●			9.525	4.76	0.8	4.40
	VBMT160412		●			9.525	4.76	1.2	4.40
	VCMT160402					9.525	4.76	0.2	4.40

● : Stock ○ : Fade out item

PCD Series
insert (Negative/Positive)

PCD

Geomethy	Designation	Grade			g	Measurement (mm)			
		DP90	DP150	DP200		IC (Inscribed circle)	T (Thickness)	R (Nose R)	Ød (Hole size)
	VCMT160404		●			9.525	4.76	0.4	4.40
	VCMT160408		●			9.525	4.76	0.8	4.40
	VCMT160412					9.525	4.76	1.2	4.40
	TPGN090204					5.56	2.38	0.4	-
	TPGN090208					5.56	2.38	0.8	-
	TPGN110302					6.35	3.18	0.2	-
	TPGN110304		●			6.35	3.18	0.4	-
	TPGN110308		●			6.35	3.18	0.8	-
	TPGN160302					9.525	3.18	0.2	-
	TPGN160304					9.525	3.18	0.4	-
	TPGN160308					9.525	3.18	0.8	-
	SPGN090304		●			9.525	3.18	0.4	-
	SPGN090308					9.525	3.18	0.8	-
	SPGN120304					12.7	3.18	0.4	-
	SPGN120308					12.7	3.18	0.8	-
	SCMT09T304					9.525	3.97	0.4	4.4
	SCMT09T308					9.525	3.97	0.8	4.4
	SCMT09T312					9.525	3.97	1.2	4.4
	SCMT090302					9.525	3.18	0.2	4.4
	SCMT090304					9.525	3.18	0.4	4.4
	SCMT090308					9.525	3.18	0.8	4.4

● : Stock ○ : Fade out item

OTHER





TOOL MASTER ---------- 206
HT HEIGHT TOUCH SETTER --------- 208
DOP DINE OPTICAL EDGE FINDER --- 208
DZH DINE Z AXIAL HEIGHT GAUGE -- 209
DZP Dine Z Axial Setting Height Gauge 209
SC SPINDLE CLEANER ---------- 210
KCP ---------- 210
TB ---------- 211
BLANK TOOL (BLK) --------- 211
TAPER SIZE ---------- 212
POSITIONING BLOCK ------- 220

TOOL MASTER QUADRA



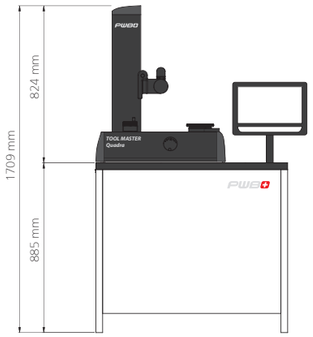
Features

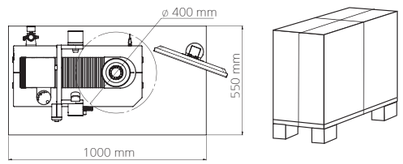
- Fast and precise measuring in high quality
- Optimised setup times and machine downtime
- Cost-saving
- Increased tool life
- Manufactured with branded components
- Intuitive software and ergonomic hardware
- Economical
- Worldwide online-support
- Quality “Made in Switzerland”

TECHNICAL DATA

Type	Pneumatic clamping, practical design and ease of use
Measuring range Standard.(ø mm / l mm) Max. (ø mm / L mm)	 400 / 40 .... 400 400 / 40 600
Axis xation	**Pneumatics**
Fine adjustment	Handwheel per axis
Tool mounting	**Needle bearings or KV spindle with rotation clamp and vacuum feeder**
Measuring procedure	Image processing with EyeRay® Hawk or Buzzard

EASY PACK





The base is designed such that the device is packaged and shipped in it saving space, reducing cost and environmentally friendly.
TOOL MASTER Quadra incl. base structure
L,W,H 118 x 70 x 151 cm ~ 200 kg in wooden crate

TOOL MASTER BASIC



Features

- Excellent quality-price ratio
- Measuring in high quality
- Manufactured with branded components
- Intuitive software and ergonomic hardware
- Economical
- Worldwide online-support
- Quality “Made in Switzerland”

