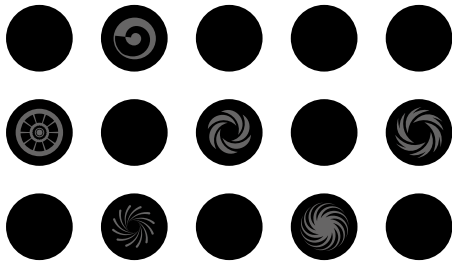


2 0 2 0 - 2 0 2 1
DINOX
NC TOOLING SYSTEM





CONTENTS

Catalog layout guide

- 04** Global Networks
- 06** DINE Products
- 08** DINE History
- 10** Application
- 12** DINOX Map
- 14** Master Index
- 22** Catalog Manual
- 23** Chuck
- 113** Arbor Modular
- 133** Boring tool
- 197** Angular head
- 217** cBN/PCD
- 265** Smart factory
- 281** TAUMAX
- 293** Other
- 310** ABC Index





We will be the leading global company
with the best technical skills

DINE Inc. makes a better world with its technologies and quality in addition to customer confidence.

By supplying our customers with high-quality products, we contribute to the development of the automobile, electronics, machinery, and plant industries. Furthermore, we make every effort to demonstrate the excellence of Korean cutting tools to the world by exporting our superior-quality cutting tools overseas.



Achieved ISO quality management system certification

KS Q ISO 9001:2009 / ISO 9001:2008

SBC certifies that the above company's environmental management system meets the requirements of the system standards and certification scope below.



Achieved ISO environmental management system certification

KS I ISO 14001:2009 / ISO 14001:2004

SBC certifies that the above company's management system meets the requirements of the standards and certification scope below.

We have manufactured high-quality T/H products using high-precision equipment and advanced CAM software.

T/H

cBN

We have manufactured cBN and PCD tools essential for machining automobiles, airplanes, and ships, etc.

T/S

We have also manufactured MCT (Machining Center) tools and T/S (Tooling System).



Homepage



Facebook

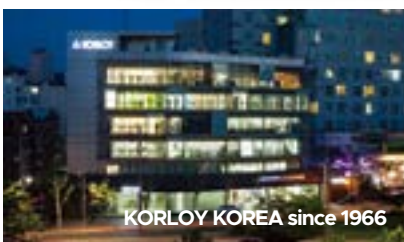
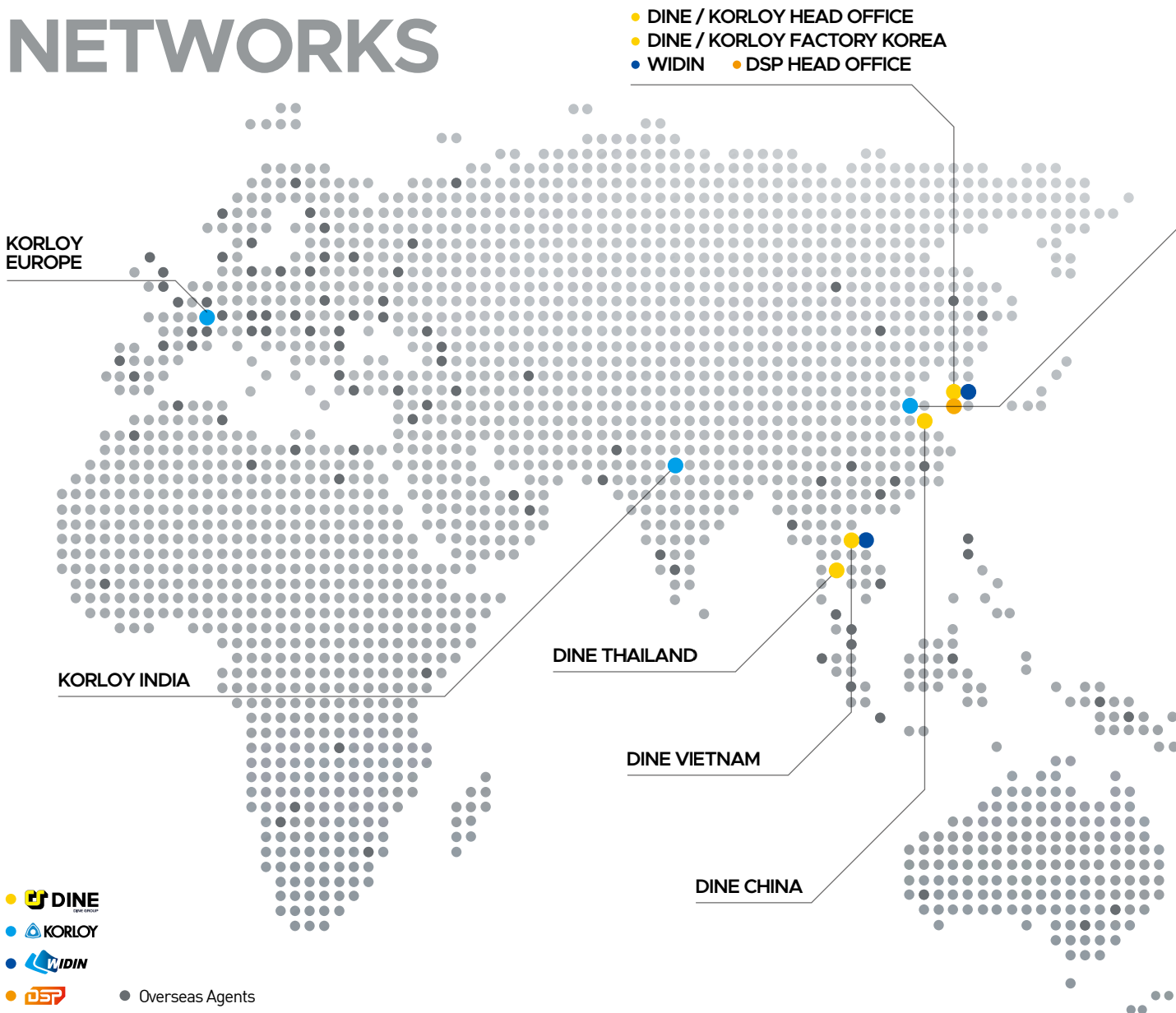


YouTube



KakaoTalk Plus

DINE GROUP GLOBAL NETWORKS



- DINE FACTORY QINGDAO
- KORLOY FACTORY QINGDAO

WIDIN AMERICA

KORLOY AMERICA

KOREA NETWORKS

KORLOY BRASIL

- DSP Head Office
- DINE Inc. Head Office (MTV)
- Jungbu Branch
- Daegu Branch
- Nambu Branch
- Nambu Support Center SMART FACTORY
- WIDIN Head Office
- KOROLY Head Office
- Gyeonggin Branch
- KOROLY Jincheon Factory



DINE PRODUCTS

Chuck 

Boring tool 

IT Solution 

Angular head 

Arbor 

PCD 



TAUMAX 



| | | | |
|----|----|----|---------------|
| | 01 | 06 | DINE PRODUCTS |
| 02 | 03 | 09 | |
| | 05 | | |
| 04 | 07 | 08 | |

01 Chuck

Chuck products such as milling chucks, hydraulic expansion chucks, shrinking chucks, collet chucks, and tapping chucks, etc. that available for high-speed and high-precision machining with strong clamping force and perfect balanced boring

02 Boring tool

Structurally stable boring products that boast of wide boring range such as wide diameter boring machining and that enable high-quality mass production using ultrahigh-speed boring

03 IT Solution

High-precision cutting tools for brushes and floating holder products that can machine high-precision data communication equipment such as smart phones and tablet PCs, etc.

04 Arbor

Various types of tool holder products such as cutters, indexable end mills, indexable drills, tool holders, and boring bars

05 Angular head

Angular heads that can create an effect of two machines with one through diverse machining angles and stable operation

06 TAUMAX

Lower-priced entry-level product brands including all kinds of machine parts, machine tools, and peripheral industrial goods released by DINE Inc. to find a new market

07 PCD

Products that show excellent surface roughness and machining accuracy due to their very high hardness and outstanding wear resistance

08 cBN

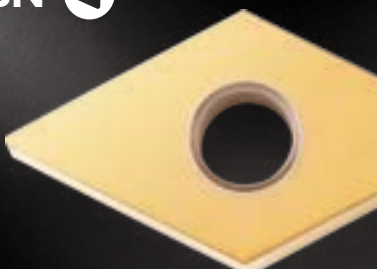
Optimal products for productivity improvement through excellent processing of cast iron and heat-treated steel due to their strength and resistance

09 Smart factory

Products based on the 4th Industrial Revolution that can enhance productivity, quality, and customer satisfaction, etc. by creating new value and applying information communications technologies to the entire process such as total tool system (MDM Software System) and collaborative robots, etc.

Smart factory 

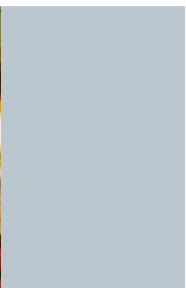
cBN 



DINE HISTORY



- 1975. 07 Founded Hanju Trading Company (sale of imported Cemented carbide alloy cutting tools)
- 1988. 07 Converted into a corporation and renamed DINE, Inc., Im Sang-jin inaugurated
- 1989. 02 Produced holders and locator, started OEM supply to Korloy
- 1990. 04 The manufacturing technology of NC Tooling System was introduced from Kyoritsu Seiki (Japan); Made a contract (for 5 years); Approved by the Commerce-Industry
- 1994. 08 Ministry Signed a contract for introducing the manufacturing technology of cBN cutting tools with Sumitomo in Japan
- 1995. 12 TOOLING SYSTEM factory was transferred (Sihwa Industrial Complex own factory move-in)
- 1997. 03 cBN/PCD factory was transferred (Sihwa Industrial Complex)
- 1997. 09 Started the localization of the integral angular head of Kyoritsu Seiki (Japan)
- 1998. 11 The head office was transferred (1257-4, Jeongwang-dong, Siheung-si, Gyeonggi-do (Sihwa Industrial Complex 2-da 705))
- 1999. 08 Changed company name to DINE after the merger of (Dine, Inc., Dine Co., Ltd., Ilshin Industry, Presto Co., Ltd.)
- 2000. 02 Designated as IBK Family Enterprise (IBK : outstanding enterprise)
- 2001. 07 Achieved ISO 9001 : 2000 certification (SMB Certification Center)
- 2001. 11 Awarded the 3 Million Dollar Export Tower Prize on the 38th Trade Day
- 2003. 03 Applied for a patent on milling chuck with tightening precision improved (application no. 10-2003-0015317) Awarded the 5 Million Dollar Export Tower Prize on the 41st Trade Day
- 2004. 11 Awarded the 5 Million Dollar Export Tower Prize on the 41st Trade Day
- 2006. 01 Opened the second Sihwa factory
- 2006. 04 Selected as a company qualified for SMB learning organization business (HRD Korea)
- 2006. 06 Established DINE China, Inc. (DCI)
- 2006. 10 Established DINE Tool R&D Center; Approved by KOITA
- 2006. 11 Awarded the 10 Million Dollar Export Tower Prize on the 43rd Trade Day
- 2006. 12 Designated as a technology-innovation SMB (INNO-BIZ) by the SMBA
- 2007. 01 Opened the knowledge management system "Dian[다이안]"
- 2007. 04 KIPO No.10-0713805 "Milling chuck with a strong structure preventing foreign substance penetration"
- 2007. 06 Opened a call center
- 2007. 08 Selected as a Gyeonggi-do promising SMB (for 5 years)
- 2007. 10 Established a manufacturing corporation in China
- 2007. 12 Received a presidential citation on the 7th Machinist Day (Chairman Yoon Hye-seop)
- 2008. 07 Broke ground for the manufacturing corporation in China
Achieved zero hazard goal twofold
- 2008. 10 Achieved zero hazard goal threefold
- 2008. 12 Awarded the 20 Million Dollar Export Tower Prize on the 45th Trade Day /
Awarded the 3rd Gyeonggi SMB Prize - export field
- 2009. 12 Signed an MOU with the Qingdao Bonded Area / Held the completion ceremony for the manufacturing corporation in China
- 2010. 02 Applied for a patent on the tool holder mounting system (application no. 10-2010-0012422)
- 2010. 03 Built WEB ERP (enterprise resource planning)
- 2010. 06 System Signed a function promotion agreement (HRD Korea)
- 2010. 07 Awarded the 8th Siheung-si Woman Prize (Chairman Yoon Hye-seop) - economy field



- 2010. 09 Selected as an outstanding enterprise for human resource development (Best HRD)
- 2010. 11 Productivity management system (PMS) was confirmed / Awarded IBK Export Tower - Stone Tower / Designated as a management-innovation SMB (MAIN-BIZ) by the SMBA
- 2011. 03 Awarded "Trader prize of this month who has brought glory to Korea" - Chairman Yoon Hye-seop
- 2011. 05 "National team member agreement for the 41st UK International Vocational Training Competition"
- 2011. 08 KIPO No.10-1060687 Cutting tool module of a machine tool using the dual pitch screw method
- 2011. 09 ISO 14001 certification
- 2011. 11 Zero hazard goal achievement threefold certification (Head office), Zero hazard goal achievement threefold certification (Factory)
- 2011. 12 Awarded the 30 Million Dollar Export Tower Prize on the 48th Trade Day
- 2012. 04 Achieved Excellent Green Biz certification (SMBA) - grade A
- 2012. 05 Selected as an enterprise qualified for Korean-style hidden champion promotion (Export-Import Bank of Korea)
- 2012. 08 Signed a rehabilitation social contribution project agreement (Siheung City Hall)
- 2013. 03 Received a citation from the Minister of Knowledge Economy on the 40th Day of Commerce and Industry : Yoon Hye-seop
Received a citation from the Chairman of Fair Trade Commission on the 12th Day of Fair Trade : Yoon Hye-seop
- 2013. 04 Established FTA SYSTEM
- 2013. 07 Obtained country of origin certification & exporter certification
- 2013. 08 Awarded Siheung City 1% welfare foundation sponsor company citation by Siheung Mayor
- 2013. 12 Acquired DSP Tooling (DSP)
- 2014. 06 Established the standard cost operation system
- 2014. 12 Opened the Incheon Logistics Center (DIW)
- 2015. 07 Head office and factory were integrated and transferred - Siheung Smart Hub MTV Industrial Complex
- 2015. 12 Introduced and established an automatic warehouse system / established small tool production system for the IT industry Newly established Busan branch
- 2016. 01 established Busan branch
- 2016. 04 Held the completion ceremony for the Sihwa Smart Hub MTV new factory
- 2016. 07 Awarded a presidential medal on the 2nd Day of Enterprise of Middle Standing (Chairman Yoon Hye-seop)
- 2016. 11 Awarded the Creation Technology Prize in the autumn symposium by KSMTE (Chairman Yoon Hye-seop)
- 2016. 12 Awarded the 50 Million Dollar Export Tower Prize on the 55th Trade Day (Achieved 100 billion won of annual sales)
- 2017. 01 Launched TAUMAX second brand; started to sell products
- 2017. 02 Opened Vietnam branch (DVC)
- 2017. 03 Started the solar energy generation project
- 2017. 04 Selected as a 2017 small hidden champion (MOEL)
- 2018. 01 Newly established Robot Division
- 2018. 06 Celebrated Company's 30th anniversary
- 2018. 08 Opened Nambu Branch (Ulsan/Changwon/Busan integrated)
- 2018. 10 Acquired WIDIN Co., Ltd.
- 2019. 11 Opened Thailand Branch (DTC)
- 2019. 11 Opened DINE SMART FACTORY Nambu Support Center



TOOL APPLICATION

NC TOTAL TOOLING SYSTEM

GSK

Milling, Drilling, Reaming, Chamfering

OFH

Deburring

DBC

Rough Boring

DHE

Milling, Drilling
Reaming

SAH

Drilling

FBH/B

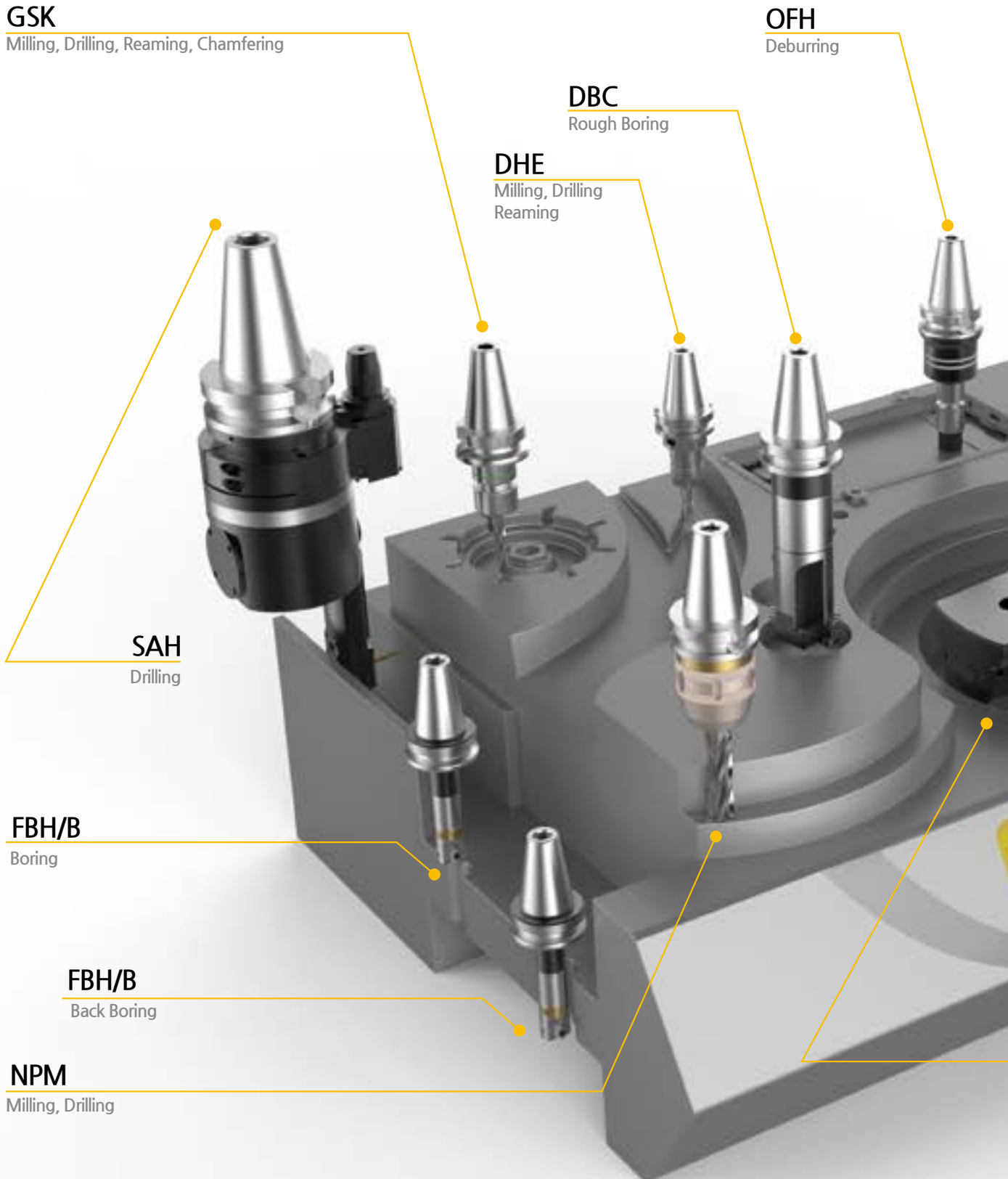
Boring

FBH/B

Back Boring

NPM

Milling, Drilling





CHUCK



C

DHE/S NEW
Slim hydraulic expansion chuck

24p



C

DHE
Hydraulic expansion chuck

27p



C

DZC
Zero fit collet

34p



C

DSC
Shrinking chuck

36p



C

NPM
New power milling chuck

52p



C

DCJ
DINE Jetcoolant collet

54p



C

DCL NEW
Lock collet for milling chuck

62p



C

SDC/P
Precision collet chuck for multi purpose machining

68p



C

GERC
GERC collet

75p



C

ER COLLET
ER collet

80p



C

ER/L NEW
Lock collet for ER collet chuck

84p



C

RTJW
Jet coolant disk

86p

- C** Internal coolant system installed.
- C** Internal coolant system **is optional**.
- C** **This product does not support** the internal coolant system.



C

DSK
Slim type collet chuck

88p



C

GSK
Great speed slim type collet chuck

92p



C

HC collet
HC slim collet

98p



C

NPU
Drill chuck

100p



C

DTN
Tapping holder

102p



C

TCA
Tap adapter

105p



C

DST
High speed synchro tapping chuck

106p



C

TER
TER collet
ER tap collet

109p



C

OFH
Floating holder for brush

110p



C

SLA
Side lock arbor

114p



C

MTA
Morse taper arbor

118p



C

FMA
Face mill arbor

119p

ARBOR/MODULAR

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



C

FMC
Face mill arbor

122p



C

MD
Modular arbor

126p



C

EXT
Extension bar

130p



C

RDC
Reducer bar

130p



C

FBH/B
FBH Back boring & balanced type

134p



C

DBCA NEW
New balance cut tool

144p

BORING TOOL



C

DBC
Balance cut tool (Rough boring)

154p



C

TBCA NEW
Wide diameter boring system

160p



C

TBC
Balance cut tool for Rough boring

166p



C

FBC
Balance cut tool for Fine boring

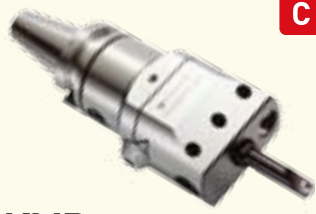
171p



C

SMB
Small micro boring bar

176p















C

KMB
Micro boring

178p

- C** Internal coolant system installed.
- C** Internal coolant system **is optional**.
- C** **This product does not support** the internal coolant system.

| | | |
|--|--|--|
|  <p>SMH Small micro boring bar (precision type)</p> <p>180p</p> |  <p>BB BITE BB bite (for SMB, SMH, KMB)</p> <p>184p</p> |  <p>BH Square boring bite for BSA</p> <p>185p</p> |
|  <p>BSA Square boring bar</p> <p>186p</p> |  <p>BKA FZ micro boring bar</p> <p>188p</p> |  <p>FZ UNIT FZ unit inclined mounting type</p> <p>190p</p> |
|  <p>BCF Micro boring bar</p> <p>192p</p> |  <p>SAH Slim angular head</p> <p>201p</p> |  <p>MAH MAH for mold(0°-90°) Rigidity-reinforced angular head</p> <p>202p</p> |
|  <p>KHU KHU Collet type angular head (0°-90°)</p> <p>204p</p> |  <p>HRAG HRAG(90° fixed) Rigidity-reinforced angular head</p> <p>206p</p> |  <p>KAG Attachment type KAG</p> <p>208p</p> |

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER

ANGULAR HEAD

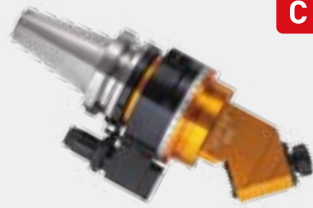


C

KAH

Modular type KAH(90° type)
Fixed angle-type angular head

210p



C

KAC

Modular type KAC(45° type)
Fixed angle-type angular head

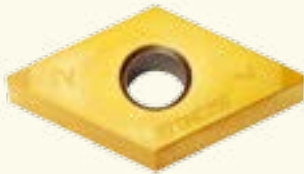
212p



DNC100

Coating cBN

240p



DNC250

Coating cBN

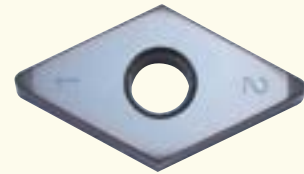
241p



DNC300 NEW

Coating cBN

242p



DNC350

Coating cBN

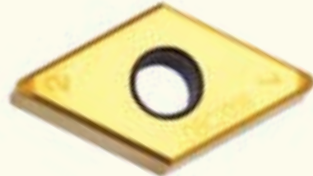
243p



DNC400

Solid type Coating cBN

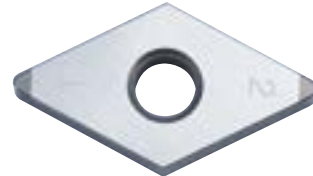
244p



RA, GA Chipbreaker

cBN chipbreaker
Chip breaker

245p



DB1000

Non coating cBN

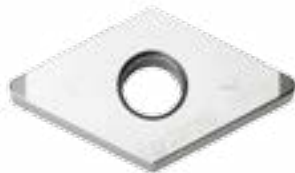
246p



DB2000

Non coating cBN

247p



DB7000

Non coating cBN

248p















DB7500

Non coating cBN

249p

- C** Internal coolant system installed.
- C** Internal coolant system **is optional**.
- C** **This product does not support** the internal coolant system.

| | | |
|--|---|--|
|  <p>UC Chipbreaker New PCD insert chipbreaker</p> <p>262p</p> |  <p>MDM MDM software system</p> <p>268p</p> |  <p>M SERIES M series collaborative robot</p> <p>270p</p> |
|  <p>A SERIES A series collaborative robot</p> <p>270p</p> |  <p>TOOL MASTER LITE Tool master lite</p> <p>275p</p> |  <p>TOOL MASTER BASIC Tool master basic</p> <p>276p</p> |
|  <p>TOOL MASTER QUADRA Tool master quadra</p> <p>277p</p> |  <p>PVT MC POWER VISE PVT Powered Vise</p> <p>282p</p> |  <p>MVT MC MACHINE VISE MVT</p> <p>285p</p> |
|  <p>TAPER CLEANER Taper cleaner</p> <p>286p</p> |  <p>MH-200 MH-200 Shrink fit</p> <p>287p</p> |  <p>CLEAN-TEC FAN Clean-tec fan</p> <p>288p</p> |

SMART FACTORY

Chuck

Arbor / Modular

Boring tool

Angular head

TAUMAX

cBN/PCD

Smart factory

TAUMAX

OTHER



C

MICRO ADJUSTING CART RIDGE

Precision micro adjusting cartridge

289p



PULLSTUD BOLT WRENCH

Pullstud bolt wrench

289p



TOOL CLAMP NEW

Tool clamp

290p



MAGNETIC NEW BASE

Magnetic base

291p



DIGITAL 3D NEW TASTER

Digital 3d taster

294p



3D TASTER 2007

3D taster 2007

294p

OTHER



HT

Height touch setter

295p



DOP

DINE Optical edge finder
Optical edge finder

295p



DZH

DINE Z axial height gauge

296p



DZP

DINE Z axial setting height gauge

296p



DZOP

DINE Z axial P reset gauge

297p



HDG

Hydraulic expansion chuck gauge

297p

- C** Internal coolant system installed.
- C** Internal coolant system **is optional**.
- C** **This product does not support** the internal coolant system.



ROT
Run-out tester

298p



NTSS
New tool setting stand

299p



Pull stud bolt
Pull stud bolt

308p

| | | |
|--|--|--|
| | | |
| | | |
| | | |
| | | |

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD










Smart factory

TAUMAX





OTHER

Significant pictogram description

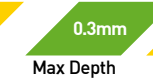





Common pictogram

| | | | | | |
|--|-----------------------------|---|------------------------|---|--|
|  G6.3 G value | Rotational durability value |  Ø25 Max Dia | Max. end mill diameter |  C Coolant System | Internal coolant system installed. |
|  15,000 Max RPM | Allowable rotation value |  130 MIN Range | Min. boring diameter |  C Coolant System | Internal coolant system is optional. |
|  5µm Run-out | Vibration tolerance |  535 MAX Range | Max. boring diameter |  C Coolant System | This product does not support the internal coolant system. |

ISO Shank specifications

| | |
|---|---|
|  MAS 403-BT Shank | MAS403 specifications BT shank. |
|  DIN 69893-1 Shank | ISO 12164-1 : 2001 specifications HSK shank. |
|  DIN 69871 -1A/B Shank | ISO 7388/1 : 1983(E) specifications SK shank. |
|  DIN 2080 JIS B 6101 Shank | ISO 297 : 1988(E) specifications NT shank. |

Insert

| | | |
|--|--|---|
|  0.3mm Max Depth |  Coating Max. cutting depth |  Non-Coating Non-coating insert |
|  K Cast iron |  H Heat-treated steel |  Sintering parts Sintered parts |

Recommended machining grade

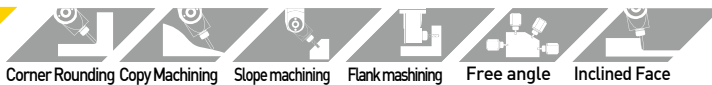
Intermittent cutting intensity

| | | | |
|--|--|---|--|
|  Continuous |  Low interrupted |  Medium interrupted |  Heavy interrupted |
|--|--|---|--|

Recommended Machining Works by products



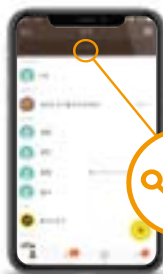
Angular head machining



Contact us as KakaoTalk



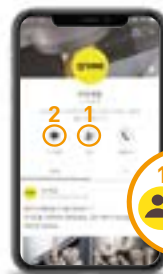
Run Kakao Talk



Click Find Friends



Search for "Dine Inc."



Start "1:1 Chatting" after adding friends



Make an inquiry



Chuck

DINOX NC TOOLING SYSTEM

CHUCK

| | |
|---|-----|
| DHE/S | 24 |
| DHE | 27 |
| DHC Collet (general type & waterproof type) | 32 |
| DHJ Collet (jet coolant) | 33 |
| DZC | 34 |
| DSC | 36 |
| NPM | 52 |
| DCJ | 54 |
| DCL | 62 |
| SDC/P | 68 |
| GERC | 75 |
| ER COLLET | 80 |
| ER/L | 84 |
| RTJW | 86 |
| DSK | 88 |
| GSK | 92 |
| HC COLLET | 98 |
| NPU | 100 |
| DTN | 102 |
| TCA | 105 |
| DST PAT. | 106 |
| TER | 109 |
| OFH | 110 |



DHE/S

Slim hydraulic expansion chuck



Features

- Optimized chuck for machining that requires high-quality surface roughness and accuracy
- Suitable for challenging mold and automotive parts machining that involves complicated shapes and a lot of interferences
- Ideal for metal impeller machining, which requires deep penetration
- Enables easy tool connection without any additional connecting device
- Easy to perform fine boring operations (0.02-0.2mm)
- Application scope: milling, drilling, reaming

| | | | | | |
|--------|-------------|---------------------------|-----------|----------|------------|
| NAMING | BT30 | DHE | 8 | S | 115 |
| | Spindle | Hydraulic Expansion Chuck | Tool Dia. | Slim | Length |

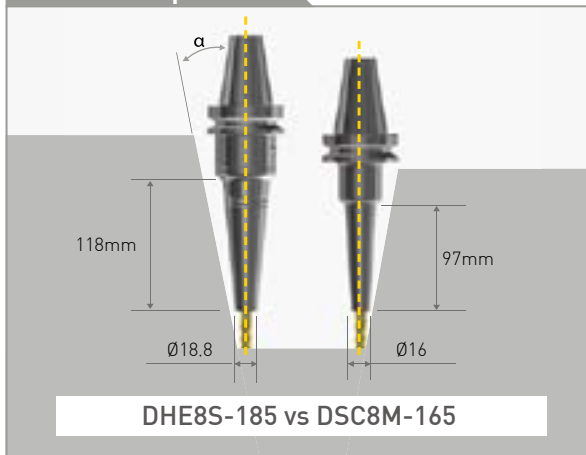


Recommended Machining Works



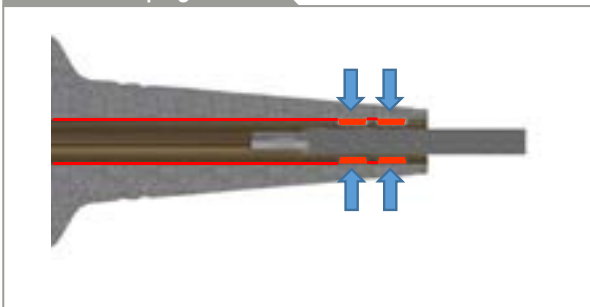
- Optimized for machining that requires high precision
- Enables challenging narrow and deep machining
- Products that require fine boring operations

Product Comparison



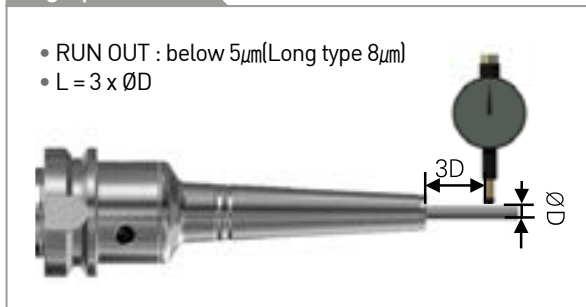
- Length and thickness are the same as those of DSC/M TYPE (if the tool projection length is 40mm, difference of α = around 2°)
- Longer gauge line and higher rigidity (versus the DSC/M TYPE)
- Ideal for mold machining due to its 3-degree taper shape

Stable Clamping force



- Maintains high clamping force and good accuracy by holding the tool at two points

High-precision

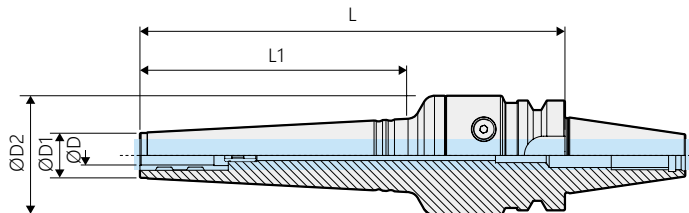


- RUN OUT : below $5\mu\text{m}$ (Long type $8\mu\text{m}$)
- $L = 3 \times \text{ØD}$



BT-DHE/S

Slim hydraulic expansion chuck



- For more information on the related parts, see **26p**
- For more information on product features, see **24p**

| | Model No. | ØD | ØD1 | ØD2 | L | L1 | RPM | Run-out (Based on 3D) | Kg | Package weight (Kg) |
|-----------------|-----------------|------|------|-----|-----|--------|--------|--------------------------|-----|------------------------|
| BT30 | BT30-DHE6S-115 | 6 | 16.8 | 50 | 115 | 50 | 25,000 | 5 µm | 1.1 | 1.2 |
| | BT30-DHE6S-180 | | | 50 | 180 | 115 | 25,000 | 8 µm | 1.4 | 1.5 |
| | BT30-DHE8S-115 | 8 | 18.8 | 50 | 115 | 50 | 25,000 | 5 µm | 1.1 | 1.2 |
| | BT30-DHE8S-180 | | | 50 | 180 | 115 | 25,000 | 8 µm | 1.4 | 1.6 |
| | BT30-DHE10S-120 | 10 | 20.8 | 50 | 120 | 55 | 25,000 | 5 µm | 1.4 | 1.5 |
| | BT30-DHE10S-180 | | | 50 | 180 | 115 | 25,000 | 8 µm | 1.9 | 2.0 |
| BT30-DHE12S-130 | 12 | 22.8 | 50 | 130 | 65 | 25,000 | 5 µm | 1.2 | 1.3 | |
| BT30-DHE12S-180 | | | 50 | 180 | 115 | 25,000 | 8 µm | 1.6 | 1.7 | |
| BT40 | BT40-DHE6S-120 | 6 | 16.8 | 50 | 120 | 50 | 15,000 | 5 µm | 1.7 | 1.8 |
| | BT40-DHE6S-185 | | | 50 | 185 | 115 | 15,000 | 8 µm | 2.0 | 2.2 |
| | BT40-DHE8S-120 | 8 | 18.8 | 50 | 120 | 50 | 15,000 | 5 µm | 2.0 | 2.1 |
| | BT40-DHE8S-185 | | | 50 | 185 | 115 | 15,000 | 8 µm | 2.0 | 2.2 |
| | BT40-DHE10S-125 | 10 | 20.8 | 50 | 125 | 55 | 15,000 | 5 µm | 1.6 | 1.7 |
| | BT40-DHE10S-185 | | | 50 | 185 | 115 | 15,000 | 8 µm | 2.0 | 2.2 |
| | BT40-DHE12S-135 | 12 | 22.8 | 50 | 135 | 65 | 15,000 | 5 µm | 1.8 | 1.9 |
| | BT40-DHE12S-185 | | | 50 | 185 | 115 | 15,000 | 8 µm | 2.2 | 2.3 |

C Internal coolant system installed.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

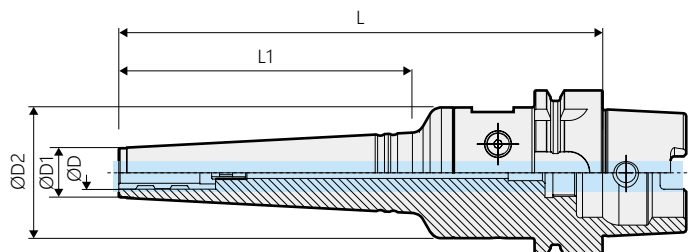
TAUMAX

OTHER



HSK-DHE/S

Slim hydraulic expansion chuck



- For more information on the related parts, see **26p**
- For more information on product features, see **24p**

| Model No. | ØD | ØD1 | ØD2 | L | L1 | RPM | Run-out (Based on 3D) | Kg | Package weight (Kg) |
|-----------|----|------|-----|-----|-----|--------|--------------------------|-----|------------------------|
| HSK63A | 6 | 16.8 | 50 | 120 | 50 | 10,000 | 5 µm | 1.4 | 1.6 |
| | | | | 185 | 115 | | 8 µm | 1.7 | 1.9 |
| | 8 | 18.8 | | 120 | 50 | | 5 µm | 1.4 | 1.7 |
| | | | | 185 | 115 | | 8 µm | 1.8 | 2.0 |
| | 10 | 20.8 | | 125 | 55 | | 5 µm | 1.5 | 1.7 |
| | | | | 185 | 115 | | 8 µm | 1.8 | 2.0 |
| | 12 | 22.8 | | 135 | 65 | | 5 µm | 1.8 | 1.9 |
| | | | | 185 | 115 | | 8 µm | 1.8 | 2.1 |

C Internal coolant system installed.



DHE/S SPARE PART

Slim hydraulic expansion chuck related parts

| Spare Part | | Main component | | | |
|----------------|--------------------|----------------|---------|----------------|---------------|
| Type | Clamp bolt | Wrench | Type | Adjust screw | |
| Model No. | Images | | | Images | |
| | Model No. | | | Model No. | |
| BT30 | DHE/S 6, 8, 10, 12 | BTF1010 | DHETW-5 | DHE/S 6, 8, 10 | DHE-M5 (ADJ) |
| BT40 HSK63A | DHE/S 6, 8, 10, 12 | BTF1010 | | DHE/S 12 | DHE-M10 (ADJ) |



DHE

Hydraulic expansion chuck



Features

- Ideal for machining on molds, automotive parts, and precision parts due to its high precision machining operations
- Improves machining surface roughness due to the effective vibration resistance of its hydraulic seal
- Reduces replacement time and operator fatigue because the tool is removable using a T-wrench
- Tool clamping range: $\varnothing 6\text{--}\varnothing 32$

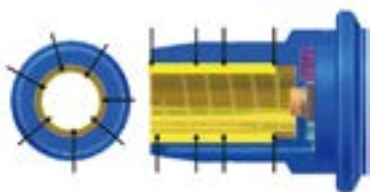
| | | | | | | | |
|--------|-------------|---|---------------------------|---|-----------|---|------------|
| NAMING | BT40 | — | DHE | — | 20 | — | 140 |
| | Spindle | | Hydraulic Expansion Chuck | | Tool Dia. | | Length |

Product Features

Its high precision not only increases the tool life of a cutting tool by reducing the wear of the tool but also improves machining surface roughness with the effect of vibration reduction by its hydraulic seal.

Completely closed inside construction (durability)

- The completely closed system of its inner diameter prevents dust, cutting oil, lubricant, and chips, etc. from penetrating it.
- Maintains clamping force and precision for a long time



| SHANK | Grade | Max.RPM |
|---------------------|-------|---------|
| BT50, SK50, HSK100A | G6.3 | 8,000 |
| BT40, SK40, HSK63A | G6.3 | 10,000 |
| BT30, SK30, HSK50A | G6.3 | 15,000 |



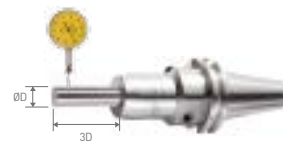
C Internal coolant system installed by default.

C Internal coolant system is optional. (HSK Shank)



High precision

- RUN OUT : below $5\mu\text{m}$
- $L = 3 \times \varnothing D$
- Shank : tolerance of $\varnothing D: h6$



Removal availability by using T-wrench tool

- Clamping / unclamping structure that only requires simple operation (convenience)
 - : Reduces operator fatigue
 - : Enhances the operation rate of equipment



Stable clamping force

Provides clamping force by fixing the space of the holder and tool with hydraulic pressure



Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



BT-DHE

Hydraulic expansion chuck



Fig.1

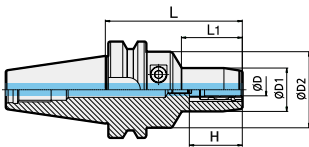


Fig.2

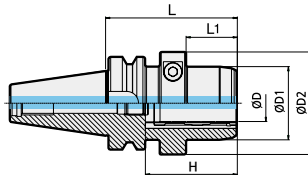


Fig.3

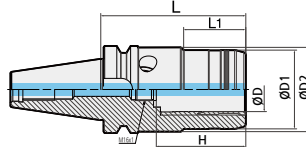
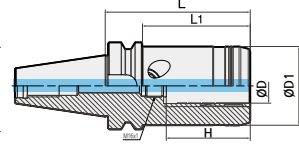


Fig.4



• H : Depth of tool insertion (Min. ~ Max.)

• For more information on product features, see **27p**

• For more information on the related parts, see **33p**

| | Model No. | ØD | L | ØD1 | ØD2 | L1 | H | ADJ | Fig. | Kg | Package weight (Kg) |
|----------------|----------------|-----|-----|-----|-----|-------|---------|-----|------|-----|---------------------|
| BT30 | BT30-DHE6-65 | 6 | 65 | 29 | 46 | 33 | 30~39.8 | M5 | 1 | 0.7 | 0.8 |
| | BT30-DHE8-65 | 8 | 65 | 31 | 46 | 33 | 30~39.8 | M5 | 1 | 0.7 | 0.8 |
| | BT30-DHE10-65 | 10 | 65 | 32 | 46 | 34 | 35~44.8 | M5 | 1 | 0.7 | 0.8 |
| | BT30-DHE12-70 | 12 | 70 | 35 | 46 | 34 | 41~50.8 | M5 | 1 | 0.8 | 0.8 |
| | BT30-DHE14-90 | 14 | 90 | 36 | 46 | 40 | 43~52.8 | M5 | 1 | 1.0 | 1.1 |
| | BT30-DHE16-90 | 16 | 90 | 40 | 46 | 45 | 46~55.8 | M5 | 1 | 1.0 | 1.1 |
| | BT30-DHE18-90 | 18 | 90 | 42 | 46 | 40 | 49~58.8 | M5 | 1 | 1.1 | 1.2 |
| | BT30-DHE20-90 | 20 | 90 | 44 | 46 | 45 | 49~58.8 | M5 | 1 | 1.1 | 1.2 |
| BT40 | BT40-DHE6-90 | 6 | 90 | 29 | 50 | 40 | 30~39.8 | M5 | 1 | 1.4 | 1.6 |
| | BT40-DHE6-140 | 6 | 140 | 29 | 50 | 40 | 30~39.8 | M5 | 1 | 2.2 | 2.5 |
| | BT40-DHE8-90 | 8 | 90 | 31 | 50 | 40 | 30~39.8 | M5 | 1 | 1.4 | 1.6 |
| | BT40-DHE8-140 | 8 | 140 | 31 | 50 | 40 | 30~39.8 | M5 | 1 | 2.2 | 2.5 |
| | BT40-DHE10-90 | 10 | 90 | 33 | 50 | 40 | 35~44.8 | M5 | 1 | 1.5 | 1.7 |
| | BT40-DHE10-140 | 10 | 140 | 33 | 50 | 40 | 35~44.8 | M5 | 1 | 2.2 | 2.4 |
| | BT40-DHE12-90 | 12 | 90 | 35 | 50 | 40 | 41~50.8 | M10 | 1 | 1.5 | 1.7 |
| | BT40-DHE12-140 | 12 | 140 | 35 | 50 | 40 | 41~50.8 | M10 | 1 | 2.3 | 2.5 |
| | BT40-DHE14-90 | 14 | 90 | 36 | 50 | 40 | 43~52.8 | M10 | 1 | 1.5 | 1.7 |
| | BT40-DHE14-140 | 14 | 140 | 36 | 50 | 40 | 43~52.8 | M10 | 1 | 2.2 | 2.4 |
| | BT40-DHE16-90 | 16 | 90 | 40 | 50 | 45 | 46~55.8 | M10 | 1 | 1.5 | 1.7 |
| | BT40-DHE16-140 | 16 | 140 | 40 | 50 | 45 | 46~55.8 | M10 | 1 | 2.2 | 2.5 |
| | BT40-DHE18-90 | 18 | 90 | 42 | 50 | 45 | 49~58.8 | M10 | 1 | 1.5 | 1.7 |
| | BT40-DHE18-140 | 18 | 140 | 42 | 50 | 45 | 49~58.8 | M10 | 1 | 2.2 | 2.5 |
| | BT40-DHE20-90 | 20 | 90 | 44 | 50 | 47 | 49~58.8 | M10 | 1 | 1.5 | 1.7 |
| | BT40-DHE20-140 | 20 | 140 | 44 | 50 | 50 | 49~58.8 | M10 | 1 | 2.3 | 2.5 |
| | BT40-DHE25-90 | 25 | 90 | 50 | 70 | 35 | 58~67.8 | M16 | 2 | 2.0 | 2.2 |
| | BT40-DHE25-105 | 25 | 105 | 57 | - | 78 | 51~61 | M16 | 4 | 2.0 | 2.2 |
| | BT40-DHE25-140 | 25 | 140 | 57 | - | 113 | 51~61 | M16 | 4 | 2.6 | 2.9 |
| | BT40-DHE32-90 | 32 | 90 | 63 | 75 | 35 | 58~67.8 | M16 | 2 | 2.3 | 2.5 |
| BT40-DHE32-105 | 32 | 105 | 57 | 61 | 45 | 55~65 | M16 | 3 | 2.4 | 2.6 | |
| BT40-DHE32-140 | 32 | 140 | 57 | 61 | 45 | 55~65 | M16 | 3 | 3.0 | 3.2 | |

C Internal coolant system installed.



BT-DHE

Hydraulic expansion chuck



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

Fig.1

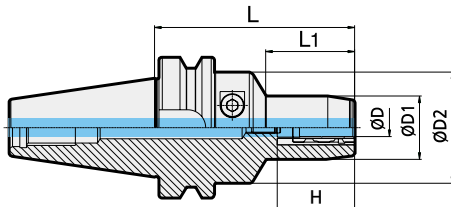


Fig.2

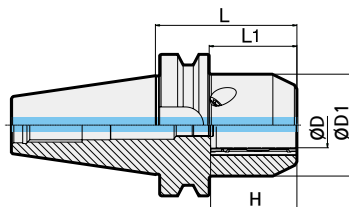
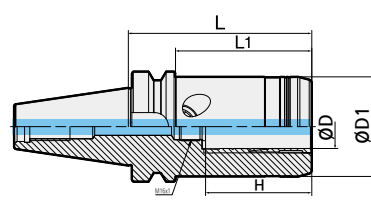


Fig.3



• H : Depth of tool insertion (Min.~Max.)

- For more information on product features, see **27p**
- For more information on the related parts, see **33p**

| Model No. | ØD | L | ØD1 | ØD2 | L1 | H | ADJ | Fig. | Kg | Package weight (Kg) |
|----------------|----|-----|-----|-----|-----|---------|-----|------|-----|---------------------|
| BT50-DHE6-90 | 6 | 90 | 29 | 50 | 34 | 30~39.8 | M5 | 1 | 3.9 | 4.2 |
| BT50-DHE6-140 | 6 | 140 | 29 | 50 | 40 | 30~39.8 | M5 | 1 | 4.4 | 4.8 |
| BT50-DHE8-90 | 8 | 90 | 31 | 50 | 34 | 30~39.8 | M5 | 1 | 4.2 | 4.5 |
| BT50-DHE8-140 | 8 | 140 | 31 | 50 | 40 | 30~39.8 | M5 | 1 | 4.6 | 5 |
| BT50-DHE10-90 | 10 | 90 | 33 | 50 | 34 | 35~44.8 | M5 | 1 | 3.9 | 4.2 |
| BT50-DHE10-140 | 10 | 140 | 33 | 50 | 34 | 35~44.8 | M5 | 1 | 4.5 | 4.9 |
| BT50-DHE12-90 | 12 | 90 | 35 | 50 | 34 | 41~50.8 | M10 | 1 | 4.0 | 4.3 |
| BT50-DHE12-140 | 12 | 140 | 35 | 50 | 34 | 41~50.8 | M10 | 1 | 4.6 | 5 |
| BT50-DHE14-90 | 14 | 90 | 36 | 50 | 34 | 43~52.8 | M10 | 1 | 3.9 | 4.2 |
| BT50-DHE14-140 | 14 | 140 | 36 | 50 | 34 | 43~52.8 | M10 | 1 | 4.5 | 4.9 |
| BT50-DHE16-90 | 16 | 90 | 40 | 50 | 34 | 46~55.8 | M10 | 1 | 4.1 | 4.4 |
| BT50-DHE16-140 | 16 | 140 | 40 | 50 | 34 | 46~55.8 | M10 | 1 | 4.7 | 5.1 |
| BT50-DHE18-90 | 18 | 90 | 42 | 50 | 40 | 49~58.8 | M10 | 1 | 4.0 | 4.3 |
| BT50-DHE18-140 | 18 | 140 | 42 | 50 | 45 | 49~58.8 | M10 | 1 | 4.5 | 4.9 |
| BT50-DHE20-90 | 20 | 90 | 44 | 50 | 34 | 49~58.8 | M10 | 1 | 4.0 | 4.3 |
| BT50-DHE20-140 | 20 | 140 | 44 | 50 | 47 | 49~58.8 | M10 | 1 | 4.5 | 4.9 |
| BT50-DHE25-90 | 25 | 90 | 66 | - | 52 | 58~67.8 | M16 | 2 | 4.7 | 5 |
| BT50-DHE25-150 | 25 | 150 | 57 | - | 112 | 51~61 | M16 | 3 | 4.5 | 4.8 |
| BT50-DHE32-90 | 32 | 90 | 72 | - | 52 | 58~67.8 | M16 | 2 | 5.8 | 6.2 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

C Internal coolant system installed.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



HSK-DHE

Hydraulic expansion chuck

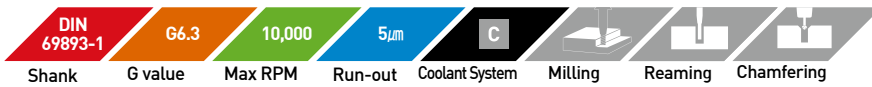


Fig.1

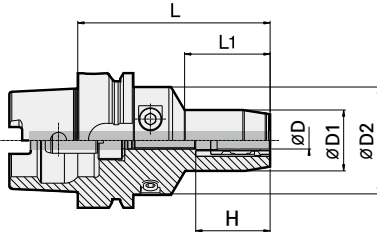
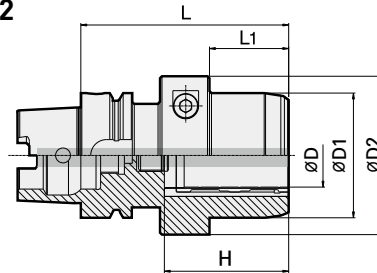


Fig.2



• **H** : Depth of tool insertion (Min.-Max.)

• For more information on product features, see **27p**

• For more information on the related parts, see **33p**

| | Model No. | ØD | L | ØD1 | ØD2 | L1 | H | ADJ | Fig. | RPM | Kg | Package weight (Kg) |
|---------|-------------------|----|-----|-----|-----|----|---------|-----|------|--------|-----|---------------------|
| HSK63A | HSK63A-DHE6-75 | 6 | 75 | 29 | 50 | 34 | 30~39.8 | M5 | 1 | 10,000 | 1.0 | 1.2 |
| | HSK63A-DHE8-75 | 8 | 75 | 31 | 50 | 34 | 30~39.8 | M5 | 1 | 10,000 | 1.0 | 1.2 |
| | HSK63A-DHE10-85 | 10 | 85 | 33 | 50 | 40 | 35~44.8 | M5 | 1 | 10,000 | 1.2 | 1.4 |
| | HSK63A-DHE12-90 | 12 | 90 | 35 | 50 | 40 | 41~50.8 | M5 | 1 | 10,000 | 1.2 | 1.4 |
| | HSK63A-DHE16-95 | 16 | 95 | 40 | 50 | 45 | 46~55.8 | M10 | 1 | 10,000 | 1.3 | 1.5 |
| | HSK63A-DHE20-100 | 20 | 100 | 44 | 50 | 50 | 49~58.8 | M10 | 1 | 10,000 | 1.4 | 1.7 |
| | HSK63A-DHE20-150 | 20 | 150 | 44 | 50 | 50 | 49~58.8 | M10 | 1 | 10,000 | 2.2 | 2.4 |
| | HSK63A-DHE25-110 | 25 | 110 | 50 | 70 | 48 | 56~67.8 | M16 | 2 | 10,000 | 2.0 | 1.9 |
| HSK100A | HSK100A-DHE20-105 | 20 | 105 | 44 | 50 | 50 | 49~58.8 | M10 | 1 | 8,000 | 2.9 | 3.2 |
| | HSK100A-DHE25-115 | 25 | 115 | 50 | 63 | 62 | 58~67.8 | M16 | 1 | 8,000 | 3.2 | 3.6 |
| | HSK100A-DHE32-115 | 32 | 115 | 63 | 75 | 62 | 58~67.8 | M16 | 1 | 8,000 | 3.8 | 4.2 |

☐ Internal coolant system is optional.

For separate purchase

Internal coolant system



Classification by shank

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



SK-DHE

Hydraulic expansion chuck

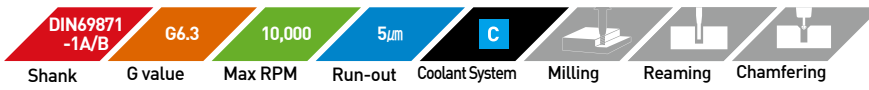
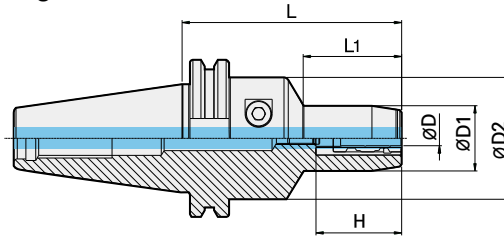


Fig.1



• H : Depth of tool insertion (Min.~Max.)

• For more information on product features, see **27p**

• For more information on the related parts, see **33p**

| | Model No. | ØD | L | ØD1 | ØD2 | L1 | H | ADJ | Fig. | RPM | Kg | Package weight (Kg) |
|----------------|----------------|-----|-----|-----|-----|---------|---------|-----|--------|--------|-----|---------------------|
| SK40 | SK40-DHE6-90 | 6 | 90 | 29 | 50 | 40 | 30-39.8 | M5 | 1 | 10,000 | 1.4 | 1.6 |
| | SK40-DHE8-90 | 8 | 90 | 31 | 50 | 40 | 30-39.8 | M5 | 1 | 10,000 | 1.4 | 1.6 |
| | SK40-DHE10-90 | 10 | 90 | 33 | 50 | 40 | 35-44.8 | M5 | 1 | 10,000 | 1.5 | 1.7 |
| | SK40-DHE12-90 | 12 | 90 | 35 | 50 | 40 | 41~50.8 | M10 | 1 | 10,000 | 1.5 | 1.7 |
| | SK40-DHE12-140 | 12 | 140 | 35 | 50 | 40 | 41~50.8 | M10 | 1 | 10,000 | 2.1 | 2.3 |
| | SK40-DHE12-90 | 12 | 90 | 35 | 50 | 40 | 41~50.8 | M10 | 1 | 10,000 | 1.5 | 1.7 |
| | SK40-DHE12-140 | 12 | 140 | 35 | 50 | 40 | 41~50.8 | M10 | 1 | 10,000 | 2.1 | 2.3 |
| | SK40-DHE14-90 | 14 | 90 | 36 | 50 | 40 | 43~52.8 | M10 | 1 | 10,000 | 1.4 | 1.6 |
| | SK40-DHE16-90 | 16 | 90 | 40 | 50 | 45 | 46~55.8 | M5 | 1 | 10,000 | 1.5 | 1.7 |
| | SK40-DHE18-90 | 18 | 90 | 42 | 50 | 45 | 49~58.8 | M5 | 1 | 10,000 | 1.5 | 1.7 |
| | SK40-DHE20-90 | 20 | 90 | 44 | 50 | 50 | 49~58.8 | M10 | 1 | 10,000 | 1.5 | 1.7 |
| SK40-DHE20-140 | 20 | 140 | 44 | 50 | 50 | 49~58.8 | M10 | 1 | 10,000 | 2.1 | 2.4 | |
| SK50 | SK50-DHE12-90 | 12 | 90 | 35 | 50 | 40 | 41~50.8 | M10 | 1 | 8,000 | 3.2 | 3.5 |
| | SK50-DHE14-90 | 14 | 90 | 36 | 50 | 40 | 43~52.8 | M10 | 1 | 8,000 | 3.2 | 3.5 |
| | SK50-DHE16-90 | 16 | 90 | 40 | 50 | 45 | 46~55.8 | M10 | 1 | 8,000 | 3.3 | 3.5 |
| | SK50-DHE18-90 | 18 | 90 | 42 | 50 | 40 | 49~58.8 | M10 | 1 | 8,000 | 3.2 | 3.5 |
| | SK50-DHE20-90 | 20 | 90 | 44 | 50 | 47 | 49~58.8 | M10 | 1 | 8,000 | 3.2 | 3.5 |

C Internal coolant system installed.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER

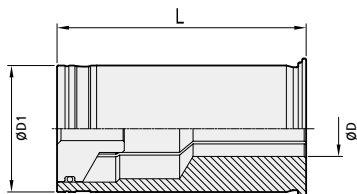


DHC Collet (general type & waterproof type)

DHE Collet(General type) / DHE Collet(waterproof type)

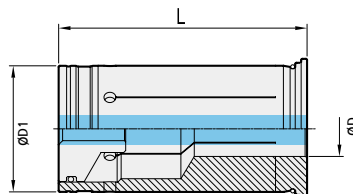


Fig.1



C This product does not support the internal coolant system.

Fig.2



C Internal coolant system installed.

• Other sizes are customizable

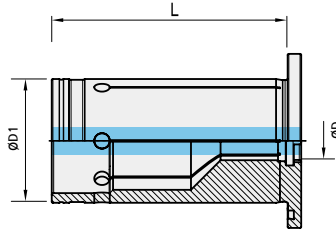
| Model No. (general type) | ØD | ØD1 | L | Fig. | Kg |
|-----------------------------|----|-----|----|------|---------------|
| DHC12-3 | 3 | 12 | 47 | 1 | 0.06~ 0.08 |
| DHC12-4 | 4 | 12 | 47 | 1 | |
| DHC12-5 | 5 | 12 | 47 | 1 | |
| DHC12-6 | 6 | 12 | 47 | 1 | |
| DHC12-8 | 8 | 12 | 47 | 1 | |
| DHC20-3 | 3 | 20 | 52 | 1 | 0.04~ 0.06 |
| DHC20-4 | 4 | 20 | 52 | 1 | |
| DHC20-5 | 5 | 20 | 52 | 1 | |
| DHC20-6 | 6 | 20 | 52 | 1 | |
| DHC20-7 | 7 | 20 | 52 | 1 | |
| DHC20-8 | 8 | 20 | 52 | 1 | |
| DHC20-9 | 9 | 20 | 52 | 1 | |
| DHC20-10 | 10 | 20 | 52 | 1 | |
| DHC20-11 | 11 | 20 | 52 | 1 | |
| DHC20-12 | 12 | 20 | 52 | 1 | |
| DHC20-14 | 14 | 20 | 52 | 1 | 0.2~ 0.5 |
| DHC20-16 | 16 | 20 | 52 | 1 | |
| DHC32-6 | 6 | 32 | 63 | 1 | |
| DHC32-8 | 8 | 32 | 63 | 1 | |
| DHC32-10 | 10 | 32 | 63 | 1 | |
| DHC32-12 | 12 | 32 | 63 | 1 | |
| DHC32-14 | 14 | 32 | 63 | 1 | |
| DHC32-16 | 16 | 32 | 63 | 1 | |
| DHC32-18 | 18 | 32 | 63 | 1 | |
| DHC32-19 | 19 | 32 | 63 | 1 | |
| DHC32-20 | 20 | 32 | 63 | 1 | |
| DHC32-25 | 25 | 32 | 63 | 1 | |

| Model No. (waterproof type) | ØD | ØD1 | L | Fig. | Kg |
|--------------------------------|----|-----|----|------|--------------|
| DHC12-3(P) | 3 | 12 | 47 | 2 | 0.04 |
| DHC12-4(P) | 4 | 12 | 47 | 2 | |
| DHC12-5(P) | 5 | 12 | 47 | 2 | |
| DHC12-6(P) | 6 | 12 | 47 | 2 | |
| DHC12-8(P) | 8 | 12 | 47 | 2 | |
| DHC20-3(P) | 3 | 20 | 52 | 2 | 0.06~ 0.1 |
| DHC20-4(P) | 4 | 20 | 52 | 2 | |
| DHC20-5(P) | 5 | 20 | 52 | 2 | |
| DHC20-6(P) | 6 | 20 | 52 | 2 | |
| DHC20-7(P) | 7 | 20 | 52 | 2 | |
| DHC20-8(P) | 8 | 20 | 52 | 2 | |
| DHC20-9(P) | 9 | 20 | 52 | 2 | |
| DHC20-10(P) | 10 | 20 | 52 | 2 | |
| DHC20-11(P) | 11 | 20 | 52 | 2 | |
| DHC20-12(P) | 12 | 20 | 52 | 2 | |
| DHC20-14(P) | 14 | 20 | 52 | 2 | 0.2~ 0.3 |
| DHC20-16(P) | 16 | 20 | 52 | 2 | |
| DHC32-6(P) | 6 | 32 | 63 | 2 | |
| DHC32-8(P) | 8 | 32 | 63 | 2 | |
| DHC32-10(P) | 10 | 32 | 63 | 2 | |
| DHC32-12(P) | 12 | 32 | 63 | 2 | |
| DHC32-14(P) | 14 | 32 | 63 | 2 | |
| DHC32-16(P) | 16 | 32 | 63 | 2 | |
| DHC32-18(P) | 18 | 32 | 63 | 2 | |
| DHC32-19(P) | 19 | 32 | 63 | 2 | |
| DHC32-20(P) | 20 | 32 | 63 | 2 | |
| DHC32-25(P) | 25 | 32 | 63 | 2 | |



DHJ Collet (jet coolant)

DHJ JET Coolant Collet



| Model No. | ØD | ØD1 | L | Kg | Package weight (Kg) |
|-----------|----|-----|----|------|---------------------|
| DHJ20-6 | 6 | 20 | 50 | 0.1 | 0.1 |
| DHJ20-8 | 8 | 20 | 50 | 0.14 | 0.14 |
| DHJ20-10 | 10 | 20 | 50 | 0.1 | 0.1 |
| DHJ20-12 | 12 | 20 | 50 | 0.1 | 0.1 |
| DHJ20-14 | 14 | 20 | 50 | 0.08 | 0.08 |
| DHJ20-16 | 16 | 20 | 50 | 0.08 | 0.08 |

C Internal coolant system installed.