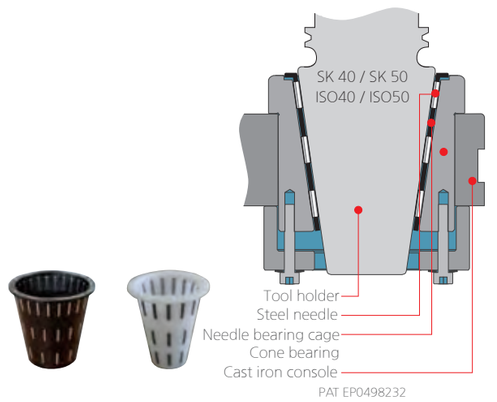
TECHNICAL DATA

Type	Pneumatic clamping, practical design and ease of use
Measuring range Standard.(ø mm / L mm)	400 / 40 400
Axis xation	**Pneumatics**
Fine adjustment	Handwheel per axis
Tool mounting	**Needle bearings or KV spindle with rotation clamp and vacuum feeder**
Measuring procedure	Image processing with EyeRay® Hawk

PWB NEEDLE BEARINGS

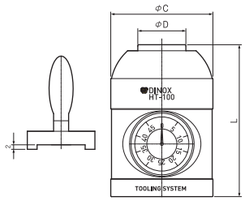
FOR HIGHEST REPEATABILITY

- Protection against damage of the ground cone
- Lower surface pressure than ball-bearings, thus less wear
- Higher centring forces than when using surface contact
- Oil and dirt remain in the cavities and have no infuence on the measuring accuracy
- Integrated edge protection when changing tools
- Easy to clean
- No maintenance costs



HT HEIGHT TOUCH SETTER





Designation	ØD	ØC	L
HT - 100	32	68	100

Features

- End tool height gauge
- Position accuracy : ±0.003mm

DZH DINE Z AXIAL HEIGHT GAUGE





Designation	HEIGHT	G.W.WEIGHT KGS	LxWxH/UNIT:mm
DZH-50	50.00±0.005mm	1.2kgs	50X63X63

Features

- Cutter height gauge
- Height : 50.00±0.005mm
- Easy control
- Magnetic attachment

DOP DINE OPTICAL EDGE FINDER



Designation	G.W.WEIGHT KGS	ACCURACY	LxWxH/UNIT:mm
DOP-20B	0.3kgs	±0.005	158X20X10

Features

- Araming when contact

DZP DINE Z AXIAL SETTING HEIGHT GAUGE





Designation	HEIGHT	G.W.WEIGHT KGS	LxWxH/UNIT:mm
DZP-100	±0.005	0.73kgs	100X50X50

Features

- Cutter height gauge
- Height : 50.00±0.005mm
- Easy control
- Magnetic attachment

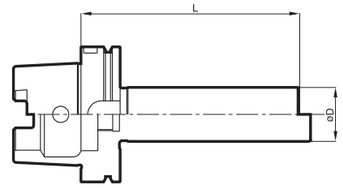
SC SPINDLE CLEANER



Designation	Taper	Weight
SC - BT30	BT30	0.08kg
SC - BT40	BT40	0.1kg
SC - BT50	BT50	0.2kg
SC - HSK50	HSK50	0.12kg
SC - HSK63	HSK63	0.13kg
SC - HSK100	HSK100	0.7kg

TB
Test bar

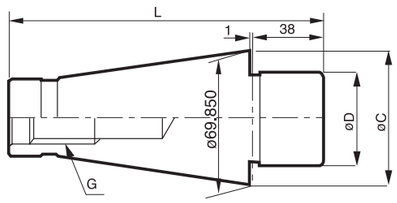




Designation	ØD	L
HSK63A-TB40-300	40	300
BTN30-TB30-200	30	200
BTN40-TB50-300	50	300
BTN50-TB50-300	50	300

KCP

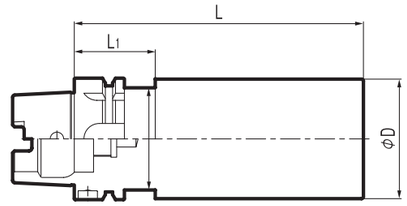




Designation	Taper	ØD	ØD	ØC	L	G
NTN 50 - KCP60	NT50	200(Over 8")	60	69.55	164.00	M24

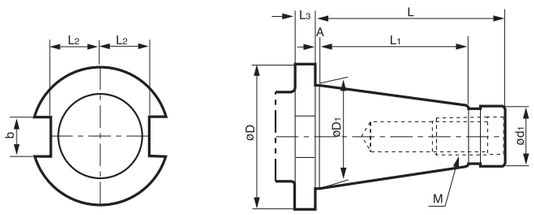
BLANK TOOL (BLK)





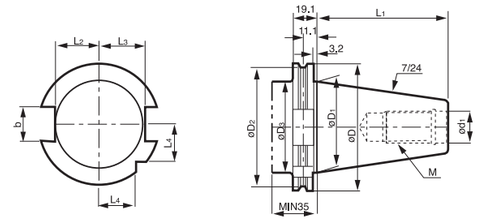
Designation	ØD	ØC	L	L1
HSK40A-BLK42-180	42	34	180	35
HSK50A-BLK52- 200	52	42	200	42
HSK63A-BLK63-150	63	52	150	42
HSK63A-BLK63-250	63	52	250	42
HSK63A-BLK82- 200	82	52	200	42
HSK100A-BLK102-150	102	85	150	45
HSK100A-BLK102-250	102	85	250	45
HSK100A-BLK126-200	126	85	200	45
BT30-BLK48-180	48	44	180	30
BT40-BLK63-150	63	61	150	35
BT40-BLK63-250	63	61	250	35
BT40-BLK82-200	82	61	200	35
BT50-BLK102-150	102	98	150	48
BT50-BLK102-250	102	98	250	48
BT50-BLK126-200	126	98	200	48

DIN 2080, JIS B 6101, ISO 297 : 1988(E)



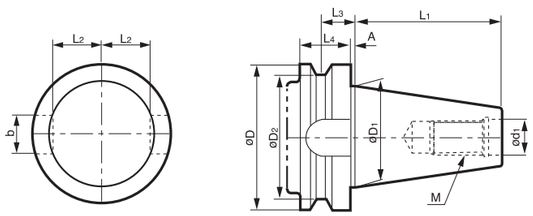
TAPER	ØD	ØD1	Ød1	L	L1	L2	L3	A	b	M
NT30	46	31.75	17.4	68.4	48.4	16.2	10	1.6	16.1	UNC 1/2-13
NT40	63	44.45	25.3	93.4	65.4	22.5	10	1.6	16.1	UNC 5/8 -11
NT50	100	69.85	39.6	126.8	101.8	35.3	14	3.2	25.7	UNC 1 - 8
NT60	155	107.95	60.2	206.8	161.8	60	15	3.2	25.7	UNC 1,1/4 -7

DIN 69871-1 A/B, ISO 7388/1 : 1983(E)



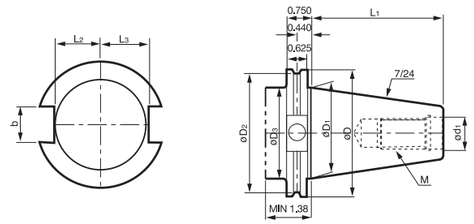
TAPER	ØD	ØD1	ØD2	ØD3	Ød1	L1	L2	L3	L4	b	M
SK30	50	31.75	44.3	45	13	47.8	16.4	19	15	16.1	M12 x 1.75
SK40	63.55	44.45	56.25	50	17	68.4	22.8	25	18.5	16.1	M16 x 2.0
SK50	97.5	69.85	91.25	80	25	101.75	35.5	37.7	30	25.7	M24 x 3.0

BOTTLE GRIP TAPER MAS403-BT



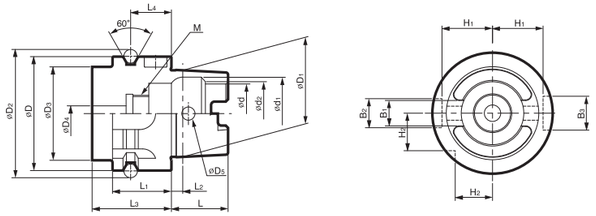
TAPER	ØD	ØD1	ØD2	Ød1	L1	L2	L3	L4	A	b	M
BT30	46	31.75	38	12.5	48.4	16.3	13.6	20	2	16.1	M12 x 1.75
BT40	63	44.45	53	17	65.4	22.6	16.6	25	2	16.1	M16 x 2
BT50	100	69.85	85	25	101.8	35.4	23.2	35	3	25.7	M24 x 3
BT60	155	107.95	135	31	161.8	60.1	28.2	45	3	25.7	M30 x 3.5