DHE SPARE PART

Hydraulic expansion chuck related parts

Spare Part

| | | Main component | | | |
|--|----------------------------------|----------------|---------|------------------------|------------------|
| Type | | Clamp bolt | Wrench | Type | Adjustment screw |
| Model No. | Images | | | Images | |
| | Model No. | | | Model No. | |
| BT30 / SK30 / HSK50 | DHE 6, 8, 10, 12 | BTF1010 | DHETW-5 | DHE 6, 8, 10 | DHE-M5 (ADJ) |
| | DHE 14, 16, 18, 20 | BTF1010 | | DHE 12, 14, 16, 18, 20 | DHE-M10 (ADJ) |
| BT40 / BT50 / SK40 / SK50 / HSK63A / HSK100A | DHE 6, 8, 10, 12, 14, 16, 18, 20 | BTF1010 | DHETW-6 | DHE 25, 32 | DHE-M16 (ADJ) |
| | DHE 25, 32 | BTF1212-1.5 | | DHE 25, 32 | DHE-M16 (ADJ) |



DZC

Zero fit collet



≤2μm
C
 Run-out Coolant System

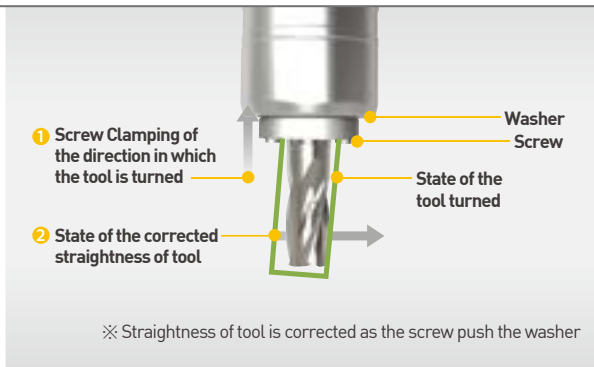
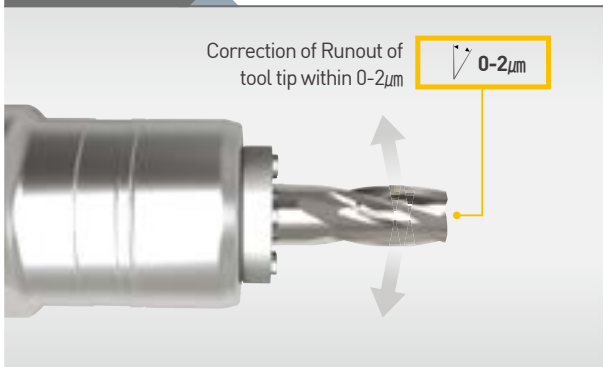
Features

- Correcting 10 - 20μm runout generated at tool tip to 0-2μm.
- Improves the runout and straightness of end tools.
 - Improves the surface roughness and quality of the machining area.
 - Improves the accuracy of boring hole dimension.
 - Improves the tool life of end tools.



| | | | | |
|---------|-----------------|-------------|---|-----------|
| MACHINE | DZC | 20 | — | 10 |
| | Zero Fit Collet | Collet size | | Tool Dia. |

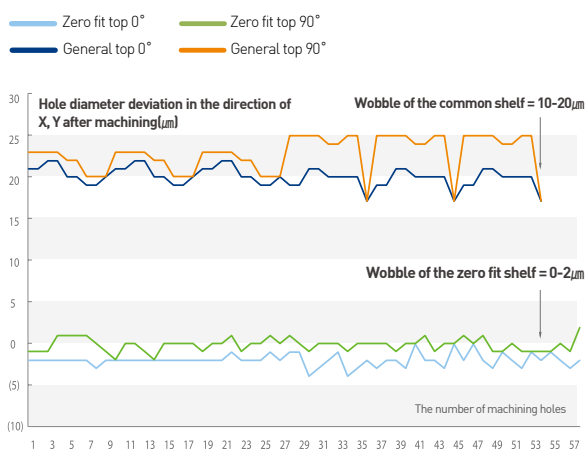
Main features



Comparison test

| | |
|-----------------------------|----------------------------|
| Runout of tool tip 10-20 μm | Runout of tool tip 0-2 μm |
| | |
| Surface roughness Rz 11.064 | Surface roughness Rz 6.688 |
| | |
| Tool fracture occurred | No fracture occurred |

PCD reamer hole machining test result

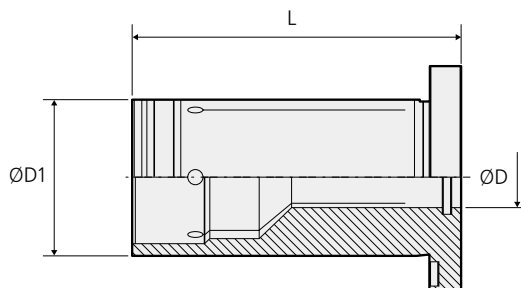


| Hole actual deviation as Machining result(mm) | | |
|---|---------------------------|-------------------------|
| Based on Ø8 | Zero Fit +0.003 | General +0.02 |



DZC

Zero fit collet



| | Model No. | ØD1 | ØD | L |
|-------|-----------|-----|----|------|
| DZC20 | DZC20-6 | 6 | 20 | 56.5 |
| | DZC20-8 | 8 | 20 | 56.5 |
| | DZC20-10 | 10 | 20 | 56.5 |
| | DZC20-12 | 12 | 20 | 56.5 |
| | DZC20-14 | 14 | 20 | 56.5 |
| | DZC20-16 | 16 | 20 | 56.5 |
| DZC32 | DZC32-6 | 6 | 32 | 67.5 |
| | DZC32-8 | 8 | 32 | 67.5 |
| | DZC32-10 | 10 | 32 | 67.5 |
| | DZC32-12 | 12 | 32 | 67.5 |
| | DZC32-16 | 16 | 32 | 67.5 |
| | DZC32-20 | 20 | 32 | 67.5 |
| | DZC32-25 | 25 | 32 | 67.5 |

C This product does not support the internal coolant system.

※ Precautions

- Runout is adjusted by clamping the runout adjustment screw even with a small force.
- Excessively clamping the runout adjustment screw can deform inner parts. (Don't use excessive force when clamping. Torque: less than 600cN·m recommended)
- If the runout adjustment screw is clamped using excessive force, all six screws must be completely unclamped and adjusted again.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



DSC

Shrinking Chuck



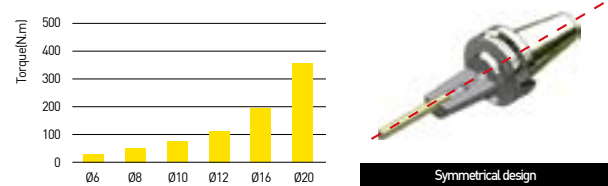
Features

- Uses special steel specially heat-treated
- Enables anyone to perform high-precision tightening and machining
- Ensure a long tool life and enhanced machining accuracy by minimizing interference and tool protrusion length for deep groove machining
- Boring range : \varnothing 3- \varnothing 20

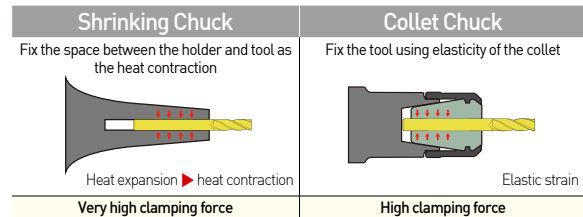
| | | | | | | |
|--------|-------------|-----------------------|---------------|------------|------------|----------------|
| NAMING | BT50 | DSC | 6 | S | 165 | S |
| | Shank Shape | Holder type | Tool Dia. | Type | Length | Special |
| | BT HSK SK | DSC : Shrinking chuck | | S : Slim | | S : Curve type |
| | ST CS CM | SLK : 2piece holder | | M : Middle | | NON : General |
| | | | NON : General | | | |



High clamping force



- Increase of 30% clamping force versus hydraulic expansion chuck
- Definite power transmission · Runout (\leq 0.003mm)



Slim type series

Straight type



Mono type



2piece type





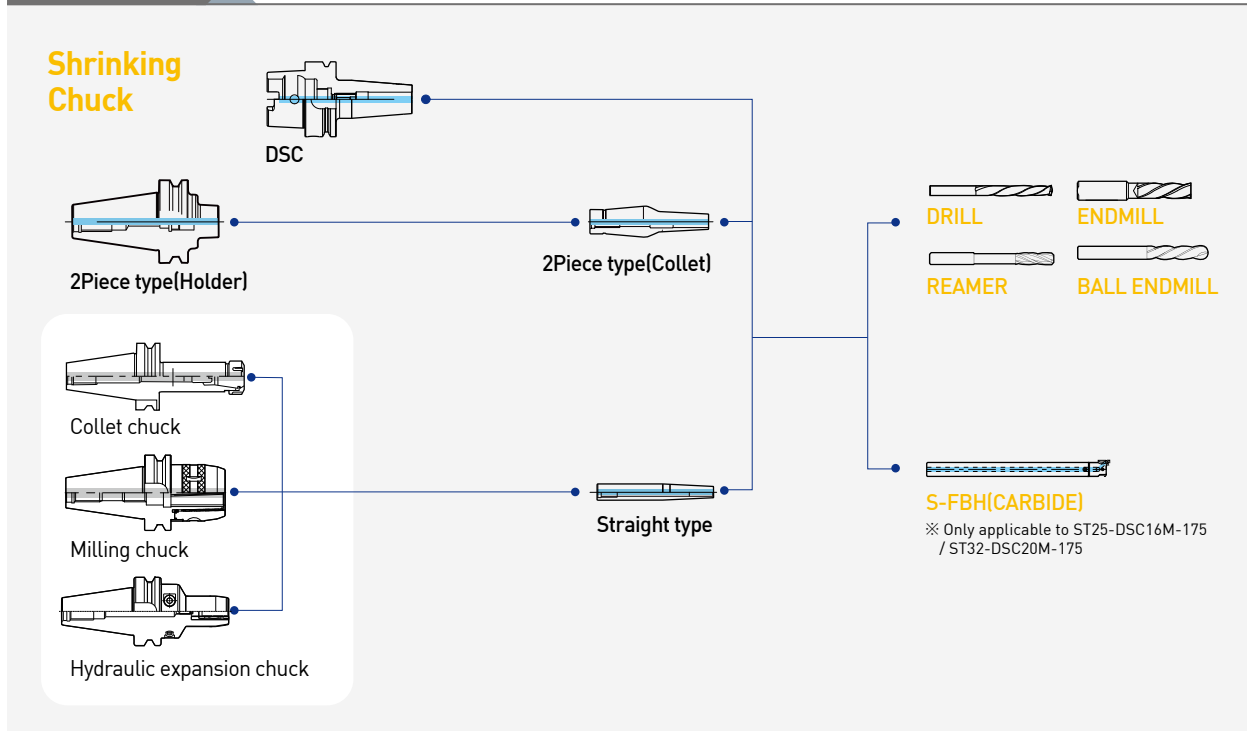
Tool tightening tolerance

| Tool Shank | Tool Shank Tolerance[h6] | Tool Shank | Tool Shank Tolerance[h6] | Tool Shank | Tool Shank Tolerance[h6] | Tool Shank | Tool Shank Tolerance[h6] |
|------------|--------------------------|------------|--------------------------|------------|--------------------------|------------|--------------------------|
| Ø3 | 0~-0.008 | Ø6 | 0~-0.008 | Ø12 | 0~-0.011 | Ø25 | 0~-0.013 |
| Ø4 | 0~-0.009 | Ø8 | 0~-0.009 | Ø16 | 0~-0.011 | Ø32 | 0~-0.016 |
| Ø5 | 0~-0.011 | Ø10 | 0~-0.011 | Ø20 | 0~-0.013 | | |

Min. tool insertion depth

| Inner diameter(Ø) | Type | Ø6 | Ø8 | Ø10 | Ø12 | Ø16 | Ø20 | Ø25 | Ø32 |
|---------------------------|---------|----|----|-----|-----|-----|-----|-----|-----|
| Min. tool insertion depth | Slim | 18 | 24 | 30 | 30 | - | - | - | - |
| | Medium | 18 | 24 | 30 | 30 | 32 | 40 | - | - |
| | General | 26 | 26 | 32 | 37 | 37 | 40 | 42 | 52 |

DSC MAP





MONO CURVE TYPE

- Integral DSC of outstanding accuracy and rigidity balance characteristics
- Long but rigid holder design



2PIECE TYPE

2Piece types enable various machining operations by collet replacement and provide convenience in tool management and use based on easy and fast assembly using tightening bolts.

| Shape | Accuracy | TYPE | |
|--|----------|------------------|--------------------|
| | | <p>Slim type</p> | <p>Medium type</p> |
| Holder+collet connection shape Connecting the holder and collet by the bolt tightening method | | | |

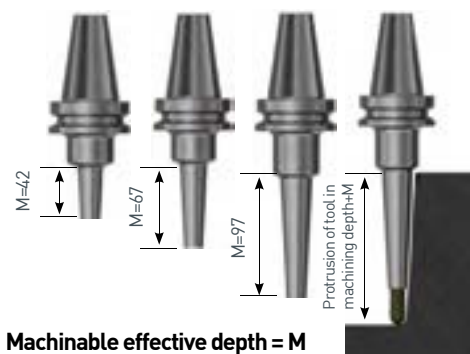
| Various collet shapes - 28 in total | Coolant system |
|--|--|
| <p>Tool management and purchase expenses are reduced by changing and using only collet in one body</p> | <p>Coolant type 60-degree angle adjustable</p> |



MONO TYPE

| Shape | Accuracy | TYPE | |
|---------------------------------|----------------------------|---------------------------|-------------------------------|
| <p>3° taper Thickness t</p> | <p>Run-out 3µm 3xD</p> | <p>Slim type 1.5t</p> | <p>Medium type 2~4.5t</p> |

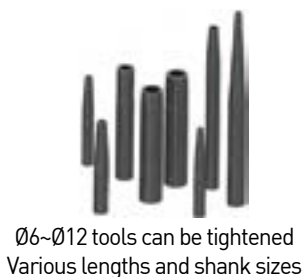
- ※ Ensures good rigidity by using special steel instead of general steel and maintains high precision due to its excellent thermal resistance even when it is used more than 5,000 times.
- ※ Enables stable cutting and good surface roughness due to its high rigidity
- ※ Provides a long tool life due to its high precision



STRAIGHT TYPE

| Shape | Accuracy | TYPE | |
|---|----------------------------|---|-------------------------------|
| <p>Collet chuck Hydraulic expansion chuck Milling chuck</p> <p>3° taper Thickness t</p> | <p>Run-out 3µm 3xD</p> | <p>Slim type 1.5t</p> | <p>Medium type 2~4.5t</p> |
| | | Used by combining with various holders such as hydraulic expansion chuck, milling chuck, and collet chuck, etc. | |

Examples



- ※ Straight types used by combining with various holders such as hydraulic expansion chuck and collet chuck, etc. maintain high precision and help enable various machining operations at an affordable price.
- ※ There are 20 types of shanks that can be used according to work situations

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

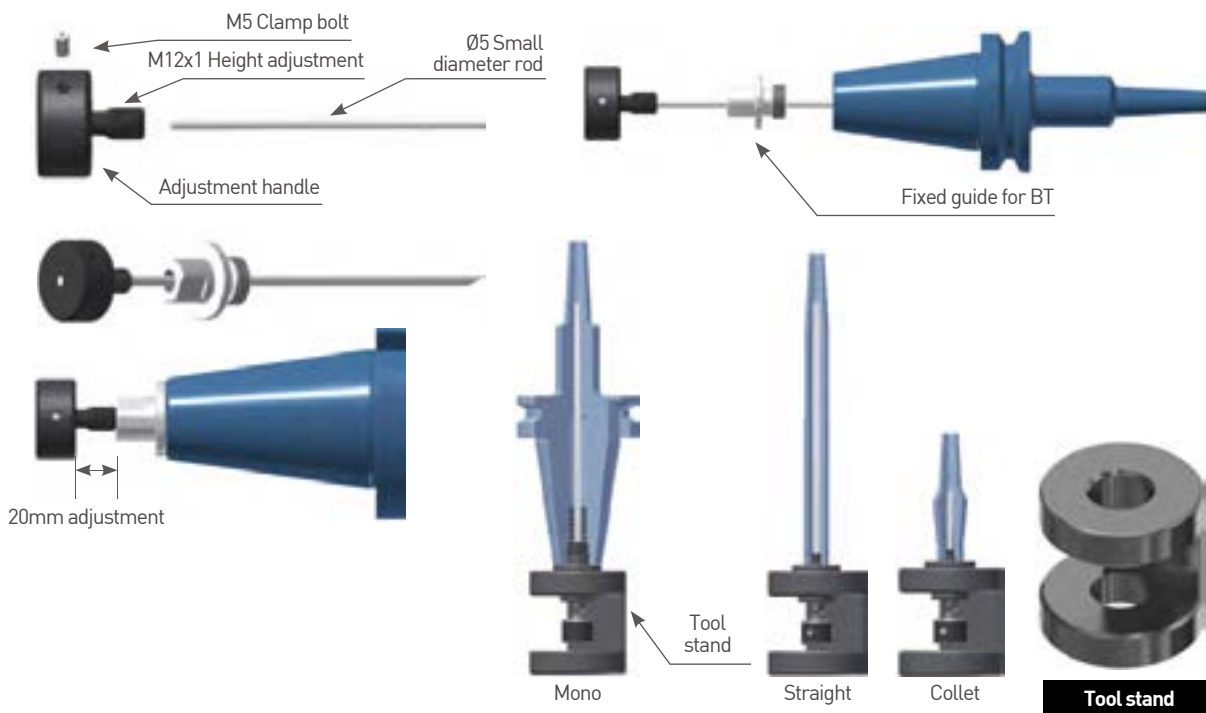
TAUMAX

OTHER



Adjustment method of tool insertion depth

1. Prepare a $\varnothing 5$ Pin suitable for tool length
2. Combine the $\varnothing 5$ Pin and adjustment handler and fix them with a clamp bolt
3. Fix the fixing guide to the tool and put the tightened adjustment handler therein.
4. Put it on the tool stand and measure tool insertion depth



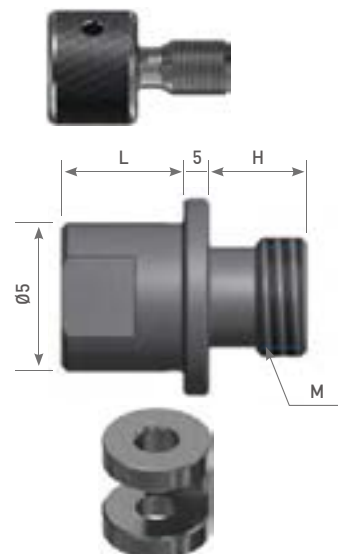
Accessory

| Name | Designation |
|--------------------|-------------|
| Adjustment handler | CTH-01 |

| Name | Designation | $\varnothing D$ | L | H | M |
|--------------|-------------|-----------------|----|----|-----|
| Fixing guide | SG-M10 | 25 | 25 | 10 | M10 |
| | SG-M12 | | | 12 | M12 |
| | SG-M16 | | | 14 | M16 |
| | SG-M24 | | | 20 | M24 |

| Name | Designation |
|------------|-------------|
| Tool stand | TS-DSC |

| Name | Designation |
|------------------------------------|---------------------|
| $\varnothing 5$ Small-diameter rod | Individual purchase |

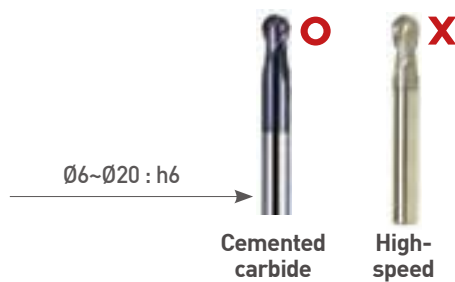




Precautions for use

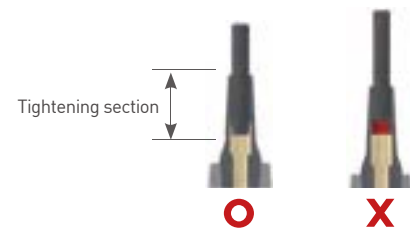
Tools to use

- Use cemented carbide tools.
- High-speed tools may not be disassembled.
- Using an excessive tolerance tool affects clamping force, causing an accident.



Precautions in case of tightening a tool

- Maintain clean state by removing rust, dust, cutting oil, etc. generated by corrosion of the inner diameter of the chuck before tool tightening.
- When tightening a tool, tighten it under the tightening section.
- Tool tightening in the middle of the tightening section affects accuracy and durability.
- When tightening a tool, touching the bottom surface affects accuracy.



High-frequency heating precautions

- When tightening/disassembling a tool, it is recommended that slim-type programmed shrink fit devices be used.
- Using devices with no slim-type program may cause overheating. (Overheating may affect the product durability, service life, and accuracy.)

Storage method

- When the shrink fit chuck is not used, the tool should be separated from the chuck. (Long-time connection may affect the service life of the product.)
- After using the shrink fit chuck, be sure to remove moisture and use inhibited oil and rust-preventing spray to prevent rust from occurring. (Less rust occurs compared to general steel as special steel is used; however, long-time non-use may cause rust occurrence.)

Components for separate sale



Shrinking device

TAUMAX shrink fit equipment MH-200

Features

- Enables a maximum of 30-time consecutive heating
- Enables the common use of steel, SUS material holders
- Enables the use of all standard taper tools simply by adapter flange replacement
- Enables replacement of heating coils with diameters of Ø25, Ø30, Ø40, Ø55
- Enables chuck overheating prevention and manual tool cooling through setting

For more information on the product features, see [287p](#).



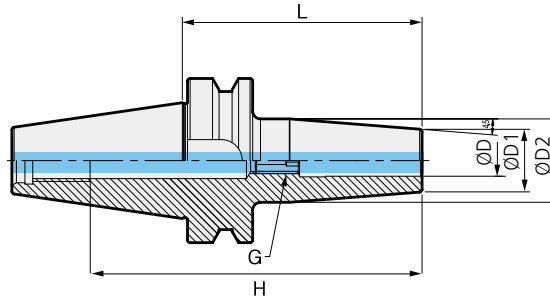


BT-DSC

Shrinking Chuck



MAS 403-BT
G2.5
25,000
3 μ m
C
Milling
Drilling
Reaming
Chamfering



• For more information on product features, see **36p**.

• **H** : Depth of tool insertion

• For more information on the related parts (adjustment screw), see **51p**.

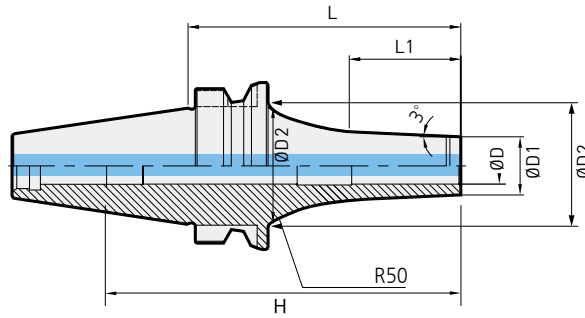
| | Model No. | ØD | L | ØD1 | ØD2 | H | G | RPM | Kg | Package weight (Kg) |
|-------------|----------------|----|-----|-----|------|----|-----|--------|-----|---------------------|
| BT30 | BT30-DSC3-60 | 3 | 60 | 11 | 18.5 | 82 | - | 25,000 | 0.4 | 0.5 |
| | BT30-DSC4-60 | 4 | 60 | 13 | 20.5 | 82 | - | 25,000 | 0.4 | 0.5 |
| BT40 | BT40-DSC6-90 | 6 | 90 | 21 | 27 | 36 | M5 | 20,000 | 1.1 | 1.3 |
| | BT40-DSC6-120 | 6 | 120 | 21 | 27 | 36 | M5 | 20,000 | 1.2 | 1.5 |
| | BT40-DSC6-160 | 6 | 160 | 21 | 27 | 36 | M5 | 20,000 | 1.4 | 1.7 |
| | BT40-DSC8-90 | 8 | 90 | 21 | 27 | 36 | M5 | 20,000 | 1.1 | 1.3 |
| | BT40-DSC8-120 | 8 | 120 | 21 | 27 | 36 | M5 | 20,000 | 1.2 | 1.4 |
| | BT40-DSC8-160 | 8 | 160 | 21 | 27 | 36 | M5 | 20,000 | 1.4 | 1.7 |
| | BT40-DSC10-90 | 10 | 90 | 24 | 32 | 42 | M8 | 20,000 | 1.1 | 1.3 |
| | BT40-DSC10-120 | 10 | 120 | 24 | 32 | 42 | M8 | 20,000 | 1.3 | 1.6 |
| | BT40-DSC10-160 | 10 | 160 | 24 | 32 | 42 | M8 | 20,000 | 1.6 | 1.8 |
| | BT40-DSC12-90 | 12 | 90 | 24 | 32 | 47 | M8 | 20,000 | 1.1 | 1.3 |
| | BT40-DSC12-120 | 12 | 120 | 24 | 32 | 47 | M8 | 20,000 | 1.3 | 1.5 |
| | BT40-DSC12-160 | 12 | 160 | 24 | 32 | 47 | M8 | 20,000 | 1.6 | 1.8 |
| | BT40-DSC16-90 | 16 | 90 | 27 | 34 | 50 | M12 | 20,000 | 1.2 | 1.4 |
| | BT40-DSC16-120 | 16 | 120 | 27 | 34 | 50 | M12 | 20,000 | 1.3 | 1.6 |
| | BT40-DSC16-160 | 16 | 160 | 27 | 34 | 50 | M12 | 20,000 | 1.7 | 1.9 |
| | BT40-DSC20-90 | 20 | 90 | 33 | 42 | 52 | M12 | 20,000 | 1.3 | 1.5 |
| | BT40-DSC20-120 | 20 | 120 | 33 | 42 | 52 | M12 | 20,000 | 1.5 | 1.8 |
| | BT40-DSC20-160 | 20 | 160 | 33 | 42 | 52 | M12 | 20,000 | 2.0 | 2.3 |

C Internal coolant system installed.



BT-DSC/M MONO CURVE TYPE

Shrinking Chuck



• H : Depth of tool insertion

※ Adjustment screws cannot be used for this product.

• For more information on product features, see **36p**

• For more information on the related parts, see **51p**

| | Model No. | ØD | L | ØD1 | ØD2 | L1 | H | RPM | Kg | Package weight (Kg) |
|------|-----------------|----|----|-----|-----|------|----|--------|-----|---------------------|
| BT30 | BT30-DSC3M-75S | 3 | 75 | 8 | 25 | 29.8 | 97 | 25,000 | 0.4 | 0.5 |
| | BT30-DSC4M-75S | 4 | 75 | 10 | 25 | 31.8 | 97 | 25,000 | 0.4 | 0.5 |
| | BT30-DSC6M-75S | 6 | 75 | 12 | 30 | 28.9 | 97 | 25,000 | 0.5 | 0.5 |
| | BT30-DSC8M-75S | 8 | 75 | 14 | 32 | 28.9 | 97 | 25,000 | 0.5 | 0.5 |
| | BT30-DSC10M-75S | 10 | 75 | 16 | 32 | 30.7 | 45 | 25,000 | 0.5 | 0.5 |
| | BT30-DSC12M-75S | 12 | 75 | 19 | 32 | 33.8 | 45 | 25,000 | 0.5 | 0.5 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

C Internal coolant system installed.

Chuck
Arbor / Modular
Boring tool
Angular head
cBN/PCD
Smart factory
TAUMAX
OTHER

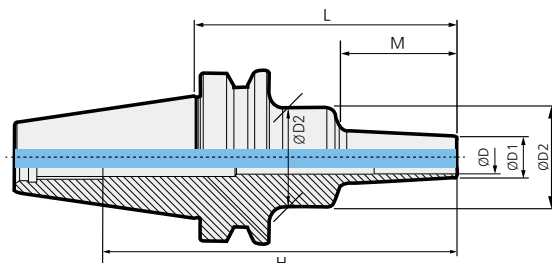


BT-DSC/M MONO TYPE

Shrinking Chuck



MAS 403-BT
G2.5
25,000
3 μ m
C
Milling
Drilling
Reaming
Chamfering



- **H** : Depth of tool insertion
- For more information on product features, see **36p**
- For more information on the related parts, see **51p**

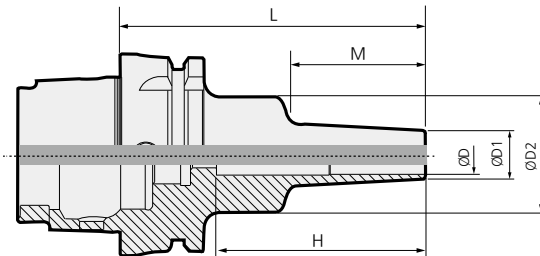
| | Model No. | ØD | L | ØD1 | ØD2 | M | H | RPM | Kg | Package weight (Kg) |
|-----------------|-----------------|-----|-----|-----|-----|----|--------|--------|-----|---------------------|
| BT40 | BT40-DSC3M-95 | 3 | 95 | 8 | 26 | 42 | 128 | 20,000 | 1.1 | 1.2 |
| | BT40-DSC4M-95 | 4 | 95 | 8 | 26 | 42 | 128 | 20,000 | 1.1 | 1.1 |
| | BT40-DSC6M-95 | 6 | 95 | 10 | 26 | 42 | 128 | 20,000 | 1.0 | 1.2 |
| | BT40-DSC6M-120 | 6 | 120 | 10 | 26 | 67 | 153 | 20,000 | 1.0 | 1.2 |
| | BT40-DSC6M-160 | 6 | 160 | 10 | 36 | 97 | 193 | 20,000 | 1.2 | 1.3 |
| | BT40-DSC8M-95 | 8 | 95 | 13 | 36 | 42 | 128 | 20,000 | 1.3 | 1.4 |
| | BT40-DSC8M-120 | 8 | 120 | 13 | 36 | 67 | 153 | 20,000 | 1.3 | 1.5 |
| | BT40-DSC8M-160 | 8 | 160 | 13 | 36 | 97 | 193 | 20,000 | 1.3 | 1.5 |
| | BT40-DSC10M-95 | 10 | 95 | 16 | 36 | 42 | 128 | 20,000 | 1.1 | 1.3 |
| | BT40-DSC10M-120 | 10 | 120 | 16 | 36 | 67 | 153 | 20,000 | 1.1 | 1.4 |
| | BT40-DSC10M-160 | 10 | 160 | 16 | 36 | 97 | 193 | 20,000 | 1.3 | 1.6 |
| | BT40-DSC12M-95 | 12 | 95 | 19 | 36 | 42 | 128 | 20,000 | 1.1 | 1.2 |
| | BT40-DSC12M-120 | 12 | 120 | 19 | 36 | 67 | 153 | 20,000 | 1.2 | 1.4 |
| | BT40-DSC12M-160 | 12 | 160 | 19 | 36 | 97 | 193 | 20,000 | 1.4 | 1.6 |
| | BT40-DSC16M-95 | 16 | 95 | 24 | 50 | 42 | 47 | 20,000 | 1.3 | 1.5 |
| | BT40-DSC16M-120 | 16 | 120 | 24 | 50 | 67 | 47 | 20,000 | 1.4 | 1.6 |
| BT40-DSC16M-160 | 16 | 160 | 24 | 50 | 97 | 47 | 20,000 | 1.7 | 2.0 | |
| BT40-DSC20M-95 | 20 | 95 | 29 | 50 | 42 | 55 | 20,000 | 1.3 | 1.5 | |
| BT40-DSC20M-120 | 20 | 120 | 29 | 50 | 67 | 55 | 20,000 | 1.5 | 1.7 | |
| BT40-DSC20M-160 | 20 | 160 | 29 | 50 | 97 | 55 | 20,000 | 1.9 | 2.1 | |
| BT50 | BT50-DSC6M-110 | 6 | 110 | 10 | 26 | 42 | 163 | 15,000 | 3.5 | 3.8 |
| | BT50-DSC6M-160 | 6 | 160 | 10 | 36 | 97 | 213 | 15,000 | 3.6 | 4.0 |
| | BT50-DSC8M-110 | 8 | 110 | 13 | 36 | 42 | 163 | 15,000 | 3.7 | 4.0 |
| | BT50-DSC8M-160 | 8 | 160 | 13 | 36 | 97 | 213 | 15,000 | 3.7 | 4.1 |
| | BT50-DSC10M-110 | 10 | 110 | 16 | 36 | 42 | 163 | 15,000 | 3.7 | 4.0 |
| | BT50-DSC10M-160 | 10 | 160 | 16 | 36 | 97 | 213 | 15,000 | 3.7 | 4.1 |
| | BT50-DSC12M-110 | 12 | 110 | 19 | 36 | 42 | 163 | 15,000 | 3.7 | 4.0 |
| | BT50-DSC12M-160 | 12 | 160 | 19 | 50 | 97 | 213 | 15,000 | 4.0 | 4.4 |
| | BT50-DSC16M-110 | 16 | 110 | 24 | 50 | 42 | 163 | 15,000 | 3.9 | 4.2 |
| | BT50-DSC16M-160 | 16 | 160 | 24 | 50 | 97 | 213 | 15,000 | 4.1 | 4.5 |
| | BT50-DSC20M-110 | 20 | 110 | 29 | 50 | 42 | 55 | 15,000 | 3.9 | 4.2 |
| | BT50-DSC20M-160 | 20 | 160 | 29 | 50 | 97 | 55 | 15,000 | 4.2 | 4.6 |

C Internal coolant system installed.



HSK-DSC/M MONO TYPE

Shrinking Chuck



• H : Depth of tool insertion

※ Adjustment screws cannot be used for this product.

- For more information on product features, see [36p](#)
- For more information on the related parts, see [51p](#)

| | Model No. | ØD | L | ØD1 | ØD2 | M | H | RPM | Kg | Package weight (Kg) |
|--------|-------------------|----|-----|-----|-----|----|----|--------|-----|---------------------|
| HSK63A | HSK63A-DSC6M-95 | 6 | 95 | 10 | 26 | 42 | 73 | 20,000 | 0.7 | 0.9 |
| | HSK63A-DSC8M-95 | 8 | 95 | 13 | 36 | 42 | 39 | 20,000 | 0.8 | 1.0 |
| | HSK63A-DSC10M-120 | 10 | 120 | 16 | 36 | 67 | 45 | 20,000 | 0.8 | 1.0 |
| | HSK63A-DSC12M-120 | 12 | 120 | 19 | 36 | 67 | 45 | 20,000 | 0.9 | 1.1 |
| | HSK63A-DSC16M-120 | 16 | 120 | 24 | 50 | 67 | 47 | 20,000 | 1.1 | 1.3 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Ⓞ Internal coolant system is optional.

For separate purchase



| Classification by shank | |
|-------------------------|-------------|
| HSK50 | HSK50A-CNS |
| HSK63 | HSK63A-CNS |
| HSK100 | HSK100A-CNS |

Chuck
Arbor / Modular
Boring tool
Angular head
cBN/PCD
Smart factory
TAUMAX
OTHER

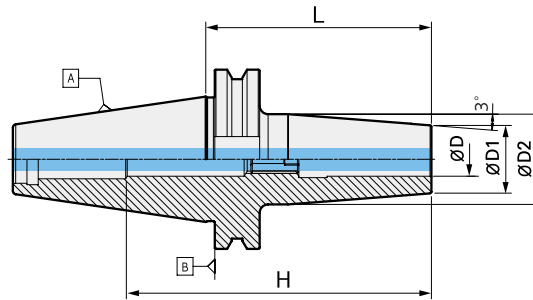


SK-DSC/M MONO TYPE

Shrinking Chuck



| | | | | | | | | |
|-------------------|---------|---------|-----------|----------------|---------|----------|---------|------------|
| DIN69871 -1A/B | G2.5 | 20,000 | 3 μ m | C | Milling | Drilling | Reaming | Chamfering |
| Shank | G value | Max RPM | Run-out | Coolant System | Milling | Drilling | Reaming | Chamfering |



• **H** : Depth of tool insertion

※ Adjustment screws cannot be used for this product.

• For more information on product features, see **36p**.

• For more information on the related parts, see **51p**.

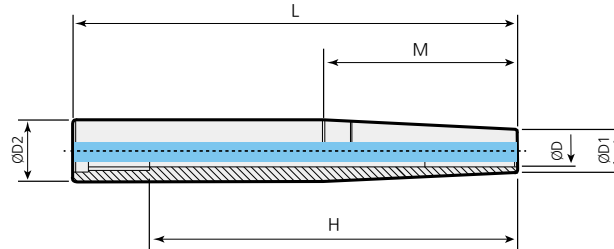
| Model No. | ØD | L | ØD1 | ØD2 | M | H | RPM | Kg | Package weight (Kg) |
|-----------------|----|-----|-----|-----|----|-----|--------|-----|---------------------|
| SK40-DSC6M-95 | 6 | 95 | 10 | 26 | 42 | 131 | 20,000 | 0.8 | 1.0 |
| SK40-DSC6M-120 | 6 | 120 | 10 | 26 | 67 | 156 | 20,000 | 1.0 | 1.2 |
| SK40-DSC8M-95 | 8 | 95 | 13 | 36 | 42 | 131 | 20,000 | 1.4 | 1.6 |
| SK40-DSC8M-120 | 8 | 120 | 13 | 36 | 67 | 156 | 20,000 | 1.0 | 1.2 |
| SK40-DSC10M-95 | 10 | 95 | 16 | 36 | 42 | 131 | 20,000 | 1.0 | 1.2 |
| SK40-DSC10M-120 | 10 | 120 | 16 | 36 | 67 | 156 | 20,000 | 1.0 | 1.3 |
| SK40-DSC12M-95 | 12 | 95 | 19 | 36 | 42 | 131 | 20,000 | 1.0 | 1.2 |
| SK40-DSC12M-120 | 12 | 120 | 19 | 36 | 67 | 156 | 20,000 | 1.1 | 1.3 |
| SK40-DSC16M-95 | 16 | 95 | 24 | 50 | 42 | 47 | 20,000 | 1.3 | 1.5 |
| SK40-DSC16M-120 | 16 | 120 | 24 | 50 | 67 | 47 | 20,000 | 1.4 | 1.6 |
| SK40-DSC20M-95 | 20 | 95 | 29 | 50 | 42 | 55 | 20,000 | 1.3 | 1.5 |
| SK40-DSC20M-120 | 20 | 120 | 29 | 50 | 67 | 55 | 20,000 | 1.4 | 1.6 |

C Internal coolant system installed.



ST-DSC/M

Straight shank shrinking chuck



• H : Depth of tool insertion

• For more information on product features, see **36p**

• For more information on the related parts, see **51p**

ST16, ST20, ST25, ST32

| Model No. | ØD | L | ØD1 | ØD2 | M | H | Kg | Package weight (Kg) |
|-----------------|----|-----|-----|-----|-----|-----|-----|---------------------|
| ST16-DSC6M-115 | 6 | 115 | 10 | 16 | 50 | 95 | 0.1 | 0.2 |
| ST16-DSC6M-140 | 6 | 140 | 10 | 16 | 60 | 120 | 0.1 | 0.2 |
| ST20-DSC6M-175 | 6 | 175 | 10 | 20 | 95 | 155 | 0.2 | 0.3 |
| ST20-DSC8M-145 | 8 | 145 | 13 | 20 | 70 | 125 | 0.2 | 0.3 |
| ST20-DSC10M-120 | 10 | 120 | 16 | 20 | 50 | 45 | 0.2 | 0.3 |
| ST25-DSC8M-175 | 8 | 175 | 13 | 25 | 105 | 155 | 0.4 | 0.5 |
| ST25-DSC10M-145 | 10 | 145 | 16 | 25 | 75 | 45 | 0.4 | 0.5 |
| ST25-DSC10M-175 | 10 | 175 | 16 | 25 | 105 | 45 | 0.4 | 0.5 |
| ST25-DSC12M-120 | 12 | 120 | 19 | 25 | 50 | 45 | 0.3 | 0.4 |
| ST25-DSC12M-150 | 12 | 150 | 19 | 25 | 80 | 45 | 0.4 | 0.4 |
| ST25-DSC16M-175 | 16 | 175 | 24 | 25 | 50 | 47 | 0.5 | 0.6 |
| ST32-DSC20M-175 | 20 | 175 | 29 | 32 | 50 | 55 | 0.8 | 0.9 |

C Internal coolant system installed.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

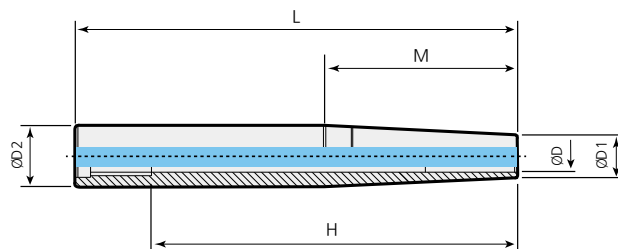
TAUMAX

OTHER



ST-DSC/S

Straight shank shrinking chuck



• **H** : Depth of tool insertion

• For more information on product features, see **36p**.

• For more information on the related parts, see **51p**.

ST16, ST20, ST32

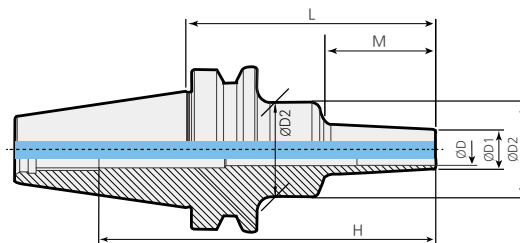
| Model No. | ØD | L | ØD1 | ØD2 | M | H |
|-----------------|----|-----|-----|-----|-----|-----|
| ST16-DSC6S-115 | 6 | 115 | 9 | 16 | 55 | 95 |
| ST16-DSC6S-140 | 6 | 140 | 9 | 16 | 70 | 120 |
| ST16-DSC8S-115 | 8 | 115 | 11 | 16 | 50 | 95 |
| ST20-DSC6S-175 | 6 | 175 | 9 | 20 | 105 | 155 |
| ST20-DSC8S-175 | 8 | 175 | 11 | 20 | 85 | 155 |
| ST20-DSC10S-145 | 10 | 145 | 13 | 20 | 75 | 77 |
| ST20-DSC12S-120 | 12 | 120 | 15 | 20 | 50 | 52 |
| ST32-DSC12S-315 | 12 | 315 | 15 | 32 | 185 | 295 |

C Internal coolant system installed.



BT-DSC/S MONO SLIM TYPE

Shrinking chuck



• H : Depth of tool insertion

※ Adjustment screws cannot be used for this product.

• For more information on product features, see **36p**

• For more information on the related parts, see **51p**

| | Model No. | ØD | L | ØD1 | ØD2 | M | H | RPM | Kg | Package weight (Kg) |
|-----------------|-----------------|-----|-----|-----|-----|-----|--------|--------|-----|---------------------|
| BT30 | BT30-DSC6S-60 | 6 | 60 | 9 | 20 | 22 | 82 | 25,000 | 0.4 | 0.5 |
| | BT30-DSC6S-80 | 6 | 80 | 9 | 20 | 42 | 102 | 25,000 | 0.5 | 0.5 |
| | BT30-DSC6S-120 | 6 | 120 | 9 | 25 | 67 | 142 | 25,000 | 0.5 | 0.6 |
| BT40 | BT40-DSC6S-95 | 6 | 95 | 9 | 26 | 42 | 128 | 20,000 | 1.0 | 1.2 |
| | BT40-DSC6S-120 | 6 | 120 | 9 | 26 | 67 | 153 | 20,000 | 1.0 | 1.2 |
| | BT40-DSC6S-160 | 6 | 160 | 9 | 36 | 97 | 193 | 20,000 | 1.2 | 1.4 |
| | BT40-DSC8S-95 | 8 | 95 | 11 | 36 | 42 | 128 | 20,000 | 1.1 | 1.3 |
| | BT40-DSC8S-120 | 8 | 120 | 11 | 36 | 67 | 153 | 20,000 | 1.1 | 1.3 |
| | BT40-DSC8S-160 | 8 | 160 | 11 | 36 | 97 | 193 | 20,000 | 1.2 | 1.5 |
| | BT40-DSC10S-95 | 10 | 95 | 13 | 36 | 42 | 128 | 20,000 | 1.0 | 1.2 |
| | BT40-DSC10S-120 | 10 | 120 | 13 | 36 | 67 | 153 | 20,000 | 1.1 | 1.3 |
| | BT40-DSC10S-160 | 10 | 160 | 13 | 36 | 97 | 193 | 20,000 | 1.2 | 1.5 |
| | BT40-DSC12S-95 | 12 | 95 | 15 | 36 | 42 | 128 | 20,000 | 1.1 | 1.3 |
| | BT40-DSC12S-120 | 12 | 120 | 15 | 36 | 67 | 153 | 20,000 | 1.1 | 1.3 |
| | BT40-DSC12S-160 | 12 | 160 | 15 | 36 | 97 | 193 | 20,000 | 1.2 | 1.4 |
| BT50 | BT50-DSC6S-110 | 6 | 110 | 9 | 26 | 42 | 166 | 15,000 | 3.5 | 3.8 |
| | BT50-DSC6S-160 | 6 | 160 | 9 | 36 | 97 | 216 | 15,000 | 3.6 | 4.0 |
| | BT50-DSC8S-110 | 8 | 110 | 11 | 36 | 42 | 166 | 15,000 | 3.6 | 3.9 |
| | BT50-DSC8S-160 | 8 | 160 | 11 | 36 | 97 | 216 | 15,000 | 3.6 | 4.0 |
| | BT50-DSC10S-110 | 10 | 110 | 13 | 36 | 42 | 166 | 15,000 | 3.6 | 3.9 |
| | BT50-DSC10S-160 | 10 | 160 | 13 | 36 | 97 | 216 | 15,000 | 3.6 | 4.0 |
| | BT50-DSC12S-110 | 12 | 110 | 15 | 36 | 42 | 166 | 15,000 | 3.6 | 3.9 |
| BT50-DSC12S-160 | 12 | 160 | 15 | 36 | 97 | 216 | 15,000 | 3.7 | 4.1 | |

C Internal coolant system installed.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

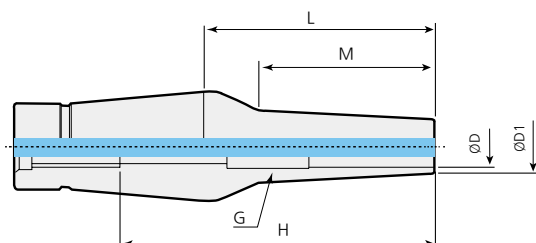
TAUMAX

OTHER



CS/CM 2PIECES TYPE

Shrinking chuck



• **H** : Depth of tool insertion

※ Adjustment screws cannot be used for this product.

※ The conventional order receiving to be converted after the current stock runs out.

• For more information on product features, see **36p**.

• For more information on the related parts, see **51p**.

| Model No. | ØD | L | ØD1 | M | H | Kg | Package weight (Kg) |
|-------------|----|-----|-----|----|------|-----|---------------------|
| CS12-6-35 | 6 | 35 | 9 | 22 | 55 | 0.1 | 0.2 |
| CS12-6-80 | 6 | 80 | 9 | 67 | 100 | 0.2 | 0.2 |
| CS12-6-110 | 6 | 110 | 9 | 97 | 130 | 0.2 | 0.3 |
| CS12-8-35 | 8 | 35 | 11 | 22 | 55 | 0.1 | 0.2 |
| CS12-8-110 | 8 | 110 | 11 | 97 | 130 | 0.3 | 0.3 |
| CS12-10-35 | 10 | 35 | 13 | 22 | 45 | 0.1 | 0.2 |
| CS12-10-80 | 10 | 80 | 13 | 67 | 65 | 0.2 | 0.3 |
| CS12-10-110 | 10 | 110 | 13 | 97 | 65 | 0.3 | 0.4 |
| CS12-12-35 | 12 | 35 | 15 | 22 | 45 | 0.1 | 0.2 |
| CS12-12-55 | 12 | 55 | 15 | 42 | 49.5 | 0.2 | 0.2 |
| CS12-12-80 | 12 | 80 | 15 | 67 | 65 | 0.2 | 0.3 |
| CS12-12-110 | 12 | 110 | 15 | 97 | 65 | 0.3 | 0.4 |

| Model No. | ØD | L | ØD1 | M | H | G | Kg | Package weight (Kg) |
|------------|----|----|-----|----|-----|----|-----|---------------------|
| CM12-6-35 | 6 | 35 | 12 | 22 | 55 | M5 | 0.2 | 0.2 |
| CM12-6-80 | 6 | 80 | 12 | 67 | 100 | M5 | 0.2 | 0.3 |
| CM12-8-35 | 8 | 35 | 14 | 22 | 55 | M5 | 0.2 | 0.2 |
| CM12-8-55 | 8 | 55 | 14 | 42 | 75 | M5 | 0.2 | 0.2 |
| CM12-8-80 | 8 | 80 | 14 | 67 | 100 | M5 | 0.3 | 0.3 |
| CM12-10-35 | 10 | 35 | 16 | 22 | 45 | M8 | 0.2 | 0.2 |
| CM12-10-55 | 10 | 55 | 16 | 42 | 45 | M8 | 0.2 | 0.3 |
| CM12-10-80 | 10 | 80 | 16 | 67 | 45 | M8 | 0.3 | 0.3 |
| CM12-12-35 | 12 | 35 | 20 | 22 | 45 | M8 | 0.2 | 0.2 |
| CM12-12-55 | 12 | 55 | 20 | 42 | 45 | M8 | 0.3 | 0.3 |
| CM12-12-80 | 12 | 80 | 20 | 52 | 55 | M8 | 0.3 | 0.4 |

C Internal coolant system installed.



BT-SLK 2PIECES TYPE

Shrinking chuck



| | | | |
|---------------|---------|-----------|----------------|
| MAS 403-BT | G2.5 | 5 μ m | C |
| Shank | G value | Run-out | Coolant System |

- ※ Dedicated PULL STUD bolts are necessary for BT30-SLK12-35.
- ※ The conventional order receiving to be converted after the current stock runs out.

| | Model No. | ØD | L | ØD1 | L1 | L2 | Kg | Package weight (Kg) |
|------|-----------------|----|-----|-----|-----|-----|------|---------------------|
| BT30 | BT30-SLK12-35 | 38 | 35 | - | 13 | - | 0.4 | 0.5 |
| | BT40-SLK12-45F | 41 | 45 | - | 18 | - | 1.0 | 1.2 |
| BT40 | BT40-SLK12-75F | 41 | 75 | - | 48 | - | 1.3 | 1.5 |
| | BT40-SLK12-135F | 41 | 135 | - | 108 | - | 2.1 | 2.4 |
| BT50 | BT50-SLK12-75 | 38 | 75 | 65 | 25 | 12 | 4.1 | 4.4 |
| | BT50-SLK12-75F | 41 | 75 | 65 | 25 | 12 | 4.1 | 4.4 |
| | BT50-SLK12-105F | 41 | 105 | 65 | 55 | 12 | 4.5 | 4.8 |
| | BT50-SLK12-135F | 41 | 135 | 65 | 85 | 12 | 5.3 | 5.7 |
| | BT50-SLK12-225 | 38 | 225 | 65 | 150 | 37 | 6.2 | 6.6 |
| | BT50-SLK12-315 | 38 | 315 | 90 | 150 | 127 | 11.5 | 11.9 |

C Internal coolant system installed.



DSC SPARE PART

Shrinking chuck related parts

Main components

Adjustment screw_length adjustment screw



※ Slim type untightening

| Main components | | | | | | | | | | |
|-----------------|-------|------|-------|-------|-------|--------|-------|-------|-------|-------|
| Type | DSC6 | DSC8 | DSC10 | DSC12 | DSC14 | DSC16 | DSC18 | DSC20 | DSC25 | DSC32 |
| Adjust screw | M520C | | M820C | | | M1230C | | | | |

※ M820C screws are used for SK40-DSC6M-95.



NPM

New power milling chuck



Features

- Strong clamping force more than 500kgf*m (based on NPM42)
- Uses its DUST BLOCK function to prevent outside foreign substance completely
- Enables jet coolant operation
- Implements high precision within 15µm in the case of L/D=3
- Boring range : $\varnothing 20\text{--}\varnothing 42$

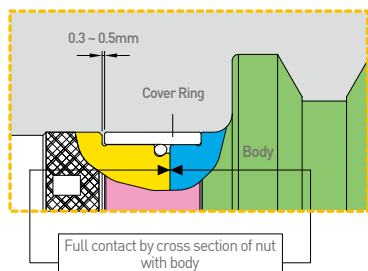
| | | | | | | | |
|--------|-------------|---|-------------------------|---|-----------|---|------------|
| NAMING | BT40 | — | NPM | — | 32 | — | 110 |
| | Spindle | | New Power Milling Chuck | | Tool Dia. | | Length |



Strong clamping force

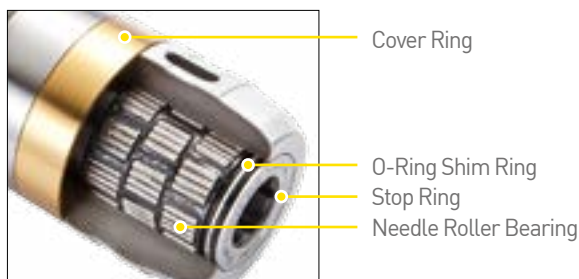
- NPM20 : Min. 130kgf·m
- NPM25 : Min. 265kgf·m
- NPM32 : Min. 350kgf·m
- NPM42 : Min. 500kgf·m
- NPM32(Short type) : Min. 230kgf·m

Durability enhanced by preventing foreign objects to be mixed (Dust Block) PAT.

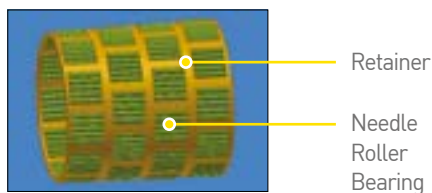


STOP RING applied to the front part
- Preventing mixing of SHIM RING and O-Ring

NPM Structural Features



Needle Roller Bearing (NPM20)



- Special steel bearing used to prevent damage
- Strong tightening due to load dispersion in the process of chucking

Enables stable machining from rough to medium boring

Ensures excellent vibration absorption and enhanced cutting power when cutting due to perfect cross-sectional adhesion and strong clamping force



Radial cutting depth (Rd)=1.0mm



Radial cutting depth (Rd)=2.5mm



Radial cutting depth (Rd)=3.5mm



Radial cutting depth (Rd)=5.0mm



Radial cutting depth (Rd)=8.0mm

Enables stable operation from rough to medium machining



NPM

New power milling chuck



Type

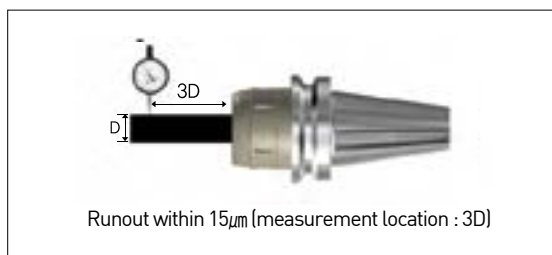
- **BT Type** : BT30, BT40, BT50
- **HSK Type** : HSK63A, HSK100A
- **SK Type** : SK30, SK40, SK50
- **NT Type** : NT40, NT50



BT Type HSK Type SK Type NT Type

High precision

- Run out accuracy within 15 μ m in the case of L/D=3
- Clamp inner diameter (Clamp I.D.) accuracy within 5 μ m



Internal coolant applicable



Internal refueling system

• **HSK shank is not available**

• **Add specifications of the CRS if not the basic application is adopted**

EX) CTC20-6 : Nut + Screw + CSR-6 (Change to the Coolant Stop Ring specifications wanting to use instead of a basic model)



| SPEC | NUT | SCREW | COLANT STOP RING | Inner diameter (Ø) | Applicable shank | Remarks |
|---------------|----------|---------|------------------|--------------------|------------------|---|
| CTC32(M16)-□□ | CBN-M16N | CAS-M12 | CSR-00 | 20, 25, 32 | #30, 40, 50 | #50 is not applicable to Inner diameter Ø32 |
| CTC32(M24)-□□ | CBN-M24N | | | 32, 42 | #50 | |

※ The above is an example.

• For more information on product features, see **61p**

CAUTION

- Be sure not to use a spanner with a pipe, etc. inserted when tightening a milling chuck.
- Excessive clamping can deform and/or adversely affect a cutting tool.
- When tightening a cutting tool, be sure not to touch it with bare hands.
- When using a collet, push it all the way into the milling chuck.
- If the insertion depth of the collet is not normal, the tool such as an end mill, etc. may fall out and/or the milling chuck may be internally damaged.
- In case of NPM milling chuck failure, do not disassemble it arbitrarily
- In case of a problem arising out of arbitrary disassembly, remember that no adjustment will be provided.



Removable within an average of 2.5 turns



DCJ

Jetcoolant collet (for milling chuck)



Features

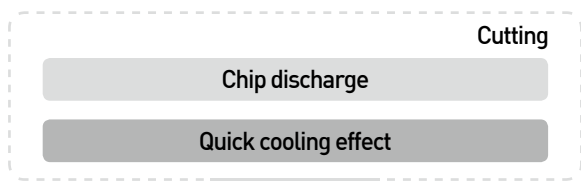
- Ensures a longer service life of cutting tools by preventing chips from adhering to tools
- Improves chip breakability/breaking strong jet injection
- Maintains the performance of the conventional milling chuck
- Enables a fast change of the inside jet coolant by collet replacement
- Available an ultrahigh-pressure inside coolant



| Model No. | Ø6 | Ø8 | Ø10 | Ø12 | Ø16 | Ø20 | Ø25 | Ø32 |
|-----------|----|----|-----|-----|-----|-----|-----|-----|
| NPM20 | ● | ● | ● | ● | ● | | | |
| NPM32 | ● | ● | ● | ● | ● | ● | ● | |
| NPM42 | ● | ● | ● | ● | ● | ● | ● | ● |

※ Can be used for an ultrahigh-pressure inside coolant

NPM+JET COOLANT COLLET



Increased tool service life

Easy assembly



※ Can be used by only combining a collet with the conventional chuck (NPM)

COOLANT TYPE

• Jet coolant



• Inside coolant



Chip evacuation



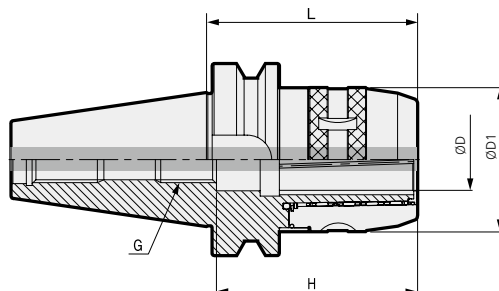
COOLANT TYPE

| | Model No. |
|-------|-----------|
| DCJ20 | DCJ20-6 |
| | DCJ20-8 |
| | DCJ20-10 |
| | DCJ20-12 |
| | DCJ20-16 |
| DCJ32 | DCJ32-6 |
| | DCJ32-8 |
| | DCJ32-10 |
| | DCJ32-12 |
| | DCJ32-16 |
| | DCJ32-20 |
| | DCJ32-25 |



BT-NPM

New power milling chuck



• H : Depth of tool insertion

| | Model No. | ØD | L | ØD1 | H | G | COLLET | Kg | Package weight (kg) |
|------|----------------|----|-----|-----|-----|-----|--------------------|-----|---------------------|
| BT30 | BT30-NPM20-85 | 20 | 85 | 54 | 85 | M16 | DC20, DCS20, DCJ20 | 1.2 | 1.3 |
| | BT40-NPM20-85 | 20 | 85 | 54 | 85 | M16 | DC20, DCS20, DCJ20 | 2.6 | 2.8 |
| | BT40-NPM20-100 | 20 | 100 | 54 | 85 | M16 | DC20, DCS20, DCJ20 | 2.3 | 2.5 |
| BT40 | BT40-NPM25-85 | 25 | 85 | 61 | 85 | M16 | DC25 | 1.7 | 1.9 |
| | BT40-NPM32-90 | 32 | 90 | 75 | 87 | M16 | DC32, DCS32, DCJ32 | 2.3 | 2.5 |
| | BT40-NPM32-110 | 32 | 110 | 75 | 95 | M16 | DC32, DCS32, DCJ32 | 2.8 | 3.1 |
| | BT40-NPM32-135 | 32 | 135 | 75 | 95 | M16 | DC32, DCS32, DCJ32 | 3.5 | 3.8 |
| BT50 | BT50-NPM20-95 | 20 | 95 | 54 | 85 | M16 | DC20, DCS20, DCJ20 | 4.3 | 4.6 |
| | BT50-NPM20-125 | 20 | 125 | 54 | 85 | M16 | DC20, DCS20, DCJ20 | 4.7 | 5.1 |
| | BT50-NPM20-165 | 20 | 165 | 54 | 85 | M16 | DC20, DCS20, DCJ20 | 5.2 | 5.6 |
| | BT50-NPM32-110 | 32 | 110 | 75 | 105 | M24 | DC32, DCS32, DCJ32 | 5.0 | 5.3 |
| | BT50-NPM32-135 | 32 | 135 | 75 | 105 | M24 | DC32, DCS32, DCJ32 | 5.7 | 6.1 |
| | BT50-NPM32-165 | 32 | 165 | 75 | 105 | M24 | DC32, DCS32, DCJ32 | 6.9 | 7.3 |
| | BT50-NPM42-110 | 42 | 110 | 90 | 125 | M24 | DC42, DCS42 | 5.4 | 5.7 |
| | BT50-NPM42-135 | 42 | 135 | 90 | 125 | M24 | DC42, DCS42 | 6.5 | 6.9 |
| | BT50-NPM42-165 | 42 | 165 | 90 | 125 | M24 | DC42, DCS42 | 7.9 | 8.3 |

☐ Internal coolant system is optional.

※ In the case of $L \leq 90$, a short length cap is recommended while in the case of medium cutting, a longer product more than 90 is recommended.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

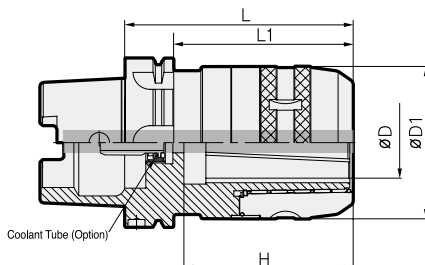
TAUMAX

OTHER



HSK-NPM

New power milling chuck



- For more information on product features, see **52p**.
- For more information on the related parts, see **61p**.

• **H** : Depth of tool insertion

| | Model No. | ØD | L | ØD1 | L1 | H | COLLET | Kg | Package weight (Kg) |
|---------|-------------------|----|-----|-----|-----|----|--------------------|-----|---------------------|
| HSK63A | HSK63A-NPM20-100 | 20 | 100 | 54 | 74 | 75 | DC20, DCS20, DCJ20 | 2.5 | 1.8 |
| | HSK63A-NPM32-120 | 32 | 120 | 75 | 84 | 90 | DC32, DCS32, DCJ32 | 2.9 | 2.8 |
| | HSK100A-NPM32-130 | 32 | 130 | 75 | 101 | 90 | DC32, DCS32, DCJ32 | 4.0 | 4.9 |
| HSK100A | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

C Internal coolant system is optional.

For separate purchase



| Classification by shank | |
|-------------------------|-------------|
| HSK50 | HSK50A-CNS |
| HSK63 | HSK63A-CNS |
| HSK100 | HSK100A-CNS |



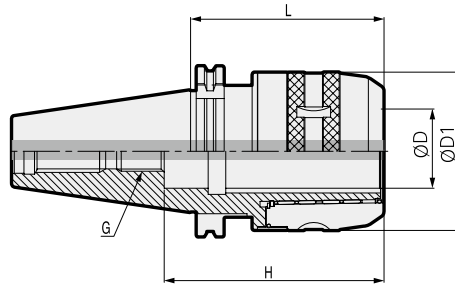
SK-NPM

New power milling chuck



DIN69871
-1A/B
15 μ m
130-500
kgf · m
C

Shank Run-out Clamping Force Coolant System Milling Drilling



- For more information on product features, see **52p**
- For more information on the related parts, see **61p**

• **H** : Depth of tool insertion

| | Model No. | ØD | L | ØD1 | H | G | COLLET | Kg | Package weight (Kg) |
|-------------|----------------|----|-----|-----|-----|-----|--------------------|-----|---------------------|
| SK40 | SK40-NPM20-95 | 20 | 95 | 54 | 85 | M16 | DC20, DCS20, DCJ20 | 2.4 | 2.6 |
| | SK40-NPM32-95 | 32 | 90 | 75 | 85 | M16 | DC32, DCS32, DCJ32 | 2.4 | 2.6 |
| | SK40-NPM32-110 | 32 | 110 | 75 | 95 | M16 | DC32, DCS32, DCJ32 | 2.8 | 3.0 |
| | SK40-NPM32-135 | 32 | 135 | 75 | 95 | M16 | DC32, DCS32, DCJ32 | 3.2 | 3.5 |
| SK50 | SK50-NPM20-100 | 20 | 100 | 54 | 85 | M16 | DC20, DCS20, DCJ20 | 3.6 | 3.9 |
| | SK50-NPM32-100 | 32 | 100 | 75 | 105 | M24 | DC32, DCS32, DCJ32 | 4.3 | 4.6 |
| | SK50-NPM32-130 | 32 | 130 | 75 | 105 | M24 | DC32, DCS32, DCJ32 | 5.2 | 5.6 |
| | SK50-NPM42-110 | 42 | 110 | 90 | 125 | M24 | DC42, DCS42 | 5.2 | 5.5 |
| | SK50-NPM42-135 | 42 | 135 | 90 | 125 | M24 | DC42, DCS42 | 6.1 | 6.5 |

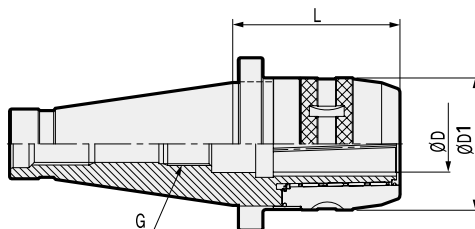
C Internal coolant system is optional.

Chuck
 Arbor / Modular
 Boring tool
 Angular head
 cBN/PCD
 Smart factory
 TAUMAX
 OTHER



NT-NPM

New power milling chuck



- For more information on product features, see **52p**.
- For more information on the related parts, see **61p**.

| | Model No. | ØD | L | ØD1 | G | COLLET | Kg | Package weight (Kg) |
|------|----------------|----|----|-----|-----|--------------------|-----|---------------------|
| NT40 | NT40-NPM32-95 | 32 | 95 | 75 | M16 | DC32, DCS32, DCJ32 | 2.7 | 2.9 |
| | NT50-NPM32-95 | 32 | 95 | 75 | M24 | DC32, DCS32, DCJ32 | 4.3 | 4.6 |
| NT50 | NT50-NPM42-95 | 42 | 95 | 90 | M24 | DC42, DCS42 | 4.8 | 5.1 |
| | NT50M-NPM32-95 | 32 | 95 | 75 | M24 | DC32, DCS32, DCJ32 | 4.4 | 4.7 |
| | NT50M-NPM42-95 | 42 | 95 | 90 | M24 | DC42, DCS42 | 4.9 | 5.2 |

C This product does not support the internal coolant system.

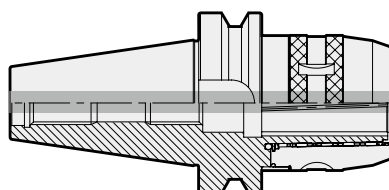


NPM SET

New power milling chuck SET



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



- For more information on product features, see **52p**.
- HSK, SK/ B Set are customizable.

| | Images | Body | Collet | Spanner |
|------|-------------------|----------------|-----------------------------------|---------|
| BT40 | Model No. | | | |
| | 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 | BT50-NPM42-110(A) | BT50-NPM42-110 | DC42-6, 8, 10, 12, 16, 20, 25, 32 | 92-96 |
| | | | | |

Internal coolant system is optional.

※ B Set includes MT collet and DJT collet in addition to the above item list.



A Set

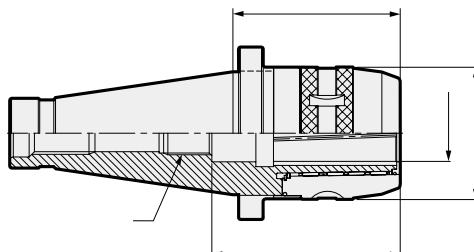


B Set

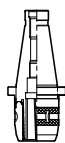
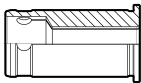





NT-NPM SET

New power milling chuck SET



• For more information on product features, see **52p**

| | Images | Body | Collet | MT Collet | DJT | Spanner |
|-------------|------------------|--|--|--|--|--|
| | Model No. |  |  |  |  |  |
| NT40 | 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 | 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 |

C This product does not support the internal coolant system.



NPM SPARE PART

New power milling chuck



For separate purchase (BT/SK)

| Spare Part | | | |
|-----------------------|------------------------|--------------------|---------|
| For separate purchase | | | |
| Type | Coolant system (BT/SK) | Collet | Spanner |
| Images | | | |
| Model No. | | | |
| NPM20 | CTC20-□□ | DCS20, DC20, DCJ20 | 57-60 |
| NPM32 | CTC32-□□ | DCS32, DC32, DCJ32 | 75-79 |
| NPM42 | CTC42-□□ | DCS42, DC42 | 92-96 |

For separate purchase (HSK)

| Spare Part | |
|-------------------------|-------------|
| For separate purchase | |
| Coolant tube | |
| | |
| Classification by shank | |
| HSK50 | HSK50A-CNS |
| HSK63 | HSK63A-CNS |
| HSK100 | HSK100A-CNS |

Internal refueling system



• **HSK shank is not available**

• **Add specifications of the CRS if not the basic application is adopted.**

EX) CTC20-6 : Nut + Screw + CSR-6 (Change to the Coolant Stop Ring specifications wanting to use instead of a basic model)

※ Caution : If the coolant stop ring (CSR) is rotated continuously using Wrench that the coolant adjust screw(CAS) will be used, falls below the Coolant Bush Nut (CBN) and the CSR is dropped, so please be careful when using it.



| SPEC | NUT | SCREW | COLANT STOP RING | Inner diameter (∅) | Applied screw(G) | Remarks |
|---------------|----------|---------|------------------|--------------------|------------------|---------|
| CTC20(M16)-□□ | CBN-M16N | CAS-M12 | CSR-00 | 20 | M16 | |
| CTC25(M16)-□□ | CBN-M16N | | | 25 | M16 | |
| CTC32(M16)-□□ | CBN-M16N | | | 32 | M16 | |
| CTC32(M24)-□□ | CBN-M24N | | | 32 | M24 | |
| CTC42(M24)-□□ | CBN-M24N | | | 42 | M24 | |

※ For the CTC32 type, use two types, CTC32(M12) and CTC32(M24), because the standard of Adjust Screw per Shank is different.

※ For the Coolant Stop Ring (CSR), you can select the specification option that suits your situation.



DCL NEW

Lock collet for milling chuck



Features

Milling chuck equipped with anti-fallout feature to prevent poor milling when machining a workpiece and improve tool service life (with DINE's milling chuck)

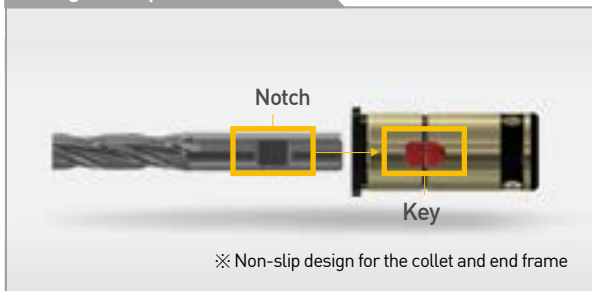
- Prevents the tool from falling out due to coolant pressure and vibration
- Useful for working with difficult-to-cut materials that require high workload
- Fit for difficult-to-cut materials with ultralight weight and high hardness in aerospace and automobile industries



| | | | |
|--------|------------------|-------------|-----------|
| NAMING | DCL | 32 | 20 |
| | DINE Lock-Collet | Collet Size | Tool Dia. |

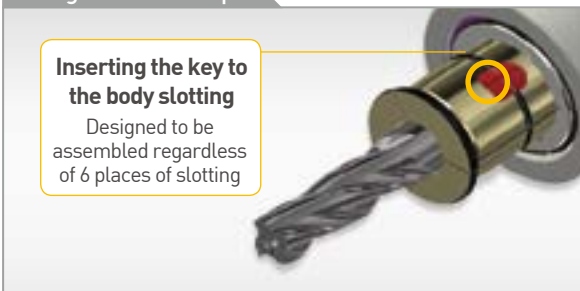
Structural Features

Designed to prevent fallout



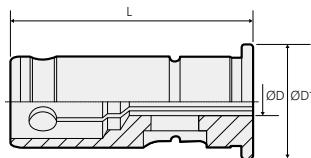
- Designed especially for extreme machining with a lot of mechanical actions, prevents the tool from deviating or falling out.
- Weldon flat (DINE 6535HB) end mill used

Designed as non-slip



- Closely adhered to the grooves of the milling chuck - No slip occurring even under high torque

Detailed Specifications



| | Model No. | ØD | ØD1 | L |
|-------|-----------|----|-----|------|
| DCL20 | DCL20-6 | 6 | 20 | 53 |
| | DCL20-8 | 8 | 20 | 53 |
| | DCL20-10 | 10 | 20 | 53 |
| | DCL20-12 | 12 | 20 | 53 |
| | DCL20-14 | 14 | 20 | 53 |
| | DCL20-16 | 16 | 20 | 53 |
| DCL32 | DCL32-6 | 6 | 32 | 64.5 |
| | DCL32-8 | 8 | 32 | 64.5 |
| | DCL32-10 | 10 | 32 | 64.5 |
| | DCL32-12 | 12 | 32 | 64.5 |
| | DCL32-14 | 14 | 32 | 64.5 |
| | DCL32-16 | 16 | 32 | 64.5 |
| | DCL32-18 | 18 | 32 | 64.5 |
| | DCL32-20 | 20 | 32 | 64.5 |
| | DCL32-25 | 25 | 32 | 64.5 |

※ DIN 6535 specifications end mill used





DCL SPARE PART

Non-slip milling chuck collet related parts



SPARE PART

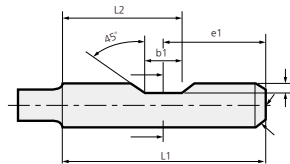
| TYPE | Main component | |
|----------|---|---|
| | Key | C-Grip |
| |  |  |
| DCL20-6 | DCL20-6K | DCL-CG20 |
| DCL20-8 | DCL20-8K | DCL-CG20 |
| DCL20-10 | DCL20-10K | DCL-CG20 |
| DCL20-12 | DCL20-12K | DCL-CG20 |
| DCL20-14 | DCL20-14K | DCL-CG20 |
| DCL20-16 | DCL20-16K | DCL-CG20 |
| DCL32-6 | DCL32-6K | DCL-CG32 |
| DCL32-8 | DCL32-8K | DCL-CG32 |
| DCL32-10 | DCL32-10K | DCL-CG32 |
| DCL32-12 | DCL32-12K | DCL-CG32 |
| DCL32-14 | DCL32-14K | DCL-CG32 |
| DCL32-16 | DCL32-16K | DCL-CG32 |
| DCL32-18 | DCL32-18K | DCL-CG32 |
| DCL32-20 | DCL32-20K | DCL-CG32 |
| DCL32-25 | DCL32-25K | DCL-CG32 |



Notched Endmill

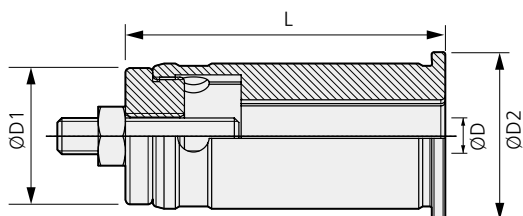
Notched Endmill

Detailed Specifications



| Tool Ø | Tool (DIN6535) | | | | |
|--------|----------------|------|-----|-------|-----|
| | L1 | e1 | b1 | L2 | t |
| 6 | 36 | 18 | 4.2 | 20.1 | 0.9 |
| 8 | 36 | 18 | 5.5 | 20.75 | 1.1 |
| 10 | 40 | 20 | 7 | 23.5 | 1.5 |
| 12 | 45 | 22.5 | 8 | 26.5 | 1.6 |
| 14 | 45 | 22.5 | 8 | 26.5 | 1.3 |
| 16 | 48 | 24 | 10 | 29 | 1.8 |
| 18 | 48 | 24 | 10 | 29 | 1.8 |
| 20 | 50 | 25 | 11 | 30.5 | 1.8 |
| 25 | 56 | 32 | 12 | 30 | 2 |
| 32 | 60 | 36 | 14 | 31 | 2 |

※ DIN 6535 specifications end mill used ※ As a separate purchase, it can be referred to when using ERL/L collet.



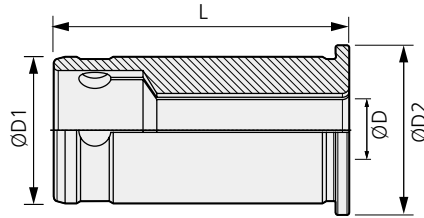
• It can be adjusted in length with a collet adjustment screw.

| | Model No. | ØD | L | ØD1 | ØD2 | Kg | Package weight (Kg) |
|----------|-----------|---------|------|-----|-----|-----|---------------------|
| DCS20 | DCS20-6 | 6 | 57 | 20 | 25 | 0.1 | 0.1 |
| | DCS20-8 | 8 | 57 | 20 | 25 | 0.1 | |
| | DCS20-10 | 10 | 57 | 20 | 25 | 0.1 | |
| | DCS20-12 | 12 | 57 | 20 | 25 | 0.1 | |
| | DCS20-16 | 16 | 57 | 20 | 25 | 0.1 | |
| DCS32 | DCS32-6 | 6 | 70.5 | 32 | 37 | 0.2 | 0.2~0.3 |
| | DCS32-8 | 8 | 70.5 | 32 | 37 | 0.2 | |
| | DCS32-10 | 10 | 70.5 | 32 | 37 | 0.2 | |
| | DCS32-12 | 12 | 70.5 | 32 | 37 | 0.2 | |
| | DCS32-14 | 14 | 70.5 | 32 | 37 | 0.2 | |
| | DCS32-16 | 16 | 70.5 | 32 | 37 | 0.2 | |
| | DCS32-19 | 19 | 70.5 | 32 | 37 | 0.2 | |
| | DCS32-20 | 20 | 70.5 | 32 | 37 | 0.2 | |
| | DCS32-25 | 25 | 70.5 | 32 | 37 | 0.2 | |
| | DCS42 | DCS42-6 | 6 | 80 | 42 | 47 | |
| DCS42-8 | | 8 | 80 | 42 | 47 | 0.5 | |
| DCS42-10 | | 10 | 80 | 42 | 47 | 0.5 | |
| DCS42-12 | | 12 | 80 | 42 | 47 | 0.5 | |
| DCS42-16 | | 16 | 80 | 42 | 47 | 0.5 | |
| DCS42-20 | | 20 | 80 | 42 | 47 | 0.5 | |
| DCS42-25 | | 25 | 80 | 42 | 47 | 0.5 | |
| DCS42-32 | | 32 | 80 | 42 | 47 | 0.5 | |



DC

Straight collet



| | Model No. | ØD | L | ØD1 | ØD2 | Kg | Package weight (Kg) |
|-------------|-----------|----|------|-----|-----|-----|---------------------|
| DC20 | DC20-6 | 6 | 53 | 20 | 25 | 0.1 | 0.1 |
| | DC20-8 | 8 | 53 | 20 | 25 | 0.1 | |
| | DC20-10 | 10 | 53 | 20 | 25 | 0.1 | |
| | DC20-12 | 12 | 53 | 20 | 25 | 0.1 | |
| | DC20-14 | 14 | 53 | 20 | 25 | 0.1 | |
| | DC20-16 | 16 | 53 | 20 | 25 | 0.1 | |
| DC25 | DC25-6 | 6 | 61.5 | 25 | 29 | 0.2 | 0.2 |
| | DC25-8 | 8 | 61.5 | 25 | 29 | 0.2 | |
| | DC25-10 | 10 | 61.5 | 25 | 29 | 0.2 | |
| | DC25-12 | 12 | 61.5 | 25 | 29 | 0.2 | |
| | DC25-16 | 16 | 61.5 | 25 | 29 | 0.2 | |
| DC32 | DC32-6 | 6 | 64.5 | 32 | 37 | 0.2 | 0.3 |
| | DC32-8 | 8 | 64.5 | 32 | 37 | 0.2 | |
| | DC32-10 | 10 | 64.5 | 32 | 37 | 0.2 | |
| | DC32-12 | 12 | 64.5 | 32 | 37 | 0.2 | |
| | DC32-14 | 14 | 64.5 | 32 | 37 | 0.2 | |
| | DC32-16 | 16 | 64.5 | 32 | 37 | 0.2 | |
| | DC32-19 | 19 | 64.5 | 32 | 37 | 0.2 | |
| | DC32-20 | 20 | 64.5 | 32 | 37 | 0.2 | |
| | DC32-25 | 25 | 64.5 | 32 | 37 | 0.2 | |
| DC42 | DC42-6 | 6 | 73 | 42 | 47 | 0.5 | 0.3-0.5 |
| | DC42-8 | 8 | 73 | 42 | 47 | 0.5 | |
| | DC42-10 | 10 | 73 | 42 | 47 | 0.5 | |
| | DC42-12 | 12 | 73 | 42 | 47 | 0.5 | |
| | DC42-16 | 16 | 73 | 42 | 47 | 0.5 | |
| | DC42-20 | 20 | 73 | 42 | 47 | 0.5 | |
| | DC42-25 | 25 | 73 | 42 | 47 | 0.5 | |
| | DC42-32 | 32 | 73 | 42 | 47 | 0.5 | |

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

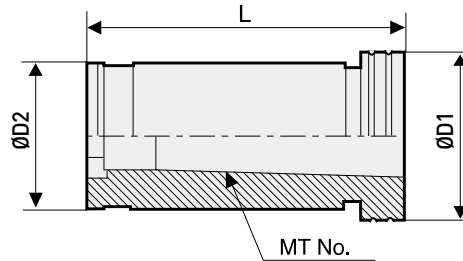
TAUMAX

OTHER



TC

Taper collet

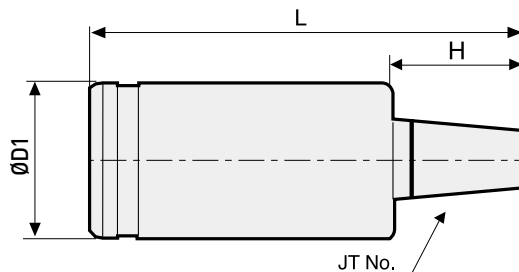


| | Model No. | MT No. | L | ØD1 | ØD2 | Kg | Package weight (kg) |
|------|-----------|--------|-------|-----|-----|-----|---------------------|
| TC20 | TC20-1 | MT1 | 60 | 20 | 26 | 0.1 | 0.1 |
| | TC20-2 | MT2 | 72 | 20 | 26 | 0.1 | 0.1 |
| TC25 | TC25-1 | MT1 | 60 | 25 | 32 | 0.2 | 0.2 |
| | TC25-2 | MT2 | 72 | 25 | 32 | 0.2 | 0.2 |
| TC32 | TC32-1 | MT1 | 60 | 32 | 38 | 0.4 | 0.4 |
| | TC32-2 | MT2 | 72 | 32 | 38 | 0.4 | 0.4 |
| | TC32-3 | MT3 | 90 | 32 | 38 | 0.4 | 0.4 |
| TC42 | TC42-1 | MT1 | 60 | 42 | 48 | 0.6 | 0.6 |
| | TC42-2 | MT2 | 72 | 42 | 48 | 0.7 | 0.7 |
| | TC42-3 | MT3 | 90 | 42 | 48 | 0.8 | 0.8 |
| | TC42-4 | MT4 | 112.5 | 42 | 48 | 0.9 | 0.9 |



DJT

Drill chuck arbor



DJT20, DJT32, DJT42

| Model No. | JT No. | L | ØD1 | H | Kg | Package weight (kg) |
|-----------|--------|-----|-----|----|-----|---------------------|
| DJT20-6 | JT6 | 83 | 20 | 28 | 0.2 | 0.2 |
| DJT32-6 | JT6 | 93 | 32 | 28 | 0.5 | 0.5 |
| DJT42-6 | JT6 | 103 | 42 | 28 | 0.9 | 0.9 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



SDC/P

Precision collet chuck for multi purpose machining



Features

- Improved precision (higher than conventional SDC)
- Simpler model number management than conventional SDC due to its organized gauge line
- Collet chuck suitable for multi-purpose machining with SWISS-MADE sleeve nut adopted
- Boring range : Ø1~Ø25

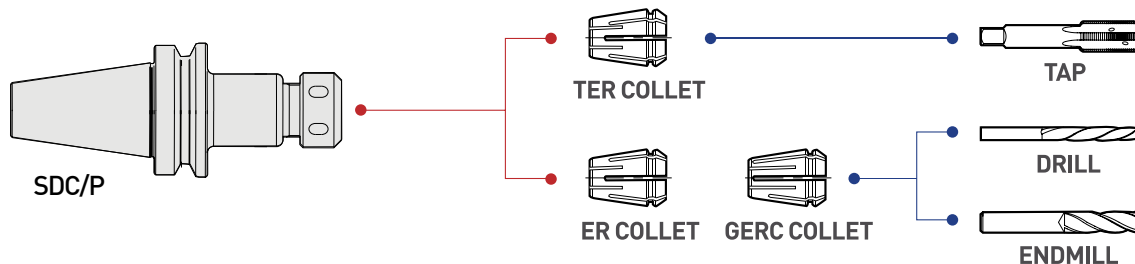
| | | | | | | | |
|--------|-------------|---|--------------|-----------|-----------|---|------------|
| NAMING | BT30 | – | SDC | 10 | P | – | 100 |
| | Spindle | | Collet chuck | Tool Dia. | Precision | | Length |



Best functional Nut(SWISS made)



SDC/P Application



SPARE PART

Main components

| Chuck | Main components | |
|---------|--------------------|--------------|
| | Sleeve bearing nut | Adjust screw |
| TYPE | | |
| SDC 7P | RN11 | BN0716F |
| SDC 10P | RN16 | BN1025F |
| SDC 13P | RN20 | BN1325F |
| SDC 16P | RN25 | BN1830F |
| SDC 20P | RN32 | BN2230F |
| SDC 26P | RN40 | BN2838F |

For separate purchase

| Chuck | For separate purchase | |
|---------|-----------------------|---------------|
| | Spanner | Collet |
| TYPE | | |
| SDC 7P | 20-22 | GERC/ER 11-ØD |
| SDC 10P | 32-35 | GERC/ER 16-ØD |
| SDC 13P | 35-38 | GERC/ER 20-ØD |
| SDC 16P | 42-46 | GERC/ER 25-ØD |
| SDC 20P | 48-52 | GERC/ER 32-ØD |
| SDC 26P | 62-65 | GERC/ER 40-ØD |



BT-SDC/P

Precision collet chuck for multi purpose machining



Fig.1

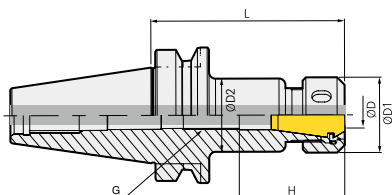


Fig.2

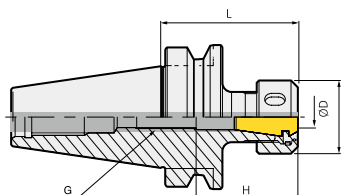
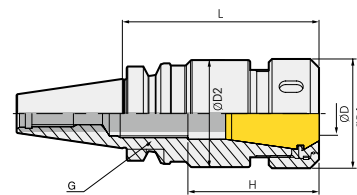


Fig.3



• H : Depth of tool insertion

※ Using oil hole types requires the standard dimension.

- For more information on the product features, see **68p**
- For more information on the related parts, see **72p**
- For more information on the applicable collet, see **75p**

| | Model No. | ØD | L | ØD1 | ØD2 | H | COLLET | G | Fig. | Kg | Package weight (Kg) |
|-----------------|-----------------|-----------|-----|-----|-----|--------|--------|-----|------|-----|---------------------|
| BT30 | BT30-SDC7P-70 | 1.0~7.0 | 70 | 18 | 17 | 33 | GERC11 | M7 | 1 | 0.5 | 0.5 |
| | BT30-SDC7P-100 | 1.0~7.0 | 100 | 18 | 17 | 33 | GERC11 | M7 | 1 | 0.5 | 0.6 |
| | BT30-SDC10P-50 | 1.0~10.0 | 50 | 32 | - | 44.5 | GERC16 | M10 | 2 | 0.5 | 0.6 |
| | BT30-SDC10P-70 | 1.0~10.0 | 70 | 32 | 31 | 44.5 | GERC16 | M10 | 1 | 0.6 | 0.6 |
| | BT30-SDC10P-100 | 1.0~10.0 | 100 | 32 | 31 | 44.5 | GERC16 | M10 | 1 | 0.7 | 0.9 |
| | BT30-SDC13P-50 | 1.0~13.0 | 50 | 35 | - | 49 | GERC20 | M13 | 2 | 0.5 | 0.6 |
| | BT30-SDC13P-70 | 1.0~13.0 | 70 | 35 | 34 | 49 | GERC20 | M13 | 1 | 0.6 | 0.7 |
| | BT30-SDC13P-100 | 1.0~13.0 | 100 | 35 | 34 | 49 | GERC20 | M13 | 1 | 0.8 | 0.9 |
| | BT30-SDC16P-50 | 2.0~16.0 | 50 | 42 | - | 50 | GERC25 | M18 | 2 | 0.5 | 0.6 |
| | BT30-SDC16P-70 | 2.0~16.0 | 70 | 42 | 41 | 50 | GERC25 | M18 | 1 | 0.7 | 0.8 |
| | BT30-SDC16P-100 | 2.0~16.0 | 100 | 42 | 41 | 50 | GERC25 | M18 | 1 | 1.0 | 1.1 |
| | BT30-SDC20P-60 | 2.0~20.0 | 60 | 50 | - | 60 | GERC32 | M22 | 2 | 0.6 | 0.7 |
| BT30-SDC20P-90 | 2.0~20.0 | 90 | 50 | 49 | 60 | GERC32 | M22 | 3 | 1.0 | 1.1 | |
| BT30-SDC20P-120 | 2.0~20.0 | 120 | 50 | 49 | 60 | GERC32 | M22 | 3 | 1.4 | 1.5 | |
| BT40 | BT40-SDC7P-70 | 1.0~7.0 | 70 | 18 | 17 | 33 | GERC11 | M7 | 1 | 0.9 | 1.1 |
| | BT40-SDC7P-90 | 1.0~7.0 | 90 | 18 | 17 | 33 | GERC11 | M7 | 1 | 0.9 | 1.2 |
| | BT40-SDC7P-130 | 1.0~7.0 | 130 | 18 | 17 | 33 | GERC11 | M7 | 1 | 1.0 | 1.2 |
| | BT40-SDC10P-70 | 1.0~10.0 | 70 | 32 | 31 | 44.5 | GERC16 | M10 | 1 | 1.0 | 1.2 |
| | BT40-SDC10P-90 | 1.0~10.0 | 90 | 32 | 31 | 44.5 | GERC16 | M10 | 1 | 1.2 | 1.4 |
| | BT40-SDC10P-130 | 1.0~10.0 | 130 | 32 | 31 | 44.5 | GERC16 | M10 | 2 | 1.4 | 1.5 |
| | BT40-SDC13P-70 | 1.0~13.0 | 70 | 35 | 34 | 49 | GERC20 | M13 | 1 | 1.1 | 1.2 |
| | BT40-SDC13P-90 | 1.0~13.0 | 90 | 35 | 34 | 49 | GERC20 | M13 | 1 | 1.2 | 1.4 |
| | BT40-SDC13P-130 | 1.0~13.0 | 130 | 35 | 34 | 49 | GERC20 | M13 | 1 | 1.4 | 1.6 |
| | BT40-SDC13P-150 | 1.0~13.0 | 150 | 35 | 34 | 49 | GERC20 | M13 | 1 | 1.6 | 1.8 |
| | BT40-SDC16P-70 | 2.0~16.0 | 70 | 42 | 41 | 50 | GERC25 | M18 | 1 | 1.1 | 1.3 |
| | BT40-SDC16P-90 | 2.0~16.0 | 90 | 42 | 41 | 50 | GERC25 | M18 | 1 | 1.3 | 1.5 |
| | BT40-SDC16P-130 | 2.0~16.0 | 130 | 42 | 41 | 50 | GERC25 | M18 | 1 | 1.7 | 1.9 |
| | BT40-SDC20P-70 | 2.0~20.0 | 70 | 50 | - | 60 | GERC32 | M22 | 2 | 1.1 | 1.3 |
| | BT40-SDC20P-90 | 2.0~20.0 | 90 | 50 | 49 | 60 | GERC32 | M22 | 1 | 1.4 | 1.6 |
| | BT40-SDC20P-130 | 2.0~20.0 | 130 | 50 | 49 | 60 | GERC32 | M22 | 1 | 1.9 | 2.2 |
| | BT40-SDC20P-150 | 2.0~20.0 | 150 | 50 | 49 | 60 | GERC32 | M22 | 1 | 2.2 | 2.5 |
| | BT40-SDC26P-90 | 16.0~25.0 | 90 | 63 | 62 | 71 | GERC40 | M28 | 1 | 1.7 | 1.9 |

☐ Internal coolant system is optional.



BT-SDC/P

Precision collet chuck for multi purpose machining



Fig.1

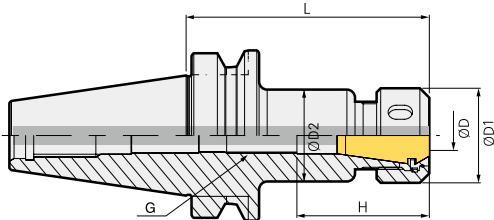
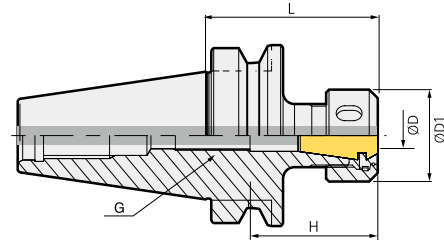


Fig.2



• **H** : Depth of tool insertion

※ Using oil hole types requires the standard dimension.

• For more information on the product features, see **68p**.

• For more information on the related parts, see **72p**.

• For more information on the applicable collet, see **75p**.

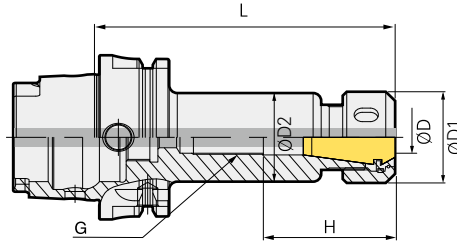
| Model No. | ØD | L | ØD1 | ØD2 | H | COLLET | G | Fig. | Kg | Package weight (Kg) |
|-----------------|-----------|-----|-----|-----|------|--------|-----|------|-----|---------------------|
| BT50-SDC10P-100 | 1.0~10.0 | 100 | 32 | 31 | 44.5 | GERC16 | M10 | 1 | 3.7 | 4.0 |
| BT50-SDC10P-120 | 1.0~10.0 | 120 | 32 | 31 | 44.5 | GERC16 | M10 | 1 | 3.7 | 4.1 |
| BT50-SDC10P-160 | 1.0~10.0 | 160 | 32 | 31 | 44.5 | GERC16 | M10 | 1 | 3.8 | 4.4 |
| BT50-SDC13P-100 | 1.0~13.0 | 100 | 35 | 34 | 49 | GERC20 | M13 | 1 | 3.8 | 4.1 |
| BT50-SDC13P-130 | 1.0~13.0 | 130 | 35 | 34 | 49 | GERC20 | M13 | 1 | 3.8 | 4.2 |
| BT50-SDC13P-160 | 1.0~13.0 | 160 | 35 | 34 | 49 | GERC20 | M13 | 1 | 4.1 | 4.5 |
| BT50-SDC13P-180 | 1.0~13.0 | 180 | 35 | 34 | 49 | GERC20 | M13 | 1 | 4.2 | 4.6 |
| BT50-SDC16P-100 | 2.0~16.0 | 100 | 42 | 41 | 50 | GERC25 | M18 | 1 | 3.9 | 4.2 |
| BT50-SDC16P-160 | 2.0~16.0 | 160 | 42 | 41 | 50 | GERC25 | M18 | 1 | 4.3 | 4.7 |
| BT50-SDC20P-70 | 2.0~20.0 | 70 | 50 | - | 60 | GERC32 | M22 | 2 | 1.7 | 2.0 |
| BT50-SDC20P-100 | 2.0~20.0 | 100 | 50 | 49 | 60 | GERC32 | M22 | 1 | 4.0 | 4.3 |
| BT50-SDC20P-130 | 2.0~20.0 | 130 | 50 | 49 | 60 | GERC32 | M22 | 1 | 4.3 | 4.7 |
| BT50-SDC20P-160 | 2.0~20.0 | 160 | 50 | 49 | 60 | GERC32 | M22 | 1 | 4.7 | 5.1 |
| BT50-SDC20P-180 | 2.0~20.0 | 180 | 50 | 49 | 60 | GERC32 | M22 | 1 | 5.0 | 5.4 |
| BT50-SDC26P-160 | 16.0~26.0 | 160 | 63 | 62 | 71 | GERC40 | M28 | 1 | 5.5 | 5.9 |

☐ Internal coolant system is optional.



HSK-SDC/P

Precision collet chuck for multi purpose machining



• **H** : Depth of tool insertion

※ Using oil hole types requires the standard dimension.

• For more information on the product features, see **68p**

• For more information on the related parts, see **72p**

• For more information on the applicable collet, see **75p**

| | Model No. | ØD | L | ØD1 | ØD2 | H | G | COLLET | Kg | Package weight (Kg) |
|---------|--------------------|----------|-----|-----|-----|------|-----|--------|-----|---------------------|
| HSK63A | HSK63A-SDC10P-100 | 1.0~10.0 | 100 | 32 | 31 | 44.5 | M10 | GERC16 | 1.0 | 1.1 |
| | HSK63A-SDC13P-100 | 1.0~13.0 | 100 | 35 | 34 | 49 | M7 | GERC20 | 1.1 | 1.2 |
| | HSK63A-SDC16P-100 | 2.0~16.0 | 100 | 42 | 41 | 50 | M7 | GERC25 | 1.2 | 1.4 |
| | HSK63A-SDC20P-110 | 2.0~20.0 | 110 | 50 | 49 | 60 | M7 | GERC32 | 1.5 | 1.7 |
| HSK100A | HSK100A-SDC16P-110 | 2.0~16.0 | 110 | 42 | 41 | 50 | M13 | GERC25 | 2.6 | 2.9 |
| | HSK100A-SDC20P-120 | 2.0~20.0 | 120 | 50 | 49 | 60 | M10 | GERC32 | 2.9 | 3.3 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

☐ Internal coolant system is optional.

For separate purchase



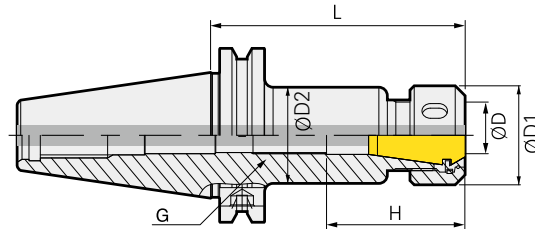
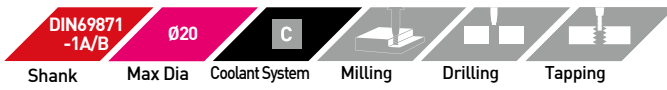
Internal coolant system

| Classification by shank | |
|-------------------------|-------------|
| HSK50 | HSK50A-CNS |
| HSK63 | HSK63A-CNS |
| HSK100 | HSK100A-CNS |



SK-SDC/P

Precision collet chuck for multi purpose machining



• **H** : Depth of tool insertion

※ Using oil hole types requires the standard dimension.

• For more information on the product features, see **68p**.

• For more information on the related parts, see **72p**.

• For more information on the applicable collet, see **75p**.

| | Model No. | ØD | L | ØD1 | ØD2 | H | COLLET | G | Kg | Package weight (Kg) |
|------|-----------------|----------|-----|-----|-----|------|--------|-----|-----|---------------------|
| SK40 | SK40-SDC10P-90 | 1.0~10.0 | 90 | 32 | 31 | 44.5 | GERC16 | M10 | 1.1 | 1.2 |
| | SK40-SDC13P-90 | 1.0~13.0 | 90 | 35 | 34 | 49 | GERC20 | M13 | 1.2 | 1.3 |
| | SK40-SDC13P-120 | 1.0~13.0 | 120 | 35 | 34 | 49 | GERC20 | M13 | 1.3 | 1.5 |
| | SK40-SDC16P-90 | 2.0~16.0 | 90 | 42 | 41 | 50 | GERC25 | M18 | 1.4 | 1.5 |
| | SK40-SDC20P-90 | 2.0~20.0 | 90 | 50 | 49 | 60 | GERC32 | M13 | 1.5 | 1.6 |

☐ Internal coolant system is optional.



SDC/P SPARE PART

ER collet chuck related parts

| Spare Part | | |
|-----------------|--------------------|--------------|
| Main components | | |
| Type | Sleeve bearing nut | Adjust screw |
| Images | | |
| Model No. | | |
| SDC 7P | RN11 | BN0716F |
| SDC 10P | RN16 | BN1025F |
| SDC 13P | RN20 | BN1325F |
| SDC 16P | RN25 | BN1830F |
| SDC 20P | RN32 | BN2230F |
| SDC 26P | RN40 | BN2838F |

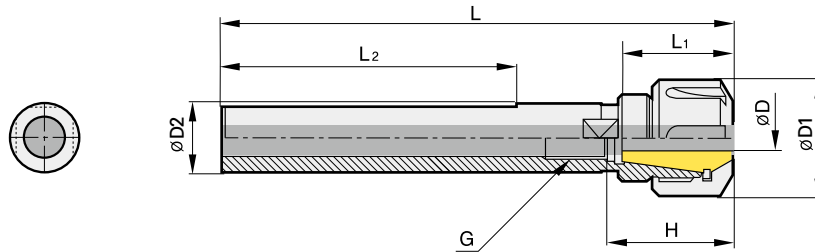
| Spare Part | | |
|-----------------------|---------|---------------|
| For separate purchase | | |
| Type | Spanner | GERC / ER |
| Images | | |
| Model No. | | |
| SDC 7P | 20-22 | GERC/ER 11-ØD |
| SDC 10P | 32-35 | GERC/ER 16-ØD |
| SDC 13P | 35-38 | GERC/ER 20-ØD |
| SDC 16P | 42-46 | GERC/ER 25-ØD |
| SDC 20P | 48-52 | GERC/ER 32-ØD |
| SDC 26P | 62-65 | GERC/ER 40-ØD |

※ BN0716F screws are used for BT30-SDC13P-50/HSK63A-SDC13P-100.



S-SDC

Straight shank collet chuck



• For more information on the applicable collet, see **75p**

| | Model No. | ØD | L | ØD1 | ØD2 | L1 | L2 | H | COLLET | G | Kg | Package weight (Kg) |
|----------------|----------------|----------|-----|-----|-----|------|----|--------|--------|-----|-----|---------------------|
| S16, S20 | S16-SDC7-120M | 1.0~7.0 | 120 | 19 | 16 | - | 73 | 33 | GERC11 | M7 | 0.1 | 0.2 |
| | S16-SDC7-120T | 1.0~7.0 | 120 | 19 | 16 | - | 73 | 33 | GERC11 | M7 | 0.1 | 0.2 |
| | S16-SDC10-150T | 1.0~10.0 | 150 | 28 | 16 | 46.5 | 83 | 34.5 | GERC16 | M10 | 0.2 | 0.3 |
| | S20-SDC10-150M | 1.0~10.0 | 150 | 28 | 20 | 26.5 | 83 | 34.5 | GERC16 | M10 | 0.3 | 0.4 |
| | S20-SDC10-150T | 1.0~10.0 | 150 | 28 | 20 | 26.5 | 83 | 34.5 | GERC16 | M10 | 0.3 | 0.4 |
| | S20-SDC13-150M | 1.0~13.0 | 150 | 35 | 20 | 50 | 83 | 49 | GERC20 | M13 | 0.3 | 0.4 |
| | S20-SDC13-150T | 1.0~13.0 | 150 | 35 | 20 | 50 | 83 | 49 | GERC20 | M13 | 0.3 | 0.4 |
| S25, S32 | S25-SDC10-150M | 1.0~10.0 | 150 | 28 | 25 | - | 83 | 34.5 | GERC16 | M10 | 0.4 | 0.5 |
| | S25-SDC10-150T | 1.0~10.0 | 150 | 28 | 25 | - | 83 | 34.5 | GERC16 | M10 | 0.4 | 0.5 |
| | S25-SDC13-150M | 1.0~13.0 | 150 | 35 | 25 | - | 83 | 49 | GERC20 | M13 | 0.4 | 0.5 |
| | S25-SDC13-150T | 1.0~13.0 | 150 | 35 | 25 | - | 83 | 49 | GERC20 | M13 | 0.4 | 0.5 |
| | S32-SDC13-150M | 1.0~13.0 | 150 | 35 | 32 | - | 83 | 49 | GERC20 | M13 | 0.7 | 0.8 |
| | S32-SDC13-150T | 1.0~13.0 | 150 | 35 | 32 | - | 83 | 49 | GERC20 | M13 | 0.7 | 0.8 |
| | S32-SDC20-165M | 2.0~20.0 | 165 | 50 | 32 | - | 83 | 60 | GERC32 | M22 | 0.9 | 1.0 |
| S32-SDC20-165T | 2.0~20.0 | 165 | 50 | 32 | - | 83 | 60 | GERC32 | M22 | 0.9 | 1.0 | |

☐ Internal coolant system is optional.

※ For milling (M)/ for lathe operation (T) - e.g.) S16-SDC7-120M (for milling) / S16-SDC7-120T (for lathe operation)

※ Can be used by being tightened with a milling chuck.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



S-SDC/S

Straight shank collet chuck slim type



Fig.1

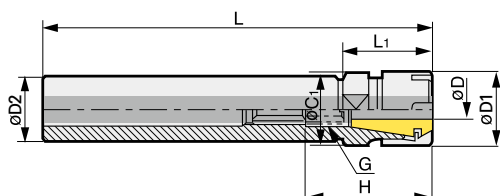
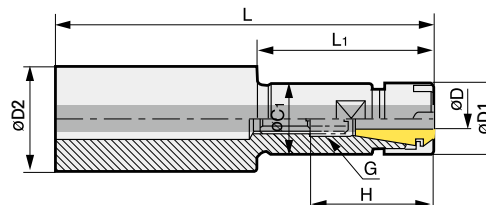


Fig.2



• H : Depth of tool insertion

• For more information on the applicable collet, see **75p**.

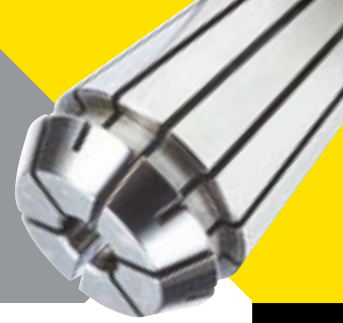
| | Model No. | ØD | L | ØD1 | ØD2 | L1 | H | Collet/step | G | Kg | Package weight (Kg) |
|-----------------|-----------------|----------|-----|-----|-----|----|------------|-------------|-----|-----|---------------------|
| S16, S20 | S16-SDC7S-100M | 1.0~7.0 | 100 | 16 | 16 | 21 | 33 | GERC11/0.5 | M7 | 0.1 | 0.2 |
| | S16-SDC7S-150M | 1.0~7.0 | 150 | 16 | 16 | 21 | 33 | GERC11/0.5 | M7 | 0.1 | 0.2 |
| | S16-SDC10S-100M | 1.0~10.0 | 100 | 22 | 16 | 50 | 44.5 | GERC16/1.0 | M10 | 0.1 | 0.2 |
| | S16-SDC10S-150M | 1.0~10.0 | 150 | 22 | 16 | 50 | 44.5 | GERC16/1.0 | M10 | 0.1 | 0.2 |
| | S20-SDC7S-100M | 1.0~7.0 | 100 | 16 | 20 | 30 | 35 | GERC11/0.5 | M7 | 0.1 | 0.2 |
| | S20-SDC7S-150M | 1.0~7.0 | 150 | 16 | 20 | 80 | 35 | GERC11/0.5 | M7 | 0.2 | 0.3 |
| | S20-SDC10S-100M | 1.0~10.0 | 100 | 22 | 20 | 50 | 44.5 | GERC16/1.0 | M10 | 0.1 | 0.2 |
| | S20-SDC10S-150M | 1.0~10.0 | 150 | 22 | 20 | 50 | 44.5 | GERC16/1.0 | M10 | 0.2 | 0.3 |
| | S20-SDC10S-200M | 1.0~10.0 | 200 | 22 | 20 | 50 | 44.5 | GERC16/1.0 | M10 | 0.3 | 0.4 |
| | S20-SDC13S-100M | 1.0~13.0 | 100 | 28 | 20 | 50 | 49 | GERC20/1.0 | M13 | 0.1 | 0.2 |
| S20-SDC13S-150M | 1.0~13.0 | 150 | 28 | 20 | 50 | 49 | GERC20/1.0 | M13 | 0.2 | 0.3 | |
| S25, S32 | S25-SDC7S-100M | 1.0~7.0 | 100 | 16 | 25 | 30 | 33 | GERC11/0.5 | M7 | 0.2 | 0.3 |
| | S25-SDC7S-150M | 1.0~7.0 | 150 | 16 | 25 | 80 | 33 | GERC11/0.5 | M7 | 0.2 | 0.3 |
| | S25-SDC10S-100M | 1.0~10.0 | 100 | 22 | 25 | 30 | 44.5 | GERC16/1.0 | M10 | 0.2 | 0.3 |
| | S25-SDC10S-150M | 1.0~10.0 | 150 | 22 | 25 | 80 | 44.5 | GERC16/1.0 | M10 | 0.3 | 0.4 |
| | S25-SDC13S-100M | 1.0~13.0 | 100 | 28 | 25 | 50 | 49 | GERC20/1.0 | M13 | 0.2 | 0.3 |
| | S25-SDC13S-150M | 1.0~13.0 | 150 | 28 | 25 | 50 | 49 | GERC20/1.0 | M13 | 0.4 | 0.5 |
| | S25-SDC16S-100M | 1.0~16.0 | 100 | 35 | 25 | 50 | 50 | GERC25/1.0 | M18 | 0.3 | 0.4 |
| | S25-SDC16S-150M | 1.0~16.0 | 150 | 35 | 25 | 50 | 50 | GERC25/1.0 | M18 | 0.4 | 0.5 |
| | S25-SDC16S-200M | 1.0~16.0 | 200 | 35 | 25 | 50 | 50 | GERC25/1.0 | M18 | 0.6 | 0.7 |
| | S32-SDC16S-120M | 1.0~16.0 | 120 | 35 | 32 | 50 | 50 | GERC25/1.0 | M18 | 0.5 | 0.6 |
| S32-SDC16S-150M | 1.0~16.0 | 150 | 35 | 32 | 50 | 50 | GERC25/1.0 | M18 | 0.6 | 0.7 | |

C Internal coolant system is optional.



GERC

GERC Collet



| | | | |
|----------------------|------------------------|------------|----------------|
| General 5 μ m | Precision 2 μ m | Waterproof | Coolant System |
| Run-out | Run-out | | |

Features

- Collet that prevents surface corrosion to micro range
- Maintains functionality and precision for a long time based on advanced coating technology
- Economic use for tool life

| | | | | |
|--------|-------------|-------------|-----------|---------------------------------|
| NAMING | GERC | 16 | 4 | HP |
| | GERC Collet | Collet Size | Tool Dia. | HP : Precision NON : General |



Special coating technology

The characteristics of the conventional unprotected collet unlike GERC collets are as follows:
The conventional uncoated collet is affected by corrosion in a short time due to various causes such as humidity, cutting oil, detergent, salt, and gas. This affects not only the collet but also the entire machining process.



A rusty collet shortens tool service life and greatly lowers precision. To avoid this situation, surface coating is performed to micro range to effectively protect a collet and maintain its precision for a long time by preventing it from corroding in the long term.



Two collets used for 4 months :

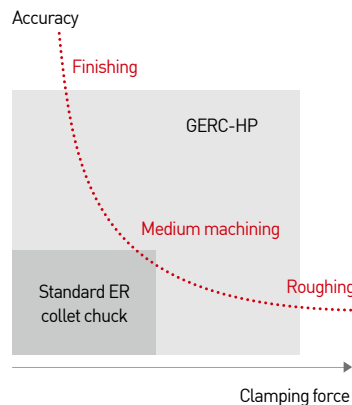
The left one is an uncoated collet, and the right one is a GERC-used collet.

GERC-HP (precision type)

The precision type collet chuck is more expensive than the general collect chuck but in terms of long-term cost efficiency, its benefits are far greater. Its maximum accuracy provides more excellent workpieces due to its less manufacturing tolerance, minimizing costly re-work.

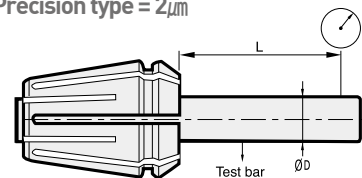


Precision type 2 μ m



Accuracy (L/D=3)

General type = 5 μ m
Precision type = 2 μ m



Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

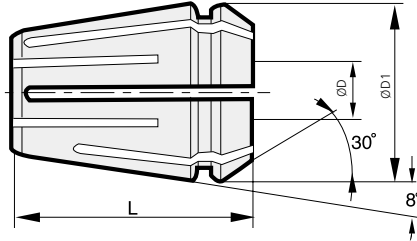
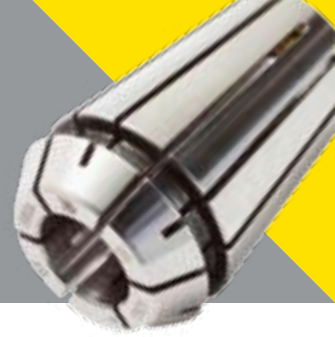
TAUMAX

OTHER



GERC COLLET

GERC collet (general type)



| | Model No. | ER Size | ØD | L | ØD1 | Accuracy |
|--------|-------------|---------|------|------|------|----------|
| GERC11 | GERC11-1.0 | 11 | 1.0 | 18.0 | 11.5 | 5µm |
| | GERC11-1.5 | 11 | 1.5 | 18.0 | 11.5 | 5µm |
| | GERC11-2.0 | 11 | 2.0 | 18.0 | 11.5 | 5µm |
| | GERC11-2.5 | 11 | 2.5 | 18.0 | 11.5 | 5µm |
| | GERC11-3.0 | 11 | 3.0 | 18.0 | 11.5 | 5µm |
| | GERC11-3.5 | 11 | 3.5 | 18.0 | 11.5 | 5µm |
| | GERC11-4.0 | 11 | 4.0 | 18.0 | 11.5 | 5µm |
| | GERC11-4.5 | 11 | 4.5 | 18.0 | 11.5 | 5µm |
| | GERC11-5.0 | 11 | 5.0 | 18.0 | 11.5 | 5µm |
| | GERC11-5.5 | 11 | 5.5 | 18.0 | 11.5 | 5µm |
| GERC16 | GERC16-1.0 | 16 | 1.0 | 27.5 | 17.0 | 5µm |
| | GERC16-2.0 | 16 | 2.0 | 27.5 | 17.0 | 5µm |
| | GERC16-3.0 | 16 | 3.0 | 27.5 | 17.0 | 5µm |
| | GERC16-4.0 | 16 | 4.0 | 27.5 | 17.0 | 5µm |
| | GERC16-4.5 | 16 | 4.5 | 27.5 | 17.0 | 5µm |
| | GERC16-5.0 | 16 | 5.0 | 27.5 | 17.0 | 5µm |
| | GERC16-6.0 | 16 | 6.0 | 27.5 | 17.0 | 5µm |
| | GERC16-7.0 | 16 | 7.0 | 27.5 | 17.0 | 5µm |
| | GERC16-8.0 | 16 | 8.0 | 27.5 | 17.0 | 5µm |
| | GERC16-9.0 | 16 | 9.0 | 27.5 | 17.0 | 5µm |
| GERC20 | GERC20-1.0 | 20 | 1.0 | 31.5 | 21.0 | 5µm |
| | GERC20-2.0 | 20 | 2.0 | 31.5 | 21.0 | 5µm |
| | GERC20-3.0 | 20 | 3.0 | 31.5 | 21.0 | 5µm |
| | GERC20-4.0 | 20 | 4.0 | 31.5 | 21.0 | 5µm |
| | GERC20-5.0 | 20 | 5.0 | 31.5 | 21.0 | 5µm |
| | GERC20-6.0 | 20 | 6.0 | 31.5 | 21.0 | 5µm |
| | GERC20-7.0 | 20 | 7.0 | 31.5 | 21.0 | 5µm |
| | GERC20-8.0 | 20 | 8.0 | 31.5 | 21.0 | 5µm |
| | GERC20-9.0 | 20 | 9.0 | 31.5 | 21.0 | 5µm |
| | GERC20-10.0 | 20 | 10.0 | 31.5 | 21.0 | 5µm |
| | GERC20-11.0 | 20 | 11.0 | 31.5 | 21.0 | 5µm |
| | GERC20-12.0 | 20 | 12.0 | 31.5 | 21.0 | 5µm |
| | GERC20-13.0 | 20 | 13.0 | 31.5 | 21.0 | 5µm |

| | Model No. | ER Size | ØD | L | ØD1 | Accuracy |
|--------|-------------|---------|------|------|------|----------|
| GERC25 | GERC25-2.0 | 25 | 2.0 | 34.0 | 26.0 | 5µm |
| | GERC25-3.0 | 25 | 3.0 | 34.0 | 26.0 | 5µm |
| | GERC25-4.0 | 25 | 4.0 | 34.0 | 26.0 | 5µm |
| | GERC25-5.0 | 25 | 5.0 | 34.0 | 26.0 | 5µm |
| | GERC25-6.0 | 25 | 6.0 | 34.0 | 26.0 | 5µm |
| | GERC25-7.0 | 25 | 7.0 | 34.0 | 26.0 | 5µm |
| | GERC25-8.0 | 25 | 8.0 | 34.0 | 26.0 | 5µm |
| | GERC25-9.0 | 25 | 9.0 | 34.0 | 26.0 | 5µm |
| | GERC25-10.0 | 25 | 10.0 | 34.0 | 26.0 | 5µm |
| | GERC25-11.0 | 25 | 11.0 | 34.0 | 26.0 | 5µm |
| | GERC25-12.0 | 25 | 12.0 | 34.0 | 26.0 | 5µm |
| | GERC25-13.0 | 25 | 13.0 | 34.0 | 26.0 | 5µm |
| GERC32 | GERC32-2.0 | 32 | 2.0 | 40 | 33.0 | 5µm |
| | GERC32-3.0 | 32 | 3.0 | 40 | 33.0 | 5µm |
| | GERC32-4.0 | 32 | 4.0 | 40 | 33.0 | 5µm |
| | GERC32-5.0 | 32 | 5.0 | 40 | 33.0 | 5µm |
| | GERC32-6.0 | 32 | 6.0 | 40 | 33.0 | 5µm |
| | GERC32-7.0 | 32 | 7.0 | 40 | 33.0 | 5µm |
| | GERC32-8.0 | 32 | 8.0 | 40 | 33.0 | 5µm |
| | GERC32-9.0 | 32 | 9.0 | 40 | 33.0 | 5µm |
| | GERC32-10.0 | 32 | 10.0 | 40 | 33.0 | 5µm |
| | GERC32-11.0 | 32 | 11.0 | 40 | 33.0 | 5µm |
| | GERC32-12.0 | 32 | 12.0 | 40 | 33.0 | 5µm |
| | GERC32-13.0 | 32 | 13.0 | 40 | 33.0 | 5µm |
| GERC40 | GERC40-16.0 | 40 | 16.0 | 46.0 | 41.0 | 5µm |
| | GERC40-20.0 | 40 | 20.0 | 46.0 | 41.0 | 5µm |
| | GERC40-25.0 | 40 | 25.0 | 46.0 | 41.0 | 5µm |

Order example · General type - Order as GERC16-6.0 · Precision type - Order as GERC16-6.OHP · General-type waterproof type - Order as GERC16-6.0C

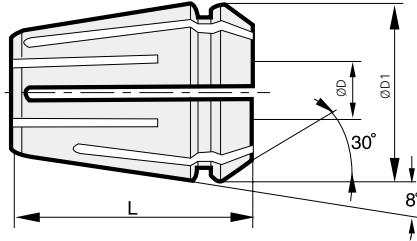
※ Please contact us about precision & water-proof type.

※ Please contact us about GERC40 precision type and other dimensions.



GERC COLLET

GERC collet [precision type]



| | Model No. | ER Size | ØD | L | ØD1 | Accuracy | |
|---------------|---------------|--------------|------|------|------|----------|-----|
| GERC11 | GERC11-3.0HP | 11 | 3.0 | 18.0 | 11.5 | 2µm | |
| | GERC11-4.0HP | 11 | 4.0 | 18.0 | 11.5 | 2µm | |
| | GERC11-5.0HP | 11 | 5.0 | 18.0 | 11.5 | 2µm | |
| | GERC11-6.0HP | 11 | 6.0 | 18.0 | 11.5 | 2µm | |
| GERC16 | GERC16-3.0HP | 16 | 3.0 | 27.5 | 17.0 | 2µm | |
| | GERC16-4.0HP | 16 | 4.0 | 27.5 | 17.0 | 2µm | |
| | GERC16-5.0HP | 16 | 5.0 | 27.5 | 17.0 | 2µm | |
| | GERC16-6.0HP | 16 | 6.0 | 27.5 | 17.0 | 2µm | |
| | GERC16-7.0HP | 16 | 7.0 | 27.5 | 17.0 | 2µm | |
| | GERC16-8.0HP | 16 | 8.0 | 27.5 | 17.0 | 2µm | |
| | GERC16-9.0HP | 16 | 9.0 | 27.5 | 17.0 | 2µm | |
| | GERC16-10.0HP | 16 | 10.0 | 27.5 | 17.0 | 2µm | |
| | GERC20 | GERC20-3.0HP | 20 | 3.0 | 31.5 | 21.0 | 2µm |
| | | GERC20-4.0HP | 20 | 4.0 | 31.5 | 21.0 | 2µm |
| GERC20-5.0HP | | 20 | 5.0 | 31.5 | 21.0 | 2µm | |
| GERC20-6.0HP | | 20 | 6.0 | 31.5 | 21.0 | 2µm | |
| GERC20-8.0HP | | 20 | 8.0 | 31.5 | 21.0 | 2µm | |
| GERC20-9.0HP | | 20 | 9.0 | 31.5 | 21.0 | 2µm | |
| GERC20-10.0HP | | 20 | 10.0 | 31.5 | 21.0 | 2µm | |
| GERC20-11.0HP | | 20 | 11.0 | 31.5 | 21.0 | 2µm | |
| GERC20-12.0HP | | 20 | 12.0 | 31.5 | 21.0 | 2µm | |
| GERC20-13.0HP | | 20 | 13.0 | 31.5 | 21.0 | 2µm | |
| GERC25 | GERC25-6.0HP | 25 | 6.0 | 34.0 | 26.0 | 2µm | |
| | GERC25-10.0HP | 25 | 10.0 | 34.0 | 26.0 | 2µm | |
| | GERC25-12.0HP | 25 | 12.0 | 34.0 | 26.0 | 2µm | |
| | GERC25-14.0HP | 25 | 14.0 | 34.0 | 26.0 | 2µm | |
| | GERC25-16.0HP | 25 | 16.0 | 34.0 | 26.0 | 2µm | |
| GERC32 | GERC32-6.0HP | 32 | 6.0 | 44.0 | 33.0 | 2µm | |
| | GERC32-10.0HP | 32 | 10.0 | 44.0 | 33.0 | 2µm | |
| | GERC32-12.0HP | 32 | 12.0 | 44.0 | 33.0 | 2µm | |
| | GERC32-16.0HP | 32 | 16.0 | 44.0 | 33.0 | 2µm | |
| | GERC32-18.0HP | 32 | 18.0 | 44.0 | 33.0 | 2µm | |
| GERC32-20.0HP | 32 | 20.0 | 44.0 | 33.0 | 2µm | | |

Order example · General type - **Order as GERC16-6.0** · Precision type - **Order as GERC16-6.0HP** · General-type waterproof type - **Order as GERC16-6.0C**

- ※ Please contact us about precision & water-proof type.
- ※ Please contact us about GERC40 precision type and other dimensions.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

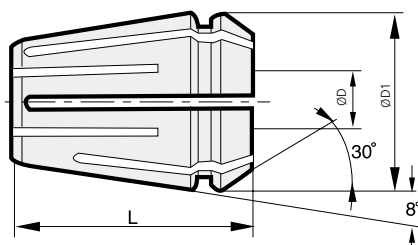
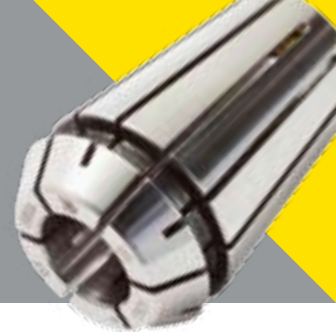
TAUMAX

OTHER



GERC COLLET

GERC collet (waterproof-type general type)



| | Model No. | ER Size | ØD | L | ØD1 | Accuracy |
|--------------|--------------|---------|------|------|------|----------|
| GERC16 | GERC16-5.0C | 16 | 5.0 | 27.5 | 17.0 | 5µm |
| | GERC16-6.0C | 16 | 6.0 | 27.5 | 17.0 | 5µm |
| | GERC16-8.0C | 16 | 8.0 | 27.5 | 17.0 | 5µm |
| | GERC16-10.0C | 16 | 10.0 | 27.5 | 17.0 | 5µm |
| GERC20 | GERC20-6.0C | 20 | 6.0 | 31.5 | 21.0 | 5µm |
| | GERC20-8.0C | 20 | 8.0 | 31.5 | 21.0 | 5µm |
| | GERC20-10.0C | 20 | 10.0 | 31.5 | 21.0 | 5µm |
| | GERC20-12.0C | 20 | 12.0 | 31.5 | 21.0 | 5µm |
| GERC25 | GERC25-6.0C | 25 | 6.0 | 34.0 | 26.0 | 5µm |
| | GERC25-8.0C | 25 | 8.0 | 34.0 | 26.0 | 5µm |
| | GERC25-10.0C | 25 | 10.0 | 34.0 | 26.0 | 5µm |
| | GERC25-12.0C | 25 | 12.0 | 34.0 | 26.0 | 5µm |
| | GERC25-14.0C | 25 | 14.0 | 34.0 | 26.0 | 5µm |
| GERC32 | GERC25-16.0C | 25 | 16.0 | 34.0 | 26.0 | 5µm |
| | GERC32-8.0C | 32 | 8.0 | 44.0 | 33.0 | 5µm |
| | GERC32-9.0C | 32 | 9.0 | 44.0 | 33.0 | 5µm |
| | GERC32-10.0C | 32 | 10.0 | 44.0 | 33.0 | 5µm |
| | GERC32-11.0C | 32 | 11.0 | 44.0 | 33.0 | 5µm |
| | GERC32-12.0C | 32 | 12.0 | 44.0 | 33.0 | 5µm |
| | GERC32-13.0C | 32 | 13.0 | 44.0 | 33.0 | 5µm |
| | GERC32-14.0C | 32 | 14.0 | 44.0 | 33.0 | 5µm |
| | GERC32-16.0C | 32 | 16.0 | 44.0 | 33.0 | 5µm |
| | GERC32-18.0C | 32 | 18.0 | 44.0 | 33.0 | 5µm |
| GERC32-20.0C | 32 | 20.0 | 44.0 | 33.0 | 5µm | |

Order example · General type - **Order as GERC16-6.0** · Precision type - **Order as GERC16-6.0HP** · General-type waterproof type - **Order as GERC16-6.0C**

- ※ Please contact us about precision & water-proof type.
- ※ Please contact us about GERC40 precision type and other dimensions.

1:1 Chat



GERC COLLET SET

GERC collet set (general type)



| Model No. | ØD | Clearance | Collet quantity | Accuracy | Kg | Package weight (Kg) |
|--------------|----------|-----------|-----------------|----------|-----|---------------------|
| GERC11 (SET) | 1.0-7.0 | 0.5 | 13pcs | 5µm | 0.1 | 0.3 |
| GERC16 (SET) | 1.0-10.0 | 1.0 | 10pcs | 5µm | 0.2 | 0.4 |
| GERC20 (SET) | 2.0-13.0 | 1.0 | 12pcs | 5µm | 0.5 | 0.8 |
| GERC25 (SET) | 2.0-16.0 | 1.0 | 15pcs | 5µm | 1.1 | 1.5 |
| GERC32 (SET) | 3.0-20.0 | 1.0 | 18pcs | 5µm | 2.6 | 3.1 |
| GERC40 (SET) | 4.0-26.0 | 1.0 | 23pcs | 5µm | 5.8 | 6.9 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

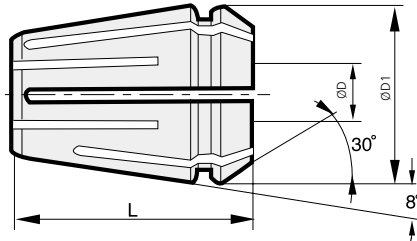
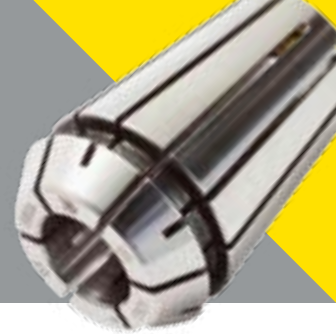
TAUMAX

OTHER



ER COLLET

ER collet (general type)



| | Model No. | ER Size | ØD | L | ØD1 | Accuracy |
|-----------|-----------|----------|------|------|------|----------|
| ER11 | ER11-1.0 | 11 | 1.0 | 18.0 | 11.5 | 10µm |
| | ER11-1.5 | 11 | 1.5 | 18.0 | 11.5 | 10µm |
| | ER11-2.0 | 11 | 2.0 | 18.0 | 11.5 | 10µm |
| | ER11-2.5 | 11 | 2.5 | 18.0 | 11.5 | 10µm |
| | ER11-3.0 | 11 | 3.0 | 18.0 | 11.5 | 10µm |
| | ER11-3.5 | 11 | 3.5 | 18.0 | 11.5 | 10µm |
| | ER11-4.0 | 11 | 4.0 | 18.0 | 11.5 | 10µm |
| | ER11-4.5 | 11 | 4.5 | 18.0 | 11.5 | 10µm |
| | ER11-5.0 | 11 | 5.0 | 18.0 | 11.5 | 10µm |
| | ER11-5.5 | 11 | 5.5 | 18.0 | 11.5 | 10µm |
| | ER11-6.0 | 11 | 6.0 | 18.0 | 11.5 | 10µm |
| | ER11-6.5 | 11 | 6.5 | 18.0 | 11.5 | 10µm |
| | ER11-7.0 | 11 | 7.0 | 18.0 | 11.5 | 10µm |
| | ER16 | ER16-1.0 | 16 | 1.0 | 27.5 | 17.0 |
| ER16-2.0 | | 16 | 2.0 | 27.5 | 17.0 | 10µm |
| ER16-3.0 | | 16 | 3.0 | 27.5 | 17.0 | 10µm |
| ER16-4.0 | | 16 | 4.0 | 27.5 | 17.0 | 10µm |
| ER16-5.0 | | 16 | 5.0 | 27.5 | 17.0 | 10µm |
| ER16-6.0 | | 16 | 6.0 | 27.5 | 17.0 | 10µm |
| ER16-7.0 | | 16 | 7.0 | 27.5 | 17.0 | 10µm |
| ER16-8.0 | | 16 | 8.0 | 27.5 | 17.0 | 10µm |
| ER16-9.0 | | 16 | 9.0 | 27.5 | 17.0 | 10µm |
| ER16-10.0 | | 16 | 10.0 | 27.5 | 17.0 | 10µm |
| ER20 | ER20-1.0 | 20 | 1.0 | 31.5 | 21.0 | 10µm |
| | ER20-2.0 | 20 | 2.0 | 31.5 | 21.0 | 10µm |
| | ER20-3.0 | 20 | 3.0 | 31.5 | 21.0 | 10µm |
| | ER20-4.0 | 20 | 4.0 | 31.5 | 21.0 | 10µm |
| | ER20-5.0 | 20 | 5.0 | 31.5 | 21.0 | 10µm |
| | ER20-6.0 | 20 | 6.0 | 31.5 | 21.0 | 10µm |
| | ER20-7.0 | 20 | 7.0 | 31.5 | 21.0 | 10µm |
| | ER20-8.0 | 20 | 8.0 | 31.5 | 21.0 | 10µm |
| | ER20-9.0 | 20 | 9.0 | 31.5 | 21.0 | 10µm |
| | ER20-10.0 | 20 | 10.0 | 31.5 | 21.0 | 10µm |
| | ER20-11.0 | 20 | 11.0 | 31.5 | 21.0 | 10µm |
| | ER20-12.0 | 20 | 12.0 | 31.5 | 21.0 | 10µm |
| | ER20-13.0 | 20 | 13.0 | 31.5 | 21.0 | 10µm |

Order example · General type - Order using ER16-6.0 · General & water-proof type - Order using ER16-6.0C

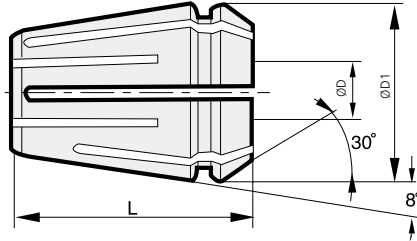
※ Please contact us about other dimensions.