CAT SHANK (ANSI/ASME B5.50-1985)



TAPER	ØD	ØD1	ØD2	ØD3	Ød1	L1	L2	L3	b	M
CAT30	1.812	1.250	1.531	1.250	0.516	1.875	0.640	0.735	0.645	UNC 0.500-13
CAT40	2.500	1.750	2.219	1.750	0.641	2.687	0.890	0.985	0.645	UNC 0.625-11
CAT50	3.875	2.750	3.594	2.750	1.031	4.000	1.390	1.485	1.020	UNC 1.000-8
CAT60	5.500	4.250	5.219	4.250	1.281	6.375	2.140	2.235	1.020	UNC 1.250-7

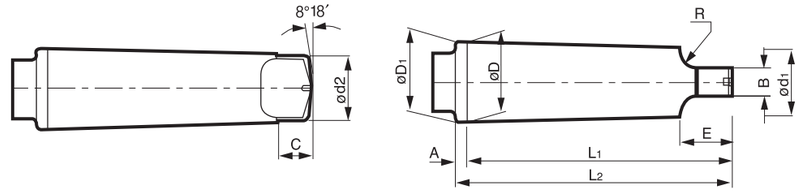
HSK SHANK DIN 69893-1, ISO 12164-1 : 2001



TAPER	ØD	ØD1	ØD3	ØD2	ØD4	ØD5	L	L1	L2	L3	L4
HSK 40A	40	30	34	45	5.0	4.6	20	20	4.0	35	16
HSK 50A	50	38	42	59.3	6.8	6.0	25	26	5.0	42	18
HSK 63A	63	48	53	72.3	8.4	7.5	32	26	6.3	42	18
HSK100A	100	75	88	109.75	12.0	12.0	50	29	10.0	45	20

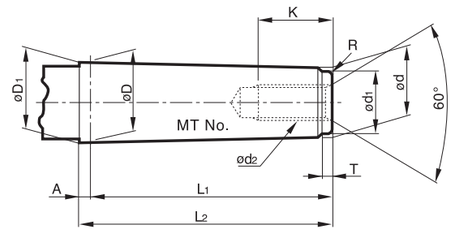
TAPER	Ød	Ød1	Ød2	B1	ØD4	ØD5	H1	H2	M
HSK 40A	21	25.5	23	8.05	11	9	17.0	12.0	M12×1.0
HSK 50A	26	32.0	29	10.54	14	12	21.0	15.5	M16×1.0
HSK 63A	34	40.0	37	12.54	18	16	26.5	20.0	M18×1.0
HSK 100A	53	63.0	58	20.02	22	20	44.0	31.5	M24×1.5

MORSE TAPER (TANG TYPE)



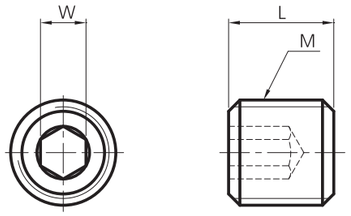
TAPER	Taper	Taper Angle(α)	ØD	A	ØD1	Ød1	L1	L2	Ød2	B	C	E	R	r
MT0	1/19.212	1°29'27"	9.045	3	9.201	6.104	56.5	59.5	6.0	3.9	6.5	10.5	4	1
MT1	1/20.047	1°25'43"	12.065	3.5	12.240	8.972	62.0	65.5	8.7	5.2	8.5	13.5	5	1.2
MT2	1/20.020	1°25'50"	17.780	5	18.030	14.034	75.0	80.0	13.5	6.3	10	16	6	1.6
MT3	1/19.922	1°26'16"	23.825	5	24.076	19.107	94.0	99.0	18.5	7.9	13	20	7	2
MT4	1/19.254	1°29'15"	31.267	6.5	31.605	25.164	117.5	124.0	24.5	11.9	16	24	8	2.5
MT5	1/19.002	1°30'26"	44.399	6.5	44.741	36.531	149.5	156.0	35.7	15.9	19	29	10	3
MT6	1/19.180	1°29'36"	63.348	8	63.765	52.399	210.0	218.0	51.0	19.0	27	40	13	4
MT7	1/19.231	1°29'22"	83.058	10	83.578	68.186	286.0	296.0	66.8	28.6	35	54	19	5