※ The (C) type is a water-proof ER collet.



ER COLLET

ER Collet (General type)



| | Model No. | ER Size | ØD | L | ØD1 | Accuracy |
|-----------|-----------|----------|------|------|------|----------|
| ER25 | ER25-2.0 | 25 | 2.0 | 34.0 | 26.0 | 10µm |
| | ER25-3.0 | 25 | 3.0 | 34.0 | 26.0 | 10µm |
| | ER25-4.0 | 25 | 4.0 | 34.0 | 26.0 | 10µm |
| | ER25-5.0 | 25 | 5.0 | 34.0 | 26.0 | 10µm |
| | ER25-6.0 | 25 | 6.0 | 34.0 | 26.0 | 10µm |
| | ER25-7.0 | 25 | 7.0 | 34.0 | 26.0 | 10µm |
| | ER25-8.0 | 25 | 8.0 | 34.0 | 26.0 | 10µm |
| | ER25-9.0 | 25 | 9.0 | 34.0 | 26.0 | 10µm |
| | ER25-10.0 | 25 | 10.0 | 34.0 | 26.0 | 10µm |
| | ER25-11.0 | 25 | 11.0 | 34.0 | 26.0 | 10µm |
| | ER25-12.0 | 25 | 12.0 | 34.0 | 26.0 | 10µm |
| | ER25-13.0 | 25 | 13.0 | 34.0 | 26.0 | 10µm |
| | ER25-14.0 | 25 | 14.0 | 34.0 | 26.0 | 10µm |
| | ER25-15.0 | 25 | 15.0 | 34.0 | 26.0 | 10µm |
| | ER25-16.0 | 25 | 16.0 | 34.0 | 26.0 | 10µm |
| | ER32 | ER32-2.0 | 32 | 2.0 | 40.0 | 33.0 |
| ER32-3.0 | | 32 | 3.0 | 40.0 | 33.0 | 10µm |
| ER32-4.0 | | 32 | 4.0 | 40.0 | 33.0 | 10µm |
| ER32-5.0 | | 32 | 5.0 | 40.0 | 33.0 | 10µm |
| ER32-6.0 | | 32 | 6.0 | 40.0 | 33.0 | 10µm |
| ER32-7.0 | | 32 | 7.0 | 40.0 | 33.0 | 10µm |
| ER32-8.0 | | 32 | 8.0 | 40.0 | 33.0 | 10µm |
| ER32-9.0 | | 32 | 9.0 | 40.0 | 33.0 | 10µm |
| ER32-10.0 | | 32 | 10.0 | 40.0 | 33.0 | 10µm |
| ER32-11.0 | | 32 | 11.0 | 40.0 | 33.0 | 10µm |
| ER32-12.0 | | 32 | 12.0 | 40.0 | 33.0 | 10µm |
| ER32-13.0 | | 32 | 13.0 | 40.0 | 33.0 | 10µm |
| ER32-14.0 | | 32 | 14.0 | 40.0 | 33.0 | 10µm |
| ER32-15.0 | | 32 | 15.0 | 40.0 | 33.0 | 10µm |
| ER32-16.0 | 32 | 16.0 | 40.0 | 33.0 | 10µm | |
| ER32-17.0 | 32 | 17.0 | 40.0 | 33.0 | 10µm | |
| ER32-18.0 | 32 | 18.0 | 40.0 | 33.0 | 10µm | |
| ER32-19.0 | 32 | 19.0 | 40.0 | 33.0 | 10µm | |
| ER32-20.0 | 32 | 20.0 | 40.0 | 33.0 | 10µm | |

Order example · General type - **Order as ER16-6.0** · General type waterproof type - **Order as ER16-6.0C**

- ※ Please contact us about other sizes.
- ※ The (C) type is a water-proof ER collet.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

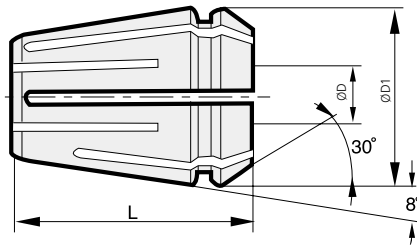
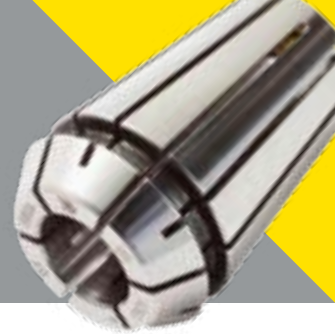
TAUMAX

OTHER



ER COLLET

ER collet (waterproof type)



| | Model No. | ER Size | ØD | L | ØD1 | Accuracy |
|------------|------------|---------|------|------|------|----------|
| ER16 | ER16-5.0C | 16 | 5.0 | 27.5 | 17.0 | 10µm |
| | ER16-6.0C | 16 | 6.0 | 27.5 | 17.0 | 10µm |
| | ER16-8.0C | 16 | 8.0 | 27.5 | 17.0 | 10µm |
| | ER16-10.0C | 16 | 10.0 | 27.5 | 17.0 | 10µm |
| ER20 | ER20-6.0C | 11 | 6.0 | 18.0 | 11.5 | 10µm |
| | ER20-8.0C | 11 | 8.0 | 18.0 | 11.5 | 10µm |
| | ER20-10.0C | 11 | 10.0 | 18.0 | 11.5 | 10µm |
| | ER20-12.0C | 11 | 12.0 | 18.0 | 11.5 | 10µm |
| ER25 | ER25-6.0C | 20 | 6.0 | 31.5 | 21.0 | 10µm |
| | ER25-8.0C | 20 | 8.0 | 31.5 | 21.0 | 10µm |
| | ER25-10.0C | 20 | 10.0 | 31.5 | 21.0 | 10µm |
| | ER25-12.0C | 20 | 12.0 | 31.5 | 21.0 | 10µm |
| | ER25-14.0C | 20 | 14.0 | 31.5 | 21.0 | 10µm |
| ER32 | ER25-16.0C | 20 | 16.0 | 31.5 | 21.0 | 10µm |
| | ER32-8.0C | 32 | 8.0 | 40.0 | 33.0 | 10µm |
| | ER32-9.0C | 32 | 9.0 | 40.0 | 33.0 | 10µm |
| | ER32-10.0C | 32 | 10.0 | 40.0 | 33.0 | 10µm |
| | ER32-11.0C | 32 | 11.0 | 40.0 | 33.0 | 10µm |
| | ER32-12.0C | 32 | 12.0 | 40.0 | 33.0 | 10µm |
| | ER32-13.0C | 32 | 13.0 | 40.0 | 33.0 | 10µm |
| | ER32-14.0C | 32 | 14.0 | 40.0 | 33.0 | 10µm |
| | ER32-15.0C | 32 | 15.0 | 40.0 | 33.0 | 10µm |
| | ER32-16.0C | 32 | 16.0 | 40.0 | 33.0 | 10µm |
| | ER32-18.0C | 32 | 18.0 | 40.0 | 33.0 | 10µm |
| ER32-20.0C | 32 | 20.0 | 40.0 | 33.0 | 10µm | |

Order example · General type - Order using ER16-6.0 · General & water-proof type - Order using ER16-6.0C

- ※ Please contact us about other dimensions.
- ※ The (C) type is a water-proof ER collet.



ER COLLET SET

ER Collet (General type)



| Model No. | ØD | Clearance | Collet quantity | Accuracy | Kg | Package weight (Kg) |
|-----------|----------|-----------|-----------------|----------|-----|---------------------|
| ER11(SET) | 1.0-7.0 | 0.5 | 13pcs | 10µm | 0.1 | 0.2 |
| ER16(SET) | 1.0-10.0 | 1.0 | 10pcs | 10µm | 0.1 | 0.3 |
| ER20(SET) | 2.0-13.0 | 1.0 | 12pcs | 10µm | 0.4 | 0.7 |
| ER25(SET) | 2.0-16.0 | 1.0 | 15pcs | 10µm | 1.1 | 1.5 |
| ER32(SET) | 3.0-20.0 | 1.0 | 18pcs | 10µm | 2.6 | 3.1 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

- Chuck
- Arbor / Modular
- Boring tool
- Angular head
- cBN/PCD
- Smart factory
- TAUMAX
- OTHER



ER/L

Lock collet for ER collet chuck



Features

- Designed to prevent the end mill from falling out
- Prevents tool fallout, slipping, or idle running
- Uses the Weldon flat (DIN 6535HB) end mill without any special end mill
- Useful for machining large-sized mold or difficult-to-cut materials

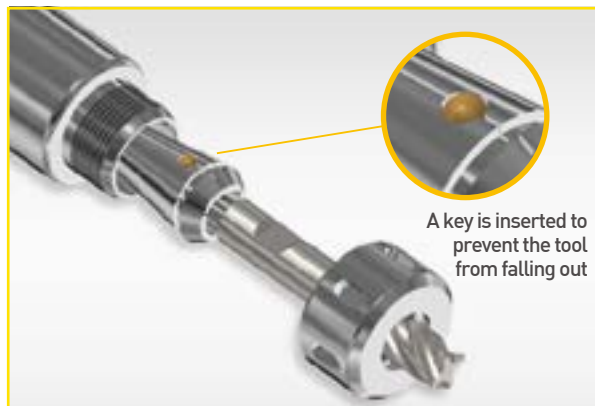
| | | | | | | |
|--------|-----------|-------------|---|-----------|---|------|
| NAMING | ER | 20 | — | 12.0 | — | L |
| | ER Collet | Collet Size | | Tool Dia. | | Lock |



Structural Features

Designed to prevent fallout

- Tool fallout is prevented by a key inserted in the collet.
- A key is inserted to prevent the tool from falling out

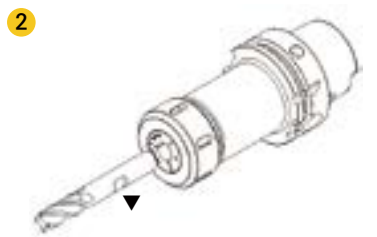


How to use

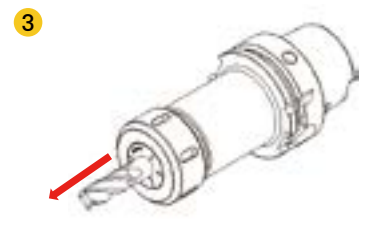
- Assemble the collet with nut (same for general ER collet in use)
- Assemble the end tool (in the direction of assembling notch with key)
- Tighten the nut with the body



Combine the non-slip ER collet with nut.



Clamp the nut after inserting no. 1 into the collet chuck. After that, insert the end mill notch to be aligned with the part ▼ (steel ball position).



After checking that the steel ball in the collet is caught in the notched part, completely clamp the nut by pulling the end mill in the axial direction (arrow direction)

Note If an auto clamp device is used, skip step 3. (End mill rotation may cause injury.)

Applicable end mill



〈DIN6535 specifications end mill〉

- For more information on the detailed specifications, see **85p**

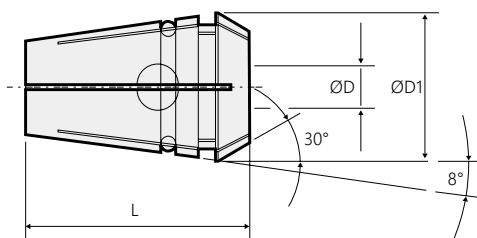


ER/L

Lock collet for ER collet chuck



Detailed Specifications



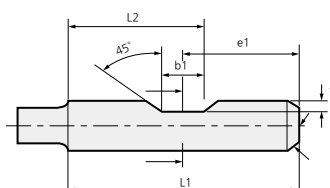
| | Model No. | ØD | ØD | ØD1 | L |
|-------|-----------|----|----|------|------|
| ER20L | ER20-6L | 20 | 6 | 20.7 | 31.5 |
| | ER20-8L | 20 | 8 | 20.7 | 31.5 |
| | ER20-10L | 20 | 10 | 20.7 | 31.5 |
| | ER20-12L | 20 | 12 | 20.7 | 31.5 |
| ER32L | ER32-12L | 32 | 12 | 32.7 | 40 |
| | ER32-16L | 32 | 16 | 32.7 | 40 |
| | ER32-20L | 32 | 20 | 32.7 | 40 |

※ For DIN ISO 15488-A standard



Notched Endmill

Notched Endmill



Detailed Specifications

| Tool Ø | Tool (DIN6535) | | | | |
|--------|----------------|------|-----|-------|-----|
| | L1 | e1 | b1 | L2 | t |
| 6 | 36 | 18 | 4.2 | 20.1 | 0.9 |
| 8 | 36 | 18 | 5.5 | 20.75 | 1.1 |
| 10 | 40 | 20 | 7 | 23.5 | 1.5 |
| 12 | 45 | 22.5 | 8 | 26.5 | 1.6 |
| 14 | 45 | 22.5 | 8 | 26.5 | 1.3 |
| 16 | 48 | 24 | 10 | 29 | 1.8 |
| 18 | 48 | 24 | 10 | 29 | 1.8 |
| 20 | 50 | 25 | 11 | 30.5 | 1.8 |
| 25 | 56 | 32 | 12 | 30 | 2 |
| 32 | 60 | 36 | 14 | 31 | 2 |

※ DIN 6535 specifications end mill used ※ As a separate purchase, it can be referred to when using ERL/L collet.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



RTJW

Jet coolant disk



Features

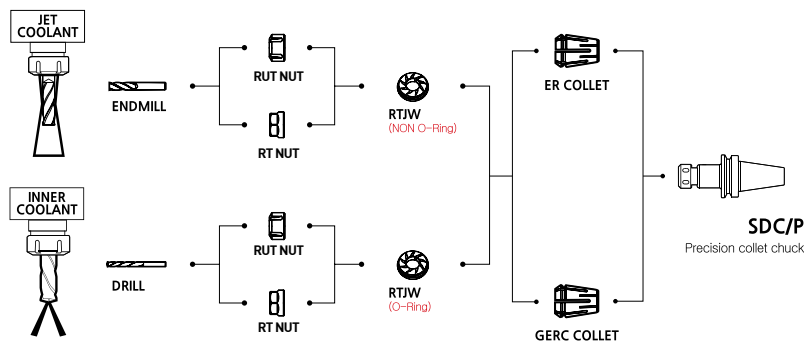
- Provides a longer cutting tool service life by preventing chips from adhering to the tool
- Improves chip breakability/breaking strong jet injection
- Reduces equipment non-operation time as nozzle position change is not necessary

| | | | | |
|--------|------------------|----------------|---|-----------|
| NAMING | RTJW | 16 | — | 6 |
| | Jet Coolant Disk | ER Collet Size | | Tool Dia. |

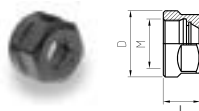


Application

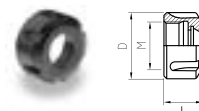
- With one waterproof type (RT, RUT) NUT, the inside jet coolant is simultaneously used
- Enables a fast change of the inside jet coolant only by disk replacement
- Strong jet injection with no scattering even in the high-speed rotation



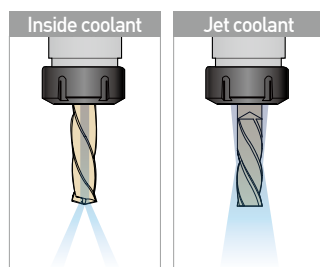
| RT NUT | | | |
|--------|----------|------|------|
| TYPE | M | D | L |
| RT16 | M22x1.50 | 28.0 | 22.5 |



| RUT NUT | | | |
|---------|----------|------|------|
| TYPE | M | D | L |
| RUT20 | M25x1.50 | 35.0 | 24.0 |
| RUT25 | M32x1.50 | 42.0 | 25.0 |
| RUT32 | M40x1.50 | 50.0 | 27.5 |
| RUT40 | M50x1.50 | 63.0 | 30.5 |

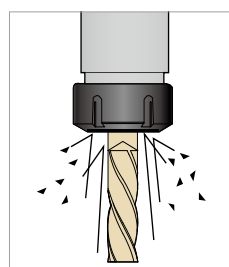


| | Pocket machining | After | Remarks |
|-----------------|------------------|-------|--|
| JET COOLANT | | | ▶ The chips in the pocket completely are removed by a strong jet injection. |
| OUTSIDE COOLANT | | | ▶ The chips in the pocket are not removed. ▶ Chips are accumulated in the collet and nut. |



Coolant method

According to use, inside coolant and jet coolant refueling can be used.



Mixing prevention

Effective for vibration proof by preventing mixing of cutting chips by using RTJW.



RTJW

Jet coolant disk



Jet coolant Inside coolant



- For more information on the product features, see **86p**.
- For more information on the products to be tightened, see **68p**.

※ Less than $\varnothing 5$ cannot be used for production.

| | Model No. | ER Size | Inner diameter |
|-----------|-----------|---------|----------------|
| RTJW16,20 | 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 | 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 |

| | Model No. | ER Size | Inner diameter |
|--------|-----------|---------|----------------|
| RTJW32 | 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 |
| | RTJW32-20 | 32 | 20 |
| RTJW40 | RTJW40-18 | 40 | 18 |
| | RTJW40-19 | 40 | 19 |
| | RTJW40-20 | 40 | 20 |
| | RTJW40-21 | 40 | 21 |
| | RTJW40-22 | 40 | 22 |
| | RTJW40-24 | 40 | 24 |

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



DSK

Slim type collet chuck



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

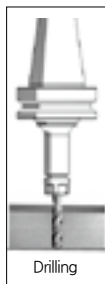
Features

- Enables balanced G6.3/ a maximum of 15,000RPM machining
- Minimized tool vibration during machining by adopting an 8-degree collet
- Provides optimal machining stability by applying Swiss Made nuts
- Tool clamping range : Ø2-Ø25



| | | | | | | | |
|---------------|-------------|---|------------------------|---|-----------|---|-----------|
| NAMING | BT30 | — | DSK | — | 10 | — | 90 |
| | Spindle | | Slim type Collet Chuck | | Tool Dia. | | Length |




Multipurpose operation




Collet

| General type & Precision type | Model No. | Max Chacking | Runout | 8° HC Collet |
|---|-----------|--------------|-----------------------|--|
|  | HC6 - ØD | 6.0 | General type 5µm |  Minimizes tool vibration during machining |
| | HC10 - ØD | 10.0 | | |
| | HC13 - ØD | 13.0 | Precision type 3µm | |
| | HC16 - ØD | 16.0 | | |
| | HC20 - ØD | 20.0 | | |
| | HC25 - ØD | 25.0 | | |

Spanner(optional)

| | Model No. | Chuck |
|--|-----------|--------|
|  Spanner | DSS - 6 | DSK 6 |
| | DSS - 10 | DSK 10 |
| | DSS - 13 | DSK 13 |
| | DSS - 16 | DSK 16 |
| | DSS - 20 | DSK 20 |
| | DSS - 25 | DSK 25 |

Collet extract tool

| | Model No. | Chuck |
|--|------------|--------|
|  Collet Extractor | DSS - 6CE | DSK 6 |
| | DSS - 10CE | DSK 10 |
| | DSS - 13CE | DSK 13 |
| | DSS - 16CE | DSK 16 |
| | DSS - 20CE | DSK 20 |
| | DSS - 25CE | DSK 25 |

C Internal coolant system is optional.

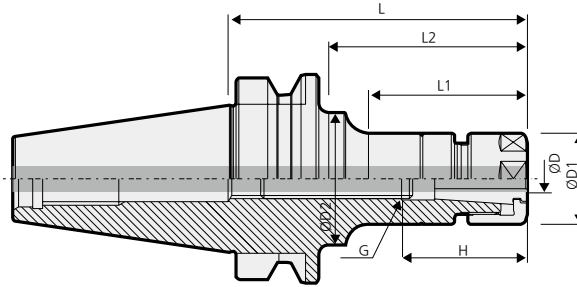


BT-DSK

Slim type collet chuck



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



- For more information on the product features, see **88p**
- For more information on the related parts, see **91p**
- For more information on the applicable collet, see **98p**

※ If a coolant system is used, use a coolant collet.

| | Model No. | ØD | L | ØD1 | ØD2 | L1 | L2 | H | COLLET | G | RPM | Kg | Package weight (Kg) |
|----------------|----------------|-----------|-----|------|------|------|------|------|--------|--------|--------|-----|---------------------|
| BT30 | BT30-DSK6-60 | 3.0~6.0 | 60 | 19.5 | 19.5 | 33 | 33 | 31 | HC6 | M8 | 15,000 | 0.4 | 0.5 |
| | BT30-DSK6-90 | 3.0~6.0 | 90 | 19.5 | 32 | 56 | 65 | 31 | HC6 | M8 | 15,000 | 0.5 | 0.6 |
| | BT30-DSK10-60 | 2.0~10.0 | 60 | 27.5 | 27.5 | 35 | 35 | 38 | HC10 | M12 | 15,000 | 0.5 | 0.6 |
| | BT30-DSK10-90 | 2.0~10.0 | 90 | 27.5 | 27.5 | 65 | 65 | 38 | HC10 | M12 | 15,000 | 0.6 | 0.7 |
| | BT30-DSK13-60 | 3.0~13.0 | 60 | 33 | 33 | 36 | 36 | 43 | HC13 | M12 | 15,000 | 0.5 | 0.6 |
| | BT30-DSK16-60 | 3.0~16.0 | 60 | 40 | 40 | 37 | 37 | 52 | HC16 | M12 | 15,000 | 0.6 | 0.7 |
| | BT30-DSK16-90 | 3.0~16.0 | 90 | 40 | 40 | 67 | 67 | 52 | HC16 | M18 | 15,000 | 0.8 | 0.9 |
| | BT30-DSK25-90 | 16.0~25.0 | 90 | 55 | 55 | 67.5 | 67.5 | 63.5 | HC25 | M12 | 15,000 | 0.9 | 1.1 |
| BT40 | BT40-DSK6-90 | 3.0~6.0 | 90 | 19.5 | 32 | 51 | 61 | 31 | HC6 | M8 | 10,000 | 1.1 | 1.3 |
| | BT40-DSK6-120 | 3.0~6.0 | 120 | 19.5 | 32 | 60 | 90 | 31 | HC6 | M8 | 10,000 | 1.1 | 1.3 |
| | BT40-DSK6-150 | 3.0~6.0 | 150 | 19.5 | 25 | 60 | 120 | 31 | HC6 | M8 | 10,000 | 1.1 | 1.4 |
| | BT40-DSK10-90 | 2.0~10.0 | 90 | 27.5 | 40 | 48 | 60 | 38 | HC10 | M12 | 10,000 | 1.2 | 1.4 |
| | BT40-DSK10-120 | 2.0~10.0 | 120 | 27.5 | 40 | 73 | 90 | 38 | HC10 | M12 | 10,000 | 1.2 | 1.5 |
| | BT40-DSK10-150 | 2.0~10.0 | 150 | 27.5 | 34.5 | 73 | 118 | 38 | HC10 | M12 | 10,000 | 1.4 | 1.7 |
| | BT40-DSK13-90 | 3.0~13.0 | 90 | 33 | 33 | 59 | 59 | 43 | HC13 | M15 | 10,000 | 1.3 | 1.5 |
| | BT40-DSK16-90 | 3.0~16.0 | 90 | 40 | 40 | 58 | 58 | 52 | HC16 | M18 | 10,000 | 1.3 | 1.5 |
| | BT40-DSK16-120 | 3.0~16.0 | 120 | 40 | 40 | 88 | 88 | 52 | HC16 | M18 | 10,000 | 1.5 | 1.7 |
| | BT40-DSK16-150 | 3.0~16.0 | 150 | 40 | 40 | 118 | 118 | 52 | HC16 | M18 | 10,000 | 1.9 | 2.1 |
| | BT40-DSK20-90 | 4.0~20.0 | 90 | 48.5 | 48.5 | 60 | 60 | 60 | HC20 | M22 | 10,000 | 1.5 | 1.7 |
| | BT40-DSK20-120 | 4.0~20.0 | 120 | 48.5 | 48.5 | 90 | 90 | 60 | HC20 | M22 | 10,000 | 1.8 | 2.0 |
| | BT40-DSK25-90 | 16.0~25.0 | 90 | 55 | 55 | 61 | 61 | 63.5 | HC25 | M28 | 10,000 | 1.6 | 1.8 |
| BT40-DSK25-120 | 16.0~25.0 | 120 | 55 | 55 | 91 | 91 | 85 | HC25 | M28 | 10,000 | 2.0 | 2.3 | |

C Internal coolant system is optional.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER

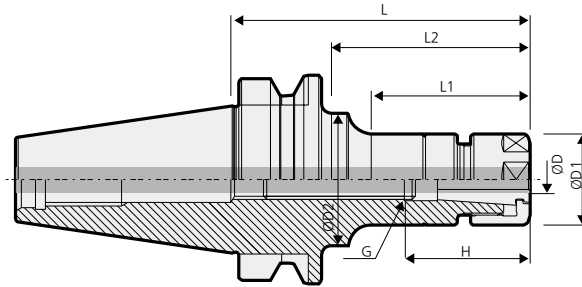


BT-DSK

Slim type collet chuck



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



- For more information on the product features, see **88p**.
- For more information on the related parts, see **91p**.
- For more information on the applicable collet, see **98p**.

※ If a coolant system is used, use a coolant collet.

| Model No. | ØD | L | ØD1 | ØD2 | L1 | L2 | H | COLLET | G | RPM | Kg | Package weight (Kg) |
|----------------|-----------|-----|------|------|-----|-----|------|--------|-----|-------|-----|---------------------|
| BT50-DSK6-105 | 3.0~6.0 | 105 | 19.5 | 32 | 55 | 64 | 31 | HC6 | M8 | 8,000 | 3.6 | 3.9 |
| BT50-DSK6-135 | 3.0~6.0 | 135 | 19.5 | 32 | 60 | 92 | 31 | HC6 | M8 | 8,000 | 3.7 | 4.1 |
| BT50-DSK6-165 | 3.0~6.0 | 165 | 19.5 | 32 | 60 | 114 | 31 | HC6 | M8 | 8,000 | 4.1 | 4.4 |
| BT50-DSK10-105 | 2.0~10.0 | 105 | 27.5 | 27.5 | 57 | 57 | 38 | HC10 | M12 | 8,000 | 3.8 | 4.1 |
| BT50-DSK10-135 | 2.0~10.0 | 135 | 27.5 | 32 | 70 | 92 | 38 | HC10 | M12 | 8,000 | 3.9 | 4.3 |
| BT50-DSK10-165 | 2.0~10.0 | 165 | 27.5 | 36 | 75 | 114 | 38 | HC10 | M12 | 8,000 | 4.1 | 4.5 |
| BT50-DSK13-135 | 3.0~13.0 | 135 | 33 | 33 | 92 | 92 | 43 | HC13 | M15 | 8,000 | 3.8 | 4.2 |
| BT50-DSK16-105 | 3.0~16.0 | 105 | 40 | 40 | 62 | 62 | 52 | HC16 | M18 | 8,000 | 4.0 | 4.3 |
| BT50-DSK16-135 | 3.0~16.0 | 135 | 40 | 40 | 92 | 92 | 52 | HC16 | M18 | 8,000 | 4.2 | 4.6 |
| BT50-DSK16-165 | 3.0~16.0 | 165 | 40 | 50 | 40 | 122 | 52 | HC16 | M18 | 8,000 | 4.6 | 5.0 |
| BT50-DSK20-105 | 4.0~20.0 | 105 | 48 | 40 | 62 | 62 | 60 | HC20 | M22 | 8,000 | 4.2 | 4.5 |
| BT50-DSK20-135 | 4.0~20.0 | 135 | 48 | 40 | 92 | 92 | 60 | HC20 | M22 | 8,000 | 4.5 | 4.9 |
| BT50-DSK20-165 | 4.0~20.0 | 165 | 48 | 40 | 122 | 122 | 60 | HC20 | M22 | 8,000 | 4.9 | 5.3 |
| BT50-DSK25-105 | 16.0~25.0 | 105 | 55 | 55 | 62 | 62 | 63.5 | HC25 | M28 | 8,000 | 4.4 | 4.7 |
| BT50-DSK25-135 | 16.0~25.0 | 135 | 55 | 55 | 92 | 92 | 63.5 | HC25 | M28 | 8,000 | 4.5 | 4.9 |
| BT50-DSK25-165 | 16.0~25.0 | 165 | 55 | 55 | 122 | 122 | 63.5 | HC25 | M28 | 8,000 | 5.2 | 5.6 |

C Internal coolant system is optional.



DSK SPARE PART

Slim collet chuck related parts



Main components

| Spare Part | | | |
|-----------------|------|-----------------------------------|-----------------|
| Main components | | | |
| Type | Nut | Adjust screw | Extraction tool |
| Images | | | |
| Model No. | | | |
| DSK6 | DN6 | BN0825 | DSK-6CE |
| DSK10 | DN10 | BN1230 | DSK-10CE |
| DSK13 | DN13 | BN1230(BT30) / BN1524F(Others) | DSK-13CE |
| DSK16 | DN16 | BN1830F | DSK-16CE |
| DSK20 | DN20 | BN2230F | DSK-20CE |
| DSK25 | DN25 | BN2838F | DSK-25CE |

※ BN1230 screws are used for BT30-DSK25-90.

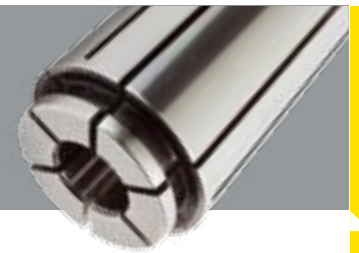
For separate purchase

| Spare Part | | |
|-----------------------|------------------|-------------------|
| For separate purchase | | |
| Images | Applicable chuck | Spanner Model No. |
| | DSK6 | DSS-6 |
| | DSK10 | DSS-10 |
| | DSK13 | DSS-13 |
| | DSK16 | DSS-16 |
| | DSK20 | DSS-20 |
| | DSK25 | DSS-25 |

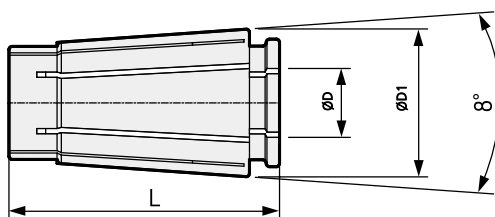


HC COLLET

HC Slim collet (General & precision type)



For separate purchase



| Model No. | ØD1 | L | MAX. ØD | Clearance | General | Precision (P) |
|------------|------|------|---------|-----------|---------|---------------|
| HC6 ØD(P) | 10.5 | 25.0 | 6.0 | 1.0 | 5µm | 3µm |
| HC10 ØD(P) | 15.6 | 30.5 | 10.0 | 1.0 | 5µm | 3µm |
| HC13 ØD(P) | 20.1 | 39.0 | 13.0 | 1.0 | 5µm | 3µm |
| HC16 ØD(P) | 24.6 | 45.0 | 16.0 | 1.0 | 5µm | 3µm |
| HC20 ØD(P) | 29.2 | 54.3 | 20.0 | 1.0 | 5µm | 3µm |
| HC25 ØD(P) | 35.7 | 57.0 | 25.0 | 1.0 | 5µm | 3µm |

Order Example · General type - **Order as HC16-8.0**
 · Precision type - **Order as HC16-8.0P**

• For more information on the detailed specifications, see **98p**.



GSK

Great speed slim collet chuck



| | | | | | |
|---------|---------|---------|----------------|---------|----------|
| G2.5 | 25,000 | Ø25 | C | | |
| G value | Max RPM | Max Dia | Coolant System | Milling | Drilling |

Features

- Enables balanced G2.5/a maximum of 25,000RPM machining
- Improves machining productivity by high-speed machining
- Minimized tool vibration during machining by adopting an 8-degree collet
- The collet is pressed steadily by the Swiss Made high-accuracy nut.
- Optimal machining stability
- Tool clamping range : Ø2-Ø25

| | | | | | | |
|--------|-------------|---|----------------------------------|-----------|---|-----------|
| NAMING | BT40 | — | GSK | 10 | — | 90 |
| | Spindle | | Great Speed Slim collet chuck | Tool Dia. | | Length |



Unique Design

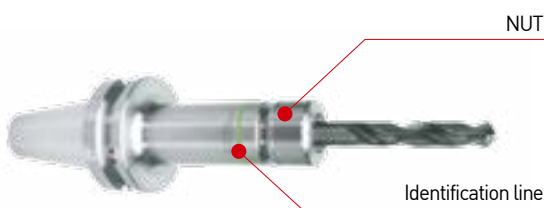
| GSK | Third party |
|---|--|
| <p>Planar part fixing method</p> <p>8° HC Collet</p> <p>Nuts for high-speed rotation</p> <p>Provides strong tightening force with a 8° collet and good fixation degree based on planar part fixing method</p> | <p>Vibration due to balance instability</p> <p>Unstable balance is generated by the centrifugal force at the time of high-speed rotation</p> |

Comparison of screw polishing at points of nut tightened

| GSK | Third party |
|---|--|
| <p>Provides excellent reproduction precision through screw grinding</p> | <p>Unstable precision due to turning operation</p> |

Special Design

Optimized for great-speed collet chucks and uniquely designed to enable easy runout measurement by designating the test bar area to the product



Spanner(optional)



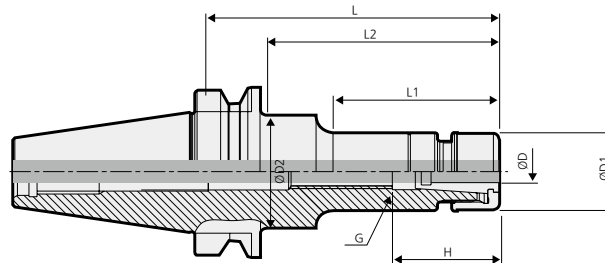
| Model No. | GSK |
|---------------|-------|
| GSK6 SPANNER | GSK6 |
| GSK10 SPANNER | GSK10 |
| GSK13 SPANNER | GSK13 |
| GSK16 SPANNER | GSK16 |
| GSK20 SPANNER | GSK20 |
| GSK25 SPANNER | GSK25 |

C Internal coolant system is optional.



BT-GSK

Great slim type collet chuck



- For more information on the product features, see **92p**
- For more information on the related parts, see **97p**
- For more information on the applicable collet, see **98p**

※ If a coolant system is used, use a coolant collet.

| | Model No. | ØD | L | ØD1 | ØD2 | L1 | L2 | H | COLLET/STEP | G | RPM | Kg | Package weight (Kg) |
|------|----------------|-----------|-----|------|------|------|------|------|-------------|-----|--------|-----|---------------------|
| BT30 | BT30-GSK6-60 | 3.0~6.0 | 60 | 19.5 | 19.5 | 33 | 33 | 31 | HC6/1.0 | M8 | 25,000 | 0.4 | 0.4 |
| | BT30-GSK6-90 | 3.0~6.0 | 90 | 19.5 | 32 | 56 | 65 | 31 | HC6/1.0 | M8 | 25,000 | 0.5 | 0.6 |
| | BT30-GSK10-60 | 2.0~10.0 | 60 | 27 | 27 | 35 | 35 | 38 | HC10/1.0 | M12 | 25,000 | 0.5 | 0.6 |
| | BT30-GSK10-90 | 2.0~10.0 | 90 | 27 | 27 | 65 | 65 | 38 | HC10/1.0 | M12 | 25,000 | 0.6 | 0.7 |
| | BT30-GSK13-60 | 3.0~13.0 | 60 | 35 | 35 | 36 | 36 | 43 | HC13/1.0 | M12 | 25,000 | 0.6 | 0.7 |
| | BT30-GSK16-60 | 3.0~16.0 | 60 | 40 | 40 | 37 | 37 | 52 | HC16/1.0 | M12 | 25,000 | 0.6 | 0.7 |
| | BT30-GSK16-90 | 3.0~16.0 | 90 | 40 | 40 | 67 | 67 | 52 | HC16/1.0 | M18 | 25,000 | 0.8 | 0.9 |
| | BT30-GSK25-90 | 16.0~25.0 | 90 | 55 | 55 | 67.5 | 67.5 | 63.5 | HC25/1.0 | M12 | 25,000 | 1.0 | 1.1 |
| BT40 | BT40-GSK6-90 | 3.0~6.0 | 90 | 19.5 | 32 | 51 | 61 | 31 | HC6/1.0 | M8 | 20,000 | 1.0 | 1.2 |
| | BT40-GSK6-120 | 3.0~6.0 | 120 | 19.5 | 32 | 60 | 90 | 31 | HC6/1.0 | M8 | 20,000 | 1.2 | 1.5 |
| | BT40-GSK6-150 | 3.0~6.0 | 150 | 19.5 | 25 | 60 | 120 | 31 | HC6/1.0 | M8 | 20,000 | 1.2 | 1.4 |
| | BT40-GSK10-90 | 2.0~10.0 | 90 | 27 | 40 | 48 | 60 | 38 | HC10/1.0 | M12 | 20,000 | 1.1 | 1.3 |
| | BT40-GSK10-120 | 2.0~10.0 | 120 | 27 | 40 | 73 | 90 | 38 | HC10/1.0 | M12 | 20,000 | 1.3 | 1.5 |
| | BT40-GSK10-150 | 2.0~10.0 | 150 | 27 | 34.5 | 73 | 118 | 38 | HC10/1.0 | M12 | 20,000 | 1.4 | 1.6 |
| | BT40-GSK13-90 | 3.0~13.0 | 90 | 35 | 35 | 59 | 59 | 43 | HC13/1.0 | M15 | 20,000 | 1.2 | 1.4 |
| | BT40-GSK16-90 | 3.0~16.0 | 90 | 40 | 40 | 58 | 58 | 52 | HC16/1.0 | M18 | 20,000 | 1.3 | 1.5 |
| | BT40-GSK16-120 | 3.0~16.0 | 120 | 40 | 40 | 88 | 88 | 52 | HC16/1.0 | M18 | 20,000 | 1.5 | 1.7 |
| | BT40-GSK16-150 | 3.0~16.0 | 150 | 40 | 40 | 118 | 118 | 52 | HC16/1.0 | M18 | 20,000 | 1.8 | 2.0 |
| | BT40-GSK20-90 | 4.0~20.0 | 90 | 48 | 48 | 60 | 60 | 60 | HC20/1.0 | M22 | 20,000 | 1.4 | 1.6 |
| | BT40-GSK20-120 | 4.0~20.0 | 120 | 48 | 48 | 90 | 90 | 60 | HC20/1.0 | M22 | 20,000 | 1.8 | 2.0 |
| | BT40-GSK25-90 | 16.0~25.0 | 90 | 55 | 55 | 61 | 61 | 63.5 | HC25/1.0 | M28 | 20,000 | 1.6 | 1.8 |
| | BT40-GSK25-120 | 16.0~25.0 | 120 | 55 | 55 | 91 | 91 | 63.5 | HC25/1.0 | M28 | 20,000 | 2.0 | 2.2 |

☐ Internal coolant system is optional.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER

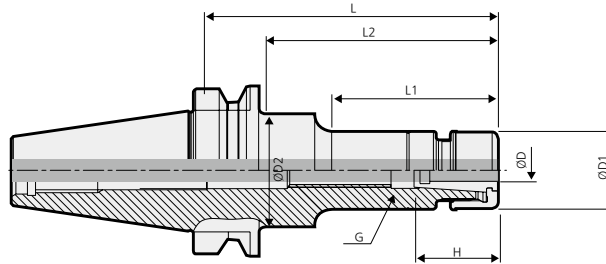


BT-GSK

Great slim type collet chuck



| | | | | | | |
|---------------|---------|---------|---------|----------------|---------|----------|
| MAS 403-BT | G2.5 | 15,000 | Ø25 | C | Milling | Drilling |
| Shank | G value | Max RPM | Max Dia | Coolant System | Milling | Drilling |



- For more information on the product features, see **92p**.
- For more information on the related parts, see **97p**.
- For more information on the applicable collet, see **98p**.

※ If a coolant system is used, use a coolant collet.

| Model No. | ØD | L | ØD1 | ØD2 | L1 | L2 | H | COLLET | G | RPM | Kg | Package weight (Kg) |
|----------------|-----------|-----|------|-----|-----|-----|------|--------|-----|--------|-----|---------------------|
| BT50-GSK6-105 | 3.0~6.0 | 105 | 19.5 | 32 | 55 | 64 | 31 | HC6 | M8 | 15,000 | 3.6 | 3.9 |
| BT50-GSK6-135 | 3.0~6.0 | 135 | 19.5 | 32 | 60 | 92 | 31 | HC6 | M8 | 15,000 | 3.6 | 4.0 |
| BT50-GSK6-165 | 3.0~6.0 | 165 | 19.5 | 32 | 60 | 114 | 31 | HC6 | M8 | 15,000 | 3.9 | 4.3 |
| BT50-GSK10-105 | 2.0~10.0 | 105 | 27 | 27 | 57 | 57 | 38 | HC10 | M12 | 15,000 | 3.7 | 4.0 |
| BT50-GSK10-135 | 2.0~10.0 | 135 | 27 | 32 | 70 | 92 | 38 | HC10 | M12 | 15,000 | 3.7 | 4.1 |
| BT50-GSK10-165 | 2.0~10.0 | 165 | 27 | 36 | 75 | 114 | 38 | HC10 | M12 | 15,000 | 4.0 | 4.4 |
| BT50-GSK13-135 | 3.0~13.0 | 135 | 35 | 35 | 92 | 92 | 43 | HC13 | M15 | 15,000 | 3.9 | 4.3 |
| BT50-GSK16-105 | 3.0~16.0 | 105 | 40 | 40 | 62 | 62 | 52 | HC16 | M18 | 15,000 | 3.9 | 4.2 |
| BT50-GSK16-135 | 3.0~16.0 | 135 | 40 | 40 | 92 | 92 | 52 | HC16 | M18 | 15,000 | 4.1 | 4.5 |
| BT50-GSK16-165 | 3.0~16.0 | 165 | 40 | 50 | 40 | 122 | 52 | HC16 | M18 | 15,000 | 4.3 | 4.7 |
| BT50-GSK20-105 | 4.0~20.0 | 105 | 48 | - | 62 | 62 | 60 | HC20 | M22 | 15,000 | 4.1 | 4.4 |
| BT50-GSK20-135 | 4.0~20.0 | 135 | 48 | - | 92 | 92 | 60 | HC20 | M22 | 15,000 | 4.4 | 4.8 |
| BT50-GSK20-165 | 4.0~20.0 | 165 | 48 | - | 122 | 122 | 60 | HC20 | M22 | 15,000 | 4.9 | 5.1 |
| BT50-GSK25-105 | 16.0~25.0 | 105 | 55 | 55 | 62 | 62 | 63.5 | HC25 | M28 | 15,000 | 4.2 | 4.5 |
| BT50-GSK25-135 | 16.0~25.0 | 135 | 55 | 55 | 92 | 92 | 63.5 | HC25 | M28 | 15,000 | 4.6 | 5.0 |
| BT50-GSK25-165 | 16.0~25.0 | 165 | 55 | 55 | 122 | 122 | 63.5 | HC25 | M28 | 15,000 | 5.1 | 5.5 |

C Internal coolant system is optional.

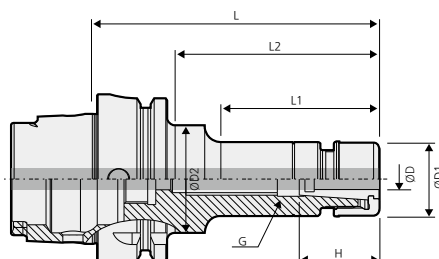


HSK-GSK

Great slim type collet chuck



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



- For more information on the product features, see **92p**
- For more information on the related parts, see **97p**
- For more information on the applicable collet, see **98p**

※ If a coolant system is used, use a coolant collet.

| | Model No. | ØD | L | ØD1 | ØD2 | L1 | L2 | H | COLLET | G | RPM | Kg | Package weight (Kg) |
|---------|-------------------|-----------|-----|------|------|-----|-----|------|--------|-----|--------|-----|---------------------|
| HSK63A | HSK63A-GSK6-100 | 3.0~6.0 | 100 | 19.5 | 32 | 51 | 71 | 31 | HC6 | M8 | 20,000 | 0.8 | 1.0 |
| | HSK63A-GSK10-105 | 2.0~10.0 | 105 | 27 | 34.5 | 59 | 76 | 38 | HC10 | M12 | 20,000 | 0.9 | 1.2 |
| | HSK63A-GSK16-120 | 3.0~16.0 | 120 | 40 | 40 | 89 | 89 | 52 | HC16 | M18 | 20,000 | 1.3 | 1.5 |
| | HSK63A-GSK20-120 | 4.0~20.0 | 120 | 48 | 48 | 93 | 93 | 60 | HC20 | M22 | 20,000 | 1.6 | 1.8 |
| HSK100A | HSK100A-GSK6-120 | 3.0~6.0 | 120 | 19.5 | 32 | 69 | 86 | 31 | HC6 | M8 | 15,000 | 2.2 | 2.6 |
| | HSK100A-GSK10-120 | 2.0~10.0 | 120 | 27 | 27 | 69 | 86 | 38 | HC10 | M12 | 15,000 | 2.3 | 2.7 |
| | HSK100A-GSK16-140 | 3.0~16.0 | 140 | 40 | 40 | 106 | 106 | 52 | HC16 | M18 | 15,000 | 2.8 | 3.1 |
| | HSK100A-GSK25-155 | 16.0~25.0 | 155 | 55 | 55 | 121 | 121 | 63.5 | HC25 | M28 | 15,000 | 3.6 | 4.0 |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

C Internal coolant system is optional.

For separate purchase

Internal coolant system



Classification by shank

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

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER

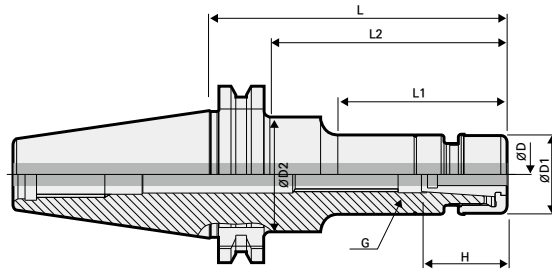


SK-GSK

Great slim type collet chuck



| | | | | | | |
|-------------------|---------|---------|---------|----------------|---------|----------|
| DIN69871 -1A/B | G2.5 | 20,000 | Ø25 | C | Milling | Drilling |
| Shank | G value | Max RPM | Max Dia | Coolant System | Milling | Drilling |



- For more information on the product features, see **92p**.
- For more information on the related parts, see **97p**.
- For more information on the applicable collet, see **98p**.

※ If a coolant system is used, use a coolant collet.

| | Model No. | ØD | L | ØD1 | ØD2 | L1 | L2 | H | COLLET | G | RPM | Kg | Package weight (Kg) |
|------|----------------|-----------|-----|------|------|-----|-----|------|--------|-----|--------|-----|---------------------|
| SK40 | SK40-GSK6-60 | 3.0~6.0 | 60 | 19.5 | 32 | - | - | 31 | HC6 | M8 | 20,000 | 0.8 | 1.0 |
| | SK40-GSK6-90 | 3.0~6.0 | 90 | 19.5 | 32 | 51 | 61 | 31 | HC6 | M8 | 20,000 | 1.0 | 1.2 |
| | SK40-GSK10-90 | 2.0~10.0 | 90 | 27 | 40 | 48 | 60 | 38 | HC10 | M12 | 20,000 | 1.1 | 1.3 |
| | SK40-GSK10-150 | 2.0~10.0 | 150 | 27 | 34.5 | 73 | 118 | 38 | HC10 | M12 | 20,000 | 1.3 | 1.6 |
| | SK40-GSK16-90 | 3.0~16.0 | 90 | 40 | 40 | 58 | 58 | 52 | HC16 | M18 | 20,000 | 1.2 | 1.4 |
| | SK40-GSK16-150 | 3.0~16.0 | 150 | 40 | 40 | 118 | 118 | 52 | HC16 | M18 | 20,000 | 1.7 | 2.0 |
| | SK40-GSK20-90 | 4.0~20.0 | 90 | 48 | 48 | 60 | 60 | 60 | HC20 | M22 | 20,000 | 1.3 | 1.5 |
| | SK40-GSK25-90 | 16.0~25.0 | 90 | 55 | 55 | 61 | 61 | 63.5 | HC25 | M28 | 20,000 | 1.3 | 1.5 |
| SK50 | SK50-GSK6-105 | 3.0~6.0 | 105 | 19.5 | 32 | 55 | 64 | 31 | HC6 | M8 | 15,000 | 3.1 | 3.4 |
| | SK50-GSK6-165 | 3.0~6.0 | 165 | 19.5 | 32 | 60 | 114 | 31 | HC6 | M8 | 15,000 | 3.3 | 3.7 |
| | SK50-GSK10-105 | 2.0~10.0 | 105 | 27 | 27 | 57 | 57 | 38 | HC10 | M12 | 15,000 | 3.2 | 3.5 |
| | SK50-GSK10-165 | 2.0~10.0 | 165 | 27 | 36 | 75 | 114 | 38 | HC10 | M12 | 15,000 | 3.4 | 3.8 |
| | SK50-GSK16-105 | 3.0~16.0 | 105 | 40 | 40 | 62 | 62 | 52 | HC16 | M18 | 15,000 | 3.4 | 3.7 |
| | SK50-GSK16-165 | 3.0~16.0 | 165 | 40 | 50 | 40 | 122 | 52 | HC16 | M18 | 15,000 | 3.9 | 4.3 |
| | SK50-GSK20-105 | 4.0~10.0 | 105 | 48 | 40 | 62 | 62 | 60 | HC20 | M22 | 15,000 | 3.6 | 3.9 |
| | SK50-GSK20-165 | 4.0~10.0 | 165 | 48 | 40 | 122 | 122 | 60 | HC20 | M22 | 15,000 | 4.3 | 4.7 |
| | SK50-GSK25-105 | 16.0~25.0 | 105 | 55 | 55 | 62 | 62 | 63.5 | HC25 | M28 | 15,000 | 3.7 | 4.0 |
| | SK50-GSK25-165 | 16.0~25.0 | 165 | 55 | 55 | 122 | 122 | 63.5 | HC25 | M28 | 15,000 | 4.6 | 5.0 |

C Internal coolant system is optional.



GSK SPARE PART

Great speed slim collet chuck related parts



Main components

| Spare Part | | | |
|-----------------|------|-----------------------------------|-----------------|
| Main components | | | |
| Type | Nut | Adjustment screw | Extraction tool |
| Images | | | |
| Model No. | | | |
| GSK6 | GN6 | BN0825 | DSK-6CE |
| GSK10 | GN10 | BN1230 | DSK-10CE |
| GSK13 | GN13 | BN1230(BT30) / BN1524F(Others) | DSK-13CE |
| GSK16 | GN16 | BN1830F | DSK-16CE |
| GSK20 | GN20 | BN2230F | DSK-20CE |
| GSK25 | GN25 | BN2838F | DSK-25CE |

※ BN1524F screws are used for HSK63A-GSK20-120.

※ BN1830F screws are used for SK40-GSK20-90.

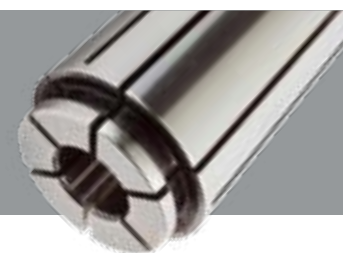
For separate purchase

| Spare Part | | |
|-----------------------|------------------|-------------------|
| For separate purchase | | |
| Images | Applicable chuck | Spanner Model No. |
| | GSK6 | GSK6 SPANNER |
| | GSK10 | GSK10 SPANNER |
| | GSK13 | GSK13 SPANNER |
| | GSK16 | GSK16 SPANNER |
| | GSK20 | GSK20 SPANNER |
| | GSK25 | GSK25 SPANNER |

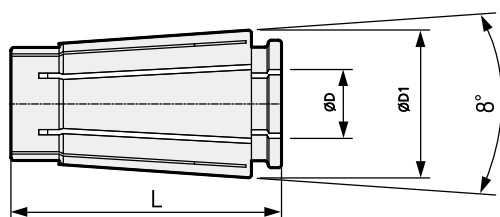


HC COLLET

HC Slim collet (General & precision type)



For separate purchase



| Model No. | ØD1 | L | MAX. ØD | Clearance | General | Precision (P) |
|------------|------|------|---------|-----------|---------|---------------|
| HC6 ØD(P) | 10.5 | 25.0 | 6.0 | 1.0 | 5µm | 3µm |
| HC10 ØD(P) | 15.6 | 30.5 | 10.0 | 1.0 | 5µm | 3µm |
| HC13 ØD(P) | 20.1 | 39.0 | 13.0 | 1.0 | 5µm | 3µm |
| HC16 ØD(P) | 24.6 | 45.0 | 16.0 | 1.0 | 5µm | 3µm |
| HC20 ØD(P) | 29.2 | 54.3 | 20.0 | 1.0 | 5µm | 3µm |
| HC25 ØD(P) | 35.7 | 57.0 | 25.0 | 1.0 | 5µm | 3µm |

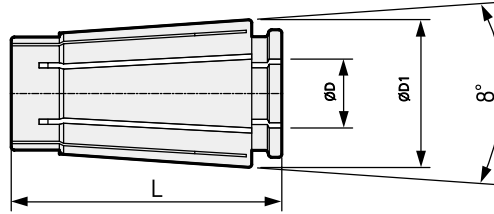
Order Example · General type - **Order as HC16-8.0**
· Precision type - **Order as HC16-8.0P**

• For more information on the detailed specifications, see **98p**.



HC COLLET

HC slim collet (general type)



| | Model No. | ØD1 | L | ØD | Clearance | Accuracy |
|-----------|-----------|----------|------|------|-----------|----------|
| HC6 | HC6-3.0 | 10.5 | 25.0 | 3.0 | 1.0 | 5µm |
| | HC6-4.0 | 10.5 | 25.0 | 4.0 | 1.0 | 5µm |
| | HC6-5.0 | 10.5 | 25.0 | 5.0 | 1.0 | 5µm |
| | HC6-6.0 | 10.5 | 25.0 | 6.0 | 1.0 | 5µm |
| HC10 | HC10-2.0 | 15.6 | 30.5 | 2.0 | 1.0 | 5µm |
| | HC10-3.0 | 15.6 | 30.5 | 3.0 | 1.0 | 5µm |
| | HC10-4.0 | 15.6 | 30.5 | 4.0 | 1.0 | 5µm |
| | HC10-5.0 | 15.6 | 30.5 | 5.0 | 1.0 | 5µm |
| | HC10-6.0 | 15.6 | 30.5 | 6.0 | 1.0 | 5µm |
| | HC10-7.0 | 15.6 | 30.5 | 7.0 | 1.0 | 5µm |
| | HC10-8.0 | 15.6 | 30.5 | 8.0 | 1.0 | 5µm |
| | HC10-9.0 | 15.6 | 30.5 | 9.0 | 1.0 | 5µm |
| | HC10-10.0 | 15.6 | 30.5 | 10.0 | 1.0 | 5µm |
| | HC13 | HC13-3.0 | 20.1 | 39.0 | 3.0 | 1.0 |
| HC13-4.0 | | 20.1 | 39.0 | 4.0 | 1.0 | 5µm |
| HC13-5.0 | | 20.1 | 39.0 | 5.0 | 1.0 | 5µm |
| HC13-6.0 | | 20.1 | 39.0 | 6.0 | 1.0 | 5µm |
| HC13-7.0 | | 20.1 | 39.0 | 7.0 | 1.0 | 5µm |
| HC13-8.0 | | 20.1 | 39.0 | 8.0 | 1.0 | 5µm |
| HC13-9.0 | | 20.1 | 39.0 | 9.0 | 1.0 | 5µm |
| HC13-10.0 | | 20.1 | 39.0 | 10.0 | 1.0 | 5µm |
| HC13-11.0 | | 20.1 | 39.0 | 11.0 | 1.0 | 5µm |
| HC13-12.0 | | 20.1 | 39.0 | 12.0 | 1.0 | 5µm |
| HC16 | HC13-13.0 | 20.1 | 39.0 | 13.0 | 1.0 | 5µm |
| | HC16-3.0 | 24.6 | 45.0 | 3.0 | 1.0 | 5µm |
| | HC16-4.0 | 24.6 | 45.0 | 4.0 | 1.0 | 5µm |
| | HC16-5.0 | 24.6 | 45.0 | 5.0 | 1.0 | 5µm |
| | HC16-6.0 | 24.6 | 45.0 | 6.0 | 1.0 | 5µm |
| | HC16-7.0 | 24.6 | 45.0 | 7.0 | 1.0 | 5µm |
| | HC16-8.0 | 24.6 | 45.0 | 8.0 | 1.0 | 5µm |
| | HC16-9.0 | 24.6 | 45.0 | 9.0 | 1.0 | 5µm |
| | HC16-10.0 | 24.6 | 45.0 | 10.0 | 1.0 | 5µm |
| | HC16-11.0 | 24.6 | 45.0 | 11.0 | 1.0 | 5µm |
| | HC16-12.0 | 24.6 | 45.0 | 12.0 | 1.0 | 5µm |
| | HC16-13.0 | 24.6 | 45.0 | 13.0 | 1.0 | 5µm |
| | HC16-14.0 | 24.6 | 45.0 | 14.0 | 1.0 | 5µm |
| | HC16-15.0 | 24.6 | 45.0 | 15.0 | 1.0 | 5µm |
| HC16-16.0 | 24.6 | 45.0 | 16.0 | 1.0 | 5µm | |

| | Model No. | ØD1 | L | ØD | Clearance | Accuracy |
|-----------|-----------|-----------|------|------|-----------|----------|
| HC20 | HC20-4.0 | 29.2 | 54.3 | 4.0 | 2.0 | 5µm |
| | HC20-6.0 | 29.2 | 54.3 | 6.0 | 2.0 | 5µm |
| | HC20-8.0 | 29.2 | 54.3 | 8.0 | 2.0 | 5µm |
| | HC20-10.0 | 29.2 | 54.3 | 10.0 | 2.0 | 5µm |
| | HC20-12.0 | 29.2 | 54.3 | 12.0 | 2.0 | 5µm |
| | HC20-14.0 | 29.2 | 54.3 | 14.0 | 2.0 | 5µm |
| | HC20-16.0 | 29.2 | 54.3 | 16.0 | 2.0 | 5µm |
| | HC20-18.0 | 29.2 | 54.3 | 18.0 | 2.0 | 5µm |
| | HC20-20.0 | 29.2 | 54.3 | 20.0 | 2.0 | 5µm |
| | HC25 | HC25-16.0 | 35.7 | 57.0 | 16.0 | 1.0 |
| HC25-17.0 | | 35.7 | 57.0 | 17.0 | 1.0 | 5µm |
| HC25-18.0 | | 35.7 | 57.0 | 18.0 | 1.0 | 5µm |
| HC25-19.0 | | 35.7 | 57.0 | 19.0 | 1.0 | 5µm |
| HC25-20.0 | | 35.7 | 57.0 | 20.0 | 1.0 | 5µm |
| HC25-21.0 | | 35.7 | 57.0 | 21.0 | 1.0 | 5µm |
| HC25-22.0 | | 35.7 | 57.0 | 22.0 | 1.0 | 5µm |
| HC25-23.0 | | 35.7 | 57.0 | 23.0 | 1.0 | 5µm |
| HC25-24.0 | | 35.7 | 57.0 | 24.0 | 1.0 | 5µm |
| HC25-25.0 | | 35.7 | 57.0 | 25.0 | 1.0 | 5µm |

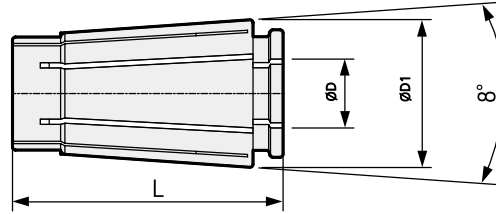
Order Example · General type - Order as **HC16-8.0** · Precision type - Order as **HC16-8.0P**

※ Please contact us about sizes other than the model nos.



HC COLLET

HC slim collet (precision type)



| | Model No. | ØD1 | L | ØD | Clearance | Accuracy | |
|----------------|----------------|-----------|------|------|-----------|----------|-----|
| HC6(P) | HC6-3.0P | 10.5 | 25.0 | 3.0 | 1.0 | 3µm | |
| | HC6-4.0P | 10.5 | 25.0 | 4.0 | 1.0 | 3µm | |
| | HC6-5.0P | 10.5 | 25.0 | 5.0 | 1.0 | 3µm | |
| | HC6-6.0P | 10.5 | 25.0 | 6.0 | 1.0 | 3µm | |
| | HC10-2.0P | 15.6 | 30.5 | 2.0 | 1.0 | 3µm | |
| HC10(P) | HC10-3.0P | 15.6 | 30.5 | 3.0 | 1.0 | 3µm | |
| | HC10-4.0P | 15.6 | 30.5 | 4.0 | 1.0 | 3µm | |
| | HC10-5.0P | 15.6 | 30.5 | 5.0 | 1.0 | 3µm | |
| | HC10-6.0P | 15.6 | 30.5 | 6.0 | 1.0 | 3µm | |
| | HC10-7.0P | 15.6 | 30.5 | 7.0 | 1.0 | 3µm | |
| | HC10-8.0P | 15.6 | 30.5 | 8.0 | 1.0 | 3µm | |
| | HC10-9.0P | 15.6 | 30.5 | 9.0 | 1.0 | 3µm | |
| | HC10-10.0P | 15.6 | 30.5 | 10.0 | 1.0 | 3µm | |
| | HC13(P) | HC13-3.0P | 20.1 | 39.0 | 3.0 | 1.0 | 3µm |
| | | HC13-4.0P | 20.1 | 39.0 | 4.0 | 1.0 | 3µm |
| HC13-5.0P | | 20.1 | 39.0 | 5.0 | 1.0 | 3µm | |
| HC13-6.0P | | 20.1 | 39.0 | 6.0 | 1.0 | 3µm | |
| HC13-7.0P | | 20.1 | 39.0 | 7.0 | 1.0 | 3µm | |
| HC13-8.0P | | 20.1 | 39.0 | 8.0 | 1.0 | 3µm | |
| HC13-9.0P | | 20.1 | 39.0 | 9.0 | 1.0 | 3µm | |
| HC13-10.0P | | 20.1 | 39.0 | 10.0 | 1.0 | 3µm | |
| HC13-11.0P | | 20.1 | 39.0 | 11.0 | 1.0 | 3µm | |
| HC13-12.0P | | 20.1 | 39.0 | 12.0 | 1.0 | 3µm | |
| HC16(P) | HC13-13.0P | 20.1 | 39.0 | 13.0 | 1.0 | 3µm | |
| | HC16-3.0P | 24.6 | 45.0 | 3.0 | 1.0 | 3µm | |
| | HC16-4.0P | 24.6 | 45.0 | 4.0 | 1.0 | 3µm | |
| | HC16-5.0P | 24.6 | 45.0 | 5.0 | 1.0 | 3µm | |
| | HC16-6.0P | 24.6 | 45.0 | 6.0 | 1.0 | 3µm | |
| | HC16-7.0P | 24.6 | 45.0 | 7.0 | 1.0 | 3µm | |
| | HC16-8.0P | 24.6 | 45.0 | 8.0 | 1.0 | 3µm | |
| | HC16-9.0P | 24.6 | 45.0 | 9.0 | 1.0 | 3µm | |
| | HC16-10.0P | 24.6 | 45.0 | 10.0 | 1.0 | 3µm | |
| | HC16-11.0P | 24.6 | 45.0 | 11.0 | 1.0 | 3µm | |
| | HC16-12.0P | 24.6 | 45.0 | 12.0 | 1.0 | 3µm | |
| | HC16-13.0P | 24.6 | 45.0 | 13.0 | 1.0 | 3µm | |
| | HC16-14.0P | 24.6 | 45.0 | 14.0 | 1.0 | 3µm | |
| | HC16-15.0P | 24.6 | 45.0 | 15.0 | 1.0 | 3µm | |
| | HC16-16.0P | 24.6 | 45.0 | 16.0 | 1.0 | 3µm | |

| | Model No. | ØD1 | L | ØD | Clearance | Accuracy |
|----------------|----------------|------------|------|------|-----------|----------|
| HC20(P) | HC20-4.0P | 29.2 | 54.3 | 4.0 | 2.0 | 3µm |
| | HC20-6.0P | 29.2 | 54.3 | 6.0 | 2.0 | 3µm |
| | HC20-8.0P | 29.2 | 54.3 | 8.0 | 2.0 | 3µm |
| | HC20-10.0P | 29.2 | 54.3 | 10.0 | 2.0 | 3µm |
| | HC20-12.0P | 29.2 | 54.3 | 12.0 | 2.0 | 3µm |
| | HC20-14.0P | 29.2 | 54.3 | 14.0 | 2.0 | 3µm |
| | HC20-16.0P | 29.2 | 54.3 | 16.0 | 2.0 | 3µm |
| | HC20-18.0P | 29.2 | 54.3 | 18.0 | 2.0 | 3µm |
| | HC20-20.0P | 29.2 | 54.3 | 20.0 | 2.0 | 3µm |
| | HC25(P) | HC25-16.0P | 35.7 | 57.0 | 16.0 | 1.0 |
| HC25-17.0P | | 35.7 | 57.0 | 17.0 | 1.0 | 3µm |
| HC25-18.0P | | 35.7 | 57.0 | 18.0 | 1.0 | 3µm |
| HC25-19.0P | | 35.7 | 57.0 | 19.0 | 1.0 | 3µm |
| HC25-20.0P | | 35.7 | 57.0 | 20.0 | 1.0 | 3µm |
| HC25-21.0P | | 35.7 | 57.0 | 21.0 | 1.0 | 3µm |
| HC25-22.0P | | 35.7 | 57.0 | 22.0 | 1.0 | 3µm |
| HC25-23.0P | | 35.7 | 57.0 | 23.0 | 1.0 | 3µm |
| HC25-24.0P | | 35.7 | 57.0 | 24.0 | 1.0 | 3µm |
| HC25-25.0P | | 35.7 | 57.0 | 25.0 | 1.0 | 3µm |

Order Example · General type - Order as **HC16-8.0** · Precision type - Order as **HC16-8.0P**

※ Please contact us about sizes other than the model nos.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

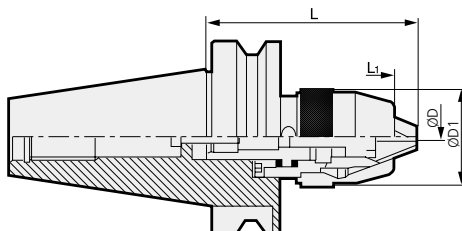
TAUMAX

OTHER



BT-NPU

Drill chuck



• For more information on the related parts, see **101p**.