MORSE TAPER(SCREW TYPE)



TAPER	Taper	Taper Angle(α)	ØD	A	ØD1	d	L1	L2	Ød1	d2	K	T	R
MT0	1/19.212	1°29'27"	9.045	3	9.201	6.442	50	53	6.4	-	-	4	0.2
MT1	1/20.047	1°25'43"	12.065	3.5	12.230	9.396	53.5	57	9.4	M6	16	5	0.2
MT2	1/20.020	1°25'50"	17.780	5	18.030	14.583	64	69	14.6	M10	24	5	0.2
MT3	1/19.922	1°26'16"	23.825	5	24.076	19.759	81	86	19.8	M12	28	7	0.6
MT4	1/19.254	1°29'15"	31.267	6.5	31.605	25.943	102.5	109	25.9	M16	32	9	1
MT5	1/19.002	1°30'26"	44.399	6.5	44.741	37.584	129.5	136	37.6	M20	40	9	2.5
MT6	1/19.180	1°29'36"	63.348	8	63.765	53.859	182	190	53.9	M24	50	12	4
MT7	1/19.231	1°29'22"	83.058	10	83.578	70.058	250	260	70.0	M33	80	18.5	5

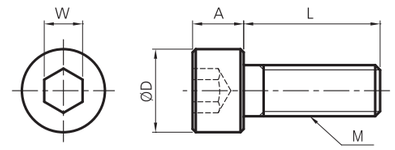
SET SCREW(SQUARE BORING BAR)



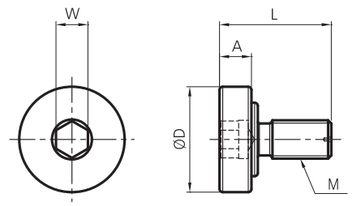
Designation	M	L	W
BTF0505	M5x0.8	5	2.5
BTF0606	M6x10	6	3
BTF0608	M6x1.0	8	3
BTF0808	M8x1.25	8	4
BTF0812	M8x1.25	12	4
BTF1010	M10x1.5	10	5
BTF1012	M10x1.5	12	5
BTF1016	M10x1.5	16	5
BTF1060	M10x1.5	60	5
BTF1212	M12x1.75	12	6
BTF1212-1.5	M12x1.5	12	6
BTF1414-1.5	M14x1.5	14	6
BTF1216	M12x1.75	16	6
BTF1220	M12x1.75	20	6
BTF1225	M12x1.75	25	6
BTF1230	M12x1.75	30	6
BTF1240	M12x1.75	40	6
BTF1616	M16x2.0	16	6
BTF1616-1.5	M16x1.5	16	8
BTF1624-1.5	M16x1.5	24	8
BTF1818-1.5	M18x1.5	18	8
BTF2020	M20x2.5	20	10
BTF2020-1.5	M20x1.5	20	10

SPARE PARTS

CLAMP BOLT(FACE MILL ARBOR)

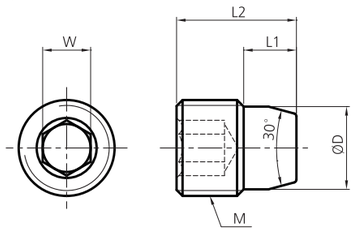


Designation	M	A	L	ØD	W
BX0310	M3x0.5	3	10	5.5	2.5
BX0412	M4x0.7	4	12	7	3
BX0415	M4x0.7	4	15	7	3
BX0515	M5x0.8	5	15	8.5	4
BX0516	M5x0.8	5	16	8.5	4
BX0616	M6x1.0	6	16	10	5
BX0620	M6x1.0	6	20	10	5
BX0625	M6x1.0	6	25	10	5
BX0630	M6x1.0	6	30	10	5
BX0820	M8x1.25	8	20	13	6
BX0825	M8x1.25	8	25	13	6
BX0830	M8x1.25	8	30	13	6
BX1020	M10x1.5	8	20	16	8
BX1030	M10x1.5	8	30	16	8
BX1035	M10x1.5	8	35	16	8
BX1230	M12x1.75	12	30	18	10
BX1235	M12x1.75	12	35	18	10
BX1640	M16x2.0	16	40	24	14
BX1645	M16x2.0	16	45	24	14