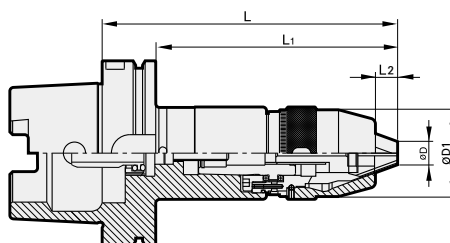
| | Model No. | ØD | L | ØD1 | L1 | Kg | Package weight (Kg) |
|------------------|----------------|------|-----|-----|------|-----|---------------------|
| BT30, BT40, BT50 | BT30-NPU8-97 | 1~8 | 97 | 38 | 8.5 | 0.8 | 0.9 |
| | BT30-NPU13-125 | 1~13 | 125 | 50 | 12.5 | 1.4 | 1.6 |
| | BT40-NPU8-87 | 1~8 | 87 | 38 | 8.5 | 1.2 | 1.4 |
| | BT40-NPU13-105 | 1~13 | 105 | 50 | 12.5 | 1.6 | 1.9 |
| | BT40-NPU13-130 | 1~13 | 130 | 50 | 12.5 | 1.9 | 2.2 |
| | BT50-NPU13-130 | 1~13 | 130 | 50 | 12.5 | 4.5 | 4.9 |
| | BT50-NPU13-190 | 1~13 | 190 | 50 | 12.5 | 5.3 | 5.7 |

C This product does not support the internal coolant system.



HSK-NPU

Drill chuck



• For more information on the related parts, see **101p**.

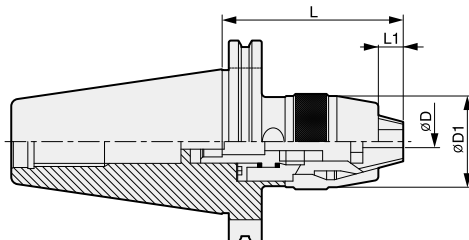
| | Model No. | ØD | L | ØD1 | L1 | L2 | Kg | Package weight (Kg) | |
|-----------------|-------------------|------|-----|-----|-----|------|-----|---------------------|--|
| HSK63A, HSK100A | HSK63A-NPU13-175 | 1~13 | 175 | 50 | 149 | 12.5 | 2.4 | 2.6 | |
| | HSK100A-NPU13-180 | 1~13 | 180 | 50 | 151 | 12.5 | 3.6 | 4.0 | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

C This product does not support the internal coolant system.



SK-NPU

Drill chuck



• For more information on the related parts, see **101p**

| SK40, SK50 | Model No. | ØD | ØD1 | L | L1 | Kg | Package weight (Kg) |
|------------|----------------|----------------|------|-----|------|------|---------------------|
| | | SK40-NPU13-105 | 1~13 | 50 | 105 | 12.5 | 1.6 |
| | SK50-NPU13-111 | 1~13 | 50 | 111 | 12.5 | 3.6 | 3.9 |
| | | | | | | | |
| | | | | | | | |

C This product does not support the internal coolant system.



NPU SPARE PART

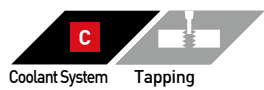
Drill chuck related parts

| Spare Part | | Main components | | Spare Part |
|------------|--------|------------------|--------|----------------------------------|
| Type | | Drill chuck head | Bolt | For separate purchase Spanner |
| Model No. | Images | | | |
| | | NPU08 | BX0620 | NPU0836 |
| | | NPU13 | BX0825 | NPU1348 |



DTN

Tapping holder



Features

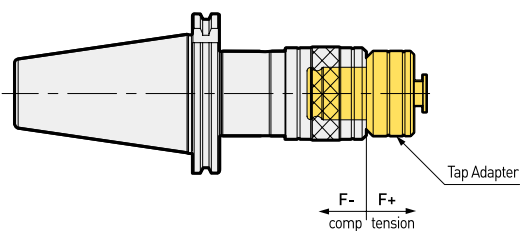
- Fast and convenient tool change
- Using an adapter with a tensile and shrinking device
- Boring range : M3~M38

| | | | | |
|---------|---------|----------------|---------------|--------|
| MAINING | BT40 | DTN | 22 | 130 |
| | Spindle | Tapping holder | Tapping Range | Length |



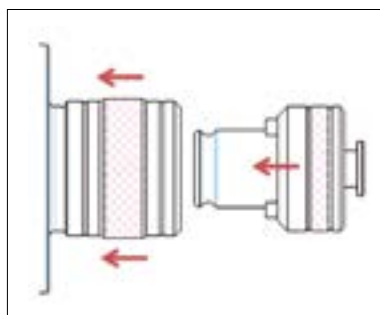
Easy TCA (Tap adapter) change

- Fast tap change per adapter pi based on the one-touch change method that enables high accuracy and a long service life and useful for various machining operations
- Enables tension and contraction using the axial direction floating method



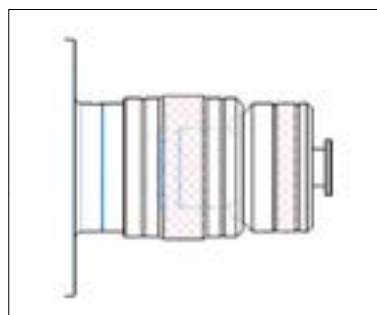
How to tighten

TCA insertion



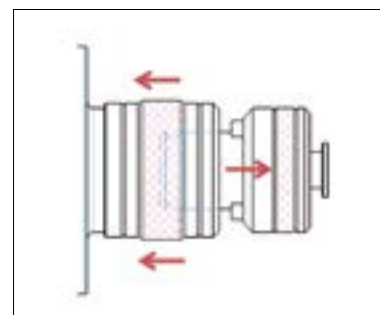
1. Insert TCA after pressing the tap holder cover down
2. Connect TCA to be aligned with the key groove and press it until the sound "click" is heard.

TCA mounting



1. The tap holder cover is put in the normal position.

TCA removal



1. Remove TCA after pressing the tap holder cover.

C This product does not support the internal coolant system.

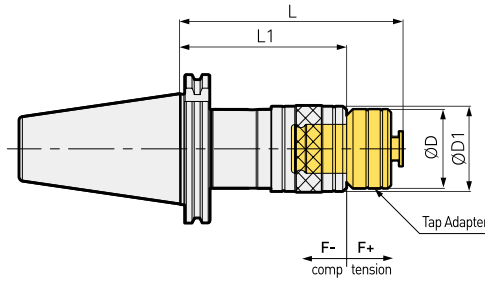
※ DTN12, DTN22 : Remove them by pulling the sliding ring down.

※ DTN38 : Remove it by pulling the adapter forward.



BT-DTN

Tapping holder



- For more information on the product features, see **102p**
- For more information on the applicable adapter, see **105p**

| | Model No. | Tap size | L | L1 | ØD | ØD1 | Adapter used | F- | F+ | Kg | Package weight (Kg) |
|------|----------------|----------|-----|-----|----|-----|--------------|------|------|-----|---------------------|
| BT30 | BT30-DTN12-85 | M3~M12 | 85 | 60 | 32 | 39 | TCA1-M | 4 | 10 | 0.5 | 0.7 |
| | BT40-DTN12-90 | M3~M12 | 90 | 65 | 32 | 39 | TCA1-M | 4 | 10 | 1.2 | 1.4 |
| BT40 | BT40-DTN12-120 | M3~M12 | 120 | 95 | 32 | 39 | TCA1-M | 4 | 10 | 1.5 | 1.7 |
| | BT40-DTN22-130 | M8~M24 | 130 | 96 | 50 | 56 | TCA2-M | 12.5 | 12.5 | 1.7 | 1.9 |
| | BT40-DTN22-160 | M8~M24 | 160 | 126 | 50 | 56 | TCA2-M | 12.5 | 12.5 | 2.2 | 2.4 |
| BT50 | BT50-DTN12-100 | M3~M12 | 100 | 75 | 32 | 39 | TCA1-M | 4 | 10 | 3.9 | 4.2 |
| | BT50-DTN12-130 | M3~M12 | 130 | 105 | 32 | 39 | TCA1-M | 4 | 10 | 3.9 | 4.3 |
| | BT50-DTN22-140 | M8~M24 | 140 | 106 | 50 | 56 | TCA2-M | 12.5 | 12.5 | 4.3 | 4.7 |
| | BT50-DTN22-170 | M8~M24 | 170 | 136 | 50 | 56 | TCA2-M | 12.5 | 12.5 | 4.7 | 5.1 |
| | BT50-DTN38-185 | M16~M38 | 185 | 140 | 72 | 81 | TCA3-M | 20 | 20 | 5.7 | 6.1 |
| | BT50-DTN38-215 | M16~M38 | 215 | 170 | 72 | 81 | TCA3-M | 20 | 20 | 6.7 | 7.1 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

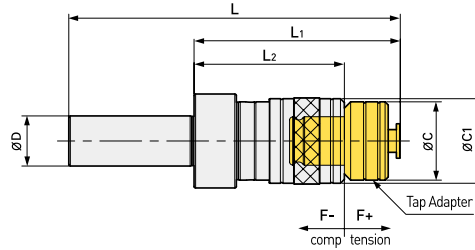
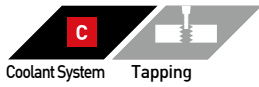
C This product does not support the internal coolant system.

Chuck
Arbor / Modular
Boring tool
Angular head
cBN/PCD
Smart factory
TAUMAX
OTHER



S-DTN

Straight shank tapping hoder



- For more information on the product features, see **102p**.
- For more information on the TAP adapter (TCA), see **105p**.

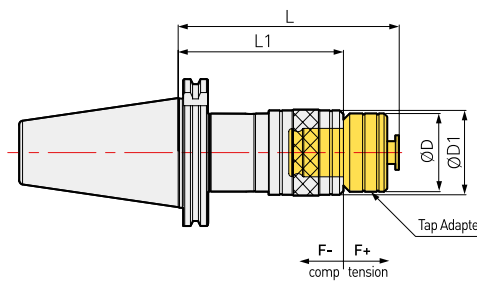
| S32 | Model No. | Tapping range | ØD | L | L1 | L2 | ØD | ØD1 | F- | F+ | Adapter used | Kg | Package weight (Kg) |
|-----|---------------|---------------|----|-----|-----|----|----|-----|------|------|--------------|-----|---------------------|
| | S32-DTN12-90 | M3-M12 | 32 | 170 | 90 | 65 | 32 | 39 | 4 | 10 | TCA1 | 1.0 | 1.1 |
| | S32-DTN22-130 | M8-M24 | 32 | 210 | 130 | 96 | 50 | 56 | 12.5 | 12.5 | TCA2 | 1.8 | 1.9 |

C This product does not support the internal coolant system.



SK-DTN

Tapping holder



- For more information on the product features, see **102p**.
- For more information on the applicable adapter, see **105p**.

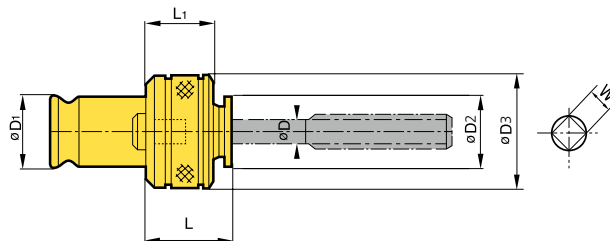
| | Model No. | Tap size | L | L1 | ØD | ØD1 | Adapter used | F- | F+ | Kg | Package weight (Kg) |
|------|----------------|----------|-----|-----|----|-----|--------------|------|------|-----|---------------------|
| SK40 | SK40-DTN12-90 | M3~M12 | 90 | 65 | 32 | 39 | TCA1-M | 4 | 10 | 1.0 | 1.2 |
| | SK40-DTN22-130 | M8~M22 | 130 | 96 | 50 | 56 | TCA2-M | 12.5 | 12.5 | 1.6 | 1.8 |
| SK50 | SK50-DTN12-100 | M3~M12 | 100 | 75 | 32 | 39 | TCA1-M | 4 | 10 | 2.9 | 3.2 |
| | SK50-DTN22-140 | M8~M22 | 140 | 106 | 50 | 56 | TCA2-M | 12.5 | 12.5 | 3.5 | 3.9 |

C This product does not support the internal coolant system.



TCA

Tap adapter



※ JIS specifications customizable

| | Model No. | ØD | ØD1 | L | L1 | ØD2 | ØD3 | W | Kg | Package weight(Kg) |
|----------|--------------|----------|------|------|------|------|-----|-----|-----|--------------------|
| TCA1 | TCA1-M3 | 4 | 19 | 26.5 | 24.5 | 18.5 | 32 | 3.2 | 0.2 | 0.2 |
| | TCA1-M4 | 5 | 19 | 26.5 | 24.5 | 18.5 | 32 | 4 | 0.2 | 0.2 |
| | TCA1-M5 | 5.5 | 19 | 26.5 | 24.5 | 18.5 | 32 | 4 | 0.2 | 0.2 |
| | TCA1-M6 | 6 | 19 | 26.5 | 24.5 | 18.5 | 32 | 4 | 0.2 | 0.2 |
| | TCA1-M8 | 6.2 | 19 | 26.5 | 24.5 | 18.5 | 32 | 5 | 0.2 | 0.2 |
| | TCA1-M10 | 7 | 19 | 26.5 | 24.5 | 18.5 | 32 | 5.5 | 0.2 | 0.2 |
| | TCA1-M11 | 8 | 19 | 26.5 | 24.5 | 18.5 | 32 | 6 | 0.2 | 0.2 |
| | TCA1-M12 | 8.5 | 19 | 26.5 | 24.5 | 18.5 | 32 | 6.5 | 0.2 | 0.2 |
| TCA2 | TCA2-M8 | 6.2 | 31 | 34 | 30.5 | 29 | 50 | 5 | 0.5 | 0.5 |
| | TCA2-M10 | 7 | 31 | 34 | 30.5 | 29 | 50 | 5.5 | 0.5 | 0.5 |
| | TCA2-M12 | 8.5 | 31 | 34 | 30.5 | 29 | 50 | 6.5 | 0.5 | 0.5 |
| | TCA2-M14 | 10.5 | 31 | 34 | 30.5 | 29 | 50 | 8 | 0.5 | 0.5 |
| | TCA2-P(=1/4) | 11 | 31 | 34 | 30.5 | 29 | 50 | 9 | 0.5 | 0.5 |
| | TCA2-M16 | 12.5 | 31 | 34 | 30.5 | 29 | 50 | 10 | 0.5 | 0.5 |
| | TCA2-M18 | 14 | 31 | 34 | 30.5 | 29 | 50 | 11 | 0.5 | 0.5 |
| | TCA2-M20 | 15 | 31 | 34 | 30.5 | 29 | 50 | 12 | 0.5 | 0.5 |
| | TCA2-M22 | 17 | 31 | 34 | 30.5 | 29 | 50 | 13 | 0.5 | 0.5 |
| | TCA2-P1/2 | 18 | 31 | 34 | 30.5 | 29 | 50 | 14 | 0.5 | 0.5 |
| | TCA2-M24 | 19 | 31 | 34 | 30.5 | 29 | 50 | 15 | 0.5 | 0.5 |
| | TCA3 | TCA3-M16 | 12.5 | 48 | 45 | 41 | 46 | 72 | 10 | 1.4 |
| TCA3-M18 | | 14 | 48 | 45 | 41 | 46 | 72 | 11 | 1.4 | 1.6 |
| TCA3-M20 | | 15 | 48 | 45 | 41 | 46 | 72 | 12 | 1.4 | 1.6 |
| TCA3-M22 | | 17 | 48 | 45 | 41 | 46 | 72 | 13 | 1.4 | 1.6 |
| TCA3-M24 | | 19 | 48 | 45 | 41 | 46 | 72 | 15 | 1.4 | 1.6 |
| TCA3-M27 | | 20 | 48 | 45 | 41 | 46 | 72 | 15 | 1.4 | 1.6 |
| TCA3-M30 | | 23 | 48 | 45 | 41 | 46 | 72 | 17 | 1.4 | 1.6 |
| TCA3-M33 | | 25 | 48 | 45 | 41 | 46 | 72 | 19 | 1.4 | 1.6 |
| TCA3-M36 | 28 | 48 | 45 | 41 | 46 | 72 | 21 | 1.4 | 1.6 | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

C This product does not support the internal coolant system.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER

DST PAT.

High speed synchro tapping chuck



G value Coolant System Tapping

Features

- Tapping chuck for high speed machining
- Specially designed to absorb thrust load to provide tap damage prevention and a longer tool service life
- Internal coolant applicable
- Boring range : M1~M22

| | | | | | | |
|--------|---------|---|----------------|---------------|---|--------|
| NAMING | BT40 | — | DST | 22 | — | 110 |
| | Spindle | | Tapping holder | Tapping Range | | Length |



Precise machining

Machining range expanded



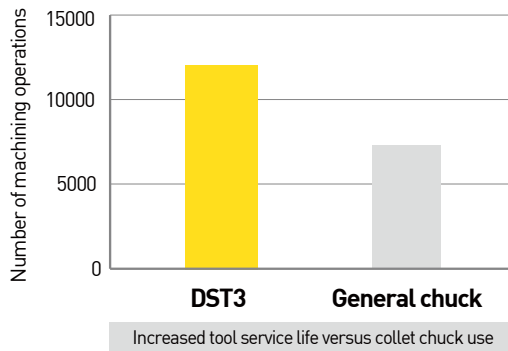
DST22
(V=100 m/min)

Improved thread quality



Conventional products

M1.4x0.3 service life test

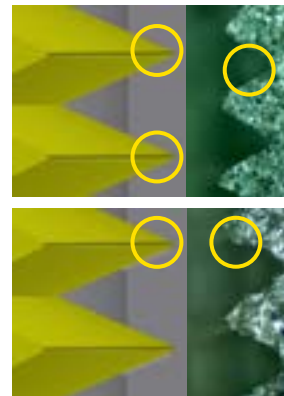
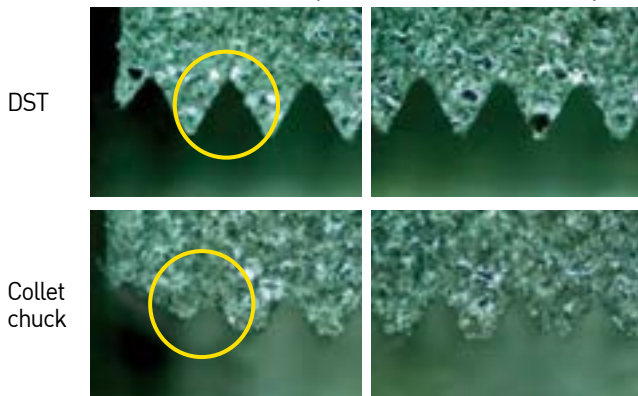


Tapping dedicated collet

- In the case of tapping, it is recommended to use TER collet.
- DST3 : ER11 collet used

Comparison of Thread shape

One-time introduction part One-time withdrawal part



Synchro tap chuck (DST3)

Clean thread shape without collapse

General collet chuck

Collapsed thread due to no adjustment for synchro error

C Internal coolant system is optional.



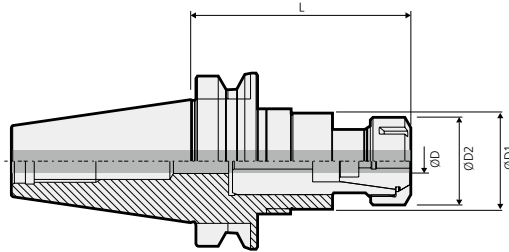
BT-DST

High speed synchro tapping chuck



MAS 403-BT G6.3 C

Shank G value Coolant System Tapping



- For more information on the product features, see **106p**
- For more information on TER collet, see **109p**
- For more information on ER collet, see **80p**

| | Model No. | ØD | L | ØD2 | ØD1 | Collet used | F- | F+ | Kg | Package weight (Kg) |
|------|----------------|--------|-----|------|------|-------------|-----|-----|-----|---------------------|
| BT30 | BT30-DST3-70 | M1~M3 | 70 | 19 | 20 | ER11 | 0.5 | 0.5 | 0.5 | 0.5 |
| | BT30-DST10-100 | M3~M10 | 100 | 28 | 40.4 | TER16 | 0.5 | 0.5 | 0.8 | 0.9 |
| BT40 | BT40-DST3-70 | M1~M3 | 70 | 19 | 20 | ER11 | 0.5 | 0.5 | 1.0 | 1.1 |
| | BT40-DST10-100 | M3~M10 | 100 | 28 | 40.4 | TER16 | 0.5 | 0.5 | 1.3 | 1.4 |
| | BT40-DST22-110 | M6~M22 | 110 | 49.5 | 60 | TER32 | 0.7 | 0.7 | 1.7 | 2.0 |
| BT50 | BT50-DST10-110 | M3~M10 | 110 | 49.5 | 60 | TER16 | 0.5 | 0.5 | 3.8 | 4.1 |
| | BT50-DST22-130 | M6~M22 | 130 | 49.5 | 60 | TER32 | 0.7 | 0.7 | 4.5 | 4.9 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

C Internal coolant system is optional.

Chuck
Arbor / Modular
Boring tool
Angular head
cBN/PCD
Smart factory
TAUMAX
OTHER



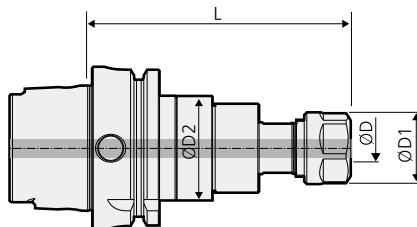
HSK-DST

HSK-DST



DIN 69893-1 G6.3 C

Shank G value Coolant System Tapping



- For more information on the product features, see **106p**.
- For more information on TER collet, see **109p**.
- For more information on ER collet, see **80p**.

| | Model No. | ØD | L | ØD1 | ØD2 | Collet used | F- | F+ | Kg | Package weight (Kg) |
|--------|------------------|--------|-----|------|------|-------------|-----|-----|-----|---------------------|
| HSK63A | HSK63A-DST3-80 | M1~M3 | 80 | 19 | 20 | ER11 | 0.5 | 0.5 | 0.7 | 0.8 |
| | HSK63A-DST10-100 | M3~M10 | 100 | 28 | 40.4 | TER16 | 0.5 | 0.5 | 0.9 | 1.2 |
| | HSK63A-DST22-130 | M6~M22 | 130 | 49.5 | 60 | TER32 | 0.7 | 0.7 | 1.8 | 2.0 |

C Internal coolant system is optional.



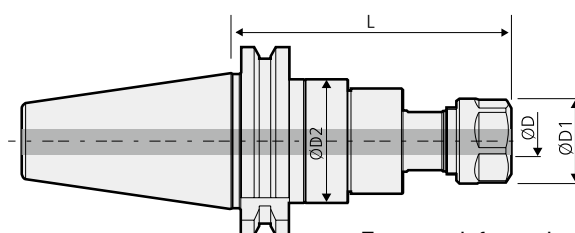
SK-DST

High speed synchro tapping chuck



DIN69871 -1A/B G6.3 C

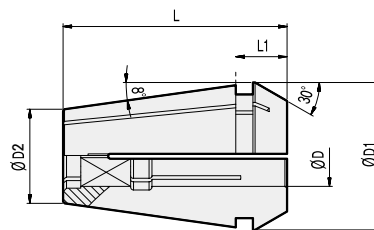
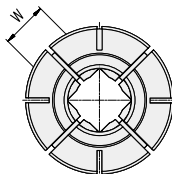
Shank G value Coolant System Tapping



- For more information on the product features, see **106p**.
- For more information on TER collet, see **109p**.
- For more information on ER collet, see **80p**.

| | Model No. | ØD | L | ØD1 | ØD2 | Collet used | F- | F+ | Kg | Package weight (Kg) |
|------|----------------|--------|-----|-----|-----|-------------|-----|-----|-----|---------------------|
| SK30 | SK30-DST3-70 | M1~M3 | 70 | 19 | 20 | ER11 | 0.2 | 0.2 | 0.4 | 0.5 |
| | SK40-DST3-70 | M1~M3 | 70 | 19 | 20 | ER11 | 0.2 | 0.2 | 0.9 | 1.0 |
| SK40 | SK40-DST10-110 | M3~M10 | 110 | 28 | 35 | TER16 | 0.5 | 0.5 | 1.2 | 1.4 |
| | SK40-DST22-120 | M6~M22 | 120 | 50 | 54 | TER32 | 0.7 | 0.7 | 1.8 | 2.1 |
| SK50 | SK50-DST10-110 | M3~M10 | 110 | 28 | 35 | TER16 | 0.5 | 0.5 | 3.0 | 3.3 |
| | SK50-DST22-120 | M6~M22 | 120 | 50 | 54 | TER32 | 0.7 | 0.7 | 3.7 | 4.1 |

C Internal coolant system is optional.



※ Waterproof type tapping is possible by using RTJW and RUT nuts (standard dimension only)

| | Model No. | Tap applied | ØD | L | W | ØD1 | ØD2 | L1 | Kg | Package weight (Kg) |
|-----------|---------------|------------------|------|------|-------|-------|------|-----|------|---------------------|
| TER16 | TER16-4x3.2 | M3 | 4 | 27.5 | 3.2 | 16.74 | 10.1 | 6.3 | 0.03 | 0.03 |
| | TER16-5x4 | M4 | 5 | 27.5 | 4 | 16.74 | 10.1 | 6.3 | 0.03 | 0.03 |
| | TER16-5.5x4.5 | M5 | 5.5 | 27.5 | 4.5 | 16.74 | 10.1 | 6.3 | 0.02 | 0.02 |
| | TER16-6x4.5 | M6,U1/4 | 6 | 27.5 | 4.5 | 16.74 | 10.1 | 6.3 | 0.02 | 0.02 |
| | TER16-6.2x5 | M7, M8 | 6.2 | 27.5 | 5 | 16.74 | 10.1 | 6.3 | 0.02 | 0.02 |
| | TER16-7x5.5 | M9, M10, U3/8 | 7 | 27.5 | 5.5 | 16.74 | 10.1 | 6.3 | 0.02 | 0.02 |
| TER20 | TER20-5x4 | M4 | 5 | 31.5 | 4 | 20.74 | 13.2 | 7.2 | 0.05 | 0.05 |
| | TER20-5.5x4.5 | M5 | 5.5 | 31.5 | 4.5 | 20.74 | 13.2 | 7.2 | 0.05 | 0.05 |
| | TER20-6x4.5 | M6,U1/4 | 6 | 31.5 | 4.5 | 20.74 | 13.2 | 7.2 | 0.05 | 0.05 |
| | TER20-6.2x5 | M7, M8 | 6.2 | 31.5 | 5 | 20.74 | 13.2 | 7.2 | 0.04 | 0.04 |
| | TER20-7x5.5 | M9, M10, U3/8 | 7 | 31.5 | 5.5 | 20.74 | 13.2 | 7.2 | 0.05 | 0.05 |
| | TER20-8x6 | M11, U7/16, P1/8 | 8 | 31.5 | 6 | 20.74 | 13.2 | 7.2 | 0.04 | 0.04 |
| | TER20-8.5x6.5 | M12 | 8.5 | 31.5 | 6.5 | 20.74 | 13.2 | 7.2 | 0.04 | 0.04 |
| TER25 | TER25-5x4 | M4 | 5 | 34 | 4 | 25.74 | 17.6 | 7.5 | 0.9 | 0.9 |
| | TER25-5.5x4.5 | M5 | 5.5 | 34 | 4.5 | 25.74 | 17.6 | 7.5 | 0.8 | 0.8 |
| | TER25-6x4.5 | M6 | 6 | 34 | 4.5 | 25.74 | 17.6 | 7.5 | 0.8 | 0.8 |
| | TER25-6.2x5 | M7, M8 | 6.2 | 34 | 5 | 25.74 | 17.6 | 7.5 | 0.1 | 0.1 |
| | TER25-7x5.5 | M9, M10, U3/8 | 7 | 34 | 5.5 | 25.74 | 17.6 | 7.5 | 0.8 | 0.8 |
| | TER25-8.5x6.5 | M12 | 8.5 | 34 | 6.5 | 25.74 | 17.6 | 7.5 | 0.8 | 0.8 |
| TER32 | TER32-6x4.5 | M6,U1/4 | 6 | 40 | 4.5 | 32.74 | 23.1 | 8.2 | 0.2 | 0.2 |
| | TER32-6.2x5 | M7, M8 | 6.2 | 40 | 5 | 32.74 | 23.1 | 8.2 | 0.2 | 0.2 |
| | TER32-7x5.5 | M9, M10, U3/8 | 7 | 40 | 5.5 | 32.74 | 23.1 | 8.2 | 0.2 | 0.2 |
| | TER32-8x6 | M11, U7/16, P1/8 | 8 | 40 | 6 | 32.74 | 23.1 | 8.2 | 0.2 | 0.2 |
| | TER32-8.5x6.5 | M12 | 8.5 | 40 | 6.5 | 32.74 | 23.1 | 8.2 | 0.2 | 0.2 |
| | TER32-10.5x8 | M14, U9/16 | 10.5 | 40 | 8 | 32.74 | 23.1 | 8.2 | 0.2 | 0.2 |
| | TER32-12.5x10 | M16 | 12.5 | 40 | 10 | 32.74 | 23.1 | 8.2 | 0.2 | 0.2 |
| | TER32-14x11 | M18, P3/8 | 14 | 40 | 11 | 32.74 | 23.1 | 8.2 | 0.1 | 0.1 |
| | TER32-15x12 | M20 | 15 | 40 | 12 | 32.74 | 23.1 | 8.2 | 0.1 | 0.1 |
| | TER32-17x13 | M22, U7/8 | 17 | 40 | 13 | 32.74 | 23.1 | 8.2 | 0.1 | 0.1 |
| | TER32-11x9 | P1/4 | 11 | 40 | 9 | 32.74 | 23.1 | 8.2 | 0.2 | 0.2 |
| | TER32-12x9 | U5/8 | 12 | 40 | 9 | 32.74 | 23.1 | 8.2 | 0.2 | 0.2 |
| TER32-9x7 | U1/2 | 9 | 40 | 7 | 32.74 | 23.1 | 8.2 | 0.2 | 0.2 | |

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



OFH

Floating holder for brush



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

Features

- Can be used consistently as a dedicated arbor (floating function) with steady pressure
- G6.3, Max RPM 15,000rpm
- Provides a longer brush service life (about 50% increase versus collet chuck)
- Reduces lead time and improves productivity
- Various sizes of sleeves and brushes can be used

NAMING

| | | | | | | |
|-------------|---|---------------------------|---|------------|---|-----------|
| BT30 | — | OFH | — | 6 | — | 75 |
| Spindle | | Floating holder for brush | | Brush Dia. | | Length |

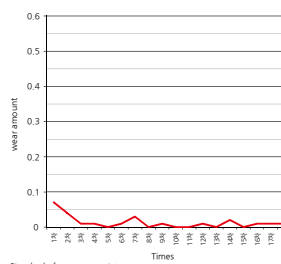


Integral exclusive tool



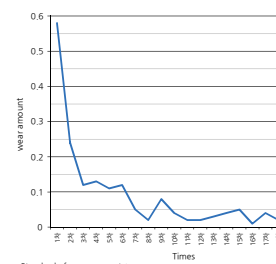
Comparison of brush wear performance

OFH Floating Holder



Standard of wear amount : mm

General Collet Chuck

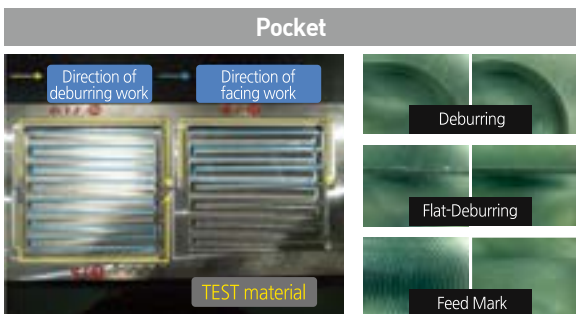


Standard of wear amount : mm

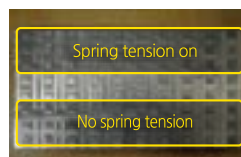
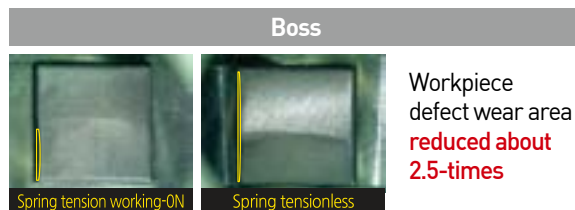
Can be used consistently due to a steady wear loss

Brush service life shortened due to an abrupt wear loss

Deburring after cutting aluminium



Surface roughness improved about 4 times
 $0.906\mu\text{m}$ (before application) \rightarrow $0.179\mu\text{m}$ (after application)

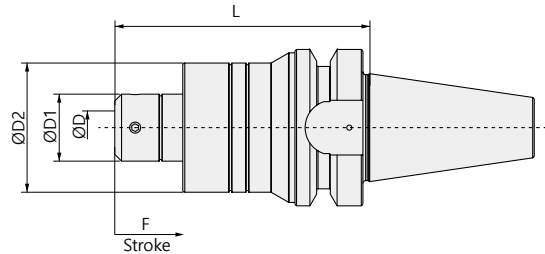
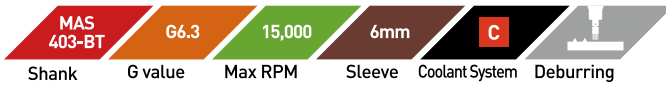


Brush wear loss **reduced about 3 times**
 (*based on the entire area applied wear loss)
 \Rightarrow (Total wear loss) 0.18mm
 \Rightarrow (Total wear loss) 0.59mm



BT-OFH

Floating holder for brush



• For more information on the product features, see [1106p](#).

| Model No. | Sleeve Dia. (ØD) | L | ØD1 | ØD2 | ØD3 | L1 | L2 | Sleeve stroke(F) | RPM |
|--------------|------------------|----|------|-----|-----|-----|-----|------------------|--------|
| BT30-OFH6-75 | 6 | 75 | 19.7 | 38 | 6 | 0.7 | 0.8 | 6 | 15,000 |
| | | | | | | | | | |

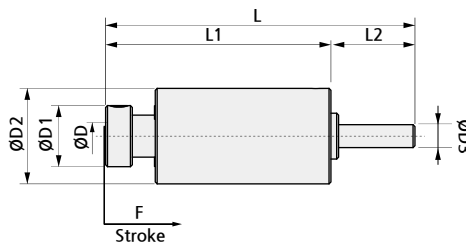
BT30

C This product does not support the internal coolant system.



ST-OFH

Floating holder for brush



• For more information on the product features, see [1106p](#).

| Model No. | Sleeve Dia. (ØD) | L | ØD1 | ØD2 | ØD3 | L1 | L2 | Sleeve stroke(F) | RPM |
|--------------|------------------|----|-----|-----|-----|----|----|------------------|--------|
| ST06-OFH6-60 | 6 | 81 | 16 | 25 | 6 | 59 | 20 | 6 | 15,000 |
| | | | | | | | | | |

ST06

C This product does not support the internal coolant system.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



MEMO

DINOX NC TOTAL TOOLING SYSTEM





Arbor Modular

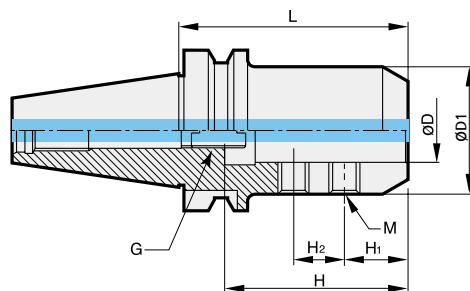
DINOX NC TOOLING SYSTEM

| | |
|-----|-----|
| SLA | 114 |
| MTA | 118 |
| FMA | 119 |
| FMC | 122 |
| MD | 126 |
| EXT | 130 |
| RDC | 130 |



BT-SLA

Side lock arbor



• For more information on the related parts, see **117p**

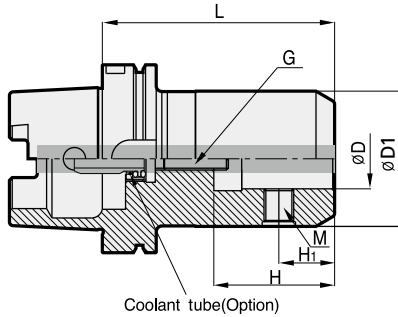
| | Model No. | ØD | L | ØD1 | H | H1 | H2 | M | G | Kg | Package weight (Kg) |
|------|----------------|----|-----|-----|----|----|----|-----|-----|-----|---------------------|
| BT30 | BT30-SLA16-90 | 16 | 90 | 40 | 72 | 25 | 20 | M10 | M12 | 0.9 | 1.0 |
| | BT30-SLA20-90 | 20 | 90 | 50 | 72 | 25 | 20 | M12 | M12 | 1.2 | 1.3 |
| | BT30-SLA25-90 | 25 | 90 | 50 | 72 | 25 | 20 | M12 | M12 | 1.1 | 1.2 |
| BT40 | BT40-SLA16-90 | 16 | 90 | 40 | 72 | 25 | 20 | M10 | M12 | 1.4 | 1.6 |
| | BT40-SLA20-90 | 20 | 90 | 50 | 72 | 25 | 20 | M12 | M12 | 1.8 | 2.0 |
| | BT40-SLA25-90 | 25 | 90 | 50 | 72 | 25 | 20 | M12 | M12 | 1.6 | 1.8 |
| | BT40-SLA32-90 | 32 | 90 | 60 | 82 | 25 | 25 | M14 | M12 | 1.8 | 2.0 |
| | BT40-SLA32-105 | 32 | 105 | 60 | 82 | 25 | 25 | M14 | M12 | 2.0 | 2.3 |
| | BT40-SLA40-105 | 40 | 105 | 80 | 82 | 25 | 25 | M16 | M12 | 2.9 | 3.1 |
| BT50 | BT50-SLA20-105 | 20 | 105 | 50 | 72 | 25 | 20 | M12 | M12 | 4.4 | 4.7 |
| | BT50-SLA25-105 | 25 | 105 | 50 | 72 | 25 | 20 | M12 | M12 | 4.3 | 4.6 |
| | BT50-SLA32-105 | 32 | 105 | 60 | 82 | 25 | 25 | M14 | M12 | 4.5 | 4.8 |
| | BT50-SLA40-105 | 40 | 105 | 90 | 82 | 25 | 20 | M16 | M12 | 6.1 | 6.4 |
| | BT50-SLA42-105 | 42 | 105 | 90 | 82 | 25 | 25 | M16 | M12 | 5.9 | 6.2 |

C Internal coolant system installed.



HSK-SLA

Side lock arbor



• For more information on the related parts, see **117p**

| | Model No. | ØD | L | ØD1 | H | H1 | M | G | Kg | Package weight (Kg) |
|---------|-------------------|----|-----|-----|----|----|-----|-----|-----|---------------------|
| HSK63A | HSK63A-SLA20-100 | 20 | 100 | 52 | 51 | 25 | M8 | M12 | 1.6 | 1.8 |
| | HSK63A-SLA25-105 | 25 | 105 | 65 | 59 | 25 | M8 | M12 | 2.1 | 2.4 |
| | HSK63A-SLA32-105 | 32 | 105 | 72 | 63 | 30 | M5 | M12 | 2.3 | 2.6 |
| HSK100A | HSK100A-SLA20-105 | 20 | 105 | 52 | 51 | 25 | M16 | M12 | 3.1 | 3.4 |
| | HSK100A-SLA25-110 | 25 | 110 | 65 | 59 | 25 | M18 | M12 | 3.8 | 4.0 |
| | HSK100A-SLA32-125 | 32 | 125 | 72 | 63 | 30 | M20 | M12 | 4.4 | 4.8 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

C Internal coolant system is optional.

For separate purchase



Internal coolant system

| Classification by shank | |
|-------------------------|-------------|
| HSK50 | HSK50A-CNS |
| HSK63 | HSK63A-CNS |
| HSK100 | HSK100A-CNS |



SK-SLA

Side lock arbor



Fig.1

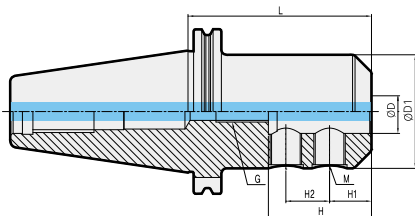
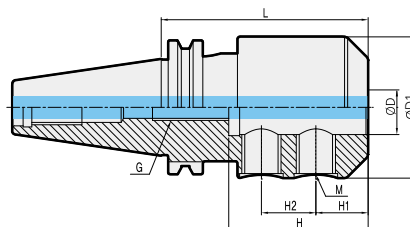


Fig.2



• For more information on the related parts, see **117p**

| | Model No. | ØD | L | ØD1 | H | H1 | H2 | M | G | Fig. | Kg | Package weight (Kg) |
|------|----------------|----|-----|-----|----|----|----|-----|-----|------|-----|---------------------|
| SK40 | SK40-SLA16-75 | 16 | 75 | 48 | 49 | 24 | - | M14 | M12 | - | 1.4 | 1.6 |
| | SK40-SLA20-75 | 20 | 75 | 52 | 51 | 25 | - | M16 | M12 | - | 1.5 | 1.7 |
| | SK40-SLA25-95 | 25 | 95 | 65 | 59 | 24 | 25 | M18 | M12 | 2 | 2.1 | 2.4 |
| | SK40-SLA32-105 | 32 | 105 | 72 | 63 | 24 | 28 | M20 | M12 | 2 | 2.8 | 2.9 |
| SK50 | SK50-SLA16-90 | 16 | 90 | 48 | 49 | 24 | - | M14 | M12 | - | 3.5 | 3.8 |
| | SK50-SLA20-90 | 20 | 90 | 52 | 51 | 25 | - | M16 | M12 | - | 3.6 | 3.9 |
| | SK50-SLA25-105 | 25 | 105 | 65 | 59 | 24 | 25 | M18 | M12 | 1 | 4.5 | 4.8 |
| | SK50-SLA32-120 | 32 | 120 | 72 | 63 | 24 | 28 | M20 | M12 | 1 | 5.2 | 5.6 |
| | SK50-SLA40-120 | 40 | 120 | 80 | 73 | 30 | 32 | M20 | M12 | 1 | 5.6 | 5.6 |

C Internal coolant system installed.





SLA SPARE PART

Side lock arbor related parts




Main components

| Spare Part | | Main components | | |
|------------|--------|---|---------------|---|
| Type | | Set screw | | Adjust screw |
| Model No. | Images |  | |  |
| | | | | |
| 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 |

※ In the case of HSK types, adjustment screws may be different.

For separate purchase

| Spare Part | | For separate purchase | | |
|------------|--------|--|---------|--|
| Type | | Wrench | | |
| Model No. | Images |  | | |
| | | | | |
| 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 | |

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



SK-MTA

Morse taper arbor



DIN69871 -1A/B **C**

Shank Coolant System Milling Drilling Reaming

Fig.1

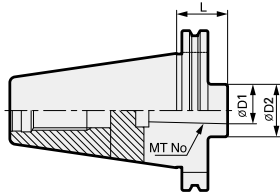
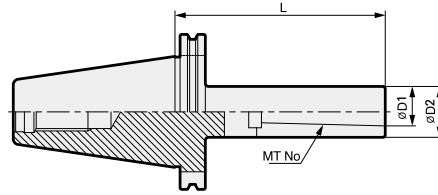


Fig.2



• Holder for Morse taper shank tools (drill, reamer)

| Model No. | MT No. | L | ØD1 | ØD2 | Kg | Fig. | Kg | Package weight [Kg] |
|---------------|--------|-----|--------|-----|-----|------|-----|---------------------|
| SK50-MTA3-45 | 3 | 45 | 23.825 | 40 | 3.8 | 1 | 2.7 | 3.0 |
| SK50-MTA3-150 | 3 | 150 | 23.825 | 40 | 4.6 | 2 | 3.6 | 4.0 |
| SK50-MTA4-75 | 4 | 75 | 31.267 | 50 | 3.9 | 1 | 2.9 | 3.2 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

SK50

C This product does not support the internal coolant system.



BT-FMA

Face mill arbor



Fig.1

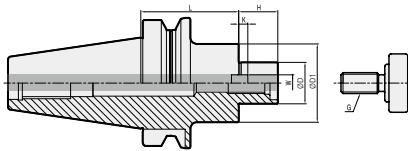


Fig.2

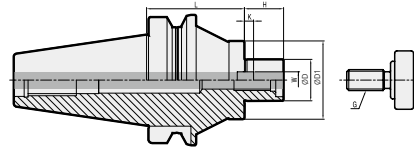


Fig.3

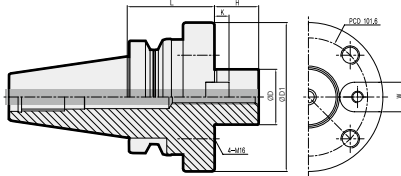
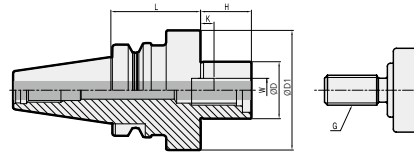


Fig.4



※ The relevant weight excludes the weight of the face cutter.

• For more information on the related parts, see **121p**

| | Model No. | Cutter diameter | ØD | ØD1 | L | H | W | K | G | Fig. | Kg | Package weight (Kg) |
|------|-------------------|-----------------|--------|-----|-----|----|-------|------|-----|------|-----|---------------------|
| BT30 | BT30-FMA25.4-45 | 80 | 25.4 | 50 | 45 | 22 | 9.5 | 5 | M12 | 4 | 1.0 | 1.0 |
| | BT40-FMA25.4-45 | 80 | 25.4 | 50 | 45 | 22 | 9.5 | 5 | M12 | 1 | 1.4 | 1.6 |
| BT40 | BT40-FMA25.4-90 | 80 | 25.4 | 50 | 90 | 22 | 9.5 | 5 | M12 | 1 | 2.2 | 2.4 |
| | BT40-FMA31.75-45 | 100 | 31.75 | 60 | 45 | 30 | 12.7 | 7 | M16 | 1 | 1.6 | 1.8 |
| | BT40-FMA31.75-90 | 100 | 31.75 | 60 | 90 | 30 | 12.7 | 7 | M16 | 1 | 2.5 | 2.7 |
| | BT40-FMA38.1-60 | 125 | 38.1 | 80 | 60 | 34 | 15.87 | 9 | M20 | 4 | 2.6 | 2.8 |
| BT50 | BT50-FMA25.4-45 | 80 | 25.4 | 50 | 45 | 22 | 9.5 | 5 | M12 | 1 | 4.0 | 4.3 |
| | BT50-FMA25.4-90 | 80 | 25.4 | 50 | 90 | 22 | 9.5 | 5 | M12 | 1 | 4.7 | 5.0 |
| | BT50-FMA25.4-150 | 80 | 25.4 | 50 | 150 | 22 | 9.5 | 5 | M12 | 2 | 6.4 | 6.8 |
| | BT50-FMA31.75-45 | 100 | 31.75 | 60 | 45 | 30 | 12.7 | 7 | M16 | 1 | 4.1 | 4.4 |
| | BT50-FMA31.75-75 | 100 | 31.75 | 60 | 75 | 30 | 12.7 | 7 | M16 | 1 | 4.8 | 5.1 |
| | BT50-FMA31.75-105 | 100 | 31.75 | 60 | 105 | 30 | 12.7 | 7 | M16 | 2 | 5.6 | 5.9 |
| | BT50-FMA38.1-45 | 125 | 38.1 | 80 | 45 | 34 | 15.87 | 9 | M20 | 1 | 4.4 | 4.7 |
| | BT50-FMA38.1-75 | 125 | 38.1 | 80 | 75 | 34 | 15.87 | 9 | M20 | 1 | 5.6 | 5.9 |
| | BT50-FMA50.8-45 | 160 | 50.8 | 100 | 45 | 36 | 19.05 | 10 | M24 | 1 | 4.9 | 5.2 |
| | BT50-FMA50.8-75 | 160 | 50.8 | 100 | 75 | 36 | 19.05 | 10 | M24 | 1 | 6.8 | 7.1 |
| | BT50-FMA47.625-75 | 200 | 47.625 | 128 | 75 | 38 | 25.4 | 12.5 | - | 3 | 8.3 | 8.6 |

C Internal coolant system is optional.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



NT-FMA

Face mill arbor



Fig.1

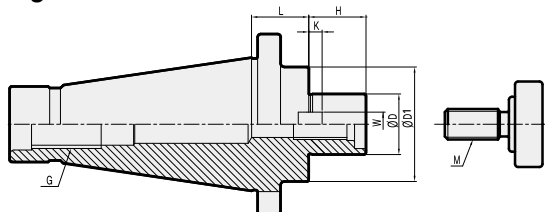
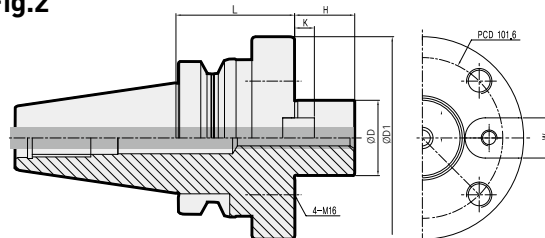


Fig.2



※ The relevant weight excludes the weight of the face cutter.

• For more information on the related parts, see **121p**

| | Model No. | Cutter diameter | ØD | L | ØD1 | H | M | W | K | G | Fig. | Kg | Package weight (Kg) |
|------|-------------------|-----------------|--------|------|-----|----|-----|-------|------|-----|------|-----|---------------------|
| NT40 | NT40-FMA25.4-25 | 80 | 25.4 | 25 | 50 | 22 | M12 | 9.5 | 5 | M16 | 1 | 1.1 | - |
| | NT40-FMA31.75-25 | 100 | 31.75 | 25 | 60 | 30 | M16 | 12.7 | 7 | M16 | 1 | 1.3 | 1.5 |
| | NT40-FMA38.1-25 | 125 | 38.1 | 25 | 80 | 34 | M20 | 15.87 | 9 | M16 | 1 | 1.8 | 2.0 |
| | NT40U-FMA50.8-25 | 160 | 50.8 | 25 | 100 | 36 | M24 | 19.05 | 10 | M16 | 1 | 2.8 | 3.0 |
| NT50 | NT50-FMA25.4-25 | 80 | 25.4 | 23.2 | 50 | 22 | M12 | 9.5 | 5 | M24 | 1 | 3.1 | 3.4 |
| | NT50-FMA31.75-30 | 100 | 31.75 | 26.2 | 60 | 30 | M16 | 12.7 | 7 | M24 | 1 | 3.3 | 3.6 |
| | NT50-FMA38.1-30 | 125 | 38.1 | 25.2 | 80 | 34 | M20 | 15.87 | 9 | M24 | 1 | 3.6 | 3.9 |
| | NT50-FMA50.8-30 | 160 | 50.8 | 27.2 | 100 | 36 | M24 | 19.05 | 10 | M24 | 1 | 4.2 | 4.5 |
| | NT50-FMA47.625-25 | 200 | 47.625 | 27.2 | 128 | 38 | - | 25.4 | 12.5 | M24 | 2 | 5.3 | 5.6 |

C This product does not support the internal coolant system.







FMA SPARE PART

Face mill arbor related parts



Main components

| Spare Part | | Main components | | | |
|------------|---|---|---|---|--|
| Type | Key | Key bolt | Mount bolt | Clamp bolt | |
| Images |  |  |  |  | |
| Model No. | | | | | |
| FMA25.4 | K9.5 | BX0412 | MBA-M12 | BX1230 | |
| FMA31.75 | K12.7 | BX0515 | MBA-M16 | - | |
| FMA38.1 | K15.87 | BX0616 | MBA-M20 | - | |
| FMA50.8 | K19.05 | BX0820 | MBA-M24 | - | |
| FMA47.625 | K25.4 | BX1020 | | BX1645 | |

For separate purchase

| Spare Part | | For separate purchase | |
|------------|--|--|-------|
| Type | | Wrench | |
| Images | |  | |
| Model No. | | | |
| FMA25.4 | | | LW-10 |
| FMA31.75 | | | LW-14 |
| FMA38.1 | | | LW-17 |

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



BT-FMC

Facemill arbor



Fig.1

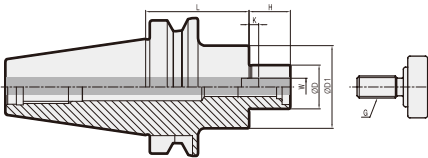


Fig.2

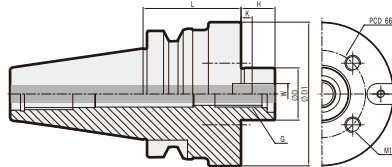
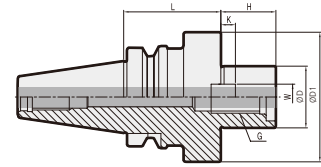


Fig.3



※ The relevant weight excludes the weight of the face cutter.

• For more information on the related parts, see **125p**

| | Model No. | Cutter diameter | ØD | ØD1 | L | H | W | K | G | Fig. | Kg | Package weight (Kg) |
|------|----------------|-----------------|----|-----|-----|----|-------|-----|-----|------|-----|---------------------|
| BT30 | BT30-FMC16-45 | 40 | 16 | 38 | 45 | 17 | 8 | 5.0 | M8 | 1 | 0.7 | 0.7 |
| | BT30-FMC22-45 | 50/63 | 22 | 48 | 45 | 19 | 10 | 5.6 | M10 | 2 | 0.8 | 0.9 |
| | BT30-FMC27-50 | 80 | 27 | 60 | 50 | 21 | 12 | 6.3 | M12 | 2 | 1.0 | 1.1 |
| BT40 | BT40-FMC16-60 | 40 | 16 | 38 | 60 | 17 | 8 | 5.0 | M8 | 1 | 1.3 | 1.5 |
| | BT40-FMC22-45 | 50/63 | 22 | 48 | 45 | 19 | 10 | 5.6 | M10 | 1 | 1.3 | 1.5 |
| | BT40-FMC22-90 | 50/63 | 22 | 48 | 90 | 19 | 10 | 5.6 | M10 | 1 | 1.9 | 2.1 |
| | BT40-FMC27-60 | 80 | 27 | 60 | 60 | 21 | 12 | 6.3 | M12 | 1 | 1.8 | 2.0 |
| | BT40-FMC27-90 | 80 | 27 | 60 | 90 | 21 | 12 | 6.3 | M12 | 1 | 2.4 | 2.6 |
| | BT40-FMC32-60 | 100 | 32 | 78 | 60 | 24 | 14 | 7.0 | M16 | 2 | 2.1 | 2.3 |
| BT50 | BT40-FMC40-50 | 125/160 | 40 | 89 | 50 | 27 | 15.87 | 8.0 | M20 | 3 | 2.3 | 2.5 |
| | BT50-FMC16-60 | 40 | 16 | 38 | 60 | 17 | 8 | 5.0 | M8 | 1 | 3.9 | 4.2 |
| | BT50-FMC22-60 | 50/63 | 22 | 48 | 60 | 19 | 10 | 5.6 | M10 | 1 | 4.1 | 4.4 |
| | BT50-FMC27-40 | 80 | 27 | 60 | 40 | 21 | 12 | 6.3 | M12 | 1 | 3.8 | 4.1 |
| | BT50-FMC27-90 | 80 | 27 | 60 | 90 | 21 | 12 | 6.3 | M12 | 1 | 4.8 | 5.1 |
| | BT50-FMC27-150 | 80 | 27 | 60 | 150 | 21 | 12 | 6.3 | M12 | 1 | 6.1 | 6.5 |
| | BT50-FMC32-45 | 100 | 32 | 78 | 45 | 24 | 14 | 7.0 | M16 | 1 | 4.1 | 4.4 |
| | BT50-FMC32-75 | 100 | 32 | 78 | 75 | 24 | 14 | 7.0 | M16 | 1 | 5.2 | 5.5 |
| | BT50-FMC32-105 | 100 | 32 | 78 | 105 | 24 | 14 | 7.0 | M16 | 1 | 6.3 | 6.6 |
| | BT50-FMC40-50 | 125/160 | 40 | 89 | 50 | 27 | 15.87 | 8.0 | M20 | 2 | 4.6 | 4.9 |

C Internal coolant system is optional.



HSK-FMC

Face mill arbor



Fig.1

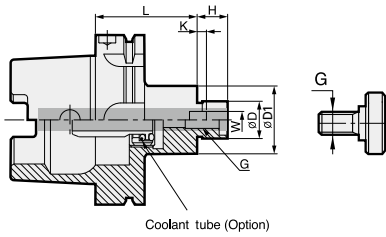


Fig.2

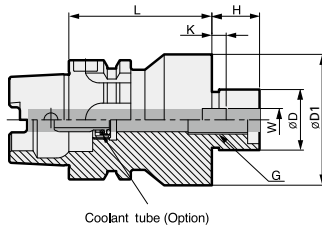
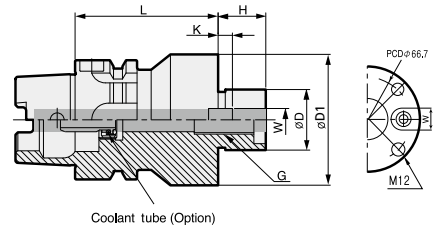


Fig.3



※ The relevant weight excludes the weight of the face cutter.

• For more information on the related parts, see [125p](#)

| | Model No. | Cutter diameter | ØD | ØD1 | L | H | W | K | G | Fig. | Kg | Package weight (Kg) |
|--------|-----------------|-----------------|----|-----|----|----|-------|-----|-----|------|-----|---------------------|
| HSK50A | HSK50A-FMC16-40 | 40 | 16 | 38 | 40 | 17 | 8 | 5 | M8 | 1 | 0.4 | 0.7 |
| | HSK50A-FMC22-50 | 50/63 | 22 | 48 | 50 | 19 | 10 | 5.6 | M10 | 1 | 0.8 | 0.9 |
| | HSK63A-FMC16-50 | 40 | 16 | 38 | 50 | 17 | 8 | 5.0 | M8 | 1 | 0.9 | 1.1 |
| | HSK63A-FMC22-50 | 50/63 | 22 | 48 | 50 | 19 | 10 | 5.6 | M10 | 1 | 1.1 | 1.3 |
| | HSK63A-FMC27-60 | 80 | 27 | 60 | 60 | 21 | 12 | 6.3 | M12 | 1 | 1.4 | 1.6 |
| | HSK63A-FMC32-60 | 100 | 32 | 78 | 60 | 24 | 14 | 7.0 | M16 | 2 | 1.7 | 1.9 |
| | HSK63A-FMC40-60 | 125/160 | 40 | 89 | 60 | 27 | 15.87 | 8.0 | M20 | 3 | 2.5 | 2.6 |
| HSK63A | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

☐ Internal coolant system is optional.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



SK-FMC

Facemill arbor



Fig.1

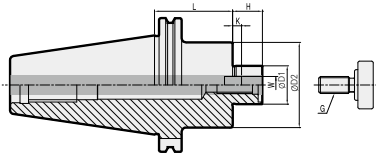


Fig.2

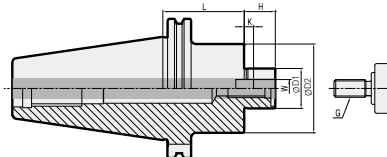
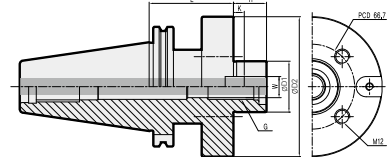


Fig.3



※ The relevant weight excludes the weight of the face cutter.





• For more information on the related parts, see **125p**

| | Model No. | Cutter diameter | ØD1 | L | ØD2 | H | W | K | G | Fig. | Kg | Package weight (Kg) |
|------|---------------|-----------------|-----|----|-----|----|-------|-----|-----|------|-----|---------------------|
| SK30 | SK30-FMC16-60 | 40 | 16 | 60 | 38 | 17 | 8 | 5.0 | M8 | 1 | 0.8 | 0.8 |
| | SK30-FMC22-50 | 50/63 | 22 | 50 | 48 | 19 | 10 | 5.6 | M10 | 2 | 0.8 | 0.9 |
| | SK30-FMC27-55 | 80 | 27 | 55 | 60 | 21 | 12 | 6.3 | M12 | 2 | 1.1 | 1.2 |
| SK40 | SK40-FMC16-55 | 40 | 16 | 55 | 38 | 17 | 8 | 5.0 | M8 | 1 | 1.2 | 1.4 |
| | SK40-FMC22-55 | 50/63 | 22 | 55 | 48 | 19 | 10 | 5.6 | M10 | 1 | 1.4 | 1.6 |
| | SK40-FMC27-60 | 80 | 27 | 60 | 60 | 21 | 12 | 6.3 | M12 | 2 | 1.6 | 1.8 |
| | SK40-FMC32-60 | 100 | 32 | 60 | 78 | 24 | 14 | 7.0 | M16 | 2 | 2.2 | 2.4 |
| | SK40-FMC40-50 | 125/160 | 40 | 50 | 89 | 27 | 15.87 | 8.0 | M20 | 3 | 2.3 | 2.5 |
| SK50 | SK50-FMC16-60 | 40 | 16 | 60 | 38 | 17 | 8 | 5.0 | M8 | 1 | 2.9 | 3.2 |
| | SK50-FMC22-60 | 50/63 | 22 | 60 | 48 | 19 | 10 | 5.6 | M10 | 1 | 3.2 | 3.5 |
| | SK50-FMC27-40 | 80 | 27 | 40 | 60 | 21 | 12 | 6.3 | M12 | 1 | 3.2 | 3.5 |
| | SK50-FMC32-45 | 100 | 32 | 45 | 78 | 24 | 14 | 7.0 | M16 | 1 | 3.7 | 4.0 |
| | SK50-FMC40-50 | 125/160 | 40 | 50 | 89 | 27 | 15.87 | 8.0 | M20 | 3 | 4.2 | 4.5 |

C Internal coolant system is optional.




Main components

| Spare Part | | Main components | | | |
|------------|---|---|---|---|--|
| Type | Key | Key bolt | Mount bolt | Clamp bolt | |
| Images |  |  |  |  | |
| Model No. | | | | | |
| FMC16 | K8.0 | BX0310 | - | BX0830 | |
| FMC22 | K10.0 | BX0412 | - | BX1030 | |
| FMC27 | K12.0 | BX0516 | MBA-M12 | BX1230 | |
| FMC32 | K14.0 | BX0616 | MBA-M16 | - | |
| FMC40 | K15.87 | BX0616 | MBA-M20 | BX1230 | |

※ BX1235 clamp bolts are used for SK40-FMC40-50.