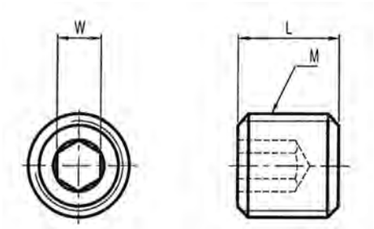
Designation	M	A	L	ØD	W
MBA-M8	M8x1.25	7	26	20	6
MBA-M10	M10x1.5	9	32	28	8
MBA-M12	M12x1.75	10	35	33	10
MBA-M16	M16x2.0	10	50	40	14
MBA-M20	M20x2.5	14	54	50	17
MBA-M24	M24x3.0	14	62	65	19

TAPER SCREW(BASIC HOLDER)



Designation	M	L1	L2	ØD	W
BTT0506F	M5x0.5	2.8	5.5	4.1	2.5
BTT0608F	M6x0.75	3.8	8	4.9	3
BTT0810F	M8x0.75	4.8	10	6.9	4
BTT1013F	M10x1.0	5.75	13	8.5	5
BTT1215F	M12x1.0	6.8	16	10.5	6
BTT1620F	M16x1.5	8.8	20	13.8	8
BTT1626F	M16x1.5	10.75	26	13.8	8
BTT1631F	M16x1.5	10.75	31	13.8	8

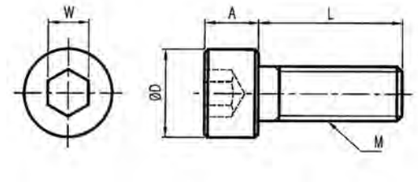
SET SCREW(TBC/FBC)



Designation	M	L1	W
BT0645	M6x1.0	45	3
BT0660	M6x1.0	60	3

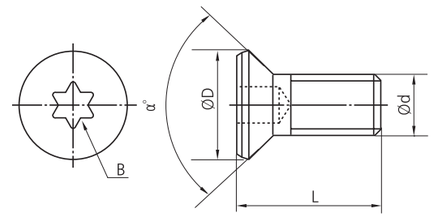
SPARE PARTS

CLAMP BOLT(FBB BITE)



Designation	M	A	L	ØD	W
BXC0304	M3x0.5	2	5	5.5	2
BXC0405	M4x0.7	2.8	6	7	2.5
BXC0506	M5x0.8	3.5	6	8.5	3
BXC0610	M6x1.0	4	10	10	4
BXC0810	M8x1.25	5	10	13	5

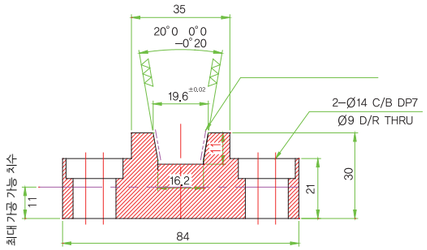
INSERT SCREW

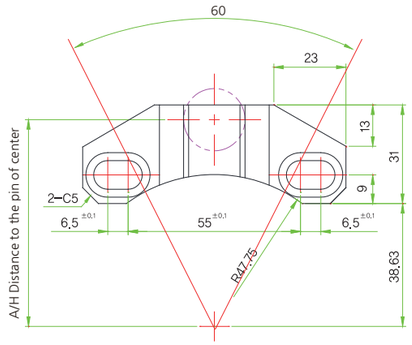


Designation	M	L	ØD	B	α°	(N·m)
BFTX0202A	2×0.4	3.0	2.7	T6	90	0.5
BFTX0204A	2×0.4	4.3	2.7	T6	90	0.5
BFTX0307A	3×0.5	6.8	4.3	T10	90	2.0
BFTX0410A	4×0.7	10.3	5.6	T15	90	3.4
BFTX02506	2.5×0.45	5.5	3.45	T8	60	1.5

POSITIONING BLOCK

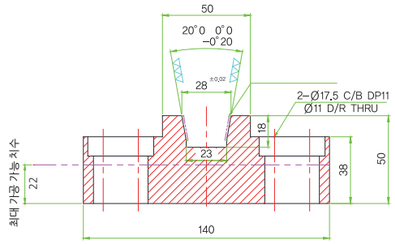
General type-A (60°) - ISO40

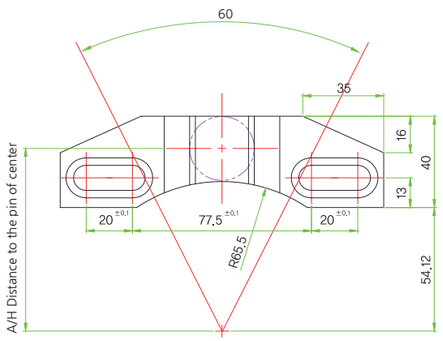




- Min.Height of block : 19mm (from the upside)
- Basic bolt M8, washer required in case of under M6

General type-A (60°) - ISO50





- Min.Height of block : 28mm (from the upside)

INDEX

NUMERAL

○NS-CN□□-○○○○○○	cBN		200
○NS-DN□□-○○○○○○	cBN		200
○NS-TN□□-○○○○○○	cBN		200
○NS-VN□□-○○○○○○	cBN		200
○NS-WN□□-○○○○○○	cBN		200
○NU-CC□□-○○○○○○	cBN		193
○NU-CN□□-○○○○○○	cBN		190
○NU-DC□□-○○○○○○	cBN		193
○NU-DN□□-○○○○○○	cBN		190
○NU-SN□□-○○○○○○	cBN		191
○NU-TC□□-○○○○○○	cBN		193
○NU-TN□□-○○○○○○	cBN		191
○NU-TP□□-○○○○○○	cBN		194
○NU-VB□□-○○○○○○	cBN		194
○NU-VC□□-○○○○○○	cBN		194
○NU-VN□□-○○○○○○	cBN		192

A

ANGULAR HEAD	Features		38

B

BB BITE	SPEC		124
BCF	BT		136
BFTX○○○○A			219
BH	SPEC		129
BKA	BT		130
BKA SPARE PART	SPARE		132
BLANK TOOL (BLK)		BLANK TOOL (BLK)	211
BSA	BT		126
BSA SPARE PART	SPARE		128
BT○○○○		(TBC/FBC)	218
BTF○○○○		(BSA, BKA, FZ, FF, SLA, SMH)	216
BTT○○○○F		(SLA, FF, MD, EXT, RDC)	218
BX○○○○		(FMA, FMC, TBC, FBC, DBC)	217
BXC○○○○		CLAMP BOLT(FBB BITE)	219

C

cBN / PCD	Features	cBN / PCD	46
CC□T○○○○○○	PCD		202
CC□W○○○○○○	cBN		195
CN□□○○○○○○	cBN		197
CN□□○○○○○○	PCD		202
CPM	Features		27
CPM	BT		71
CS/CM	SPEC	2PIECES TYPE	68
CTC○○-○○		(BT/SK)	78

D

DB1000	Features		55
DB2000	Features		56
DBC	BT		120
DBC	HSK		161
DBC	SK		179
DBC SPARE PART	SPARE		121
DBN400	Features		50
DC□T○○○○○○	PCD		203
DC□W○○○○○○	cBN		198
DCJ	Features		28
DCS/DC	SPEC		74
DH2000	Features		25
DHC COLLET	SPEC		62
DHE	Features		29
DHE	BT		60
DHE	HSK		150

INDEX

DHE	SK		164
DHE SPARE PART	SPARE		63
DHE-M○○(ADJ)			63
DHE-M○○(C)			63
DHETW-○			63
DHJ	SPEC		63
DJT	SPEC		75
DN□A○○○○○○	cBN		197
DNC100	Features		54
DNC250	Features		53
DNC350	Features		52
DNC400	Features		51
DOP		DINE OPTICAL EDGE FINDER	208
DSC	Features		24
DSC	BT		64
DSC SPARE PART	SPARE		70
DSC/M	BT	MONO CURVE TYPE	65
DSC/M	ST	MONO MIDDLE TYPE	142
DSC/M	HSK	MONO MIDDLE TYPE	151
DSC/M	SK	MONO MIDDLE TYPE	165
DSC/S	BT	MONO SLIM TYPE	67
DSC/S	ST		143
DSC/S	HSK	MONO TYPE	152
DSC/S	SK	MONO SLIM TYPE	166
DSK	Features		34
DSK	BT		86
DSK SPARE PART	SPARE		92
DSS-○			93
DST	Features		37
DST	BT		98
DST	HSK		157
DST	SK		172
DTN	Features		36
DTN	BT		96
DTN	S		148
DTN	SK		171
DZH		DINE Z AXIAL HEIGHT GAUGE	209
DZP		DINE Z AXIAL SETTING HEIGHT GAUGE	209