For separate purchase

| Spare Part | | For separate purchase |
|------------|--|-----------------------|
| Type | Images | Wrench |
| Model No. |  | |
| FMC16 | | LW-6 |
| FMC22 | | LW-8 |
| FMC27 | | LW-10 |
| FMC32 | | LW-14 |
| FMC40 | | LW-17 |



BT-MD

Modular arbor



MAS
403-BT
G6.3
C

Shank G value Coolant System

Fig.1

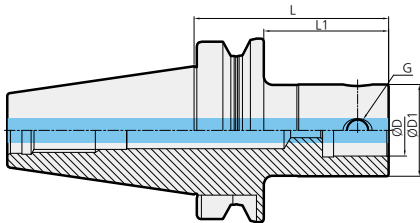
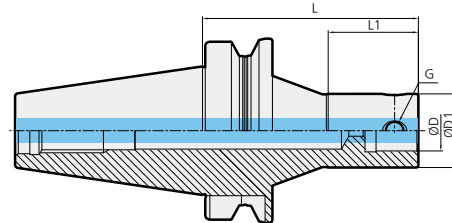


Fig.2



• For more information on the related parts, see **131p**.

| | Model No. | ØD | ØD1 | L | L1 | G | Fig. | Kg | Package weight (Kg) |
|------|-----------------|----|-----|-----|-----|-----|------|-----|---------------------|
| BT30 | BT30-MD19F-70 | 11 | 19 | 70 | 45 | M5 | 1 | 0.5 | 0.5 |
| | BT30-MD25F-90 | 14 | 25 | 90 | 63 | M6 | 1 | 0.6 | 0.7 |
| | BT30-MD32F-80 | 18 | 32 | 80 | 55 | M8 | 1 | 0.7 | 0.7 |
| | BT30-MD40F-45 | 22 | 40 | 45 | 22 | M10 | 1 | 0.5 | 0.6 |
| | BT30-MD40F-60 | 22 | 40 | 60 | 36 | M10 | 1 | 0.7 | 0.7 |
| | BT30-MD40F-80 | 22 | 40 | 80 | 56 | M10 | 1 | 0.9 | 0.9 |
| | BT30-MD50F-70 | 28 | 50 | 70 | 48 | M12 | 1 | 0.9 | 1.0 |
| BT40 | BT40-MD19F-70 | 11 | 19 | 70 | 40 | M5 | 1 | 1.0 | 1.2 |
| | BT40-MD25F-95 | 14 | 25 | 95 | 63 | M6 | 1 | 1.1 | 1.3 |
| | BT40-MD25F-105R | 14 | 25 | 105 | 40 | M6 | 2 | 1.2 | 1.4 |
| | BT40-MD32F-100 | 18 | 32 | 100 | 70 | M8 | 1 | 1.2 | 1.5 |
| | BT40-MD32F-115R | 18 | 32 | 115 | 45 | M8 | 2 | 1.5 | 1.8 |
| | BT40-MD40F-60 | 22 | 40 | 60 | 31 | M10 | 1 | 1.1 | 1.3 |
| | BT40-MD40F-110R | 22 | 40 | 110 | 60 | M10 | 2 | 1.6 | 1.9 |
| | BT40-MD40F-115 | 22 | 40 | 115 | 83 | M10 | 1 | 1.6 | 1.8 |
| | BT40-MD50F-105 | 28 | 50 | 105 | 73 | M12 | 1 | 1.8 | 2.1 |
| | BT40-MD63F-64 | 36 | 63 | 64 | 37 | M16 | 1 | 1.5 | 1.7 |
| | BT40-MD63F-110 | 36 | 63 | 110 | 83 | M16 | 1 | 2.4 | 2.6 |
| | BT40-MD63F-135 | 36 | 63 | 135 | 108 | M16 | 1 | 3.0 | 3.3 |
| | BT40-MD80F-100 | 45 | 80 | 100 | 73 | M16 | 1 | 2.9 | 3.1 |

C Internal coolant system installed.



BT-MD

Modular arbor



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

Fig.1

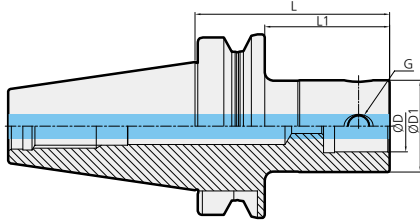
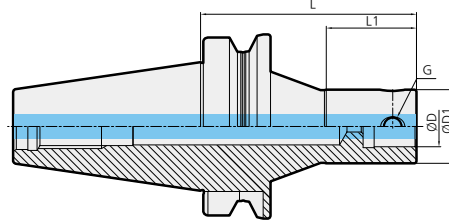


Fig.2



• For more information on the related parts, see **131p**

| Model No. | ØD | ØD1 | L | L1 | G | Fig. | Kg | Package weight [Kg] |
|-----------------|----|-----|-----|-----|-----|------|-----|---------------------|
| BT50-MD19F-85 | 11 | 19 | 85 | 44 | M5 | 1 | 3.7 | 4.0 |
| BT50-MD25F-105 | 14 | 25 | 105 | 62 | M6 | 1 | 3.8 | 4.1 |
| BT50-MD25F-120R | 14 | 25 | 120 | 40 | M6 | 2 | 3.8 | 4.1 |
| BT50-MD32F-110 | 18 | 32 | 110 | 67 | M8 | 1 | 4.0 | 4.3 |
| BT50-MD32F-115R | 18 | 32 | 115 | 45 | M8 | 2 | 4.1 | 4.5 |
| BT50-MD32F-235R | 18 | 32 | 235 | 115 | M8 | 2 | 5.5 | 5.9 |
| BT50-MD40F-60 | 22 | 40 | 60 | 22 | M10 | 1 | 3.7 | 4.0 |
| BT50-MD40F-195 | 22 | 40 | 195 | 152 | M10 | 1 | 4.8 | 5.2 |
| BT50-MD40F-230R | 22 | 40 | 230 | 180 | M10 | 2 | 5.0 | 5.4 |
| BT50-MD50F-125 | 28 | 50 | 125 | 82 | M12 | 1 | 4.6 | 5.0 |
| BT50-MD50F-225 | 28 | 50 | 225 | 182 | M12 | 1 | 6.0 | 6.4 |
| BT50-MD50F-250R | 28 | 50 | 250 | 81 | M12 | 2 | 7.0 | 7.4 |
| BT50-MD63F-75 | 36 | 63 | 75 | 35 | M16 | 1 | 4.2 | 4.5 |
| BT50-MD63F-130 | 36 | 63 | 130 | 87 | M16 | 1 | 5.3 | 5.7 |
| BT50-MD63F-195 | 36 | 63 | 195 | 152 | M16 | 1 | 6.8 | 7.2 |
| BT50-MD63F-230 | 36 | 63 | 230 | 187 | M16 | 1 | 7.5 | 7.9 |
| BT50-MD80F-75 | 45 | 80 | 75 | 36 | M16 | 1 | 4.3 | 4.6 |
| BT50-MD80F-110 | 45 | 80 | 110 | 69 | M16 | 1 | 5.7 | 6.0 |
| BT50-MD80F-175 | 45 | 80 | 175 | 134 | M16 | 1 | 8.0 | 8.4 |
| BT50-MD90F-75 | 45 | 90 | 75 | 34 | M16 | 1 | 4.8 | 5.1 |
| BT50-MD90F-145 | 45 | 90 | 145 | 104 | M16 | 1 | 7.4 | 7.8 |
| BT50-MD90F-195 | 45 | 90 | 195 | 154 | M16 | 1 | 9.4 | 9.8 |

C Internal coolant system installed.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



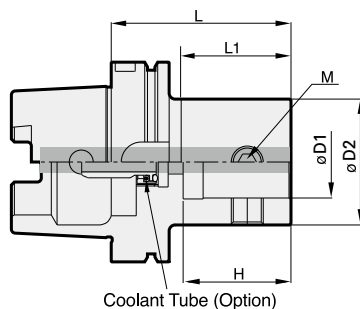
HSK-MD

Modular arbor



DIN69871
-1A/B
G6.3
C

Shank G value Coolant System



• For more information on the related parts, see **131p**.

| Model No. | ØD1 | L | ØD2 | L1 | H | M | Kg | Package weight (Kg) |
|-----------------|-----|----|-----|----|------|-----|-----|---------------------|
| HSK63A-MD19F-60 | 11 | 60 | 19 | 31 | 15.5 | M5 | 0.7 | 0.9 |
| HSK63A-MD25F-60 | 14 | 60 | 25 | 31 | 18.5 | M6 | 0.7 | 0.9 |
| HSK63A-MD32F-65 | 18 | 65 | 32 | 36 | 23.5 | M8 | 0.8 | 1.0 |
| HSK63A-MD40F-70 | 22 | 70 | 40 | 41 | 29 | M10 | 0.9 | 1.1 |
| HSK63A-MD50F-85 | 28 | 85 | 50 | 58 | 36 | M12 | 1.3 | 1.5 |
| HSK63A-MD63F-95 | 36 | 95 | 63 | 69 | 46 | M16 | 1.7 | 1.9 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

HSK63A

C Internal coolant system is optional.

For separate purchase

| | |
|-------------------------|---|
| Internal coolant system |  |
|-------------------------|---|

| Classification by shank | |
|-------------------------|-------------|
| HSK50 | HSK50A-CNS |
| HSK63 | HSK63A-CNS |
| HSK100 | HSK100A-CNS |



SK-MD

Modular arbor



Fig.1

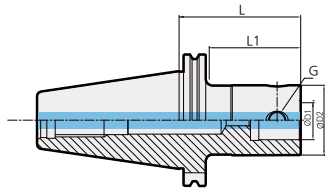


Fig.2

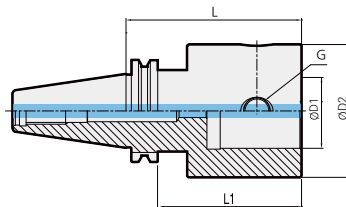
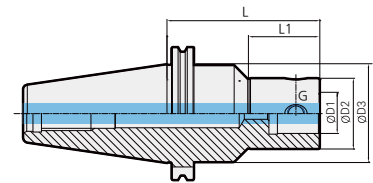


Fig.3



• For more information on the related parts, see **131p**

| | Model No. | ØD1 | L | ØD2 | ØD3 | L1 | G | Fig. | Kg | Package weight (Kg) |
|------|-----------------|-----|-----|-----|-----|-----|-----|------|-----|---------------------|
| SK40 | SK40-MD19F-80R | 11 | 80 | 19 | 30 | 12 | M5 | 3 | 1.0 | 1.2 |
| | SK40-MD25F-80R | 14 | 80 | 25 | 35 | 22 | M6 | 3 | 1.1 | 1.3 |
| | SK40-MD32F-115R | 18 | 115 | 32 | 42 | 36 | M8 | 3 | 1.5 | 1.7 |
| | SK40-MD40F-60 | 22 | 60 | 40 | - | 40 | M10 | 1 | 1.1 | 1.3 |
| | SK40-MD40F-100 | 22 | 100 | 40 | - | 80 | M10 | 1 | 1.4 | 1.6 |
| | SK40-MD50F-75 | 28 | 75 | 50 | - | 55 | M10 | 1 | 1.5 | 1.7 |
| | SK40-MD50F-100 | 28 | 100 | 50 | - | 80 | M12 | 1 | 1.8 | 2.0 |
| | SK40-MD63F-70 | 36 | 70 | 63 | - | 50 | M16 | 2 | 1.4 | 1.6 |
| SK50 | SK50-MD19F-85R | 11 | 85 | 19 | 40 | 12 | M5 | 3 | 3.0 | 3.3 |
| | SK50-MD25F-80R | 14 | 80 | 25 | 44 | 22 | M6 | 3 | 3.1 | 3.4 |
| | SK50-MD25F-105R | 14 | 105 | 25 | 44 | 22 | M6 | 3 | 3.3 | 3.6 |
| | SK50-MD32F-110 | 18 | 110 | 32 | - | 87 | M8 | 1 | 3.0 | 3.3 |
| | SK50-MD32F-110R | 18 | 110 | 32 | 50 | 36 | M8 | 3 | 3.5 | 3.8 |
| | SK50-MD40F-100 | 22 | 100 | 40 | - | 75 | M10 | 1 | 3.2 | 3.5 |
| | SK50-MD40F-145 | 22 | 145 | 40 | - | 120 | M10 | 1 | 3.5 | 3.9 |
| | SK50-MD40F-220R | 22 | 220 | 40 | 60 | 83 | M10 | 3 | 5.6 | 6.0 |
| | SK50-MD50F-125R | 28 | 125 | 50 | 65 | 60 | M12 | 3 | 4.3 | 4.6 |
| | SK50-MD50F-240R | 28 | 240 | 50 | 65 | 125 | M12 | 3 | 6.6 | 7.0 |
| | SK50-MD63F-75 | 36 | 75 | 63 | - | 52 | M16 | 1 | 3.6 | 3.9 |
| | SK50-MD63F-130 | 36 | 130 | 63 | - | 107 | M16 | 1 | 4.7 | 5.1 |
| | SK50-MD63F-230R | 36 | 230 | 63 | 80 | 149 | M16 | 3 | 7.9 | 8.3 |
| | SK50-MD80F-95 | 45 | 95 | 80 | - | 75 | M16 | 1 | 4.8 | 5.1 |
| | SK50-MD80F-150 | 45 | 150 | 80 | - | 130 | M16 | 1 | 6.8 | 7.2 |
| | SK50-MD90F-115 | 45 | 115 | 90 | - | 95 | M16 | 2 | 6.3 | 6.6 |
| | SK50-MD90F-165 | 45 | 165 | 90 | - | 145 | M16 | 2 | 8.1 | 8.5 |

C Internal coolant system installed.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

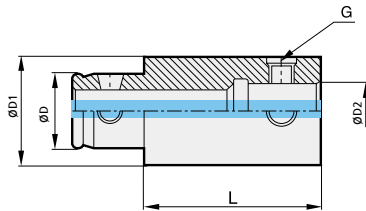
Smart factory

TAUMAX

OTHER

EXT

Extension bar

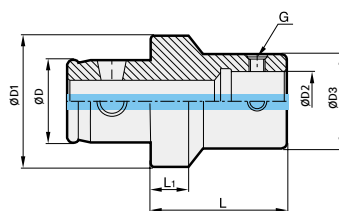


| Model No. | ØD | ØD1 | L | ØD2 | G | Kg | Package weight (Kg) |
|-----------|----|-----|-----|-----|-----|-----|---------------------|
| EXT1930F | 11 | 19 | 30 | 11 | M5 | 0.1 | 0.1 |
| EXT1950F | 11 | 19 | 50 | 11 | M5 | 0.1 | 0.1 |
| EXT2530F | 14 | 25 | 30 | 14 | M6 | 0.1 | 0.1 |
| EXT2550F | 14 | 25 | 50 | 14 | M6 | 0.2 | 0.2 |
| EXT3235F | 18 | 32 | 35 | 18 | M8 | 0.2 | 0.2 |
| EXT3260F | 18 | 32 | 60 | 18 | M8 | 0.4 | 0.4 |
| EXT4040F | 22 | 40 | 40 | 22 | M10 | 0.4 | 0.4 |
| EXT4090F | 22 | 40 | 90 | 22 | M10 | 0.9 | 0.9 |
| EXT5050F | 28 | 50 | 50 | 28 | M12 | 0.7 | 0.7 |
| EXT50100F | 28 | 50 | 100 | 28 | M12 | 1.4 | 1.5 |
| EXT6360F | 36 | 63 | 60 | 36 | M16 | 1.4 | 1.5 |
| EXT63120F | 36 | 63 | 120 | 36 | M16 | 2.9 | 2.9 |
| EXT8070F | 45 | 80 | 70 | 45 | M16 | 2.5 | 2.7 |
| EXT80120F | 45 | 80 | 120 | 45 | M16 | 4.5 | 4.7 |
| EXT9080F | 45 | 90 | 80 | 45 | M16 | 3.8 | 4.0 |
| EXT90130F | 45 | 90 | 130 | 45 | M16 | 6.4 | 6.6 |

C Internal coolant system installed.

RDC

Reducer bar




| Model No. | ØD | ØD1 | L | ØD2 | ØD3 | L1 | G | Kg | Package weight (Kg) |
|-----------|----|-----|----|-----|-----|----|-----|-----|---------------------|
| RDC3225F | 18 | 32 | 30 | 14 | 25 | 9 | M6 | 0.1 | 0.2 |
| RDC4025F | 22 | 40 | 30 | 14 | 25 | 9 | M6 | 0.3 | 0.3 |
| RDC4032F | 22 | 40 | 30 | 18 | 32 | 9 | M8 | 0.2 | 0.2 |
| RDC5025F | 28 | 50 | 30 | 14 | 25 | 9 | M6 | 0.3 | 0.4 |
| RDC5032F | 28 | 50 | 40 | 18 | 32 | 9 | M8 | 0.3 | 0.4 |
| RDC5040F | 28 | 50 | 40 | 22 | 40 | 10 | M10 | 0.5 | 0.6 |
| RDC6325F | 36 | 63 | 30 | 14 | 25 | 9 | M6 | 0.6 | 0.7 |
| RDC6332F | 36 | 63 | 40 | 18 | 32 | 9 | M8 | 0.6 | 0.7 |
| RDC6340F | 36 | 63 | 40 | 22 | 40 | 10 | M10 | 0.7 | 0.8 |
| RDC6350F | 36 | 63 | 45 | 28 | 50 | 10 | M12 | 0.9 | 1.0 |
| RDC8040F | 45 | 80 | 40 | 22 | 40 | 10 | M10 | 1.2 | 1.4 |
| RDC8050F | 45 | 80 | 45 | 28 | 50 | 10 | M12 | 1.3 | 1.5 |
| RDC8063F | 45 | 80 | 50 | 36 | 63 | 13 | M16 | 1.6 | 1.8 |

C Internal coolant system installed.



MD SPARE PART

Main components

| Spare Part | | Main components | |
|------------|--------|--|----------|
| Type | | Taper screw | |
| Model No. | Images |  | |
| | MD19F | | BTT0506F |
| MD25F | | BTT0608F | |
| MD32F | | BTT0810F | |
| MD40F | | BTT1013F | |
| MD50F | | BTT1215F | |
| MD63F | | BTT1620F | |
| MD80F | | BTT1626F | |
| MD90F | | BTT1631F | |

For separate purchase

| Spare Part | | For separate purchase | |
|------------|--|---|---|
| | | Coolant tube | Wrench |
| | |  |  |
| | | Classification by shank | |
| HSK50 | | HSK50A-CNS | LW-2.5 |
| HSK63 | | HSK63A-CNS | LW-3 |
| HSK100 | | HSK100A-CNS | LW-4 |
| | | | LW-5 |
| | | | LW-6 |
| | | | LW-8 |
| | | | LW-8 |
| | | | LW-8 |



MEMO

DINOX NC TOTAL TOOLING SYSTEM





Boring tool

DINOX NC TOOLING SYSTEM

| | |
|---------|-----|
| FBH/B | 134 |
| DBCA | 144 |
| DBC | 155 |
| TBCA | 160 |
| TBC | 166 |
| FBC | 171 |
| SMB | 176 |
| KMB | 178 |
| SMH | 180 |
| BB BITE | 184 |
| BH | 185 |
| BSA | 186 |
| BKA | 188 |
| FZ UNIT | 190 |
| BCF | 192 |
| FF | 194 |



FBH/B

FBH Back boring & balanced type



G6.3 **C**

G value Coolant System Boring

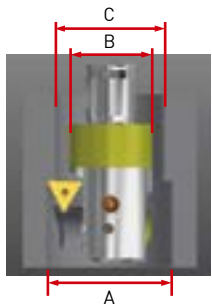
Features

- High-speed boring and back boring applicable
- High-precision balanced boring: G6.3
- Minimum adjustment range: 2 μ m

| | | | | |
|--------|------------------|---------------|-------------------|--------------|
| NAMING | FBH | 32 | 33 | B |
| | Fine boring head | MD Arbor Size | Boring Range(Min) | Balance type |



Back boring range calculation



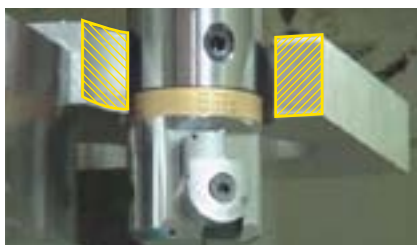
- A : Boring range(\emptyset)
- B : FBH/B BODY Size(\emptyset)
- C : Diameter for pass(\emptyset)

| Model No. | Min. diameter for pass(\emptyset)'C' |
|-----------|--|
| FBH1920B | $\geq \emptyset 24$ |
| FBH2526B | $\geq \emptyset 30.5$ |
| FBH3233B | $\geq \emptyset 35$ |
| FBH4042B | $\geq \emptyset 44$ |
| FBH5053B | $\geq \emptyset 54$ |
| FBH6368B | $\geq \emptyset 71.5$ |
| FBH6398B | $\geq \emptyset 100$ |
| FBH8098B | $\geq \emptyset 100$ |

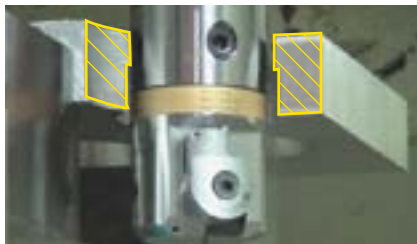
| | | |
|----------|---|-----------------------------------|
| A | Max. range of back boring (\emptyset) | A Max. value = $(2 \times C) - B$ |
| B | Max. FBH body size (\emptyset) | B Max. value = $(2 \times C) - A$ |
| C | Min. diameter for pass (\emptyset) | C Min. value = $(A + B) / 2$ |

Back boring machining

Before machining



After machining



Dial adjustment

Fine adjustment : 2 μ m boring range

Can be adjusted at a rate of 2 μ m by using the main scale and vernier scale



Initial position

0.002
Adjustment location

0.004
Adjustment location

0.006
Adjustment location

0.008
Adjustment location

0.010
Adjustment location

Convertible for machining direction

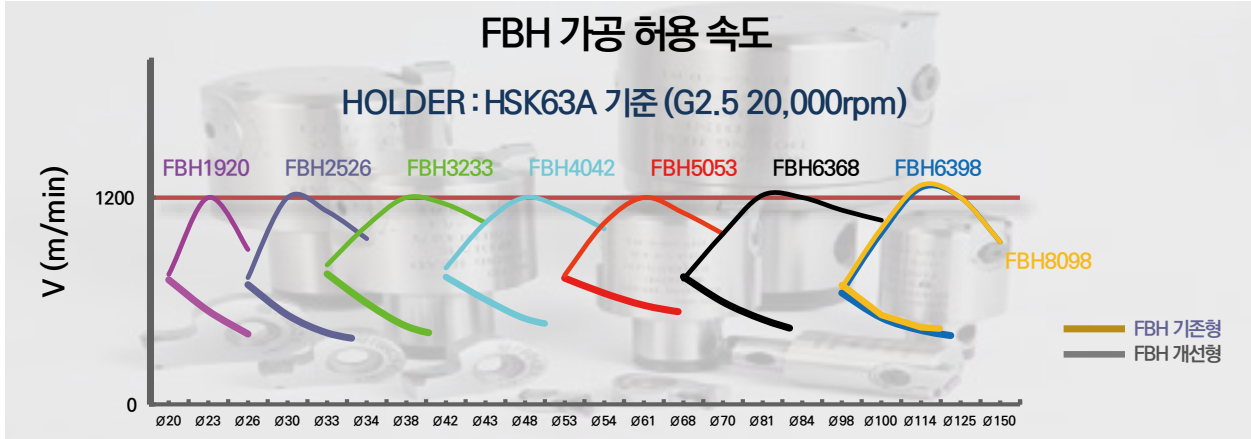


In case of boring machining

In case of back boring machining

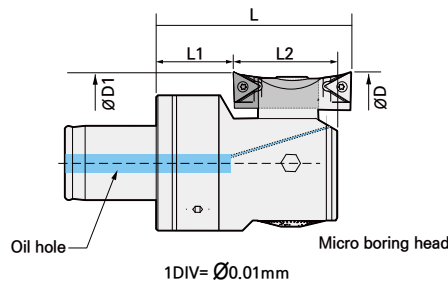
* Boring direction can be easily shifted simply by changing the bite direction

Test Results



| Chuck | Model No. V(m/min) | FBH2526B | | FBH2526N | |
|-----------------|---------------------------------|--|--|---|--|
| | | 732 (6,861rpm) | | | |
| HSK63A-MD25F-60 | Difference in surface roughness | | | | |
| | | - Constant and regular cycles are shown on the graph - Indicates stable boring work at high cutting speed | | - Irregular cycles shown on the graph - Indicates unstable boring work at high cutting speed | |

Boring range



| Model No. | Boring Range(\varnothing) | | | Backboring Range(\varnothing) | | | |
|-----------|-------------------------------|----------|-------|-----------------------------------|----------|------|------|
| | Min. | Max. | L | Min. | Max. | L1 | L2 |
| FBH1920B | 20 | 26(30) | 35.3 | 29 | 30 | 13.1 | 18.6 |
| FBH2526B | 26 | 34(40) | 40.9 | 36 | 40 | 15.1 | 21.9 |
| FBH3233B | 33 | 43(50) | 40.9 | 38 | 43(50) | 13.1 | 24.9 |
| FBH4042B | 42 | 54(62) | 50.4 | 48 | 54(62) | 15.2 | 31.4 |
| FBH5053B | 53 | 70(82) | 58.4 | 58 | 70(82) | 15.7 | 38.4 |
| FBH6368B | 68 | 100(122) | 80.6 | 78 | 100(122) | 27.4 | 48.6 |
| FBH6398B | 98 | 150(172) | 100.6 | 106 | 150(172) | 47.4 | 48.6 |
| FBH8098B | 98 | 150(172) | 100.6 | 106 | 150(172) | 47.4 | 48.6 |



BT-FBH/B

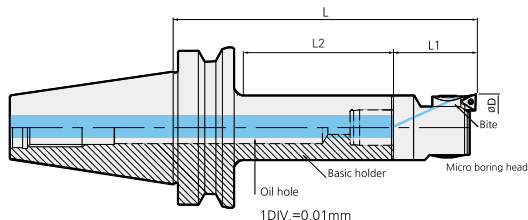
Micro boring bar (balanced type)



MAS 403-BT
G6.3
C
20
172

Shank G value Coolant System MIN Range MAX Range Boring

Fig.1



Head.1

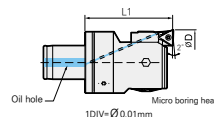
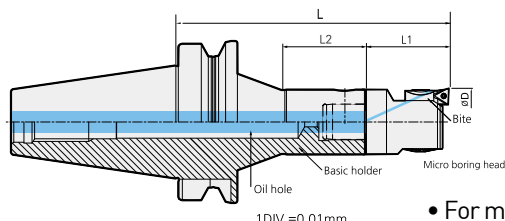


Fig.2



C Internal coolant system installed.

※ Red : Main component Blue : For separate purchase

- For more information on the product features, see **134p**.
- For more information on MD arbor, see **126p**.
- For more information on FBB bite, see **143p**.
- For more information on the related parts, see **142p**.

| | Model No. | | | Boring range(ØD) | | L | L1 | L2 | ØD | ØD1 | kg [Head weight] | kg [Head package weight] | Fig |
|------|----------------|----------------|-----------------|------------------|----------|-------|-------|-----|----|-----|------------------------|--------------------------------|-----|
| | Head model no. | Bite model no. | Arbor Model No. | Min. | Max. | | | | | | | | |
| BT30 | FBH1920B | FBB20N-□-□□ | BT30-MD19F-70 | 20(24) | 26(30) | 105.2 | 35.2 | 45 | 19 | 11 | 0.2 | 0.2 | 1 |
| | FBH2526B | FBB26N-□-□□ | BT30-MD25F-90 | 26(32) | 34(40) | 131 | 41 | 63 | 25 | 14 | 0.2 | 0.2 | 1 |
| | FBH3233B | FBB33N-□-□□ | BT30-MD32F-80 | 33(40) | 43(50) | 121 | 41 | 55 | 32 | 18 | 0.3 | 0.3 | 1 |
| | FBH4042B | FBB42N-□-□□ | BT30-MD40F-45 | 42(50) | 54(62) | 95.5 | 50.5 | 22 | 40 | 22 | 0.5 | 0.5 | 1 |
| | FBH4042B | FBB42N-□-□□ | BT30-MD40F-60 | 42(50) | 54(62) | 110.5 | 50.5 | 36 | 40 | 22 | 0.5 | 0.5 | 1 |
| | FBH4042B | FBB42N-□-□□ | BT30-MD40F-80 | 42(50) | 54(62) | 130.5 | 50.5 | 56 | 40 | 22 | 0.5 | 0.5 | 1 |
| | FBH5053B | FBB53N-□-□□ | BT30-MD50F-70 | 53(65) | 70(82) | 128.4 | 58.5 | 48 | 50 | 28 | 0.8 | 0.9 | 1 |
| BT40 | FBH1920B | FBB20N-□-□□ | BT40-MD19F-70 | 20(24) | 26(30) | 105.4 | 35.2 | 40 | 19 | 11 | 0.2 | 0.2 | 1 |
| | FBH2526B | FBB26N-□-□□ | BT40-MD25F-95 | 26(32) | 34(40) | 135.9 | 41 | 63 | 25 | 14 | 0.2 | 0.2 | 1 |
| | FBH2526B | FBB26N-□-□□ | BT40-MD25F-105R | 26(32) | 34(40) | 146 | 41 | 40 | 25 | 14 | 0.2 | 0.2 | 2 |
| | FBH3233B | FBB33N-□-□□ | BT40-MD32F-100 | 33(40) | 43(50) | 140.9 | 41 | 70 | 32 | 18 | 0.3 | 0.3 | 1 |
| | FBH3233B | FBB33N-□-□□ | BT40-MD32F-115R | 33(40) | 43(50) | 156 | 41 | 45 | 32 | 18 | 0.3 | 0.3 | 2 |
| | FBH4042B | FBB42N-□-□□ | BT40-MD40F-60 | 42(50) | 54(62) | 165.5 | 50.5 | 31 | 40 | 22 | 0.5 | 0.5 | 1 |
| | FBH4042B | FBB42N-□-□□ | BT40-MD40F-110R | 42(50) | 54(62) | 160.5 | 50.5 | 60 | 40 | 22 | 0.5 | 0.5 | 2 |
| | FBH4042B | FBB42N-□-□□ | BT40-MD40F-115 | 42(50) | 54(62) | 165.5 | 50.5 | 83 | 40 | 22 | 0.5 | 0.5 | 1 |
| | FBH5053B | FBB53N-□-□□ | BT40-MD50F-105 | 53(65) | 70(82) | 163.4 | 58.5 | 73 | 50 | 28 | 0.8 | 0.9 | 1 |
| | FBH5053B | FBB53N-□-□□ | BT40-MD63F-64 | 53(65) | 70(82) | 122.5 | 58.5 | 37 | 50 | 28 | 0.8 | 0.9 | 1 |
| | FBH6368B | FBB68N-□-□□ | BT40-MD63F-110 | 68(90) | 100(122) | 190.6 | 80.6 | 83 | 63 | 36 | 2.1 | 2.3 | 1 |
| | FBH6398B | FBB68N-□-□□ | BT40-MD63F-135 | 98(120) | 150(172) | 235.6 | 100.6 | 108 | 63 | 36 | 3.6 | 3.8 | 1 |
| | FBH8098B | FBB68N-□-□□ | BT40-MD80F-100 | 98(120) | 150(172) | 200.6 | 100.6 | 73 | 80 | 45 | 4.8 | 5.1 | 1 |

- In the above table, the Arbor Model No. is an example model no. and able to adjust the depth of boring with a combination of MD arbors and extension bars. For more details, see the MD arbor page.
- FBB bite is largely divided into general-type FBB□□N and extended-type (back boring) FBB□□N-1 and is available as FBB□□N-□-C09, FBB□□N-□-T11 depending on the insert.

| Bite | Applicable insert |
|------------------|-------------------|
| FBB□□N, FBB□□N-1 | TPGT TPGW0802□□L |
| FBB□□N-□-C | CCMT, CCGT0602□□L |
| FBB□□N-□-C09 | CCMT, CCGT09T3□□L |
| FBB□□N-□-T11 | TPGT1103□□L |



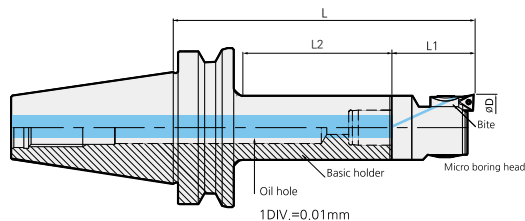
BT-FBH/B

Micro boring bar (balanced type)



| | | | | | |
|---------------|---------|----------------|-----------|-----------|--------|
| MAS 403-BT | G6.3 | C | 20 | 172 | |
| Shank | G value | Coolant System | MIN Range | MAX Range | Boring |

Fig.1



Head.1

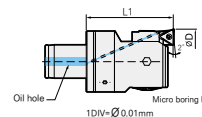
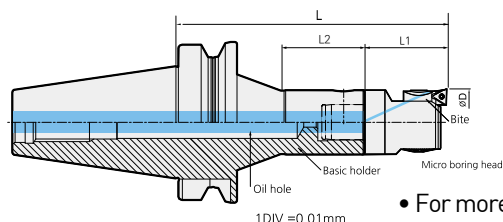


Fig.2



- For more information on the product features, see **134p**
- For more information on MD arbor, see **126p**
- For more information on FBB bite, see **143p**
- For more information on the related parts, see **142p**

C Internal coolant system installed.

※ Red : Main component Blue : For separate purchase

| | Model No. | | | Boring range(ØD) | | L | L1 | L2 | ØD | ØD1 | kg (Head weight) | kg (Head package weight) | Fig |
|----------|----------------|----------------|-----------------|------------------|----------|-------|-------|-----|----|-----|---------------------|-----------------------------|-----|
| | Head model no. | Bite model no. | Arbor Model No. | Min. | Max. | | | | | | | | |
| BT50 | FBH1920B | FBB20N-□-□□ | BT50-MD19F-85 | 20(24) | 26(30) | 120.2 | 35.2 | 44 | 19 | 11 | 0.2 | 0.2 | 1 |
| | FBH2526B | FBB26N-□-□□ | BT50-MD25F-105 | 26(32) | 34(40) | 146 | 41 | 62 | 25 | 14 | 0.2 | 0.2 | 1 |
| | FBH2526B | FBB26N-□-□□ | BT50-MD25F-120R | 26(32) | 34(40) | 161 | 41 | 40 | 25 | 14 | 0.2 | 0.2 | 2 |
| | FBH3233B | FBB33N-□-□□ | BT50-MD32F-110 | 33(40) | 43(50) | 151 | 41 | 67 | 32 | 18 | 0.3 | 0.3 | 1 |
| | FBH3233B | FBB33N-□-□□ | BT50-MD32F-115R | 33(40) | 43(50) | 156 | 41 | 45 | 32 | 18 | 0.3 | 0.3 | 2 |
| | FBH3233B | FBB33N-□-□□ | BT50-MD32F-235R | 33(40) | 43(50) | 276 | 41 | 115 | 32 | 18 | 0.3 | 0.3 | 2 |
| | FBH4042B | FBB42N-□-□□ | BT50-MD40F-60 | 42(50) | 54(62) | 110.5 | 50.5 | 22 | 32 | 18 | 0.5 | 0.5 | 1 |
| | FBH4042B | FBB42N-□-□□ | BT50-MD40F-195 | 42(50) | 54(62) | 245.5 | 50.5 | 152 | 40 | 22 | 0.5 | 0.5 | 1 |
| | FBH4042B | FBB42N-□-□□ | BT50-MD40F-230R | 42(50) | 54(62) | 280.5 | 50.5 | 180 | 40 | 22 | 0.5 | 0.5 | 2 |
| | FBH5053B | FBB53N-□-□□ | BT50-MD50F-125 | 53(65) | 70(82) | 183.5 | 58.5 | 82 | 40 | 22 | 0.8 | 0.9 | 1 |
| | FBH5053B | FBB53N-□-□□ | BT50-MD50F-225 | 53(65) | 70(82) | 283.5 | 58.5 | 182 | 50 | 28 | 0.8 | 0.9 | 1 |
| | FBH5053B | FBB53N-□-□□ | BT50-MD50F-205R | 53(65) | 70(82) | 263.5 | 58.5 | 81 | 50 | 28 | 0.8 | 0.9 | 2 |
| | FBH6368B | FBB68N-□-□□ | BT50-MD63F-75 | 68(90) | 100(122) | 145.6 | 80.6 | 35 | 63 | 36 | 2.1 | 2.3 | 1 |
| | FBH6368B | FBB68N-□-□□ | BT50-MD63F-130 | 68(90) | 100(122) | 210.6 | 80.6 | 87 | 63 | 36 | 2.1 | 2.3 | 1 |
| | FBH6368B | FBB68N-□-□□ | BT50-MD63F-195 | 68(90) | 100(122) | 275.6 | 80.6 | 152 | 63 | 36 | 2.1 | 2.3 | 1 |
| | FBH6368B | FBB68N-□-□□ | BT50-MD63F-230 | 68(90) | 100(122) | 310.6 | 80.6 | 187 | 63 | 36 | 2.1 | 2.3 | 1 |
| | FBH6398B | FBB68N-□-□□ | BT50-MD63F-75 | 98(120) | 150(172) | 175.6 | 100.6 | 35 | 63 | 36 | 3.6 | 3.8 | 1 |
| | FBH6398B | FBB68N-□-□□ | BT50-MD63F-130 | 98(120) | 150(172) | 230.6 | 100.6 | 87 | 63 | 36 | 3.6 | 3.8 | 1 |
| | FBH6398B | FBB68N-□-□□ | BT50-MD63F-195 | 98(120) | 150(172) | 295.6 | 100.6 | 152 | 63 | 36 | 3.6 | 3.8 | 1 |
| | FBH6398B | FBB68N-□-□□ | BT50-MD63F-230 | 98(120) | 150(172) | 330.6 | 100.6 | 187 | 63 | 36 | 3.6 | 3.8 | 1 |
| FBH8098B | FBB68N-□-□□ | BT50-MD80F-75 | 98(120) | 150(172) | 175.6 | 100.6 | 36 | 80 | 45 | 4.8 | 5.1 | 1 | |
| FBH8098B | FBB68N-□-□□ | BT50-MD80F-110 | 98(120) | 150(172) | 215.6 | 100.6 | 69 | 80 | 45 | 4.8 | 5.1 | 1 | |
| FBH8098B | FBB68N-□-□□ | BT50-MD80F-175 | 98(120) | 150(172) | 275.6 | 100.6 | 134 | 80 | 45 | 4.8 | 5.1 | 1 | |

- In the above table, the Arbor Model No. is an example model no. and able to adjust the depth of boring with a combination of MD arbors and extension bars. For more details, see the MD arbor page.
- FBB bite is largely divided into general-type FBB□□N and extended-type (back boring) FBB□□N-1 and is available as FBB□□N-□-C09, FBB□□N-□-T11 depending on the insert.

| Bite | Applicable insert |
|------------------|-------------------|
| FBB□□N, FBB□□N-1 | TPGT TPGW0802□□L |
| FBB□□N-□-C | CCMT, CCGT0602□□L |
| FBB□□N-□-C09 | CCMT, CCGT09T3□□L |
| FBB□□N-□-T11 | TPGT1103□□L |

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER

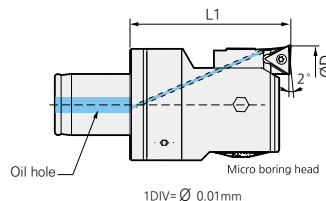
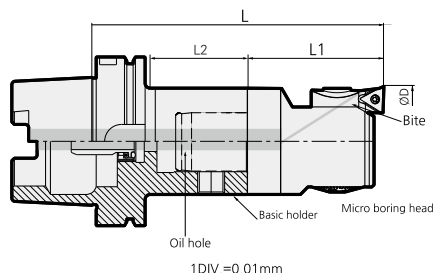


HSK-FBH/B

Micro boring bar (balanced type)



| | | | | | |
|--------------------|-------------|----------------|-----------|------------|--------|
| DIN 69893-1 | G6.3 | C | 20 | 172 | |
| Shank | G value | Coolant System | MIN Range | MAX Range | Boring |



- For more information on the product features, see **134p**
- For more information on MD arbor, see **126p**
- For more information on FBB bite, see **143p**
- For more information on the related parts, see **142p**

C Internal coolant system is optional.

※ **Red** : Main component **Blue** : For separate purchase

| HSK63 | Model No. | | | Boring range(ØD) | | L | L1 | L2 | ØD | ØD1 | kg (Head weight) | kg (Head package weight) | Fig |
|-----------------|--------------------|------------------------|------------------------|------------------|--------|-------|----|----|----|-----|---------------------|-----------------------------|-----|
| | Head model no. | Bite model no. | Arbor Model No. | Min. | Max. | | | | | | | | |
| | FBH1920B | FBB20N-□-□□ | HSK63A-MD19F-60 | 20(24) | 26(30) | | | | | | | | |
| FBH2526B | FBB26N-□-□□ | HSK63A-MD25F-60 | 26(32) | 34(40) | 101 | 41 | 31 | 25 | 14 | 0.2 | 0.2 | 1 | |
| FBH3233B | FBB33N-□-□□ | HSK63A-MD32F-65 | 33(40) | 43(50) | 106 | 41 | 36 | 32 | 18 | 0.3 | 0.3 | 1 | |
| FBH4042B | FBB42N-□-□□ | HSK63A-MD40F-70 | 42(50) | 54(62) | 120.5 | 50.5 | 41 | 40 | 22 | 0.5 | 0.5 | 1 | |
| FBH5053B | FBB53N-□-□□ | HSK63A-MD50F-85 | 53(65) | 70(82) | 143.5 | 58.5 | 58 | 50 | 28 | 0.8 | 0.9 | 1 | |
| FBH6368B | FBB68N-□-□□ | HSK63A-MD63F-95 | 68(90) | 100(122) | 175.6 | 80.6 | 69 | 63 | 36 | 2.1 | 2.3 | 1 | |
| FBH6398B | FBB68N-□-□□ | HSK63A-MD63F-95 | 98(120) | 150(172) | 195.6 | 100.6 | 69 | 63 | 36 | 3.6 | 3.8 | 1 | |

- In the above table, the Arbor Model No. is an example model no. and able to adjust the depth of boring with a combination of MD arbors and extension bars. For more details, see the MD arbor page. .
- FBB bite is largely divided into general-type FBB□□N and extended-type (back boring) FBB□□N-1 and is available as FBB□□N-□-C09, FBB□□N-□-T11 depending on the insert.

| Bite | Applicable insert |
|------------------|-------------------|
| FBB□□N, FBB□□N-1 | TPGT TPGW0802□□L |
| FBB□□N-□-C | CCMT, CCGT0602□□L |
| FBB□□N-□-C09 | CCMT, CCGT09T3□□L |
| FBB□□N-□-T11 | TPGT1103□□L |

For separate purchase

| | |
|-------------------------|--|
| Internal coolant system | |
|-------------------------|--|

| Classification by shank | |
|-------------------------|-------------|
| HSK50 | HSK50A-CNS |
| HSK63 | HSK63A-CNS |
| HSK100 | HSK100A-CNS |



SK-FBH/B

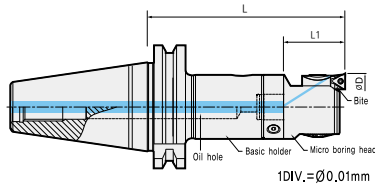
Micro boring bar (balanced type)



DIN69871
-1A/B
G6.3
C
26
172
Boring

Shank G value Coolant System MIN Range MAX Range Boring

Fig.1



Head.1

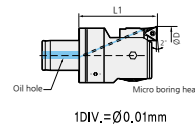


Fig.2

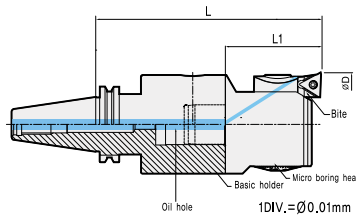
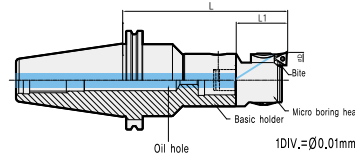


Fig.3



C Internal coolant system installed.

※ Red : Main component Blue : For separate purchase

- For more information on the product features, see 134p
- For more information on MD arbor, see 126p
- For more information on FBB bite, see 143p
- For more information on the related parts, see 142p

| | Model No. | | | Boring range(ØD) | | L | L1 | L2 | ØD | ØD1 | kg (Head weight) | kg (Head package weight) | Fig |
|------|----------------|----------------|-----------------|------------------|----------|-------|-------|-----|----|-----|---------------------|-----------------------------|-----|
| | Head model no. | Bite model no. | Arbor Model No. | Min. | Max. | | | | | | | | |
| SK40 | FBH2526B | FBB26N-□-□□ | SK40-MD25F-80R | 26(32) | 34(40) | 121 | 41 | 22 | 25 | 14 | 0.2 | 0.2 | 3 |
| | FBH3233B | FBB33N-□-□□ | SK40-MD32F-115R | 33(40) | 43(50) | 156 | 41 | 36 | 32 | 18 | 0.3 | 0.3 | 3 |
| | FBH4042B | FBB42N-□-□□ | SK40-MD40F-100 | 42(50) | 54(62) | 150.5 | 50.5 | 80 | 40 | 22 | 0.5 | 0.5 | 1 |
| | FBH5053B | FBB53N-□-□□ | SK40-MD50F-100 | 53(65) | 70(82) | 158.5 | 58.5 | 80 | 50 | 28 | 0.8 | 0.9 | 1 |
| | FBH6368B | FBB68N-□-□□ | SK40-MD63F-70 | 68(90) | 100(122) | 150.6 | 80.6 | 50 | 63 | 36 | 2.1 | 2.3 | 2 |
| SK50 | FBH6398B | FBB68N-□-□□ | SK40-MD63F-70 | 98(120) | 150(172) | 170.6 | 100.6 | 50 | 63 | 36 | 3.6 | 3.8 | 2 |
| | FBH2526B | FBB26N-□-□□ | SK50-MD25F-105R | 26(32) | 34(40) | 146 | 41 | 22 | 25 | 14 | 0.2 | 0.2 | 3 |
| | FBH3233B | FBB33N-□-□□ | SK50-MD32F-110 | 33(40) | 43(50) | 151 | 41 | 87 | 32 | 18 | 0.3 | 0.3 | 1 |
| | FBH4042B | FBB42N-□-□□ | SK50-MD40F-145 | 42(50) | 54(62) | 195.5 | 50.5 | 120 | 40 | 22 | 0.5 | 0.5 | 1 |
| | FBH5053B | FBB53N-□-□□ | SK50-MD50F-240R | 53(65) | 70(82) | 298.5 | 58.5 | 125 | 50 | 28 | 0.8 | 0.9 | 3 |
| | FBH6368B | FBB68N-□-□□ | SK50-MD63F-130 | 68(90) | 100(122) | 210.6 | 80.6 | 107 | 63 | 36 | 2.1 | 2.3 | 1 |
| | FBH6398B | FBB68N-□-□□ | SK50-MD63F-130 | 98(120) | 150(172) | 230.6 | 100.6 | 107 | 63 | 36 | 3.6 | 3.8 | 1 |
| | FBH8098B | FBB68N-□-□□ | SK50-MD80F-150 | 98(120) | 150(172) | 250.6 | 100.6 | 130 | 80 | 45 | 4.8 | 5.1 | 1 |

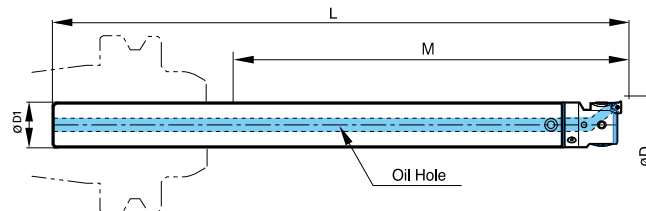
- In the above table, the Arbor Model No. is an example model no. and able to adjust the depth of boring with a combination of MD arbors and extension bars. For more details, see the MD arbor page.
- FBB bite is largely divided into general-type FBB□□N and extended-type (back boring) FBB□□N-1 and is available as FBB□□N-□-C09, FBB□□N-□-T11 depending on the insert.

| Bite | Applicable insert |
|------------------|-------------------|
| FBB□□N, FBB□□N-1 | TPGT TPGW0802□□L |
| FBB□□N-□-C | CCMT, CCGT0602□□L |
| FBB□□N-□-C09 | CCMT, CCGT09T3□□L |
| FBB□□N-□-T11 | TPGT1103□□L |



S-FBH/B

Micro boring bar (balanced type)



C Internal coolant system installed.

*S□□W : Cemented carbide shank

*S□□ : Steel shank

• For more information on the product features, see **134p**

• For more information on FBB bite, see **143p**

• For more information on the related parts, see **142p**

| Model No. | Boring range | | L | ØD1 | M | Main component | | | kg (Head weight) | kg (Head package weight) |
|-----------------|--------------|------|--------|-----|-----|------------------|-------------|--------|---------------------|-----------------------------|
| | Min. | Max. | | | | Shank | Boring head | Bite | | |
| S19W-FBH20B-120 | 20 | 26 | 192.35 | 19 | 120 | S19W-MD19F-157 | FBH1920B | FBB20N | 0.6 | 0.7 |
| S19W-FBH20B-140 | 20 | 26 | 212.35 | 19 | 140 | S19W-MD19F-177 | FBH1920B | FBB20N | 0.7 | 0.8 |
| S19W-FBH20B-160 | 20 | 26 | 232.35 | 19 | 160 | S19W-MD19F-197 | FBH1920B | FBB20N | 0.8 | 0.9 |
| S25W-FBH26B-150 | 26 | 34 | 238.35 | 25 | 150 | S25W-MD25F-197.5 | FBH2526B | FBB26N | 1.4 | 1.5 |
| S25W-FBH26B-175 | 26 | 34 | 263.35 | 25 | 175 | S25W-MD25F-222.5 | FBH2526B | FBB26N | 1.6 | 1.7 |
| S25W-FBH26B-200 | 26 | 34 | 288.35 | 25 | 200 | S25W-MD25F-247.5 | FBH2526B | FBB26N | 1.8 | 1.9 |
| S32W-FBH33B-180 | 33 | 43 | 279.9 | 32 | 180 | S32W-MD32F-239 | FBH3233B | FBB33N | 2.7 | 2.8 |
| S32W-FBH33B-240 | 33 | 43 | 339.9 | 32 | 240 | S32W-MD32F-299 | FBH3233B | FBB33N | 3.4 | 3.5 |
| S19-FBH20B-40 | 20 | 26 | 112.35 | 19 | 40 | S19-MD19F-77 | FBH1920B | FBB20N | 0.2 | 0.3 |
| S19-FBH20B-80 | 20 | 26 | 152.35 | 19 | 80 | S19-MD19F-117 | FBH1920B | FBB20N | 0.2 | 0.3 |
| S25-FBH26B-50 | 26 | 34 | 138.35 | 25 | 50 | S25-MD25F-97.5 | FBH2526B | FBB26N | 0.4 | 0.5 |
| S25-FBH26B-100 | 26 | 34 | 188.35 | 25 | 100 | S25-MD25F-147.5 | FBH2526B | FBB26N | 0.6 | 0.7 |
| S32-FBH33B-90 | 33 | 43 | 189.9 | 32 | 90 | S32-MD32F-149 | FBH3233B | FBB33N | 1.1 | 1.2 |
| S32-FBH33B-120 | 33 | 43 | 219.9 | 32 | 120 | S32-MD32F-179 | FBH3233B | FBB33N | 1.2 | 1.3 |

• FBB bite is largely divided into general-type FBB□□N and extended-type (back boring) FBB□□N-1 and is available as FBB□□N-□-C09, FBB□□N-□-T11 depending on the insert.

| Bite | Applicable insert |
|------------------|-------------------|
| FBB□□N, FBB□□N-1 | TPGT TPGW0802□□L |
| FBB□□N-□-C | CCMT, CCGT0602□□L |
| FBB□□N-□-C09 | CCMT, CCGT09T3□□L |
| FBB□□N-□-T11 | TPGT1103□□L |

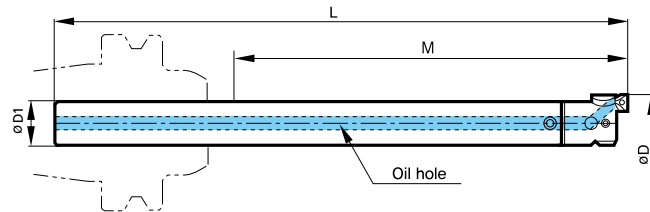


S-FBH

Small micro boring bar with carbide/steel

CARBIDE
C
15
22

Shank Coolant System MIN Range MAX Range Boring



C Internal coolant system installed.

* □□W : Cemented carbide shank

* □□ : Steel shank

• For more information on the product features, see **134p**

• For more information on FBB bite, see **143p**

• For more information on the related parts, see **142p**

| CEMENTED CARBIDE | Model No. | Boring range | | L | ØD1 | M | Detailed model no. (Main component) | | | kg (Head weight) | kg (Head package weight) |
|------------------|----------------|--------------|------|-----|-----|-----|-------------------------------------|-------------|---------|---------------------|-----------------------------|
| | | Min. | Max. | | | | Shank | Boring head | Bite | | |
| | S14W-FBH15-85 | 15 | 18 | 155 | 14 | 85 | S14W-M6-123 | FBH15 | FBB15-C | 0.3 | 0.4 |
| | S14W-FBH15-110 | 15 | 18 | 180 | 14 | 110 | S14W-M6-148 | FBH15 | FBB15-C | 0.3 | 0.4 |
| | S16W-FBH18-95 | 18 | 22 | 165 | 16 | 95 | S16W-M8-128 | FBH18 | FBB15-C | 0.4 | 0.5 |
| | S16W-FBH18-125 | 18 | 22 | 195 | 16 | 125 | S16W-M8-158 | FBH18 | FBB15-C | 0.5 | 0.6 |
| | S14-FBH15-40 | 15 | 18 | 110 | 14 | 40 | S14-M6-78 | FBH15 | FBB15-C | 0.1 | 0.2 |
| | S16-FBH18-45 | 18 | 22 | 115 | 16 | 45 | S16-M8-78 | FBH18 | FBB15-C | 0.1 | 0.2 |

• FBB bite is largely divided into general-type FBB□□N and extended-type (back boring) FBB□□N-1 and is available as FBB□□N-□-C09 and FBB□□N-□-T11 depending on the insert.


| Bite | Applicable insert |
|------------------|-------------------|
| FBB□□N, FBB□□N-1 | TPGT TPGW0802□□L |
| FBB□□N-□-C | CCMT, CCGT0602□□L |
| FBB□□N-□-C09 | CCMT, CCGT09T3□□L |
| FBB□□N-□-T11 | TPGT1103□□L |



FBH SPARE PART

Micro boring related parts

Spare Part

| Main components | | | |
|---|---|--|---|
| TYPE(FBH) | LOCK SEREW | FBB | CLAMP SCREW |
|  |  |  |  |
| FBH15 | BT02503 | FBB15-C | BFTX02505N |
| FBH18 | BT02503 | FBB15-C | BFTX02505N |



FBH/B SPARE PART

Micro boring balanced type related parts



Main components

| Spare Part | Main components | | |
|---|---|---|---|
| TYPE(FBH/B) | LOCK SCREW | CLAMP SCREW | Wrench |
|  |  |  |  |
| FBH1920B | BTF0404 | BXC0304 | LW-2 |
| FBH2526B | BTF0505 | BXC0405 | LW-2.5 |
| FBH3233B | BTF0606 | BXC0506 | LW-3 |
| FBH4042B | BTF0808 | BXC0610 | LW-4 |
| FBH5053B | BTF0812 | BXC0610 | LW-4 |
| FBH6368B | BTF1016 | BXC0810 | LW-5 |
| FBH6398B | BTF1012 | BXC0810 | LW-5 |
| FBH8098B | BTF1014 | BXC0810 | LW-5 |



FBB BITE

Boring bite



NAMING

| | | | | | |
|------------|---|-----------|----------|---|--|
| FBB | - | 20 | N | - | 1 |
| FBH Bite | | Head No. | New Type | | Non : General type 1 : Expansion type |

Spare Part

| Model No. | Boring range | Insert | Insert screw | Clamp bolt |
|--------------|----------------------------|------------------------|--------------|------------|
| FBB15-C | Ø15 ~ Ø18mm | CCET0301-□□L | BFTX01604N | BFTX02505N |
| | Ø18 ~ Ø22mm | CCET0301-□□L | BFTX01604N | BFTX02505N |
| FBB20N | Ø20 ~ Ø26mm | TPGT0802□□L,TPGW0802□□ | BFTX0204A | BXC0304 |
| FBB20N-C | Ø20 ~ Ø26mm | CCET0401□□L | FTNA0238 | BXC0304 |
| FBB20N-1 | Ø24 ~ Ø30mm | TPGT0802□□L,TPGW0802□□ | BFTX0204A | BXC0304 |
| FBB20N-1-C | Ø24 ~ Ø30mm | CCET0401□□L | FTNA0238 | BXC0304 |
| FBB26N | Ø26 ~ Ø34mm | TPGT0802□□L,TPGW0802□□ | BFTX0204A | BXC0405 |
| FBB26N-C | Ø26 ~ Ø34mm | CCET0401□□L | FTNA0238 | BXC0405 |
| FBB26N-1 | Ø32 ~ Ø40mm | TPGT0802□□L,TPGW0802□□ | BFTX0204A | BXC0405 |
| FBB26N-1-C | Ø32 ~ Ø40mm | CCET0401□□L | FTNA0238 | BXC0405 |
| FBB33N | Ø33 ~ Ø43mm | TPGT0802□□L,TPGW0802□□ | BFTX0204A | BXC0506 |
| FBB33N-C | Ø33 ~ Ø43mm | CCMT0602□□,CCGT0602□□ | BFTX02506N | BXC0506 |
| FBB33N-1 | Ø41~ Ø50mm | TPGT0802□□L,TPGW0802□□ | BFTX0204A | BXC0506 |
| FBB33N-1-C | Ø41~ Ø50mm | CCMT0602□□,CCGT0602□□L | BFTX02506N | BXC0506 |
| FBB42N | Ø42~ Ø54mm | TPGT0802□□L,TPGW0802□□ | BFTX0204A | BXC0610 |
| FBB42N-C | Ø42~ Ø54mm | CCMT0602□□,CCGT0602□□L | BFTX02506N | BXC0610 |
| FBB42N-11 | Ø42~ Ø54mm | TPGT1103□□L | BFTX0307A | BXC0610 |
| FBB42N-1 | Ø50~ Ø62mm | TPGT0802□□L,TPGW0802□□ | BFTX0204A | BXC0610 |
| FBB42N-1-C | Ø50~ Ø62mm | CCMT0602□□,CCGT0602□□L | BFTX02506N | BXC0610 |
| FBB42N-1-T11 | Ø50~ Ø62mm | TPGT1103□□L | BFTX0307A | BXC0610 |
| FBB53N | Ø53~ Ø70mm | TPGT0802□□L,TPGW0802□□ | BFTX0204A | BXC0610 |
| FBB53N-C | Ø53~ Ø70mm | CCMT0602□□,CCGT0602□□ | BFTX02506N | BXC0610 |
| FBB53N-11 | Ø53~ Ø70mm | TPGT1103□□L | BFTX0307A | BXC0610 |
| FBB53N-1 | Ø65~ Ø82mm | TPGT0802□□L,TPGW0802□□ | BFTX0204A | BXC0610 |
| FBB53N-1-C | Ø65~ Ø82mm | CCMT0602□□,CCGT0602□□L | BFTX02506N | BXC0610 |
| FBB53N-1-C09 | Ø65~ Ø82mm | CCMT09T3□□,CCGT09T3□□L | BFTX0409N | BXC0610 |
| FBB53N-1-T11 | Ø65~ Ø82mm | TPGT1103□□L | BFTX0307A | BXC0610 |
| FBB68N | Ø68~ Ø100mm / Ø98~ Ø150mm | TPGT0802□□L,TPGW0802□□ | BFTX0204A | BXC0810 |
| FBB68N-C | Ø68~ Ø100mm / Ø98~ Ø150mm | CCMT09T3□□,CCGT09T3□□L | BFTX0409N | BXC0810 |
| FBB68N-11 | Ø68~ Ø100mm / Ø98~ Ø150mm | TPGT1103□□L | BFTX0307A | BXC0810 |
| FBB68N-1 | Ø90~ Ø122mm / Ø120~ Ø172mm | TPGT0802□□L,TPGW0802□□ | BFTX0204A | BXC0810 |
| FBB68N-1-C09 | Ø90~ Ø122mm / Ø120~ Ø172mm | CCMT09T3□□,CCGT09T3□□L | BFTX0409N | BXC0810 |
| FBB68N-1-T11 | Ø90~ Ø122mm / Ø120~ Ø172mm | TPGT1103□□L | BFTX0307A | BXC0810 |

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



DBCA NEW

New balance cut tool



C 28 136

Coolant System MIN Range MAX Range Boring



Features

- Applied adjustment function simultaneously in Bi/Uni-direction of Cartridge
- Improves the rigidity of cutting by applying Cover for rotating type
- Increased machining area versus conventional own products
- Improved capacity to evacuate chips by unique design of Helical Type Head
- Boring range : $\varnothing 28 - \varnothing 136$

| | | | | | |
|--------|----------------------|---------------|------------------|---------------|-------------------------------------|
| NAMING | DBCA | 32 | 33 | S | 32 |
| | New balance cut tool | MD Arbor Size | Min. boring dia. | Straight type | H: Helical type, Non: Straight type |

Main features

Helical Type



- Improved capacity to discharge chips from clogged and deep holes
- Minimized damage to tools and insert due to chip clogging

| | |
|-----------------------------|---|
| Extended head length | Deep hole machining implemented |
| Helical Type | Improved capacity to discharge chips from holes |

Boring area optimization

Direction of spraying cutting oil

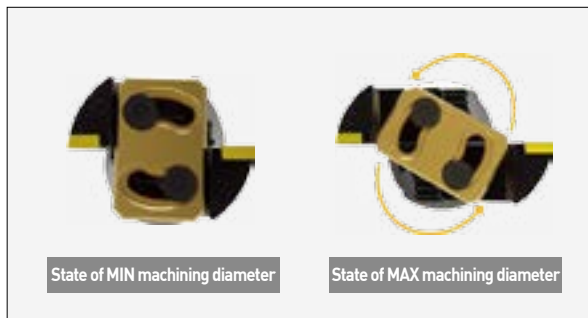
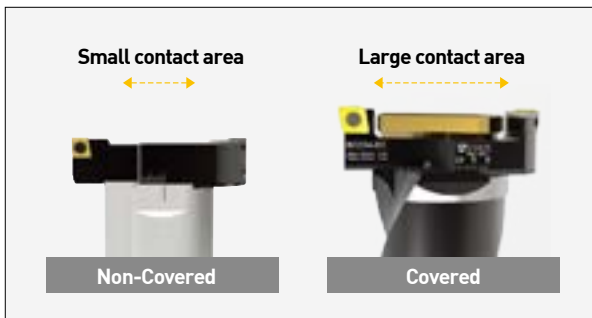


- Max. diameter expanded owing to reinforced rigidity
- Boring range expanded per model no. versus conventional boring range of DINE

| | |
|---|--|
| Coolant Hole (Direct spray to cutting edge) | <ul style="list-style-type: none"> • Improved capacity to discharge chips • Improved capacity of machining |
|---|--|

Effect of improved rigidity for Cartridge by Cover

Clamps the top of the cartridge stably, minimizing the vibration of tools and improving the roughness of the working surface





DBCA NEW

New balance cut tool



Comparison with competitors

Verifying of less vibration due to improved rigidity and smooth chip discharge

→ Superior performance compared to competitors

| MANUFACTURER | L/D | SURFACE ROUGHNESS (RA) | SPECIAL NOTES | MACHINED SURFACE |
|-----------------------|-----------|------------------------|--|------------------|
| Company A | 5D | 3.82 | Vibration occurred | |
| Company B | 5D | 2.46 | Vibration occurred Chips tangled | |
| DINE took over | 5D | 2.19 | Well-machined surface No chip tangled | |

New machining range versus old machining range of DINE

OLD TYPE



NEW TYPE



| Designation | Boring Range ØD | |
|-------------|-----------------|-----|
| | min | max |
| DBC2528S | 28 | 35 |
| DBC3235S | 35 | 46 |
| DBC4046S | 46 | 58 |
| DBC5058S | 58 | 74 |
| DBC6347S | 74 | 94 |
| DBC8094S | 94 | 120 |

| Designation | Boring Range ØD | |
|--------------|-----------------|-----|
| | min | max |
| DBCA2528S-H | 28 | 38 |
| DBCA3238S-H | 38 | 54 |
| DBCA5054S-H | 54 | 74 |
| DBCA6374S-H | 74 | 100 |
| DBCA80100S-H | 100 | 136 |

Detailed Specifications

| | Designation | Cartridge (Standard) | Step Cartridge | Step Cartridge Bite | |
|--------------|-------------|----------------------|----------------|---------------------|----------|
| | | | | CC Type | WC Type |
| | | | | DBCA2528S-□ | BCC28-EC |
| DBCA3238S-□ | BCC38-EC | BCC38SB | SBB54-CC | SBB54-WC | |
| DBCA5054S-□ | BCC54-EC | BCC54SB | SBB74-CC | SBB74-WC | |
| DBCA6374S-□ | BCC74-EC | BCC74SB | | | |
| DBCA80100S-□ | BCC100-EC | BCC100SB | | | |

Comparison with competitors

| MACHINING CONDITIONS | Vc(m/min) | f(mm/rev) | ap(mm) | MATERIAL | ITEM | DEPTH OF HALL |
|----------------------|-----------|-----------|--------|----------|------------------|---------------|
| | 200 | 0.08 | 2 | S45C | Penetration hall | 30 |

| MANUFACTURER | Insert | GAUGE LINE (HEAD+SHANK) | BORING DIAMETER | L/D | SURFACE ROUGHNESS (RA) | SPECIAL NOTES | MACHINED SURFACE | TOOL TOP | TOOL SIDE |
|--------------|-------------------|-------------------------|-----------------|----------|------------------------|--|------------------|----------|-----------|
| Competitor A | SCMT09T0304 | 164 | Ø35 | 4.68 | 3.82 | Vibration occurred | | | |
| Competitor B | CCMT080204 | 180 | Ø35 | 5.14 | 2.46 | Vibration occurred Chips tangled | | | |
| DINE | CCMT060204 | 175 | Ø35 | 5 | 2.19 | Well-machined surface No chip tangled | | | |



BT-DBC/A (Helical Type)

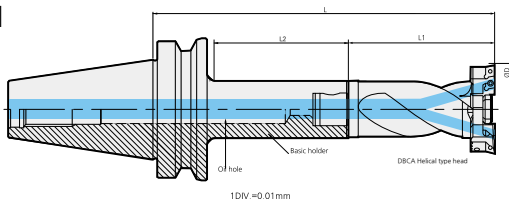
New balance cut tool(Helical Type)



MAS 403-BT
C
28
136
Boring

Shank Coolant System MIN Range MAX Range Boring

Fig.1



Head.1

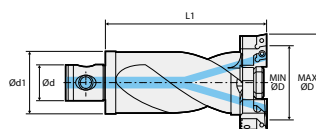
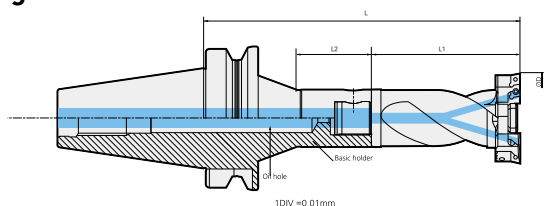


Fig.2



- For more information on the product features, see [144p](#)
- For more information on MD arbor, see [126p](#)
- For more information on the applicable insert, see [159p](#)
- For more information on the related parts, see [158p](#)

C Internal coolant system installed.