E

ER COLLET	SPEC		82
ER COLLET SET	SPEC		83
EXT	SPEC		115

F

FBB	SPEC	FBB Bite	119
FBC	Features		44
FBC/TBC	SK	Balance cut tool for rough boring	178
FBC/TBC	BT		118
FBC/TBC SPARE PART	SPARE		119
FBH(STEEL SHANK)	S		147
FBH/B	Features		42
FBH/B	BT		116
FBH/B	S		146
FBH/B	SK		177
FBH/B SPARE PART	SPARE		117
FF	SPEC		138
FF UNIT SPARE PART	SPARE		139
FMA	BT		102
FMA	NT		184
FMA,FMC SPARE PART	SPARE		104
FMC	BT		103
FMC	HSK		159
FMC	SK		174
FZ UNIT	SPEC		133
FZ UNIT SPARE PART	SPARE		134

INDEX

G

GERC	Features		32
GERC	SPEC		82
GERC COLLET SET	SPEC		83
GN ○○			93
GSK	Features		33
GSK	BT		88
GSK	HSK		155
GSK	SK		169
GSK SPARE PART	SPARE		93

H

HC COLLET	SPEC		90
HPS	Features		31
HPS	BT		80
HPS SPARE PART	SPARE		85
HRAG	Features		41
HRAG	BT		107
HT		HEIGHT TOUCH SETTER	208

I

INSERT		FZ Unit, FF Unit	135

K

KAC	Features		41
KAC	BT		111
KAG	Features		41
KAG	BT		109
KAH	Features		40
KAH	BT		110
KCP		Centering plug	210
KHU	Features		40
KHU	BT		108
KMB	Features		45
KMB	BT		122
KMB	HSK		162
KMB	SK		180
KMB SPARE PART	SPARE		125

M

M○○○C			70
MAH	Features		40
MAH	BT		106
MD	BT		112
MD	HSK		160
MD	SK		175
MTA	SK		176

N

NBA-M○		(FMA, FMC, TBC, FBC, DBC)	217
NEW 3D-TASTER	Features	NEW 3D-TASTER	58
NPM	Features		26
NPM	BT		72
NPM	HSK		153
NPM	SK		167
NPM	NT		182
NPM SET	BT		73
NPM SET	NT		183
NPM SPARE PART	SPARE		76
NPU	BT		94
NPU	HSK		156
NPU	SK		170
NPU SPARE PART	SPARE		94
NTSS		NEW TOOL SETTING STAND	209

INDEX

O

OFH	Features		35

P

PULL STUD BOLT	SPEC		140

R

RDC	SPEC		115
ROT	Features		57
RTJW	Features		30

S

SAH	Features		39
SC		SPINDLE CLEANER	210
SDC	BT		78
SDC	S		144
SDC	HSK		154
SDC	SK		168
SDC SPARE PART	SPARE		84
SDC/S	S		145
SLA	BT		100
SLA	HSK		158
SLA	SK		173
SLA SPARE PART	SPARE		101
SLK	BT	2PIECES TYPE	69
SMB	Features		45
SMB	BT		122
SMB	HSK		162
SMB	SK		180
SMB SPARE PART	SPARE		125
SMH	Features		45
SMH	BT		122
SMH	HSK		162
SMH	SK		180
SMH SET	SPEC		123
SMH SPARE PART	SPARE		125
SN□□○○○○○○	cBN		197
SP□□○○○○○○	PCD		199

T

T-○NU-CN□□-○○○○○○	cBN		190
TB		Test bar	211
TBC	Features		43
TC	SPEC		75
TCA	SPEC		97
T-CN□□○○○○○○	cBN		197
TER	SPEC		99
TN□□○○○○○○	cBN		197
TTOOL MASTER BASIC			207
TOOL MASTER QUADRA			206
TP□B○○○○○○	cBN		194
TP□N○○○○○○	PCD		204
TP□W○○○○○○	PCD		203
T-VN□□○○○○○○	cBN		197

V

VB□T○○○○○○	PCD		203
VB□W○○○○○○	cBN		148
VC□□○○○○○○	PCD		204
VN□□○○○○○○	cBN		197