※ Red : Main component Blue : For separate purchase

| Model No. | | Boring range(ØD) | | L | L1 | L2 | Ød | Ød1 | fig | kg (Head weight) | kg (Head package weight) | |
|----------------|-----------------|------------------|------|-----|-----|-----|-----|-----|-----|------------------|--------------------------|-----|
| Head model no. | Arbor Model No. | Min. | Max. | | | | | | | | | |
| BT30 | DBCA2528S-H | BT30-MD25F-90 | 28 | 38 | 193 | 103 | 63 | 14 | 25 | 1 | 0.3 | 0.3 |
| | DBCA3238S-H | BT30-MD32F-80 | 38 | 54 | 190 | 110 | 55 | 18 | 32 | 1 | 0.5 | 0.6 |
| | DBCA5054S-H | BT30-MD50F-70 | 54 | 74 | 215 | 145 | 48 | 28 | 50 | 1 | 1.8 | 1.9 |
| BT40 | DBCA2528S-H | BT40-MD25F-95 | 28 | 38 | 198 | 103 | 63 | 14 | 25 | 1 | 0.3 | 0.3 |
| | DBCA2528S-H | BT40-MD25F-105R | 28 | 38 | 208 | 103 | 40 | 14 | 25 | 2 | 0.3 | 0.3 |
| | DBCA3238S-H | BT40-MD32F-100 | 38 | 54 | 210 | 110 | 70 | 18 | 32 | 1 | 0.5 | 0.6 |
| | DBCA3238S-H | BT40-MD32F-115R | 38 | 54 | 225 | 110 | 45 | 18 | 32 | 2 | 0.5 | 0.6 |
| | DBCA5054S-H | BT40-MD50F-105 | 54 | 74 | 250 | 145 | 73 | 28 | 50 | 1 | 1.8 | 1.9 |
| | DBCA6374S-H | BT40-MD63F-64 | 74 | 100 | 244 | 180 | 37 | 36 | 63 | 1 | 3.3 | 3.5 |
| | DBCA6374S-H | BT40-MD63F-110 | 74 | 100 | 290 | 180 | 83 | 36 | 63 | 1 | 3.3 | 3.5 |
| | DBCA6374S-H | BT40-MD63F-135 | 74 | 100 | 315 | 180 | 108 | 36 | 63 | 1 | 3.3 | 3.5 |
| | DBCA80100S-H | BT40-MD80F-100 | 100 | 136 | 315 | 215 | 73 | 45 | 80 | 1 | 7.3 | 7.6 |

• In the above table, the Arbor Model No. is an example model no. and able to adjust the depth of boring with a combination of MD arbors and extension bars. For more details, see the MD arbor page.

- DBCA2528S-H: CCMT0602□□
- DBCA3238S-H: CCMT0602□□
- DBCA5054S-H: CCMT09T3□□
- DBCA6374S-H: CCMT1204□□
- DBCA80100S-H: CCMT1204□□



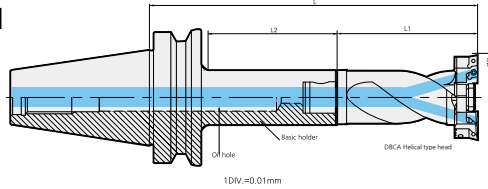
BT-DBC/A (Helical Type)

New balance cut tool(Helical Type)



| | | | | |
|----------------------|----------------|-----------|------------|--------|
| MAS 403-BT | C | 28 | 136 | |
| Shank | Coolant System | MIN Range | MAX Range | Boring |

Fig.1



Head.1

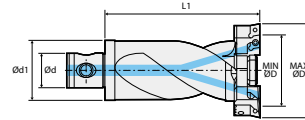
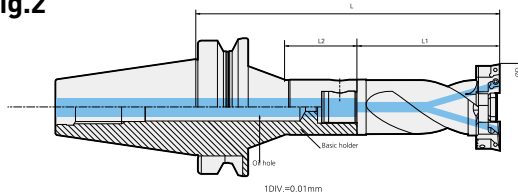


Fig.2



- For more information on the product features, see **144p**
- For more information on MD arbor, see **126p**
- For more information on the applicable insert, see **159p**
- For more information on the related parts, see **158p**

C Internal coolant system installed.

※ Red : Main component Blue : For separate purchase

| | Model No. | | Boring range(ØD) | | L | L1 | L2 | Ød | Ød1 | fig | kg (Head weight) | kg (Head package weight) |
|-------------|----------------|-----------------|------------------|------|-----|-----|-----|----|-----|-----|---------------------|-----------------------------|
| | Head model no. | Arbor Model No. | Min. | Max. | | | | | | | | |
| BT50 | DBCA2528S-H | BT50-MD25F-105 | 28 | 38 | 208 | 103 | 62 | 14 | 25 | 1 | 0.3 | 0.3 |
| | DBCA2528S-H | BT50-MD25F-120R | 28 | 38 | 223 | 103 | 40 | 14 | 25 | 2 | 0.3 | 0.3 |
| | DBCA3238S-H | BT50-MD32F-110 | 38 | 54 | 220 | 110 | 67 | 18 | 32 | 1 | 0.5 | 0.6 |
| | DBCA3238S-H | BT50-MD32F-115R | 38 | 54 | 225 | 110 | 45 | 18 | 32 | 2 | 0.5 | 0.6 |
| | DBCA3238S-H | BT50-MD32F-235R | 38 | 54 | 345 | 110 | 115 | 18 | 32 | 2 | 0.5 | 0.6 |
| | DBCA5054S-H | BT50-MD50F-125 | 54 | 74 | 270 | 145 | 82 | 28 | 50 | 1 | 1.8 | 1.9 |
| | DBCA5054S-H | BT50-MD50F-225 | 54 | 74 | 370 | 145 | 182 | 28 | 50 | 1 | 1.8 | 1.9 |
| | DBCA5054S-H | BT50-MD50F-250R | 54 | 74 | 395 | 145 | 81 | 28 | 50 | 2 | 1.8 | 1.9 |
| | DBCA6374S-H | BT50-MD63F-75 | 74 | 100 | 255 | 180 | 35 | 36 | 63 | 1 | 3.3 | 3.5 |
| | DBCA6374S-H | BT50-MD63F-130 | 74 | 100 | 280 | 180 | 87 | 36 | 63 | 1 | 3.3 | 3.5 |
| | DBCA6374S-H | BT50-MD63F-195 | 74 | 100 | 375 | 180 | 152 | 36 | 63 | 1 | 3.3 | 3.5 |
| | DBCA6374S-H | BT50-MD63F-230 | 74 | 100 | 410 | 180 | 187 | 36 | 63 | 1 | 3.3 | 3.5 |
| | DBCA80100S-H | BT50-MD80F-75 | 100 | 136 | 290 | 215 | 36 | 45 | 80 | 1 | 7.3 | 7.6 |
| | DBCA80100S-H | BT50-MD80F-110 | 100 | 136 | 325 | 215 | 69 | 45 | 80 | 1 | 7.3 | 7.6 |
| | DBCA80100S-H | BT50-MD80F-175 | 100 | 136 | 390 | 215 | 134 | 45 | 80 | 1 | 7.3 | 7.6 |

• In the above table, the Arbor Model No. is an example model no. and able to adjust the depth of boring with a combination of MD arbors and extension bars. For more details, see the MD arbor page.

- DBCA2528S-H: CCMT0602□□
- DBCA3238S-H: CCMT0602□□
- DBCA5054S-H: CCMT09T3□□
- DBCA6374S-H: CCMT1204□□
- DBCA80100S-H: CCMT1204□□



HSK-DBC/A (Helical Type)

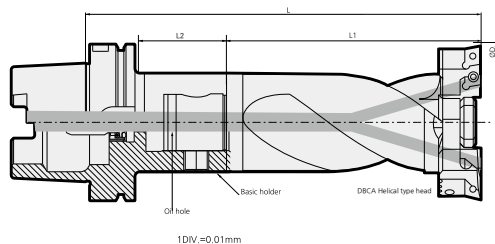
New balance cut tool(Helical Type)



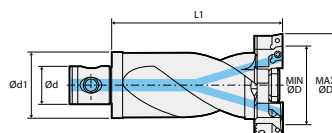
DIN 69893-1
C
38
100
Boring

Shank Coolant System MIN Range MAX Range Boring

Fig.1



Head.1



- For more information on the product features, see [144p](#).
 - For more information on MD arbor, see [126p](#).
- For more information on the applicable insert, see [159p](#).
 - For more information on the related parts, see [158p](#).

C Internal coolant system is optional.

※ Red : Main component Blue : For separate purchase

| HSK63A | Model No. | | Boring range(ØD) | | L | L1 | L2 | Ød | Ød1 | kg (Head weight) | kg (Head package weight) |
|--------|----------------|-----------------|------------------|------|-----|-----|----|----|-----|---------------------|-----------------------------|
| | Head model no. | Arbor Model No. | Min. | Max. | | | | | | | |
| | DBCA2528S-H | HSK63A-MD25F-60 | 38 | 54 | 163 | 103 | 31 | 14 | 25 | 0.3 | 0.3 |
| | DBCA3238S-H | HSK63A-MD32F-65 | 38 | 54 | 175 | 110 | 36 | 18 | 32 | 0.5 | 0.6 |
| | DBCA5054S-H | HSK63A-MD50F-85 | 54 | 74 | 230 | 145 | 58 | 28 | 50 | 1.8 | 1.9 |
| | DBCA6374S-H | HSK63A-MD63F-95 | 74 | 100 | 275 | 180 | 69 | 45 | 80 | 3.3 | 3.5 |

• In the above table, the Arbor Model No. is an example model no. and able to adjust the depth of boring with a combination of MD arbors and extension bars. For more details, see the MD arbor page.

- DBCA2528S-H: CCMT0602□□
- DBCA3238S-H: CCMT0602□□
- DBCA5054S-H: CCMT09T3□□
- DBCA6374S-H: CCMT1204□□
- DBCA80100S-H: CCMT1204□□

For separate purchase

Internal coolant system

| Classification by shank | |
|-------------------------|-------------|
| HSK50 | HSK50A-CNS |
| HSK63 | HSK63A-CNS |
| HSK100 | HSK100A-CNS |



SK-DBC/A (Helical Type)

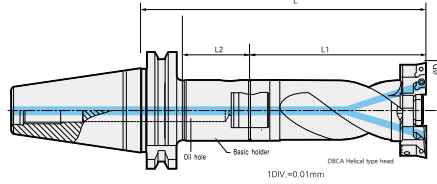
New balance cut tool(Helical Type)



DIN69871
-1A/B
C
Boring
38
136

Shank Coolant System Boring MIN Range MAX Range

Fig.1



Head.1

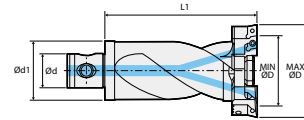


Fig.2

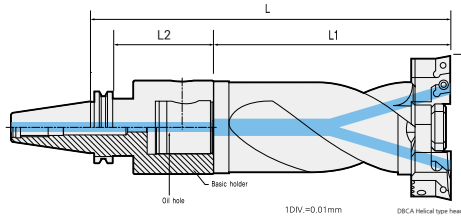
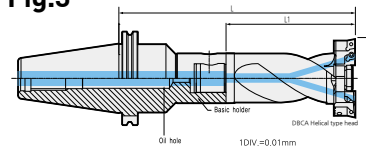


Fig.3



C Internal coolant system installed.

※ Red : Main component Blue : For separate purchase

- For more information on the product features, see **144p**
- For more information on MD arbor, see **126p**
- For more information on the applicable insert, see **159p**
- For more information on the related parts, see **158p**

| Model No. | | Boring range(ØD) | | L | L1 | L2 | Ød | Ød1 | Fig | kg (Head weight) | kg (Head package weight) | |
|----------------|-----------------|------------------|------|-----|-----|-----|-----|-----|-----|---------------------|-----------------------------|-----|
| Head model no. | Arbor Model No. | Min. | Max. | | | | | | | | | |
| SK40 | DBCA2528S-H | SK40-MD25F-80R | 38 | 54 | 183 | 103 | 22 | 14 | 25 | 3 | 0.3 | 0.3 |
| | DBCA3238S-H | SK40-MD32F-115R | 38 | 54 | 225 | 110 | 36 | 18 | 32 | 3 | 0.5 | 0.6 |
| | DBCA5054S-H | SK40-MD50F-75 | 54 | 74 | 220 | 145 | 55 | 28 | 50 | 1 | 1.8 | 1.9 |
| | DBCA5054S-H | SK40-MD50F-100 | 54 | 74 | 145 | 145 | 80 | 28 | 50 | 1 | 1.8 | 1.9 |
| | DBCA6374S-H | SK40-MD63F-70 | 74 | 100 | 250 | 180 | 50 | 36 | 63 | 2 | 3.3 | 3.5 |
| SK50 | DBCA2528S-H | SK50-MD25F-80R | 28 | 38 | 183 | 103 | 22 | 14 | 25 | 3 | 0.3 | 0.3 |
| | DBCA2528S-H | SK50-MD25F-105R | 28 | 38 | 208 | 103 | 22 | 14 | 25 | 3 | 0.3 | 0.3 |
| | DBCA3238S-H | SK50-MD32F-110 | 38 | 54 | 220 | 110 | 87 | 18 | 32 | 1 | 0.5 | 0.6 |
| | DBCA3238S-H | SK50-MD32F-110R | 38 | 54 | 220 | 110 | 36 | 18 | 32 | 3 | 0.5 | 0.6 |
| | DBCA5054S-H | SK50-MD50F-125R | 54 | 74 | 270 | 145 | 60 | 28 | 50 | 3 | 1.8 | 1.9 |
| | DBCA5054S-H | SK50-MD50F-240R | 54 | 74 | 385 | 145 | 125 | 28 | 50 | 3 | 1.8 | 1.9 |
| | DBCA6374S-H | SK50-MD63F-75 | 74 | 100 | 255 | 180 | 52 | 36 | 63 | 1 | 3.3 | 3.5 |
| | DBCA6374S-H | SK50-MD63F-130 | 74 | 100 | 310 | 180 | 107 | 36 | 63 | 1 | 3.3 | 3.5 |
| | DBCA6374S-H | SK50-MD63F-230R | 74 | 100 | 410 | 180 | 149 | 36 | 63 | 3 | 3.3 | 3.5 |
| | DBCA80100S-H | SK50-MD80F-95 | 100 | 136 | 310 | 215 | 75 | 45 | 80 | 1 | 7.3 | 7.6 |
| | DBCA80100S-H | SK50-MD80F-150 | 100 | 136 | 365 | 215 | 130 | 45 | 80 | 1 | 7.3 | 7.6 |

• In the above table, the Arbor Model No. is an example model no. and able to adjust the depth of boring with a combination of MD arbors and extension bars. For more details, see the MD arbor page.

- DBCA2528S-H: CCMT0602□□
- DBCA3238S-H: CCMT0602□□
- DBCA5054S-H: CCMT09T3□□
- DBCA6374S-H: CCMT1204□□
- DBCA80100S-H: CCMT1204□□

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



BT-DBC/A (Straight Type)

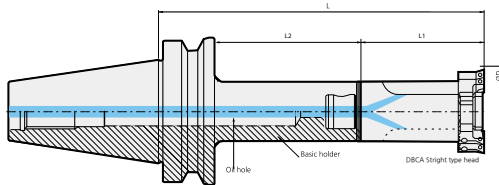
New balance cut tool (straight Type)



MAS 403-BT
C
28
136
Boring

Shank Coolant System MIN Range MAX Range Boring

Fig.1



Head

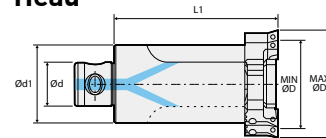
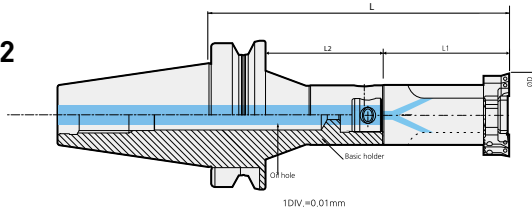


Fig.2



- For more information on the product features, see **144p**
- For more information on MD arbor, see **126p**
- For more information on the applicable insert, see **159p**
- For more information on the related parts, see **158p**

C Internal coolant system installed.

※ Red : Main component Blue : For separate purchase

| | Model No. | | Boring range(ØD) | | L | L1 | L2 | Ød | Ød1 | fig | kg (Head weight) | kg (Head package weight) |
|-------------|----------------|-----------------|------------------|------|-----|-----|-----|----|-----|-----|---------------------|-----------------------------|
| | Head model no. | Arbor Model No. | Min. | Max. | | | | | | | | |
| BT30 | DBCA2528S | BT30-MD25F-90 | 28 | 38 | 193 | 103 | 63 | 14 | 25 | 1 | 0.2 | 0.2 |
| | DBCA3238S | BT30-MD32F-80 | 38 | 54 | 190 | 110 | 55 | 18 | 32 | 1 | 0.4 | 0.4 |
| | DBCA5054S | BT30-MD50F-70 | 54 | 74 | 215 | 145 | 48 | 28 | 50 | 1 | 1.1 | 1.1 |
| BT40 | DBCA2528S | BT40-MD25F-95 | 28 | 38 | 198 | 103 | 63 | 14 | 25 | 1 | 0.2 | 0.2 |
| | DBCA2528S | BT40-MD25F-105R | 28 | 38 | 208 | 103 | 40 | 14 | 25 | 2 | 0.2 | 0.2 |
| | DBCA3238S | BT40-MD32F-100 | 38 | 54 | 210 | 110 | 70 | 18 | 32 | 1 | 0.4 | 0.4 |
| | DBCA3238S | BT40-MD32F-115R | 38 | 54 | 225 | 110 | 45 | 18 | 32 | 2 | 0.4 | 0.4 |
| | DBCA5054S | BT40-MD50F-105 | 54 | 74 | 205 | 145 | 73 | 28 | 50 | 1 | 1.1 | 1.1 |
| | DBCA6374S | BT40-MD63F-64 | 74 | 100 | 244 | 180 | 37 | 36 | 63 | 1 | 1.9 | 2.1 |
| | DBCA6374S | BT40-MD63F-135 | 74 | 100 | 315 | 180 | 83 | 36 | 63 | 1 | 1.9 | 2.1 |
| | DBCA6374S | BT40-MD80F-100 | 74 | 100 | 280 | 180 | 108 | 36 | 63 | 1 | 1.9 | 2.1 |
| | DBCA80100S | BT40-MD80F-100 | 100 | 136 | 315 | 215 | 73 | 45 | 80 | 1 | 3.7 | 3.9 |

• In the above table, the Arbor Model No. is an example model no. and able to adjust the depth of boring with a combination of MD arbors and extension bars. For more details, see the MD arbor page.

- DBCA2528S: CCMT0602□□
- DBCA3238S: CCMT0602□□
- DBCA5054S: CCMT09T3□□
- DBCA6374S: CCMT1204□□
- DBCA80100S: CCMT1204□□



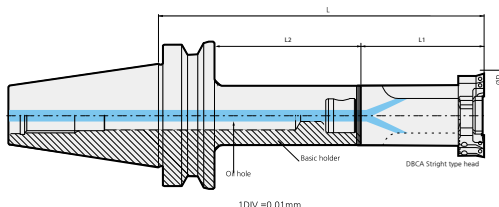
BT-DBC/A (Straight Type)

New balance cut tool(straight Type)



MAS 403-BT
C
28
136
Boring

Fig.1



Head

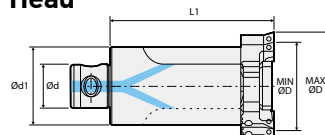
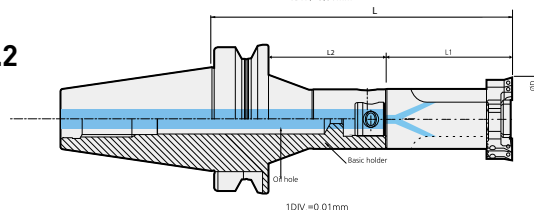


Fig.2



- For more information on the product features, see [144p](#)
- For more information on MD arbor, see [126p](#)
- For more information on the applicable insert, see [159p](#)
- For more information on the related parts, see [158p](#)

C Internal coolant system installed.

※ Red : Main component Blue : For separate purchase

| | Model No. | | Boring range(ØD) | | L | L1 | L2 | Ød | Ød1 | fig | kg (Head weight) | kg (Head package weight) |
|-------------|----------------|-----------------|------------------|------|-----|-----|-----|----|-----|-----|---------------------|-----------------------------|
| | Head model no. | Arbor Model No. | Min. | Max. | | | | | | | | |
| BT50 | DBCA2528S | BT50-MD25F-105 | 28 | 38 | 208 | 103 | 62 | 14 | 25 | 1 | 0.2 | 0.2 |
| | DBCA2528S | BT50-MD25F-120R | 28 | 38 | 223 | 103 | 40 | 14 | 25 | 2 | 0.2 | 0.2 |
| | DBCA3238S | BT50-MD32F-110 | 38 | 54 | 220 | 110 | 67 | 18 | 32 | 1 | 0.4 | 0.4 |
| | DBCA3238S | BT50-MD32F-115R | 38 | 54 | 225 | 110 | 45 | 18 | 32 | 2 | 0.4 | 0.4 |
| | DBCA3238S | BT50-MD32F-235R | 38 | 54 | 345 | 110 | 115 | 18 | 32 | 2 | 0.4 | 0.4 |
| | DBCA5054S | BT50-MD50F-125 | 54 | 74 | 270 | 145 | 82 | 28 | 50 | 1 | 1.1 | 1.1 |
| | DBCA5054S | BT50-MD50F-225 | 54 | 74 | 370 | 145 | 182 | 28 | 50 | 1 | 1.1 | 1.1 |
| | DBCA5054S | BT50-MD50F-250R | 54 | 74 | 395 | 145 | 81 | 28 | 50 | 2 | 1.1 | 1.1 |
| | DBCA6374S | BT50-MD63F-75 | 74 | 100 | 255 | 180 | 35 | 36 | 63 | 1 | 1.9 | 2.1 |
| | DBCA6374S | BT50-MD63F-130 | 74 | 100 | 310 | 180 | 87 | 36 | 63 | 1 | 1.9 | 2.1 |
| | DBCA6374S | BT50-MD63F-195 | 74 | 100 | 375 | 180 | 152 | 36 | 63 | 1 | 1.9 | 2.1 |
| | DBCA6374S | BT50-MD63F-230 | 74 | 100 | 410 | 180 | 187 | 36 | 63 | 1 | 1.9 | 2.1 |
| | DBCA80100S | BT50-MD80F-75 | 100 | 136 | 290 | 215 | 36 | 45 | 80 | 1 | 3.7 | 3.9 |
| | DBCA80100S | BT50-MD80F-110 | 100 | 136 | 325 | 215 | 69 | 45 | 80 | 1 | 3.7 | 3.9 |
| DBCA80100S | BT50-MD80F-175 | 100 | 136 | 390 | 215 | 134 | 45 | 80 | 1 | 3.7 | 3.9 | |

• In the above table, the Arbor Model No. is an example model no. and able to adjust the depth of boring with a combination of MD arbors and extension bars. For more details, see the MD arbor page.

- DBCA2528S: CCMT0602□□
- DBCA3238S: CCMT0602□□
- DBCA5054S: CCMT09T3□□
- DBCA6374S: CCMT1204□□
- DBCA80100S: CCMT1204□□



HSK-DBC/A (Straight Type)

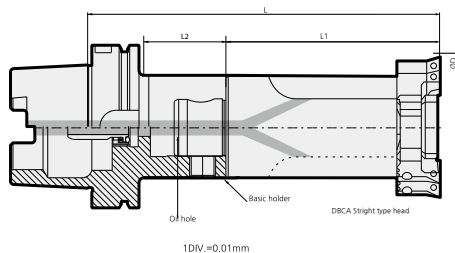
New balance cut tool (straight Type)



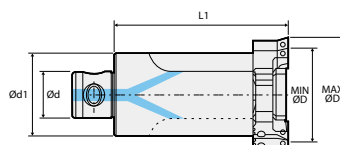
DIN 69893-1
C
38
100

Shank Coolant System MIN Range MAX Range Boring

Fig.1



Head.1



- For more information on the product features, see **144p**.
- For more information on MD arbor, see **126p**.
- For more information on the applicable insert, see **159p**.
- For more information on the related parts, see **158p**.

C Internal coolant system is optional.

※ **Red** : Main component **Blue** : For separate purchase

| | Model No. | | Boring range(ØD) | | L | L1 | L2 | Ød | Ød1 | kg (Head weight) | kg (Head package weight) |
|---------------|------------------|------------------------|------------------|------|-------|-------|----|----|-----|---------------------|-----------------------------|
| | Head model no. | Arbor Model No. | Min. | Max. | | | | | | | |
| HSK63A | DBCA2528S | HSK63A-MD25F-60 | 38 | 54 | 122 | 62 | 31 | 14 | 25 | 0.3 | 0.3 |
| | DBCA3238S | HSK63A-MD32F-65 | 38 | 54 | 134.5 | 69.5 | 36 | 18 | 32 | 0.5 | 0.6 |
| | DBCA5054S | HSK63A-MD50F-85 | 54 | 74 | 179 | 94 | 58 | 28 | 50 | 1.8 | 1.9 |
| | DBCA6374S | HSK63A-MD63F-95 | 74 | 100 | 206.5 | 106.5 | 69 | 45 | 80 | 3.3 | 3.5 |

• In the above table, the Arbor Model No. is an example model no. and able to adjust the depth of boring with a combination of MD arbors and extension bars. For more details, see the MD arbor page.

- DBCA2528S: CCMT0602□□
- DBCA3238S: CCMT0602□□
- DBCA5054S: CCMT09T3□□
- DBCA6374S: CCMT1204□□
- DBCA80100S: CCMT1204□□

For separate purchase

Internal coolant system



| Classification by shank | |
|-------------------------|-------------|
| HSK50 | HSK50A-CNS |
| HSK63 | HSK63A-CNS |
| HSK100 | HSK100A-CNS |



SK-DBC/A (Straight Type)

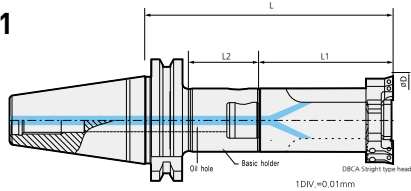
New balance cut tool(straight Type)



DIN69871
-1A/B
C
38
136

Shank Coolant System MIN Range MAX Range Boring

Fig.1



Head

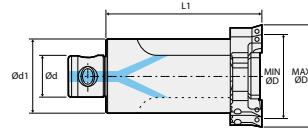


Fig.2

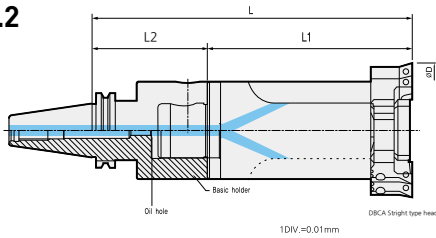
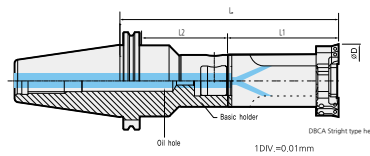


Fig.3



C Internal coolant system installed.

※ Red : Main component Blue : For separate purchase

- For more information on the product features, see 144p
- For more information on MD arbor, see 126p
- For more information on the applicable insert, see 159p
- For more information on the related parts, see 158p

| | Model No. | | Boring range(ØD) | | L | L1 | L2 | Ød | Ød1 | Fig | kg (Head weight) | kg (Head package weight) |
|-------------|----------------|-----------------|------------------|------|-----|-----|-----|----|-----|-----|---------------------|-----------------------------|
| | Head model no. | Arbor Model No. | Min. | Max. | | | | | | | | |
| SK40 | DBCA2528S | SK40-MD25F-80R | 38 | 54 | 183 | 103 | 22 | 14 | 25 | 3 | 0.3 | 0.3 |
| | DBCA3238S | SK40-MD32F-115R | 38 | 54 | 225 | 110 | 36 | 18 | 32 | 3 | 0.5 | 0.6 |
| | DBCA5054S | SK40-MD50F-75 | 54 | 74 | 220 | 145 | 55 | 28 | 50 | 1 | 1.8 | 1.9 |
| | DBCA5054S | SK40-MD50F-100 | 54 | 74 | 245 | 145 | 80 | 28 | 50 | 1 | 1.8 | 1.9 |
| | DBCA6374S | SK40-MD63F-70 | 74 | 100 | 250 | 180 | 50 | 36 | 63 | 2 | 3.3 | 3.5 |
| SK50 | DBCA2528S | SK50-MD25F-80R | 28 | 38 | 183 | 103 | 22 | 14 | 25 | 3 | 0.3 | 0.3 |
| | DBCA2528S | SK50-MD25F-105R | 28 | 38 | 208 | 103 | 22 | 14 | 25 | 3 | 0.3 | 0.3 |
| | DBCA3238S | SK50-MD32F-110 | 38 | 54 | 220 | 110 | 87 | 18 | 32 | 1 | 0.5 | 0.6 |
| | DBCA3238S | SK50-MD32F-110R | 38 | 54 | 220 | 110 | 36 | 18 | 32 | 3 | 0.5 | 0.6 |
| | DBCA5054S | SK50-MD50F-125R | 54 | 74 | 270 | 145 | 60 | 28 | 50 | 3 | 1.1 | 1.1 |
| | DBCA5054S | SK50-MD50F-240R | 54 | 74 | 385 | 145 | 125 | 28 | 50 | 3 | 1.1 | 1.1 |
| | DBCA6374S | SK50-MD63F-75 | 74 | 100 | 255 | 180 | 52 | 36 | 63 | 1 | 3.3 | 3.5 |
| | DBCA6374S | SK50-MD63F-130 | 74 | 100 | 310 | 180 | 107 | 36 | 63 | 1 | 3.3 | 3.5 |
| | DBCA6374S | SK50-MD63F-230R | 74 | 100 | 410 | 180 | 149 | 36 | 63 | 3 | 3.3 | 3.5 |
| | DBCA80100S | SK50-MD80F-95 | 100 | 136 | 310 | 215 | 75 | 45 | 80 | 1 | 7.3 | 7.6 |
| DBCA80100S | SK50-MD80F-150 | 100 | 136 | 365 | 215 | 130 | 45 | 80 | 1 | 7.3 | 7.6 | |

• In the above table, the Arbor Model No. is an example model no. and able to adjust the depth of boring with a combination of MD arbors and extension bars. For more details, see the MD arbor page.

- DBCA2528S: CCMT0602□□
- DBCA3238S: CCMT0602□□
- DBCA5054S: CCMT09T3□□
- DBCA6374S: CCMT1204□□
- DBCA80100S: CCMT1204□□



BT-DBC

Balance cut tool(Rough Boring)



MAS 403-BT C 28 120 Boring

Shank Coolant System MIN Range MAX Range Boring

Fig.1

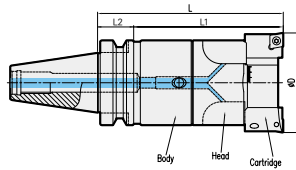
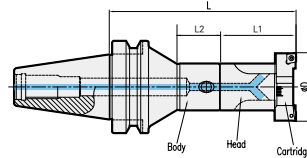
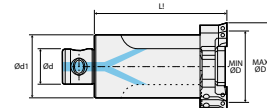


Fig.2



Head



C Internal coolant system installed.

※ Red : Main component Blue : For separate purchase

- For more information on MD arbor, see **126p**.
- For more information on the applicable insert, see **159p**.
- For more information on the related parts, see **158p**.

| Model No. | | Boring range(ØD) | | L | L1 | L2 | Ød | Ød1 | fig | kg (Head weight) | kg (Head package weight) | |
|----------------|-----------------|------------------|------|-----|-----|-----|-----|-----|-----|---------------------|-----------------------------|-----|
| Head model no. | Arbor Model No. | Min. | Max. | | | | | | | | | |
| BT30 | DBC2528S | BT30-MD25F-90 | 28 | 35 | 150 | 60 | 63 | 14 | 25 | 1 | 0.3 | 0.3 |
| | DBC3235S | BT30-MD32F-80 | 35 | 46 | 145 | 65 | 55 | 18 | 32 | 1 | 0.4 | 0.4 |
| | DBC4046S | BT30-MD40F-45 | 46 | 58 | 115 | 70 | 22 | 22 | 40 | 1 | 0.6 | 0.7 |
| | DBC4046S | BT30-MD40F-60 | 46 | 58 | 130 | 70 | 36 | 22 | 40 | 1 | 0.6 | 0.7 |
| | DBC4046S | BT30-MD40F-80 | 46 | 58 | 140 | 70 | 56 | 22 | 40 | 1 | 0.6 | 0.7 |
| | DBC5058S | BT30-MD50F-70 | 58 | 74 | 150 | 80 | 48 | 28 | 50 | 1 | 1.1 | 1.2 |
| BT40 | DBC2528S | BT40-MD25F-95 | 28 | 35 | 155 | 60 | 63 | 14 | 25 | 1 | 0.3 | 0.3 |
| | DBC2528S | BT40-MD25F-105R | 28 | 35 | 165 | 60 | 40 | 14 | 25 | 2 | 0.3 | 0.3 |
| | DBC3235S | BT40-MD32F-100 | 35 | 46 | 165 | 65 | 70 | 18 | 32 | 1 | 0.4 | 0.4 |
| | DBC3235S | BT40-MD32F-115R | 35 | 46 | 180 | 65 | 45 | 18 | 32 | 2 | 0.4 | 0.4 |
| | DBC4046S | BT40-MD40F-60 | 46 | 58 | 130 | 70 | 31 | 22 | 40 | 1 | 0.6 | 0.7 |
| | DBC4046S | BT40-MD40F-110R | 46 | 58 | 180 | 70 | 60 | 22 | 40 | 2 | 0.6 | 0.7 |
| | DBC4046S | BT40-MD40F-115 | 46 | 58 | 185 | 70 | 83 | 22 | 40 | 1 | 0.6 | 0.7 |
| | DBC5058S | BT40-MD50F-105 | 58 | 74 | 185 | 80 | 73 | 28 | 50 | 1 | 1.1 | 1.2 |
| | DBC6374S | BT40-MD63F-64 | 74 | 94 | 154 | 90 | 37 | 36 | 63 | 1 | 2.0 | 2.2 |
| | DBC6374S | BT40-MD63F-110 | 74 | 94 | 200 | 90 | 83 | 36 | 63 | 1 | 2.0 | 2.2 |
| | DBC6374S | BT40-MD63F-135 | 74 | 94 | 225 | 90 | 108 | 36 | 63 | 1 | 2.0 | 2.2 |
| | DBC8094S | BT40-MD80F-100 | 94 | 120 | 200 | 100 | 73 | 45 | 80 | 1 | 3.5 | 3.7 |

• In the above table, the Arbor Model No. is an example model no. and able to adjust the depth of boring with a combination of MD arbors and extension bars. For more details, see the MD arbor page.

- DBC2528S : CCMT0602□□
- DBC3235S : CCMT0602□□
- DBC4046S : CCMT09T3□□
- DBC5058S : CCMT09T3□□
- DBC6374S : CCMT1204□□
- DBC8094S : CCMT1204□□



BT-DBC

Balance cut tool(Rough Boring)



MAS 403-BT C 28 175 Boring

Shank Coolant System MIN Range MAX Range Boring

Fig.1

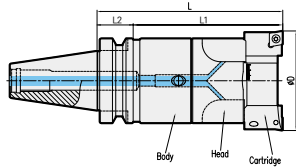
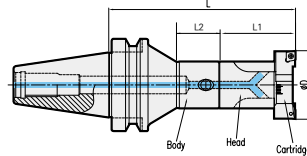
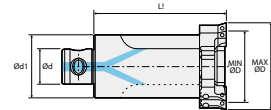


Fig.2



Head



C Internal coolant system installed.

※ Red : Main component Blue : For separate purchase

- For more information on MD arbor, see **126p**
- For more information on the applicable insert, see **159p**
- For more information on the related parts, see **158p**

| | Model No. | | Boring range(ØD) | | L | L1 | L2 | Ød | Ød1 | fig | kg (Head weight) | kg (Head package weight) |
|----------|----------------|-----------------|------------------|------|-----|-----|-----|----|-----|-----|---------------------|-----------------------------|
| | Head model no. | Arbor Model No. | Min. | Max. | | | | | | | | |
| BT50 | DBC2528S | BT50-MD25F-105 | 28 | 35 | 165 | 60 | 62 | 14 | 25 | 1 | 0.3 | 0.3 |
| | DBC2528S | BT50-MD25F-120R | 28 | 35 | 185 | 60 | 40 | 14 | 25 | 2 | 0.3 | 0.3 |
| | DBC3235S | BT50-MD32F-110 | 35 | 46 | 175 | 65 | 67 | 18 | 32 | 1 | 0.4 | 0.4 |
| | DBC3235S | BT50-MD32F-115R | 35 | 46 | 180 | 65 | 45 | 18 | 32 | 2 | 0.4 | 0.4 |
| | DBC3235S | BT50-MD32F-235R | 35 | 46 | 300 | 65 | 115 | 18 | 32 | 2 | 0.4 | 0.4 |
| | DBC4046S | BT50-MD40F-60 | 46 | 58 | 130 | 70 | 22 | 22 | 40 | 1 | 0.6 | 0.7 |
| | DBC4046S | BT50-MD40F-195 | 46 | 58 | 265 | 70 | 152 | 22 | 40 | 1 | 0.6 | 0.7 |
| | DBC4046S | BT50-MD40F-230R | 46 | 58 | 300 | 70 | 180 | 22 | 40 | 2 | 0.6 | 0.7 |
| | DBC5058S | BT50-MD50F-125 | 58 | 74 | 205 | 80 | 82 | 28 | 50 | 1 | 1.1 | 1.2 |
| | DBC5058S | BT50-MD50F-225 | 58 | 74 | 305 | 80 | 182 | 28 | 50 | 1 | 1.1 | 1.2 |
| | DBC5058S | BT50-MD50F-250R | 58 | 74 | 330 | 80 | 81 | 28 | 50 | 2 | 1.1 | 1.2 |
| | DBC6374S | BT50-MD63F-75 | 74 | 94 | 165 | 90 | 35 | 36 | 63 | 1 | 2.0 | 2.2 |
| | DBC6374S | BT50-MD63F-130 | 74 | 94 | 220 | 90 | 87 | 36 | 63 | 1 | 2.0 | 2.2 |
| | DBC6374S | BT50-MD63F-195 | 74 | 94 | 285 | 90 | 152 | 36 | 63 | 1 | 2.0 | 2.2 |
| | DBC6374S | BT50-MD63F-230 | 74 | 94 | 320 | 90 | 187 | 36 | 80 | 1 | 2.0 | 2.2 |
| | DBC8094S | BT50-MD80F-75 | 94 | 120 | 175 | 100 | 36 | 36 | 80 | 1 | 3.5 | 3.7 |
| DBC8094S | BT50-MD80F-110 | 94 | 120 | 210 | 100 | 69 | 45 | 80 | 1 | 3.5 | 3.7 | |
| DBC8094S | BT50-MD80F-175 | 94 | 120 | 275 | 100 | 134 | 45 | 80 | 1 | 3.5 | 3.7 | |
| DBC120S | BT50-MD80F-175 | 120 | 175 | 275 | 100 | 134 | 45 | 80 | 1 | 4.1 | 4.4 | |

• In the above table, the Arbor Model No. is an example model no. and able to adjust the depth of boring with a combination of MD arbors and extension bars. For more details, see the MD arbor page.

- DBC2528S : CCMT0602□□
- DBC3235S : CCMT0602□□
- DBC4046S : CCMT09T3□□
- DBC5058S : CCMT09T3□□
- DBC6374S : CCMT1204□□
- DBC8094S : CCMT1204□□



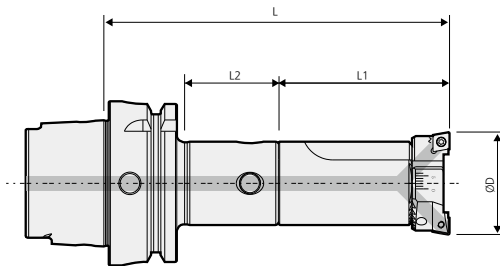
HSK-DBC

Balance cut tool (Modular type)

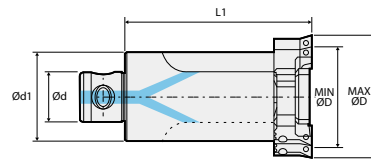


| | | | | |
|-------------|----------------|-----------|-----------|--------|
| DIN 69893-1 | C | 28 | 94 | |
| Shank | Coolant System | MIN Range | MAX Range | Boring |

Fig.1



Head.1



C Internal coolant system is optional.

※ Red : Main component Blue : For separate purchase

- For more information on MD arbor, see **126p**.
- For more information on the applicable insert, see **159p**.
- For more information on the related parts, see **158p**.

| Model No. | Boring range(ØD) | | L | L1 | L2 | Ød | Ød1 | kg (Head weight) | kg (Head package weight) | | |
|-----------|------------------|-----------------|----|----|-----|----|-----|------------------|--------------------------|------|------|
| | Head model no. | Arbor Model No. | | | | | | | | Min. | Max. |
| HSK63A | DBC2528S | HSK63A-MD25F-60 | 28 | 35 | 120 | 60 | 31 | 14 | 25 | 0.3 | 0.3 |
| | DBC3235S | HSK63A-MD32F-65 | 35 | 46 | 130 | 65 | 36 | 18 | 32 | 0.4 | 0.4 |
| | DBC4046S | HSK63A-MD40F-70 | 46 | 58 | 140 | 70 | 41 | 22 | 40 | 0.6 | 0.7 |
| | DBC5058S | HSK63A-MD50F-85 | 58 | 74 | 165 | 80 | 58 | 28 | 50 | 1.1 | 1.2 |
| | DBC6374S | HSK63A-MD63F-95 | 74 | 94 | 185 | 90 | 69 | 36 | 63 | 2.0 | 2.2 |

• In the above table, the Arbor Model No. is an example model no. and able to adjust the depth of boring with a combination of MD arbors and extension bars. For more details, see the MD arbor page.

- DBC2528S : CCMT0602□□
- DBC3235S : CCMT0602□□
- DBC4046S : CCMT09T3□□
- DBC5058S : CCMT09T3□□
- DBC6374S : CCMT1204□□
- DBC8094S : CCMT1204□□

For separate purchase

| | |
|-------------------------|--|
| Internal coolant system | |
|-------------------------|--|

| Classification by shank | |
|-------------------------|-------------|
| HSK50 | HSK50A-CNS |
| HSK63 | HSK63A-CNS |
| HSK100 | HSK100A-CNS |



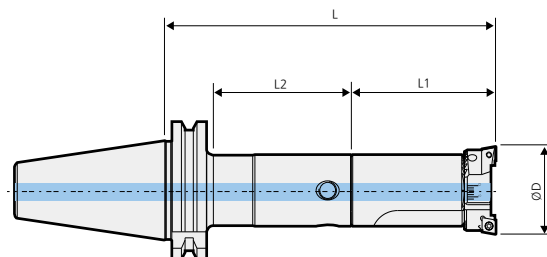
SK-DBC

Balance cut tool (Modular type)

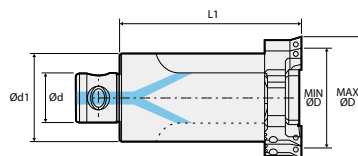
DIN69871
-1A/B
C
28
94

Shank Coolant System MIN Range MAX Range Boring

Fig.1



Head.1



C Internal coolant system installed.

※ Red : Main component Blue : For separate purchase

- For more information on MD arbor, see [126p](#)
- For more information on the applicable insert, see [159p](#)
- For more information on the related parts, see [158p](#)

| | Model No. | | Boring range(ØD) | | L | L1 | L2 | Ød | Ød1 | Fig | kg (Head weight) | kg (Head package weight) |
|------|----------------|-----------------|------------------|------|-----|-----|-----|----|-----|-----|---------------------|-----------------------------|
| | Head model no. | Arbor Model No. | Min. | Max. | | | | | | | | |
| SK40 | DBC2528S | SK40-MD25F-80R | 28 | 35 | 140 | 60 | 22 | 14 | 25 | 2 | 0.3 | 0.3 |
| | DBC3235S | SK40-MD32F-115R | 35 | 46 | 180 | 65 | 36 | 18 | 32 | 2 | 0.4 | 0.4 |
| | DBC4046S | SK40-MD50F-75 | 46 | 58 | 145 | 70 | 55 | 28 | 50 | 1 | 0.6 | 0.7 |
| | DBC5058S | SK40-MD50F-100 | 58 | 74 | 180 | 80 | 80 | 28 | 50 | 1 | 1.1 | 1.2 |
| | DBC6374S | SK40-MD63F-70 | 74 | 94 | 160 | 90 | 70 | 36 | 63 | 1 | 2.0 | 2.2 |
| SK50 | DBC2528S | BT50-MD25F-80R | 28 | 35 | 140 | 60 | 22 | 14 | 25 | 2 | 0.3 | 0.3 |
| | DBC2528S | BT50-MD25F-105R | 28 | 35 | 165 | 60 | 22 | 14 | 25 | 2 | 0.3 | 0.3 |
| | DBC3235S | BT50-MD32F-110 | 35 | 46 | 175 | 65 | 87 | 18 | 32 | 1 | 0.4 | 0.4 |
| | DBC3235S | BT50-MD32F-110R | 35 | 46 | 175 | 65 | 36 | 18 | 32 | 2 | 0.4 | 0.4 |
| | DBC4046S | SK50-MD40F-100 | 46 | 58 | 170 | 70 | 75 | 22 | 40 | 1 | 0.6 | 0.7 |
| | DBC4046S | SK50-MD40F-145 | 46 | 58 | 215 | 70 | 120 | 22 | 40 | 1 | 0.6 | 0.7 |
| | DBC4046S | SK50-MD40F-220R | 46 | 58 | 290 | 70 | 83 | 22 | 40 | 2 | 0.6 | 0.7 |
| | DBC5054S | BT50-MD50F-125R | 58 | 74 | 205 | 80 | 60 | 28 | 50 | 2 | 1.1 | 1.2 |
| | DBC5054S | BT50-MD50F-240R | 58 | 74 | 320 | 80 | 125 | 28 | 50 | 2 | 1.1 | 1.2 |
| | DBC6374S | BT50-MD63F-75 | 74 | 94 | 165 | 90 | 52 | 36 | 63 | 1 | 2.0 | 2.2 |
| | DBC6374S | BT50-MD63F-130 | 74 | 94 | 220 | 90 | 107 | 36 | 63 | 1 | 2.0 | 2.2 |
| | DBC6374S | BT50-MD63F-230R | 74 | 94 | 320 | 90 | 149 | 36 | 63 | 2 | 2.0 | 2.2 |
| | DBC8094S | BT50-MD80F-95 | 94 | 120 | 195 | 100 | 75 | 45 | 80 | 1 | 3.5 | 3.7 |
| | DBC8094S | BT50-MD80F-150 | 94 | 120 | 250 | 100 | 130 | 45 | 80 | 1 | 3.5 | 3.7 |
| | DBC120S | BT50-MD80F-150 | 120 | 175 | 250 | 100 | 95 | 45 | 80 | 1 | 4.1 | 4.4 |

• In the above table, the Arbor Model No. is an example model no. and able to adjust the depth of boring with a combination of MD arbors and extension bars. For more details, see the MD arbor page.

- DBC2528S : CCMT0602□□
- DBC3235S : CCMT0602□□
- DBC4046S : CCMT09T3□□
- DBC5058S : CCMT09T3□□
- DBC6374S : CCMT1204□□
- DBC8094S : CCMT1204□□



DBCA/DBC SPARE PART

Balance cut tool related parts



Main components

DBCA

Spare Part

| TYPE | Main components | | | | | | | | |
|------------|-----------------|------------|-------------|--------|-----------|-----------|--------|-------------|-------------|
| | Head | Spring pin | Wrench bolt | Wrench | Cartridge | Set screw | Wrench | Clamp screw | Torx wrench |
| Head Set | | | | | | | | | |
| DBCA2528S | DBCA2528 | SP0308 | BX0420 | LW-3 | BCC28-EC | BT0308 | LW-1.5 | BFTX02506N | TRX8 |
| DBCA3238S | DBCA3238 | SP0410 | BX0525 | LW-4 | BCC38-EC | BT0310 | LW-1.5 | BFTX02506M | TRX8 |
| DBCA5054S | DBCA5054 | SP0616 | BX0630 | LW-5 | BCC54-EC | BT0414 | LW-2 | BFTX0407N | TRX15 |
| DBCA6374S | DBCA6374 | SP0818 | BX0635 | LW-5 | BCC74-EC | BT0520 | LW-2.5 | BFTX0511N | TRX20 |
| DBCA80100S | DBCA80100 | SP1020 | BX0840 | LW-6 | BCC100-EC | BT0625 | LW-3 | BFTX0511N | TRX20 |

DBC

Spare Part






| TYPE | Main components | | | | | | | | |
|----------|-----------------|------------|-------------|--------|-----------|-----------|--------|-------------|-------------|
| | Head | Spring pin | Wrench bolt | Wrench | Cartridge | Set screw | Wrench | Clamp screw | Torx wrench |
| Head Set | | | | | | | | | |
| DBC2528S | DBC2528 | SP0308 | BX0416 | LW-3 | BCC28 | BT0306 | LW-1.5 | FTKA02565 | TRX7 |
| DBC3235S | DBC3235 | SP0410 | BX0516 | LW-4 | BCC35 | BT0308 | LW-1.5 | FTKA02565 | TRX7 |
| DBC4046S | DBC4046 | SP0516 | BX0620 | LW-5 | BCC46 | BT0408 | LW-2 | FTNA0408 | TRX15 |
| DBC5058S | DBC5058 | SP0616 | BX0620 | LW-5 | BCC58 | BT0412 | LW-2 | FTNA0408 | TRX15 |
| DBC6374S | DBC6374 | SP0818 | 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 | BCC120 | BT0830 | LW-4 | BFTX0511N | TRX20 |



DBCA/DBC SPARE PART

Balance cut tool related parts

For separate purchase

| Insert Part | | GRADE | Workpiece | CUTTING | Maker |
|---|-------------------------|-------------------------------|---------------------|---------------|---------------------|
|  CCMT0602□□ | Coated : AC8010P | Steel, Alloy Steel, Cast iron | general | SEI(SUMITOMO) | |
| | Coated : AC8025P | Steel, Alloy Steel | | | |
| | Coated : AC6030M | Stainless Steel | | | |
| | Cermet : T1500A | Steel, Cast iron | finishing ~ general | | |
| | Coated : NC3015, NC3020 | Steel, Alloy Steel | general | | KORLOY |
| | Coated : NC315K | Cast iron | | | |
| Coated : PC9030 | Stainless Steel | | | | |
|  CCGT0602□□ | Coated : AC5025S | Stainless Steel | general | SEI(SUMITOMO) | |
| | Cermet : T1500A, T3000Z | Steel, Cast iron | finishing ~ general | | |
| | Coated : NC3020 | Steel, Alloy Steel | general | KORLOY | |
| | W.C : H01 | Aluminium | finishing ~ general | | |
|  CCMT09T3□□ | Coated : AC8015P | Steel, Alloy Steel, Cast iron | general | SEI(SUMITOMO) | |
| | Coated : AC8025P | Steel, Alloy Steel | | | |
| | Coated : AC4015K | Cast iron | | | |
| | Coated : AC6030M | Stainless Steel | finishing ~ general | | |
| | Cermet : T1500A | Steel, Cast iron | | | |
| | Coated : NC3015, NC3020 | Steel, Alloy Steel | | | |
| | Coated : NC315K | Cast iron | | | general |
| Coated : PC9030 | Stainless Steel | | | | |
|  CCGT09T3□□ | Coated : AC5015S | Stainless Steel | general | SEI(SUMITOMO) | |
| | Cermet : T1500A | Steel, Cast iron | finishing ~ general | | |
| | W.C : H01 | Aluminium | general | KORLOY | |
| | Coated : PC9030 | Stainless Steel | | | |
| | W.C : H01 | Aluminium | | | finishing ~ general |
|  CCMT1204□□ | Coated : AC8025P | Steel, Alloy Steel | general | | SEI(SUMITOMO) |
| | Cermet : T1500A | Steel, Cast iron | finishing ~ general | | |
| | Coated : NC3015, NC3020 | Steel, Alloy Steel | general | KORLOY | |
| | Coated : NC315K | Cast iron | | | |
| Coated : PC9030 | Stainless Steel | | | | |
| CCGT1204□□ | W.C : H01 | Aluminium | finishing ~ general | | |

- There are a range of grades and chip breakers to choose from according to usage.
- The cartridge for CNMG1204□□ is different from the cartridge for CCMT1204□□ in terms of Model No.



TBCA NEW

Wide Diameter Boring system



| | | | | |
|----------------|----------|-----------|-----------|--------|
| C | AL | 0 | 631 | |
| Coolant System | Material | MIN Range | MAX Range | Boring |



Features

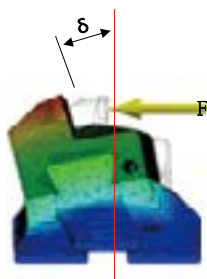
- Convenience in use simultaneously (available both inside and outside)
- Broad boring diameter and range
- Rough / Finishing boring with replaceable cartridge and common rail
- Boring range for outer diameter: Ø0~Ø395
- Boring range for inner diameter: Ø130~Ø631

| NAMING | BODY | | | HEAD SET | | |
|--------|---------|----------------|--------|------------------|----------------------|---------|
| | BT50 | FMC40 | 85 | TBC | 130 | A |
| | Spindle | Facemill arbor | length | Balance cut tool | Minimum Boring Range | Advance |

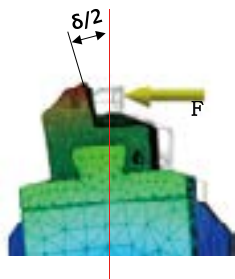
Main Features

Reinforced rigidity

- 50% less moment strain (versus the conventional product of DINE)



TBC460 (old type)



TBC460A (new type)

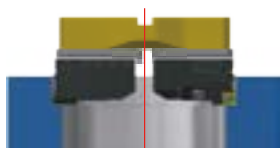
Lightweight design (HEADSET)

- BCC(Cartridge)+DBR(Bridge)+DBB(Rail)

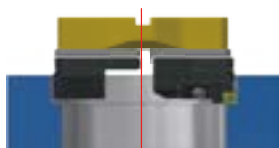


| | | | |
|---------|---------|---------|---------|
| TBC130A | TBC175A | TBC220A | TBC265A |
| 4.2Kg | 5.6Kg | 6.6Kg | 7.5Kg |
| TBC310A | TBC385A | TBC460A | TBC535A |
| 9.5Kg | 11.6Kg | 14Kg | 16Kg |

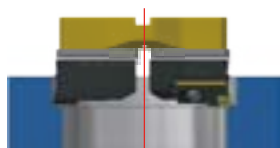
APPLICATION



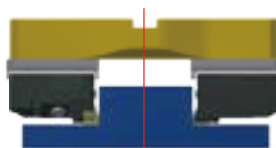
Twin edge boring



Single edge boring



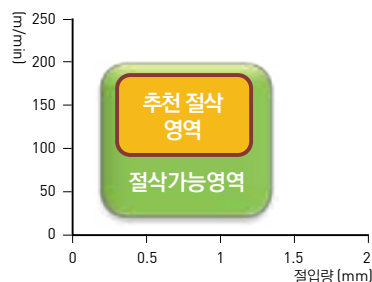
Step boring



Outside boring

Performance test

| Product | Workpiece | | Boring diameter (Depth of cutting) | Results |
|---|--------------|-----------|------------------------------------|--|
| | Product name | Material | mm | Machining |
| Conventional tool of DINE | Housing | Cast iron | Ø465 (Rd=7) | <ul style="list-style-type: none"> · Vibration occurred · Insert damaged in the machining process · Scratched surface of workpieces |
| TBC460A Applicable insert CNMG19 | Housing | QT400 | Ø508~527 (Rd=10) | <ul style="list-style-type: none"> · No chattering · No vibration found · Goal of accuracy achieved · Normal chip discharged |





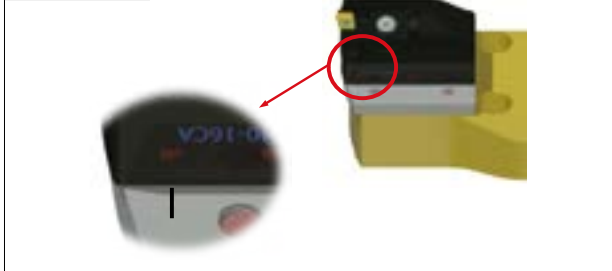
TBCA NEW

Wide Diameter Boring system



Convenience

Inner boring

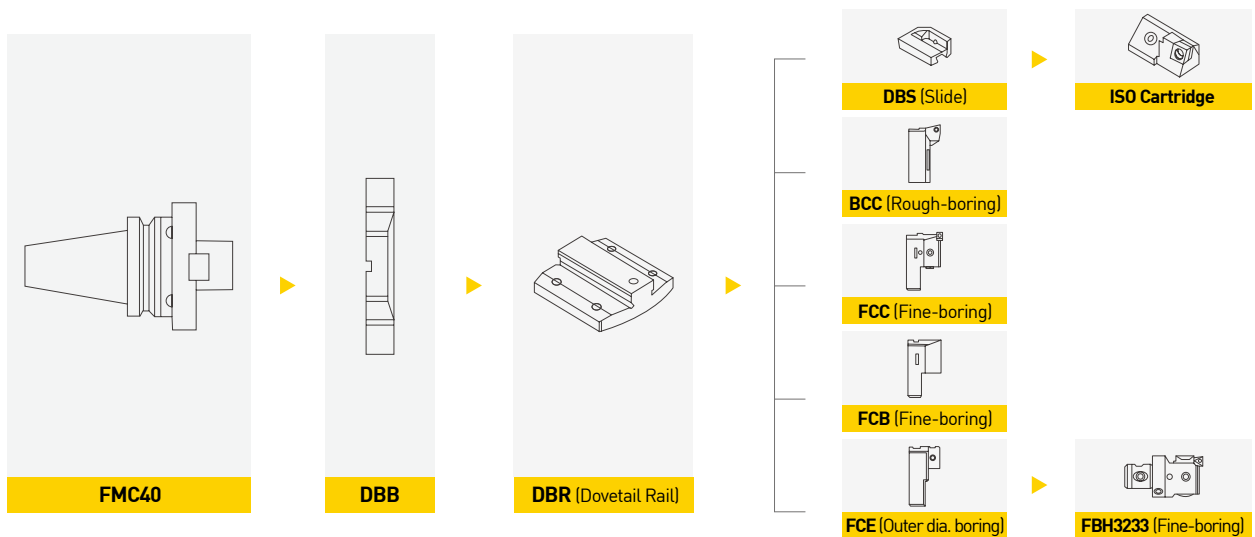


Outer boring

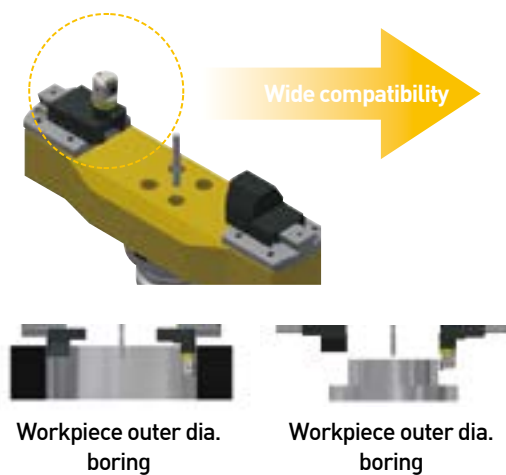


- Inner boring and outer boring can be performed by easily changing the cartridge direction
- With the scale marking on the rail, the boring diameter can be set easily.

Boring system map



Wide compatibility



| | IMAGES | List of clamping parts | Cutting type |
|-------------------|--------|-----------------------------|------------------|
| Outer dia. boring | | FBH3233B+FCE310+FCB310 | Finishing boring |
| | | DBCA3235S + FCE310 + FCB310 | Rough boring |
| Inner dia. boring | | DBS□□ - □□CA+SCGCL16C-1A2 | Rough boring |
| | | FCC310 | Finishing boring |
| | | BCC1354 | Rough boring |

※ TBC310A in case

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



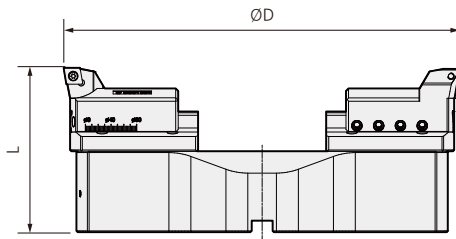
TBCA NEW

Wide Diameter Boring system

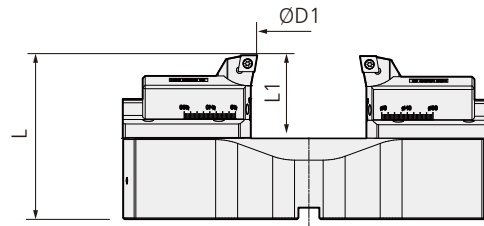


| | | | | | |
|---------------|----------------|----------|-----------|-----------|--------|
| MAS 403-BT | C | AL | 130 | 615 | |
| Shank | Coolant System | Material | MIN Range | MAX Range | Boring |

Inside Boring



Outside Boring



C Internal coolant system is optional.

※ Red : Main component Blue : For separate purchase

※ The FMC Arbor are sold individually.

• For more information on the product features, see 160p

• For more information on FMC arbor, see 122p

| FMC Arbor (Individual order) | Kg | Twin Edge Boring for Roughing | | | | | | | Kg |
|---------------------------------|------|---|------|---------------|-----|----------------|-----|----|------|
| | | TBC Head set (Rail+Cartridge (Main)) | L | Boring range | | | | | |
| | | | | Inside Boring | | Outside Boring | | L1 | |
| Min. | Max. | Min. | Max. | | | | | | |
| BT50-FMC40-50 | 4.6 | TBC130A(DBR130+BCC1348+BCC1348) | 108 | 130 | 180 | 0 | 35 | 65 | 3.8 |
| BT50-FMC40-50 | 4.6 | TBC175A(DBR175+BCC1348+BCC1348) | 113 | 175 | 225 | 0 | 75 | 65 | 5.2 |
| BT50-FMC40-50 | 4.6 | TBC220A(DBR07015+BCC1348+BCC1348) | 118 | 220 | 270 | 60 | 124 | 65 | 7.3 |
| BT50-FMC40-50 | 4.6 | TBC265A(DBR07015+BCC1348+BCC1348) | 123 | 265 | 315 | 64 | 174 | 65 | 7.3 |
| BT50-FMC40-50 | 4.6 | TBC310A(DBR10015+BCC1345+BCC1345) | 128 | 310 | 390 | 79 | 159 | 65 | 9.7 |
| BT50-FMC40-50 | 4.6 | TBC385A(DBR10015+BCC1354+BCC1345) | 133 | 385 | 465 | 153 | 233 | 65 | 11.8 |
| BT50-FMC40-50 | 4.6 | TBC460A(DBR10015+BCC1354+BCC1345) | 138 | 460 | 540 | 229 | 309 | 65 | 14.3 |
| BT50-FMC40-50 | 4.6 | TBC535A(DBR10015+BCC1354+BCC1345) | 143 | 535 | 615 | 303 | 383 | 65 | 16.4 |

| Head set | Bridge | Rail | For separate purchase | | |
|----------|--------|----------|-----------------------|---------------|--------|
| | | | Cartridge | Arbor | Pin |
| | | | | | |
| TBC130A | DBB130 | DBR130 | BCC1348S | BT50-FMC40-50 | PN1080 |
| TBC175A | DBB175 | DBR175 | BCC1348S | BT50-FMC40-50 | PN1080 |
| TBC220A | DBB220 | DBR07015 | BCC1348S | BT50-FMC40-50 | PN1080 |
| TBC265A | DBB265 | DBR07015 | BCC1348S | BT50-FMC40-50 | PN1080 |
| TBC310A | DBB310 | DBR10015 | BCC1354S | BT50-FMC40-50 | PN1080 |
| TBC385A | DBB385 | DBR10015 | BCC1354S | BT50-FMC40-50 | PN1080 |
| TBC460A | DBB460 | DBR10015 | BCC1354S | BT50-FMC40-50 | PN1080 |
| TBC535A | DBB535 | DBR10015 | BCC1354S | BT50-FMC40-50 | PN1080 |



TBCA NEW

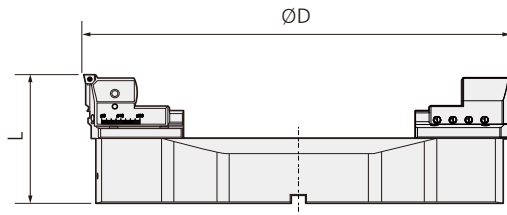
Wide Diameter Boring system



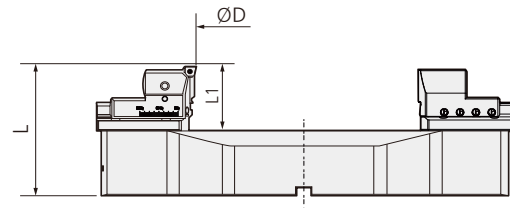
MAS 403-BT
C
AL
130
615
Boring

Shank Coolant System Material MIN Range MAX Range Boring

Inside Boring



Outside Boring



C Internal coolant system is optional.

- ※ Red, Green : Main component Blue : For separate purchase
- ※ The FMC Arbor and head set are products for an individual order.

• For more information on the product features, see **160p**

• For more information on FMC arbor, see **122p**

| FMC Arbor (Individual order) | Kg | Single Edge Boring for Roughing | | | | | | | Kg |
|---------------------------------|------|--|------|---------------|-----|----------------|-------|----|------|
| | | TBC Head set (Rail+Cartridge [Separate sale]) | L | Boring range | | | | | |
| | | | | Inside Boring | | Outside Boring | | L1 | |
| Min. | Max. | Min. | Max. | | | | | | |
| BT50-FMC40-50 | 4.6 | TBC130A(DBR130+FCC130+FCB130+FBB33N) | 101 | 130 | 180 | 37 | 37 | 72 | 4.4 |
| BT50-FMC40-50 | 4.6 | TBC175A(DBR175+FCC130+FCB130+FBB33N) | 106 | 175 | 225 | 80 | 80 | 72 | 5.7 |
| BT50-FMC40-50 | 4.6 | TBC220A(DBR07015+FCC130+FCB130+FBB33N) | 111 | 220 | 270 | 173 | 173 | 72 | 7.8 |
| BT50-FMC40-50 | 4.6 | TBC265A(DBR07015+FCC130+FCB130+FBB33N) | 116 | 265 | 315 | 176 | 176 | 72 | 7.9 |
| BT50-FMC40-50 | 4.6 | TBC310A(DBR10015+FCC310+FCB310+BB33N) | 121 | 310 | 390 | 155.5 | 155.5 | 72 | 10.1 |
| BT50-FMC40-50 | 4.6 | TBC385A(DBR10015+FCC310+FCB310+FBB33N) | 126 | 385 | 465 | 229.5 | 229.5 | 72 | 12.2 |
| BT50-FMC40-50 | 4.6 | TBC460A(DBR10015+FCC310+FCB310+FBB33N) | 131 | 460 | 540 | 305.5 | 305.5 | 72 | 14.7 |
| BT50-FMC40-50 | 4.6 | TBC535A(DBR10015+FCC310+FCB310+FBB33N) | 136 | 535 | 615 | 379.5 | 379.5 | 72 | 16.7 |

| Head set | Bridge | Rail | For separate purchase | | | | | Pin |
|----------|--------|----------|-----------------------|-----------|---------------|---------------|--------|-----|
| | | | Cartridge | Bite | Balance block | Arbor | | |
| | | | | | | | | |
| TBC130A | DBB130 | DBR130 | FCC130 | FBB130△□□ | FCB130 | BT50-FMC40-50 | PN1080 | |
| TBC175A | DBB175 | DBR175 | FCC130 | FBB130△□□ | FCB130 | BT50-FMC40-50 | PN1080 | |
| TBC220A | DBB220 | DBR07015 | FCC130 | FBB130△□□ | FCB130 | BT50-FMC40-50 | PN1080 | |
| TBC265A | DBB265 | DBR07015 | FCC130 | FBB130△□□ | FCB130 | BT50-FMC40-50 | PN1080 | |
| TBC310A | DBB310 | DBR10015 | FCC310 | FBB130△□□ | FCB310 | BT50-FMC40-50 | PN1080 | |
| TBC385A | DBB385 | DBR10015 | FCC310 | FBB130△□□ | FCB310 | BT50-FMC40-50 | PN1080 | |
| TBC460A | DBB460 | DBR10015 | FCC310 | FBB130△□□ | FCB310 | BT50-FMC40-50 | PN1080 | |
| TBC535A | DBB535 | DBR10015 | FCC310 | FBB130△□□ | FCB310 | BT50-FMC40-50 | PN1080 | |



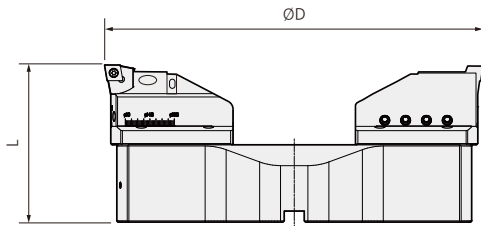
TBCA NEW

Wide Diameter Boring system

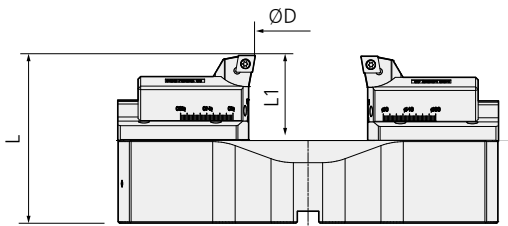


| | | | | | |
|---------------|----------------|----------|-----------|-----------|--------|
| MAS 403-BT | C | AL | 130 | 615 | |
| Shank | Coolant System | Material | MIN Range | MAX Range | Boring |

Inside Boring



Outside Boring



C Internal coolant system is optional.

※ Red, Green : Main component Blue : For separate purchase

※ The FMC Arbor and head set are products for an individual order.

• For more information on the product features, see 160p.

• For more information on FMC arbor, see 122p.

| FMC Arbor (Individual order) | Kg | Step Boring for Roughing | | | | | | | Kg |
|------------------------------------|------|--|------|---------------|-----|----------------|------|----|------|
| | | TBC Head set (Rail+Cartridge (Separate sale)) | L | Boring range | | | | | |
| | | | | Inside Boring | | Outside Boring | | L1 | |
| Min. | Max. | Min. | Max. | L1 | | | | | |
| BT50-FMC40-50 | 4.6 | TBC130A(DBR130+DBS25-□□CA+SCGCL16CA-12) | 108 | 130 | 180 | 0 | 13.5 | 65 | 4.3 |
| BT50-FMC40-50 | 4.6 | TBC175A(DBR175+DBS25-□□CA+SCGCL16CA-12) | 113 | 175 | 225 | 0 | 55 | 65 | 5.7 |
| BT50-FMC40-50 | 4.6 | TBC220A(DBR07015+DBS25-□□CA+SCGCL16CA-12) | 118 | 220 | 270 | 64 | 128 | 65 | 7.8 |
| BT50-FMC40-50 | 4.6 | TBC265A(DBR07015+DBS25-□□CA+SCGCL16CA-12) | 123 | 265 | 315 | 68 | 118 | 65 | 7.9 |
| BT50-FMC40-50 | 4.6 | TBC310A(DBR10015+DBS40-□□CA+SCGCL16CA-12) | 128 | 310 | 390 | 109 | 159 | 65 | 10.2 |
| BT50-FMC40-50 | 4.6 | TBC385A(DBR10015+DBS40-□□CA+SCGCL16CA-12) | 133 | 385 | 465 | 183 | 233 | 65 | 12.3 |
| BT50-FMC40-50 | 4.6 | TBC460A(DBR10015+DBS40-□□CA+SCGCL16CA-12) | 138 | 460 | 540 | 259 | 309 | 65 | 14.8 |
| BT50-FMC40-50 | 4.6 | TBC535A(DBR10015+DBS40-□□CA+SCGCL16CA-12) | 143 | 535 | 615 | 33 | 383 | 65 | 16.9 |

| Head set | Bridge | Rail | Cartridge | For separate purchase | | | | |
|----------|--------|----------|-----------|-----------------------|--|---------------|----------------------|--------|
| | | | | Arbor | Slide | Cartridge | Plate | Pin |
| | | | | | | | | |
| TBC130A | DBB130 | DBR130 | BCC1348S | BT50-FMC40-50 | DBS25-16CA DBS25-20CA DBS25-25CA | ISO Cartridge | ISO Cartridge Plates | PN1080 |
| TBC175A | DBB175 | DBR175 | BCC1348S | | | | | |
| TBC220A | DBB220 | DBR07015 | BCC1348S | | | | | |
| TBC265A | DBB265 | DBR07015 | BCC1348S | | | | | |
| TBC310A | DBB310 | DBR10015 | BCC1354S | | | | | |
| TBC385A | DBB385 | DBR10015 | BCC1354S | | | | | |
| TBC460A | DBB460 | DBR10015 | BCC1354S | | | | | |
| TBC535A | DBB535 | DBR10015 | BCC1354S | | | | | |



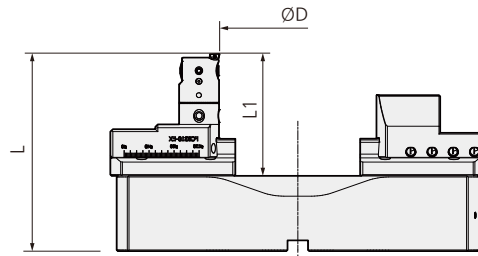
TBCA NEW

Wide Diameter Boring system



| | | | | | |
|---------------|----------------|----------|-----------|-----------|--------|
| MAS 403-BT | C | AL | 130 | 535 | Boring |
| Shank | Coolant System | Material | MIN Range | MAX Range | Boring |

Outside Boring



C Internal coolant system is optional.

- ※ Red, Green : Main component Blue : For separate purchase
- ※ The FMC Arbor and head set are products for an individual order.

- For more information on the product features, see **160p**
- For more information on FMC arbor, see **122p**

| FMC Arbor (Individual order) | Kg | Outside Boring for Finishing | | | | | Kg |
|---------------------------------|-----|--|-----|--------------------------------|------|-----|------|
| | | TBC Head set (Rail+Cartridge (Separate sale)) | L | Boring range Outside Boring | | | |
| | | | | Min. | Max. | L1 | |
| BT50-FMC40-50 | 4.6 | TBC130A(DBR130+FCB130+FCE130+FBH3233B+FBB33N) | 145 | 0 | 39 | 102 | 5.2 |
| BT50-FMC40-50 | 4.6 | TBC175A(DBR175+FCB130+FCE130+FBH3233B+FBB33N) | 150 | 0 | 84 | 102 | 6.5 |
| BT50-FMC40-50 | 4.6 | TBC220A(DBR07015+FCB130+FCE130+FBH3233B+FBB33N) | 155 | 26 | 180 | 102 | 8.7 |
| BT50-FMC40-50 | 4.6 | TBC265A(DBR07015+FCB130+FCE130+FBH3233B+FBB33N) | 160 | 26 | 180 | 102 | 8.7 |
| BT50-FMC40-50 | 4.6 | TBC310A(DBR10015+FCB310+FCE310+FBH3233B+FBB33N) | 165 | 16 | 170 | 102 | 11 |
| BT50-FMC40-50 | 4.6 | TBC385A(DBR10015+FCB310+FCE310+FBH3233B+FBB33N) | 170 | 90 | 244 | 102 | 13.1 |
| BT50-FMC40-50 | 4.6 | TBC460A(DBR10015+FCB310+FCE310+FBH3233B+FBB33N) | 175 | 166 | 318 | 102 | 15.6 |
| BT50-FMC40-50 | 4.6 | TBC535A(DBR10015+FCB310+FCE310+FBH3233B+FBB33N) | 180 | 240 | 394 | 102 | 17.7 |

| Head set | Bridge | Rail | For separate purchase | | | | |
|----------|--------|----------|-----------------------|--------|--------|----------|--------|
| | | | Arbor | Slide | B/B | Head | Pin |
| | | | | | | | |
| TBC130A | DBB130 | DBR130 | BT50-FMC40-50 | FCE130 | FCB130 | FBH3233B | PN1080 |
| TBC175A | DBB175 | DBR175 | | | | | |
| TBC220A | DBB220 | DBR07015 | | | | | |
| TBC265A | DBB265 | DBR07015 | | | | | |
| TBC310A | DBB310 | DBR10015 | | | | | |
| TBC385A | DBB385 | DBR10015 | | | | | |
| TBC460A | DBB460 | DBR10015 | | | | | |
| TBC535A | DBB535 | DBR10015 | FCE310 | FCB310 | | | |

※ B/B : Balance Block



TBC

Balance cut tool for Rough boring



C
130
540

Coolant System MIN Range MAX Range Boring



Features

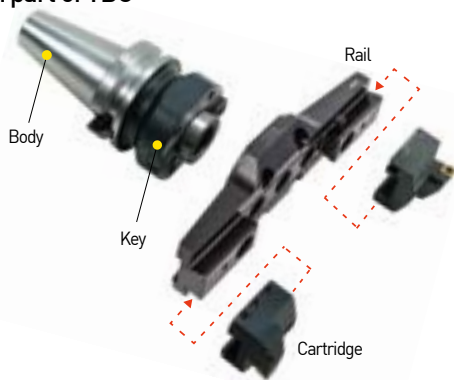
- Broad boring diameter and range
 - Wide Boring Range : Ø130 ~ Ø540mm
- Structurally stable enough to resist cutting load
 - Provides strong cutting performance based on the precision grinding dovetail method
- Can perform fine boring operation by changing boring head cartridges
 - Compatible boring head and rail as they are in the same structure
- Various cartridge tip angles - cartridge fore end angles 15° and 45° selectable

NAMING

| | | | | | | | |
|---------|---|------------------|---|-------|---|--|----------|
| BT50 | - | FMD50 | - | 85 | + | TBC | 130S |
| Spindle | | Wide dia. holder | | Depth | | Wide dia.(Rough boring) Min. boring dia. | Head set |
| | | Holder(option) | | | | | |

Structure and main features of TBC Boring Tool

Names of each part of TBC



Cartridge : BCC1348
 Insert : CCMT1204□□
 CNMG1204□□



Rail : TBR□□
 Weight reduced and space for chip discharge secured by removing the side part

Boring Range of TBC Boring Tool

| Model No. | Dia(Ø) Boring diameter | | Head set | Insert |
|-----------|------------------------|-----|--------------------------------|------------|
| | min | max | | |
| TBC130 | 130 | 180 | TBC130(TBR130+BCC1348+BCC1348) | CCMT1204□□ |
| TBC175 | 175 | 225 | TBC175(TBR175+BCC1348+BCC1348) | CCMT1204□□ |
| TBC220 | 220 | 270 | TBC220(TBR220+BCC1348+BCC1348) | CCMT1204□□ |
| TBC265 | 265 | 315 | TBC265(TBR265+BCC1348+BCC1348) | CCMT1204□□ |
| TBC310 | 310 | 390 | TBC310(TBR310+BCC1348+BCC1348) | CCMT1204□□ |
| TBC385 | 385 | 465 | TBC385(TBR310+BCC1348+BCC1348) | CCMT1204□□ |
| TBC460 | 460 | 540 | TBC460(TBR460+BCC1348+BCC1348) | CCMT1204□□ |



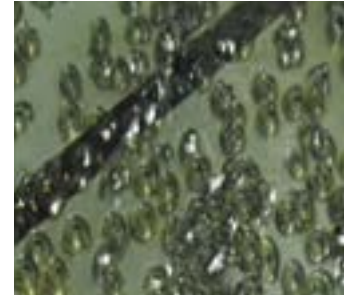
TBC

Balance cut tool for Rough boring



Application example 1 of TBC Boring Tool

Chip shapes by cartridge tip angle diversification



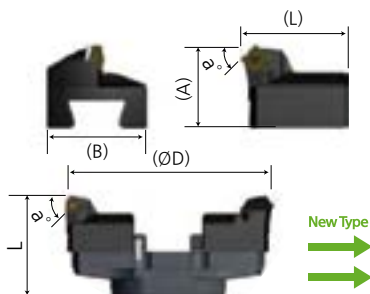
Conventional type

Angle adjustment type



- In the case of conventional type products : thick chips and change by heat
- In the case of "angle adjustment cartridge" : thin chips and no color change

Various cartridges selectable(15°, 45°)



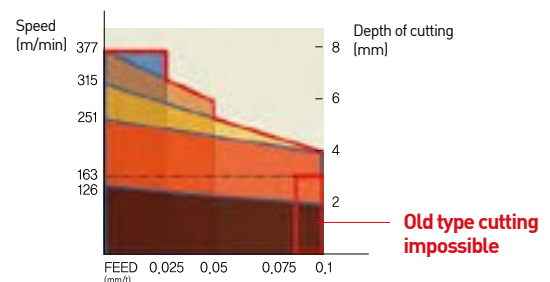
| CARTRIDGE | (A) | (B) | (L) | (a°) | Applicable insert |
|--------------|-----|-----|------|------|-------------------|
| BCC1348 | 50 | 60 | 64.5 | 1° | CCMT0602□□ |
| BCC1348-SN15 | | | | 15° | SNMG1204□□ |
| BCC1348-SN45 | | | | 45° | SNMG1204□□ |
| BCC1354 | 50 | 60 | 89.5 | 0° | CCMT0602□□ |
| BCC1354-SN15 | | | | 15° | SNMG1204□□ |
| BCC1354-SN45 | | | | 45° | SNMG1204□□ |

Application example 2 of Boring Tool

- **Equipment** : straight type machining center
- **Workpiece material** : S45C
- **Tool used** : BT50-FMD50-155 + TBC310S
- **Insert** : CCMT120408
- **Cutting conditions** : V=200m/min, RPM=163, F=0.1/per knife, d=2mm



Surface roughness effect



Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



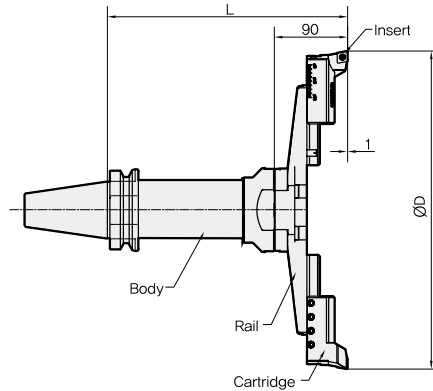
BT-TBC

Balance cut tool for Rough boring



MAS
403-BT
C
130
540
Boring

Shank Coolant System MIN Range MAX Range Boring



C This product does not support the internal coolant system.

※ FMD Arbor and head set are products for an individual order.

※ Red : Main component Blue : For separate purchase

- For more information on the product features, see **166p**
- For more information on FMD arbor, see **175p**
- For more information on the applicable insert, see **166p**
- For more information on the related parts, see **170p**

| | FMD Arbor (Individual order) | Kg (Holder weight) | Rough boring(TBC) | | | | |
|-------------|---------------------------------|-----------------------|----------------------------------|-----|------------------|------|---------------------|
| | | | TBC Head set (Rail+Cartridge) | L | Boring range(ØD) | | Kg (Head weight) |
| | | | | | Min. | Max. | |
| BT50 | BT50-FMD50-85 | 5.9 | TBC130(TBR130+BCC1348) | 175 | 130 | 180 | 3.2 |
| | BT50-FMD50-155 | 7.9 | TBC130(TBR130+BCC1348) | 245 | 130 | 180 | 3.2 |
| | BT50-FMD50-205 | 9.7 | TBC130(TBR130+BCC1348) | 295 | 130 | 180 | 3.2 |
| | BT50-FMD50-255 | 13.4 | TBC130(TBR130+BCC1348) | 345 | 130 | 180 | 3.2 |
| | BT50-FMD50-85 | 5.9 | TBC175(TBR175+BCC1348) | 175 | 175 | 225 | 3.6 |
| | BT50-FMD50-155 | 7.9 | TBC175(TBR175+BCC1348) | 245 | 175 | 225 | 3.6 |
| | BT50-FMD50-205 | 9.7 | TBC175(TBR175+BCC1348) | 295 | 175 | 225 | 3.6 |
| | BT50-FMD50-255 | 13.4 | TBC175(TBR175+BCC1348) | 345 | 175 | 225 | 3.6 |
| | BT50-FMD50-85 | 5.9 | TBC220(TBR220+BCC1348) | 175 | 220 | 270 | 4 |
| | BT50-FMD50-155 | 7.9 | TBC220(TBR220+BCC1348) | 245 | 220 | 270 | 4 |
| | BT50-FMD50-205 | 9.7 | TBC220(TBR220+BCC1348) | 295 | 220 | 270 | 4 |
| | BT50-FMD50-255 | 13.4 | TBC220(TBR220+BCC1348) | 345 | 220 | 270 | 4 |
| | BT50-FMD50-85 | 5.9 | TBC265(TBR265+BCC1348) | 175 | 265 | 315 | 4.2 |
| | BT50-FMD50-155 | 7.9 | TBC265(TBR265+BCC1348) | 245 | 265 | 315 | 4.2 |
| | BT50-FMD50-205 | 9.7 | TBC265(TBR265+BCC1348) | 295 | 265 | 315 | 4.2 |
| | BT50-FMD50-255 | 13.4 | TBC265(TBR265+BCC1348) | 345 | 265 | 315 | 4.2 |
| | BT50-FMD50-85 | 5.9 | TBC310(TBR310+BCC1354) | 175 | 310 | 390 | 5.2 |
| | BT50-FMD50-155 | 7.9 | TBC310(TBR310+BCC1354) | 245 | 310 | 390 | 5.2 |
| | BT50-FMD50-205 | 9.7 | TBC310(TBR310+BCC1354) | 295 | 310 | 390 | 5.2 |
| | BT50-FMD50-255 | 13.4 | TBC310(TBR310+BCC1354) | 345 | 310 | 390 | 5.2 |
| | BT50-FMD50-85 | 5.9 | TBC385(TBR385+BCC1354) | 175 | 385 | 465 | 5.5 |
| | BT50-FMD50-155 | 7.9 | TBC385(TBR385+BCC1354) | 245 | 385 | 465 | 5.5 |
| | BT50-FMD50-205 | 9.7 | TBC385(TBR385+BCC1354) | 295 | 385 | 465 | 5.5 |
| | BT50-FMD50-255 | 13.4 | TBC385(TBR385+BCC1354) | 345 | 385 | 465 | 5.5 |
| | BT50-FMD50-85 | 5.9 | TBC460(TBR460+BCC1354) | 175 | 460 | 540 | 12.5 |
| | BT50-FMD50-155 | 7.9 | TBC460(TBR460+BCC1354) | 245 | 460 | 540 | 12.5 |
| | BT50-FMD50-205 | 9.7 | TBC460(TBR460+BCC1354) | 295 | 460 | 540 | 12.5 |
| | BT50-FMD50-255 | 13.4 | TBC460(TBR460+BCC1354) | 345 | 460 | 540 | 12.5 |



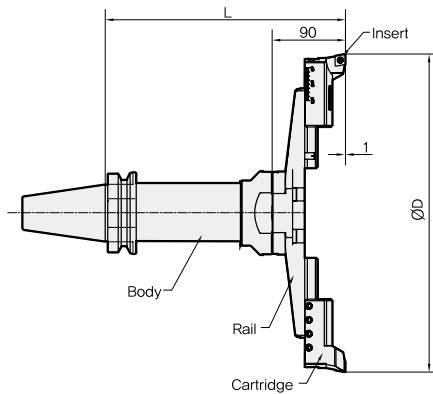
SK-TBC

Balance cut tool for Rough boring



MAS 403-BT
C
130
540

Shank Coolant System MIN Range MAX Range Boring



C This product does not support the internal coolant system.
 ※ FMD Arbor and head set are products for an individual order.
 ※ Red : Main component Blue : For separate purchase

- For more information on the product features, see **166p**
- For more information on FMD arbor, see **175p**
- For more information on the applicable insert, see **166p**
- For more information on the related parts, see **170p**

| | FMD Arbor (Individual order) | Kg | Boring range(ØD) | | | Boring range(ØD) | |
|------|---------------------------------|------|------------------------------|-----|------|------------------|------|
| | | | TBC Head set(Rail+Cartridge) | L | Kg | Min. | Max. |
| SK50 | SK50-FMD50-155 | 7.9 | TBC130(TBR130+BCC1348) | 252 | 3.2 | 130 | 180 |
| | SK50-FMD50-255 | 13.4 | TBC130(TBR130+BCC1348) | 352 | 3.2 | 130 | 180 |
| | SK50-FMD50-155 | 7.9 | TBC175(TBR175+BCC1348) | 252 | 3.6 | 175 | 225 |
| | SK50-FMD50-255 | 13.4 | TBC175(TBR175+BCC1348) | 352 | 3.6 | 175 | 225 |
| | SK50-FMD50-155 | 7.9 | TBC220(TBR220+BCC1348) | 252 | 4 | 220 | 270 |
| | SK50-FMD50-255 | 13.4 | TBC220(TBR220+BCC1348) | 352 | 4 | 220 | 270 |
| | SK50-FMD50-155 | 7.9 | TBC265(TBR265+BCC1348) | 252 | 4.2 | 265 | 315 |
| | SK50-FMD50-255 | 13.4 | TBC265(TBR265+BCC1348) | 352 | 4.2 | 265 | 315 |
| | SK50-FMD50-155 | 7.9 | TBC310(TBR310+BCC1354) | 252 | 5.2 | 310 | 390 |
| | SK50-FMD50-255 | 13.4 | TBC310(TBR310+BCC1354) | 352 | 5.2 | 310 | 390 |
| | SK50-FMD50-155 | 7.9 | TBC385(TBR385+BCC1354) | 252 | 5.5 | 385 | 465 |
| | SK50-FMD50-255 | 13.4 | TBC385(TBR385+BCC1354) | 352 | 5.5 | 385 | 465 |
| | SK50-FMD50-155 | 7.9 | TBC460(TBR460+BCC1354) | 252 | 12.5 | 460 | 540 |
| | SK50-FMD50-255 | 13.4 | TBC460(TBR460+BCC1354) | 352 | 12.5 | 460 | 540 |

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

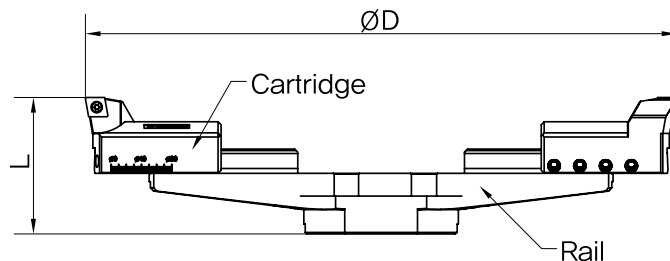
TAUMAX

OTHER



TBC HEAD SET

Balance cut tool for Rough boring



| Head set(Main component) | | | Boring range(ØD) | | L | Kg | For separate purchase Insert |
|--------------------------|--------|-----------|------------------|------|----|------|---------------------------------|
| Model No. | Rail | Cartridge | Min. | Max. | | | |
| TBC130S | TBR130 | BCC1348 | 130 | 180 | 90 | 3.5 | CCMT1204□□ |
| TBC175S | TBR175 | BCC1348 | 175 | 225 | 90 | 3.9 | CCMT1204□□ |
| TBC220S | TBR220 | BCC1348 | 220 | 270 | 90 | 4.3 | CCMT1204□□ |
| TBC265S | TBR265 | BCC1348 | 265 | 315 | 90 | 4.5 | CCMT1204□□ |
| TBC310S | TBR310 | BCC1354 | 310 | 390 | 90 | 5.5 | CCMT1204□□ |
| TBC385S | TBR385 | BCC1354 | 385 | 465 | 90 | 5.8 | CCMT1204□□ |
| TBC460S | TBR460 | BCC1354 | 460 | 540 | 90 | 12.8 | CCMT1204□□ |

※ If CNMG1204○○ insert is used, BCN1348, BCN1354 cartridges can be ordered.



TBC SPARE PART

Balance cut tool for rough boring related parts

Spare Part

| TYPE | Main component | | | | | | |
|----------|----------------|----------------------|------------|------------|----------------------|-------------|-------------|
| | Rail | Cartridge | Clamp bolt | Clamp bolt | Hexagonal wrench | Clamp screw | Torx wrench |
| Head Set | | | | | | | |
| TBC130S | TBR130 | BCC1348 (BCN1348) | BX0820 | BT0645 | LW-3 LW-4 LW-6 | BFTX0511N | TRX20 |
| TBC175S | TBR175 | | | | | | |
| TBC220S | TBR220 | | | | | | |
| TBC265S | TBR265 | BCC1354 (BCN1354) | | BT0660 | | | |
| TBC310S | TBR310 | | | | | | |
| TBC385S | TBR385 | | | | | | |
| TBC460S | TBR460 | | | | | | |



FBC

Balance cut tool for fine boring



C
130
540
Boring

Coolant System MIN Range MAX Range Boring



Features

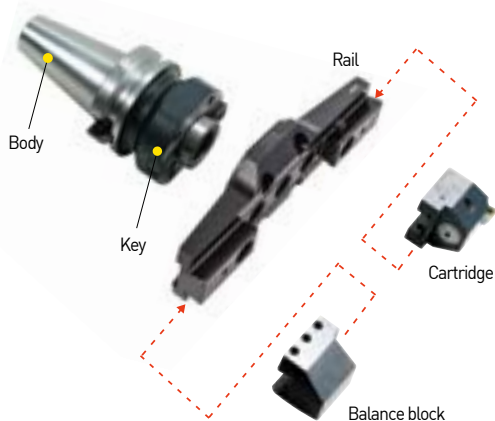
- Broad boring diameter and range
 - Wide Boring Range : $\varnothing 130 \sim \varnothing 540\text{mm}$
- Structurally stable enough to resist cutting load
 - Provides strong cutting performance based on the precision grinding dovetail method
- Can perform rough boring operation by changing boring head cartridges
 - Compatible boring head and rail as they are in the same structure
- Various cartridge tip angles
 - cartridge fore end angles 15° and 45° selectable

NAMING

| | | | | | | | |
|---------|---|------------------|---|-------|---|------------------------|------------------|
| BT50 | - | FMD50 | - | 85 | + | FBC | 130S |
| Spindle | | Wide dia. holder | | Depth | | Wide dia.(fine-boring) | Min. boring dia. |
| | | Holder(option) | | | | | Head set |

Structure and main features of FBC Boring Tool

Names of each part of FBC



Cartridge : FCC130
 Insert : CCGT09T3□□
 CCMT1204□□
 TPGT1103□□

Balance block :
 FCB130

Boring range of FBC Boring Tool

| Model No. | Dia(\varnothing) boring diameter | | Head set | Insert |
|-----------|--------------------------------------|-----|-------------------------------|---|
| | min | max | | |
| FBC130 | 130 | 180 | FBC130S(TBR130+FCC130+FCB130) | FBB130-C09(CCMT09T3□□, CCGT09T3□□) FBB130-C12(CCMT1204□□) FBB130-T11(TPMT1103□□, TPGT1103□□□) |
| 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) | |

Application example of Special FBC Boring Tool

| Material | Cutting speed V | RPM | FEED | | Cutting depth \varnothing (mm) | Boring diameter \varnothing (mm) |
|-----------|-----------------|-----|----------|----------|----------------------------------|------------------------------------|
| | | | (mm/min) | (mm/rev) | | |
| Aluminium | 200 | 48 | 5 | 0.1 | 0.5 | $\varnothing 1300$ |
| | 200 | 48 | 10 | 0.1 | 2 | $\varnothing 1300$ |
| | 500 | 120 | 12 | 0.1 | 2 | $\varnothing 1300$ |



Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



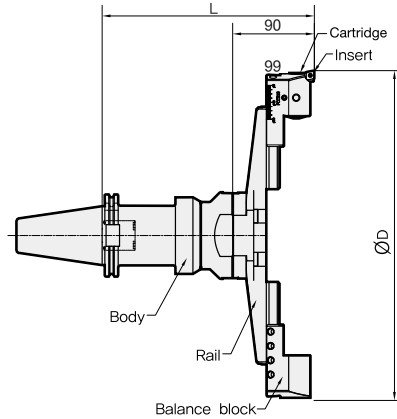
BT-FBC

Balance cut tool for fine boring



MAS 403-BT
C
130
540
Boring

Shank Coolant System MIN Range MAX Range Boring



C This product does not support the internal coolant system.

- ※ Red : Main component Blue : For separate purchase
- ※ FMD Arbor and head set are products for an individual order.
- ※ If BB130-C12bite is used, the minimum boring diameter increases by $\phi 6.7$ mm.

• For more information on the product features, see **171p**

• For more information on FMD arbor, see **175p**

• For more information on FBB bite, see **175p**

• For more information on the related parts, see **174p**

| FMD Arbor (Individual order) | Kg (Holder weight) | Rough boring(TBC) | | | | |
|---------------------------------|-----------------------|--|-----|------|------------------|------|
| | | TBC Head set (Rail+Cartridge+Balance block) | L | Kg | Boring range(ØD) | |
| | | | | | Min. | Max. |
| BT50-FMD50-85 | 5.9 | FBC130S(TBR130+FCC130+FCB130) | 182 | 3.7 | 130 | 180 |
| BT50-FMD50-155 | 7.9 | FBC130S(TBR130+FCC130+FCB130) | 252 | 3.7 | 130 | 180 |
| BT50-FMD50-205 | 9.7 | FBC130S(TBR130+FCC130+FCB130) | 302 | 3.7 | 130 | 180 |
| BT50-FMD50-255 | 13.4 | FBC130S(TBR130+FCC130+FCB130) | 352 | 3.7 | 130 | 180 |
| BT50-FMD50-85 | 5.9 | FBC175S(TBR175+FCC130+FCB130) | 182 | 4.1 | 175 | 225 |
| BT50-FMD50-155 | 7.9 | FBC175S(TBR175+FCC130+FCB130) | 252 | 4.1 | 175 | 225 |
| BT50-FMD50-205 | 9.7 | FBC175S(TBR175+FCC130+FCB130) | 302 | 4.1 | 175 | 225 |
| BT50-FMD50-255 | 13.4 | FBC175S(TBR175+FCC130+FCB130) | 352 | 4.1 | 175 | 225 |
| BT50-FMD50-85 | 5.9 | FBC220S(TBR220+FCC130+FCB130) | 182 | 4.5 | 220 | 270 |
| BT50-FMD50-155 | 7.9 | FBC220S(TBR220+FCC130+FCB130) | 252 | 4.5 | 220 | 270 |
| BT50-FMD50-205 | 9.7 | FBC220S(TBR220+FCC130+FCB130) | 302 | 4.5 | 220 | 270 |
| BT50-FMD50-255 | 13.4 | FBC220S(TBR220+FCC130+FCB130) | 352 | 4.5 | 220 | 270 |
| BT50-FMD50-85 | 5.9 | FBC265S(TBR265+FCC130+FCB130) | 182 | 4.7 | 265 | 315 |
| BT50-FMD50-155 | 7.9 | FBC265S(TBR265+FCC130+FCB130) | 252 | 4.7 | 265 | 315 |
| BT50-FMD50-205 | 9.7 | FBC265S(TBR265+FCC130+FCB130) | 302 | 4.7 | 265 | 315 |
| BT50-FMD50-255 | 13.4 | FBC265S(TBR265+FCC130+FCB130) | 352 | 4.7 | 265 | 315 |
| BT50-FMD50-85 | 5.9 | FBC310S(TBR310+FCC310+FCB310) | 182 | 5.5 | 310 | 390 |
| BT50-FMD50-155 | 7.9 | FBC310S(TBR310+FCC310+FCB310) | 252 | 5.5 | 310 | 390 |
| BT50-FMD50-205 | 9.7 | FBC310S(TBR310+FCC310+FCB310) | 302 | 5.5 | 310 | 390 |
| BT50-FMD50-255 | 13.4 | FBC310S(TBR310+FCC310+FCB310) | 352 | 5.5 | 310 | 390 |
| BT50-FMD50-85 | 5.9 | FBC385S(TBR385+FCC310+FCB310) | 182 | 5.8 | 385 | 465 |
| BT50-FMD50-155 | 7.9 | FBC385S(TBR385+FCC310+FCB310) | 252 | 5.8 | 385 | 465 |
| BT50-FMD50-205 | 9.7 | FBC385S(TBR385+FCC310+FCB310) | 302 | 5.8 | 385 | 465 |
| BT50-FMD50-255 | 13.4 | FBC385S(TBR385+FCC310+FCB310) | 352 | 5.8 | 385 | 465 |
| BT50-FMD50-85 | 5.9 | FBC460S(TBR460+FCC310+FCB310) | 182 | 12.8 | 460 | 540 |
| BT50-FMD50-155 | 7.9 | FBC460S(TBR460+FCC310+FCB310) | 252 | 12.8 | 460 | 540 |
| BT50-FMD50-205 | 9.7 | FBC460S(TBR460+FCC310+FCB310) | 302 | 12.8 | 460 | 540 |
| BT50-FMD50-255 | 13.4 | FBC460S(TBR460+FCC310+FCB310) | 352 | 12.8 | 460 | 540 |

※ Bite (Insert)

FBB130-CC09 (CCMT09T3□□, CCGT09T3□□) / FBB130-C12 (CCMT1204□□) / FBB130-T11 (TPMT1103□□, TPGT1103□□L)



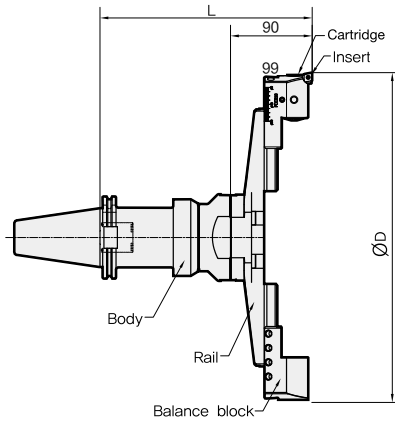
SK-FBC

Balance cut tool for fine boring



DIN69871
-1A/B
C
130
540

Shank Coolant System MIN Range MAX Range Boring



C This product does not support the internal coolant system.

※ Red : Main component Blue : For separate purchase

※ FMD Arbor and head set are products for an individual order.

※ If BB130-C12bite is used, the minimum boring diameter increases by $\varnothing 6.7$ mm.

• For more information on the product features, see **171p**

• For more information on FMD arbor, see **175p**

• For more information on FBB bite, see **175p**

• For more information on the related parts, see **174p**

| | FMD Arbor (Individual order) | Holder(Kg) | Boring range($\varnothing D$) | | | Boring range($\varnothing D$) | |
|-------------|---------------------------------|------------|--|-----|------|---------------------------------|------|
| | | | TBC Head set(Rail+Cartridge+Balance block) | L | Kg | Min. | Max. |
| SK50 | BT50-FMD50-155 | 8 | FBC130S(TBR130+FCC130+FCB130) | 252 | 3.8 | 130 | 180 |
| | BT50-FMD50-255 | 11.2 | FBC130S(TBR130+FCC130+FCB130) | 352 | 3.8 | 130 | 180 |
| | BT50-FMD50-155 | 8 | FBC175S(TBR175+FCC130+FCB130) | 252 | 4.1 | 175 | 225 |
| | BT50-FMD50-255 | 11.2 | FBC175S(TBR175+FCC130+FCB130) | 352 | 4.1 | 175 | 225 |
| | BT50-FMD50-155 | 8 | FBC220S(TBR220+FCC130+FCB130) | 252 | 4.5 | 220 | 270 |
| | BT50-FMD50-255 | 11.2 | FBC220S(TBR220+FCC130+FCB130) | 352 | 4.5 | 220 | 270 |
| | BT50-FMD50-155 | 8 | FBC265S(TBR265+FCC130+FCB130) | 252 | 4.7 | 265 | 315 |
| | BT50-FMD50-255 | 11.2 | FBC265S(TBR265+FCC130+FCB130) | 352 | 4.7 | 265 | 315 |
| | BT50-FMD50-155 | 8 | FBC310S(TBR310+FCC310+FCB310) | 252 | 5.5 | 310 | 390 |
| | BT50-FMD50-255 | 11.2 | FBC310S(TBR310+FCC310+FCB310) | 352 | 5.5 | 310 | 390 |
| | BT50-FMD50-155 | 8 | FBC385S(TBR385+FCC310+FCB310) | 252 | 5.8 | 385 | 465 |
| | BT50-FMD50-255 | 11.2 | FBC385S(TBR385+FCC310+FCB310) | 352 | 5.8 | 385 | 465 |
| | BT50-FMD50-155 | 8 | FBC460S(TBR460+FCC310+FCB310) | 252 | 12.8 | 460 | 540 |
| | BT50-FMD50-255 | 11.2 | FBC460S(TBR460+FCC310+FCB310) | 352 | 12.8 | 460 | 540 |

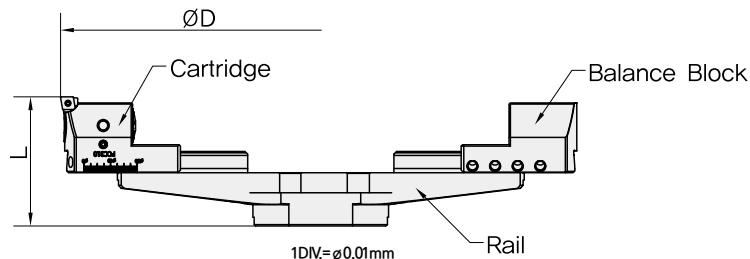
※ Bite (Insert)

FBB130-CC09 (CCMT09T3□□, CCGT09T3□□) / FBB130-C12 (CCMT1204□□) / FBB130-T11 (TPMT1103□□, TPGT1103□□L)



FBC HEAD SET

Balance cut tool for fine boring



| Head set(Main component) | | | | Boring range(ØD) | | L | Kg | For separate purchase Bite |
|--------------------------|--------|-----------|---------------|------------------|------|----|------|--|
| Model No. | Rail | Cartridge | Balance block | Min. | Max. | | | |
| FBC130S | TBR130 | FCC130 | FCB130 | 130 | 180 | 97 | 3.8 | FBB130-C09 FBB130-C12 FBB130-T11 |
| FBC175S | TBR175 | FCC130 | FCB130 | 175 | 225 | 97 | 4.1 | |
| FBC220S | TBR220 | FCC130 | FCB130 | 220 | 270 | 97 | 4.5 | |
| FBC265S | TBR265 | FCC130 | FCB130 | 265 | 315 | 97 | 4.6 | |
| FBC310S | TBR310 | FCC310 | FCB310 | 310 | 390 | 97 | 5.5 | |
| FBC385S | TBR385 | FCC310 | FCB310 | 385 | 465 | 97 | 5.8 | |
| FBC460S | TBR460 | FCC310 | FCB310 | 460 | 540 | 97 | 12.8 | |



FBC SPARE PART

Balance cut tool for fine boring related parts

| Spare Part | | | | | | | |
|------------|----------------|-----------|---------------|--------------------|------------|------------------|--|
| TYPE | Main component | | | | | | For separate purchase Bite |
| | Rail | Cartridge | Balance block | Clamp bolt | Clamp bolt | Hexagonal wrench | |
| Head Set | | | | | | | |
| FBC130S | TBR130 | FCC130 | FCB130 | BTF0810 BTF0814 | BT0645 | LW-3 LW-4 | FBB130-C09 FBB130-C12 FBB130-T11 |
| FBC175S | TBR175 | | | | | | |
| FBC220S | TBR220 | | | | | | |
| FBC265S | TBR265 | FCC310 | FCB310 | BT0660 | | | |
| FBC310S | TBR310 | | | | | | |
| FBC385S | TBR385 | | | | | | |
| FBC460S | TBR460 | | | | | | |



FBB BITE

Balance cut tool for fine boring



| Model No. | Insert |
|------------|------------------------|
| FBB130-C09 | CCMT09T3□□, CCGT09T3□□ |
| FBB130-C12 | CCMT1204□□ |
| FBB130-T11 | TPMT1103□□, TPGT1103□□ |

Chuck

Arbor / Modular

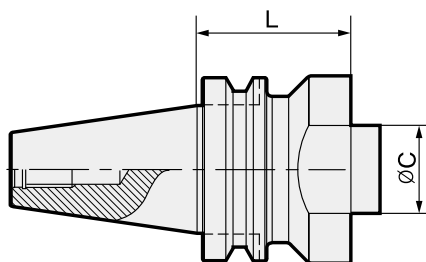
Boring tool

Angular head



BT - FMD

Arbor(Basic Holder)



| SK50, BT50 | Model No. | L | ØC | Kg |
|------------|----------------|-----|----|------|
| | BT50-FMD50-85 | 85 | 50 | 5.9 |
| | BT50-FMD50-155 | 155 | 50 | 7.9 |
| | BT50-FMD50-205 | 205 | 50 | 9.7 |
| | BT50-FMD50-255 | 255 | 50 | 10.4 |
| | SK50-FMD50-155 | 155 | 50 | 7.9 |
| | SK50-FMD50-255 | 255 | 50 | 10.4 |

cBN/PCD

Smart factory

TAUMAX

OTHER



BT-SMB

Small micro boring bar



MAS 403-BT
C
Ø6
Ø34
Boring

Shank Coolant System MIN Range MAX Range Boring

Fig.1

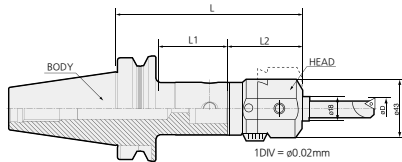
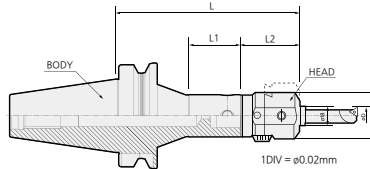
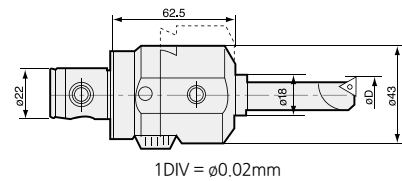


Fig.2



Head



- Adjustment length: 7mm

C This product does not support the internal coolant system.

✘ Red : Main component Blue : For separate purchase

- For more information on MD arbor, see 126p.

- For more information on BB bite, see 184p.

- For more information on the related parts, see 183p.

| | Model No. | | | Boring range(ØD) | L | L1 | L2 | Fig. | Head weight |
|-------------|----------------|-----------------|-----------|------------------|-------|-----|------|------|-------------|
| | Head model no. | Arbor Model No. | BB bite | | | | | | |
| BT30 | SMB4022 | BT30-MD40F-45 | BB18-□(S) | Ø6.0~Ø34.0 | 107.5 | 22 | 62.5 | 1 | 0.6 |
| | SMB4022 | BT30-MD40F-60 | BB18-□(S) | Ø6.0~Ø34.0 | 122.5 | 36 | 62.5 | 1 | 0.6 |
| | SMB4022 | BT30-MD40F-80 | BB18-□(S) | Ø6.0~Ø34.0 | 142.5 | 56 | 62.5 | 1 | 0.6 |
| BT40 | SMB4022 | BT40-MD40F-60 | BB18-□(S) | Ø6.0~Ø34.0 | 122.5 | 31 | 62.5 | 1 | 0.6 |
| | SMB4022 | BT40-MD40F-110R | BB18-□(S) | Ø6.0~Ø34.0 | 172.5 | 60 | 62.5 | 2 | 0.6 |
| | SMB4022 | BT40-MD40F-115 | BB18-□(S) | Ø6.0~Ø34.0 | 177.5 | 83 | 62.5 | 1 | 0.6 |
| BT50 | SMB4022 | BT50-MD40F-60 | BB18-□(S) | Ø6.0~Ø34.0 | 122.5 | 22 | 62.5 | 1 | 0.6 |
| | SMB4022 | BT50-MD40F-195 | BB18-□(S) | Ø6.0~Ø34.0 | 257.5 | 152 | 62.5 | 1 | 0.6 |
| | SMB4022 | BT50-MD40F-230R | BB18-□(S) | Ø6.0~Ø34.0 | 292.5 | 180 | 62.5 | 2 | 0.6 |

BB Bite(For SMB)

| Model No. | Boring range(ØD) | | Insert | Screw | Kg |
|------------|------------------|-----|-------------|-----------|-----|
| | Min | Max | | | |
| BB18-7(S) | 8 | 28 | TBGT0601□□L | BFTX0204A | 0.1 |
| BB18-9(S) | 10 | 30 | TPGT0802□□L | BFTX0204A | 0.1 |
| BB18-11(S) | 12 | 32 | TPGT1103□□L | BFTX0307A | 0.1 |
| BB18-13(S) | 14 | 34 | TPGT1103□□L | BFTX0307A | 0.1 |
| BB18-15(S) | 16 | 36 | TPGT1103□□L | BFTX0307A | 0.2 |
| BB18-17(S) | 18 | 38 | TPGT1103□□L | BFTX0307A | 0.2 |

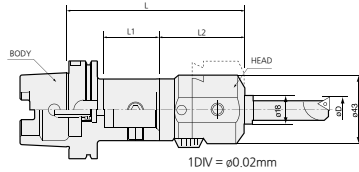


HSK/SK-SMB

Small micro boring bar



Fig.1



Head

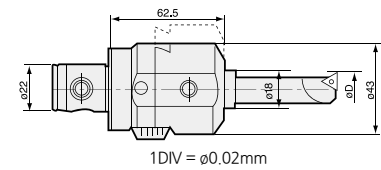


Fig.2

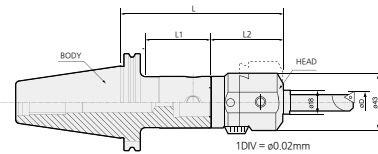
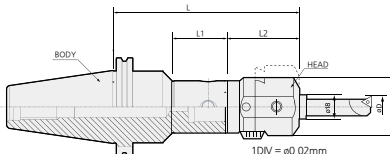


Fig.3



• Adjustment length : 17mm

Ⓢ This product does not support the internal coolant system.

※ Red : Main component Blue : For separate purchase

• For more information on MD arbor, see [126p](#)

• For more information on BB bite, see [184p](#)

• For more information on the related parts, see [183p](#)

| | Model No. | | | Boring range (ØD) | L | L1 | L2 | Fig. | Head weight |
|-------|----------------|-----------------|-----------|-------------------|-------|-----|------|------|-------------|
| | Head model no. | Arbor Model No. | BB bite | | | | | | |
| HSK63 | SMB4022 | HSK63A-MD40F-70 | BB18-□(S) | Ø6.0~Ø34.0 | 132.5 | 41 | 62.5 | 1 | 0.6 |
| | | | | | | | | | |
| | | | | | | | | | |
| SK40 | SMB4022 | SK40-MD40F-60 | BB18-□(S) | Ø6.0~Ø34.0 | 122.5 | 40 | 62.5 | 2 | 0.6 |
| | SMB4022 | SK40-MD40F-100 | BB18-□(S) | Ø6.0~Ø34.0 | 162.5 | 80 | 62.5 | 2 | 0.6 |
| SK50 | SMB4022 | SK50-MD40F-145 | BB18-□(S) | Ø6.0~Ø34.0 | 207.5 | 120 | 62.5 | 2 | 0.6 |
| | SMB4022 | SK50-MD40F-220R | BB18-□(S) | Ø6.0~Ø34.0 | 282.5 | 83 | 62.5 | 3 | 0.6 |

BB Bite(For SMB)

| Model No. | Boring range(ØD) | | Insert | Screw | Kg |
|------------|------------------|-----|-------------|-----------|-----|
| | Min | Max | | | |
| BB18-7(S) | 8 | 28 | TBGT0601□□L | BFTX0204A | 0.1 |
| BB18-9(S) | 10 | 30 | TPGT0802□□L | BFTX0204A | 0.1 |
| BB18-11(S) | 12 | 32 | TPGT1103□□L | BFTX0307A | 0.1 |
| BB18-13(S) | 14 | 34 | TPGT1103□□L | BFTX0307A | 0.1 |
| BB18-15(S) | 16 | 36 | TPGT1103□□L | BFTX0307A | 0.2 |
| BB18-17(S) | 18 | 38 | TPGT1103□□L | BFTX0307A | 0.2 |



BT-KMB

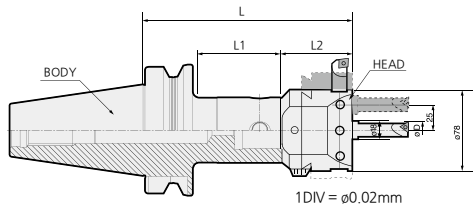
Micro boring



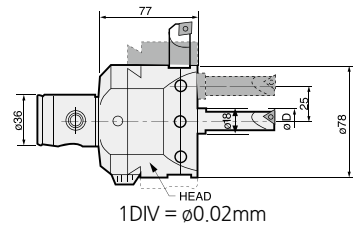
MAS 403-BT
C
Ø8
Ø165
Boring

Shank Coolant System MIN Range MAX Range Boring

Fig.1



Head



- Adjustment length: 7mm

C This product does not support the internal coolant system.

※ Red : Main component Blue : For separate purchase

- For more information on MD arbor, see **126p**

- For more information on BB bite, see **184p**

- For more information on the related parts, see **183p**

| Model No. | | | Boring range(ØD) | | L | L1 | L2 | Fig. | Head weight | |
|----------------|-----------------|----------------|------------------|----------------|-------------|-----|-----|------|-------------|-----|
| Head model no. | Arbor Model No. | BB Bite | Bite position | Ø D | | | | | | |
| BT40 | KMB6336 | BT40-MD63F-64 | BB18-□(S) | Center Hole | Ø8.0~Ø38.0 | 141 | 37 | 77 | 1 | 2.2 |
| | KMB6336 | BT40-MD63F-110 | BB18-□(S) | | | 187 | 83 | 77 | 1 | 2.2 |
| | KMB6336 | BT40-MD63F-135 | BB18-□(S) | Eccentric Hole | Ø41.0~101.0 | 212 | 108 | 77 | 1 | 2.2 |
| BT50 | KMB6336 | BT50-MD63F-75 | BB18-□(S) | | | 152 | 35 | 77 | 1 | 2.2 |
| | KMB6336 | BT50-MD63F-130 | BB18-□(S) | Side Hole | Max.Ø165.0 | 207 | 87 | 77 | 1 | 2.2 |
| | KMB6336 | BT50-MD63F-195 | BB18-□(S) | | | 272 | 152 | 77 | 1 | 2.2 |

※ The bite position has no bearing on the body model no.

BB Bite(For KMB)

| Model No. | Boring range(ØD) | | Insert(ISO) | Screw | Kg |
|------------|------------------|-----|-------------|-----------|-----|
| | Min | Max | | | |
| BB18-7(S) | 8 | 28 | TBGT0601□□L | BFTX0204A | 0.1 |
| BB18-9(S) | 10 | 30 | TPGT0802□□L | BFTX0204A | 0.1 |
| BB18-11(S) | 12 | 32 | TPGT1103□□L | BFTX0307A | 0.1 |
| BB18-13(S) | 14 | 34 | TPGT1103□□L | BFTX0307A | 0.1 |
| BB18-15(S) | 16 | 36 | TPGT1103□□L | BFTX0307A | 0.2 |
| BB18-17(S) | 18 | 38 | TPGT1103□□L | BFTX0307A | 0.2 |



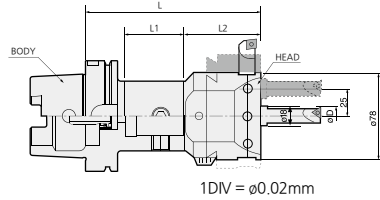
HSK/SK-KMB

Micro boring



| | | | | | |
|-------------|----------------|----------------|-----------|-----------|--------|
| DIN 69893-1 | DIN69871 -1A/B | C | Ø8 | Ø165 | |
| Shank | Shank | Coolant System | MIN Range | MAX Range | Boring |

Fig.1



Head

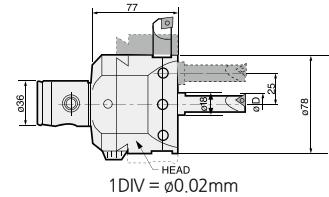


Fig.2

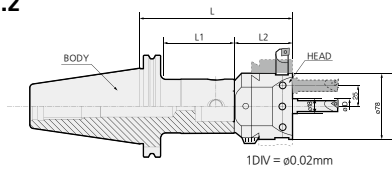
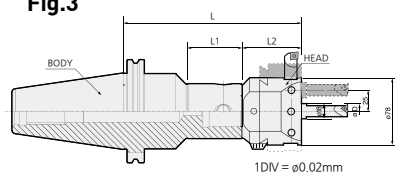


Fig.3



- Adjustment length: 7mm
- Ⓢ This product does not support the internal coolant system.
- ⊗ Red : Main component Blue : For separate purchase

- For more information on MD arbor, see **126p**
- For more information on BB bite, see **184p**
- For more information on the related parts, see **183p**

| | Model No. | | | Boring range(ØD) | | L | L1 | L2 | Fig. | Head weight |
|-------|----------------|-----------------|-----------|------------------|-------------|-----|-----|----|------|-------------|
| | Head model no. | Arbor Model No. | BB Bite | Bite position | Ø D | | | | | |
| HSK63 | KMB6336 | HSK63A-MD63F-95 | BB18-□(S) | Center Hole | Ø8.0~Ø38.0 | 172 | 69 | 77 | 1 | 2.2 |
| | | | | | | | | | | |
| SK40 | KMB6336 | SK40-MD63F-70 | BB18-□(S) | Eccentric Hole | Ø41.0~101.0 | 147 | 50 | 77 | 2 | 2.2 |
| | | | | | | | | | | |
| SK50 | KMB6336 | SK50-MD63F-130 | BB18-□(S) | Side Hole | Max.165.0 | 207 | 107 | 77 | 2 | 2.2 |
| | KMB6336 | SK50-MD63F-230R | BB18-□(S) | | | 307 | 149 | 77 | 3 | 2.2 |

⊗ The bite position has no bearing on the body model no.

BB Bite(For KMB)

| Model No. | Boring range(ØD) | | Insert(ISO) | Screw | Kg |
|------------|------------------|-----|-------------|-----------|-----|
| | Min | Max | | | |
| BB18-7(S) | 8 | 28 | TBGT0601□□L | BFTX0204A | 0.1 |
| BB18-9(S) | 10 | 30 | TPGT0802□□L | BFTX0204A | 0.1 |
| BB18-11(S) | 12 | 32 | TPGT1103□□L | BFTX0307A | 0.1 |
| BB18-13(S) | 14 | 34 | TPGT1103□□L | BFTX0307A | 0.1 |
| BB18-15(S) | 16 | 36 | TPGT1103□□L | BFTX0307A | 0.2 |
| BB18-17(S) | 18 | 38 | TPGT1103□□L | BFTX0307A | 0.2 |



BT-SMH

Small micro boring bar



MAS 403-BT
C
Ø8
Ø38
Boring

Shank Coolant System MIN Range MAX Range Boring

Fig.1

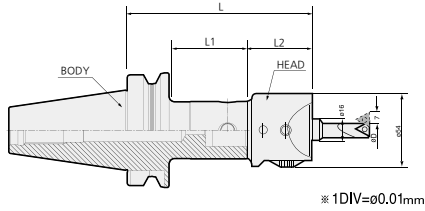
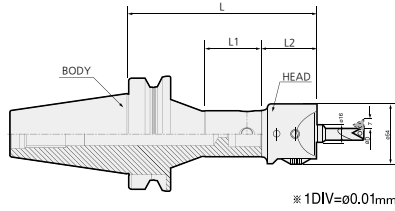
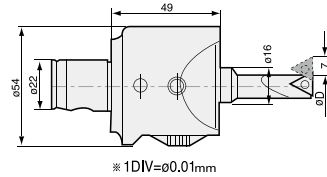


Fig.2



Head



- Adjustment length: 7mm

C This product does not support the internal coolant system.

※ Red : Main component Blue : For separate purchase

- For more information on MD arbor, see **126p**

- For more information on BB bite, see **184p**

- For more information on the related parts, see **183p**

| | Model No. | | | Boring range (ØD) | L | L1 | L2 | Fig. | Head weight |
|------|----------------|-----------------|-----------|-------------------|-----|-----|----|------|-------------|
| | Head model no. | Arbor Model No. | BB Bite | | | | | | |
| BT30 | SMH4022 | BT30-MD40F-45 | BB16-□(S) | Ø6.0~Ø34.0 | 94 | 22 | 49 | 1 | 0.6 |
| | SMH4022 | BT30-MD40F-60 | BB16-□(S) | Ø6.0~Ø34.0 | 109 | 36 | 49 | 1 | 0.6 |
| | SMH4022 | BT30-MD40F-80 | BB16-□(S) | Ø6.0~Ø34.0 | 129 | 56 | 49 | 1 | 0.6 |
| BT40 | SMH4022 | BT40-MD40F-60 | BB16-□(S) | Ø6.0~Ø34.0 | 109 | 31 | 49 | 1 | 0.6 |
| | SMH4022 | BT40-MD40F-110R | BB16-□(S) | Ø6.0~Ø34.0 | 159 | 60 | 49 | 2 | 0.6 |
| | SMH4022 | BT40-MD40F-115 | BB16-□(S) | Ø6.0~Ø34.0 | 164 | 83 | 49 | 1 | 0.6 |
| BT50 | SMH4022 | BT50-MD40F-60 | BB16-□(S) | Ø6.0~Ø34.0 | 109 | 22 | 49 | 1 | 0.6 |
| | SMH4022 | BT50-MD40F-195 | BB16-□(S) | Ø6.0~Ø34.0 | 244 | 152 | 49 | 1 | 0.6 |
| | SMH4022 | BT50-MD40F-230R | BB16-□(S) | Ø6.0~Ø34.0 | 279 | 180 | 49 | 2 | 0.6 |

BB Bite(For SMH) For separate purchase

| Model No. | Boring range(center) | | S | ød | L1 | L2 | Insert(ISO) | Insert Screw | Wrench |
|--------------|----------------------|------|------|----|----|----|-------------|--------------|--------|
| | Min. | Max. | | | | | | | |
| BB16 - 5(S) | 5 | 19 | 2.75 | 16 | 34 | 20 | WBG0601□□L | BFTX0203A | TRX06 |
| BB16 - 7(S) | 7 | 21 | 3.5 | | | 30 | TBGT0601□□L | BFTX0204A | |
| BB16 - 9(S) | 9 | 23 | 4.5 | | | 40 | TPGT0802□□L | BFTX0307A | |
| BB16 - 11(S) | 11 | 25 | 5.5 | | | 45 | TPGT1103□□L | BFTX0410A | TRX10 |
| BB16 - 15(S) | 15 | 29 | 7.5 | | | 50 | TPGT1604□□L | | |
| BB16 - 19(S) | 19 | 33 | 9.5 | | | 60 | TPGT1604□□L | TRX15 | |



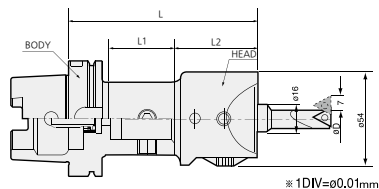
HSK/SK-SMH

Small micro boring bar



| | | | | | |
|-------------|----------------|----------------|-----------|-----------|--------|
| DIN 69893-1 | DIN69871 -1A/B | C | Ø8 | Ø38 | |
| Shank | Shank | Coolant System | MIN Range | MAX Range | Boring |

Fig.1



Head

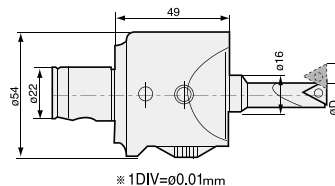


Fig.2

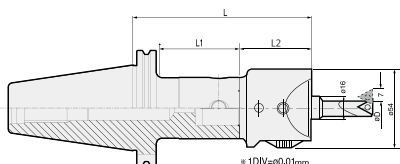
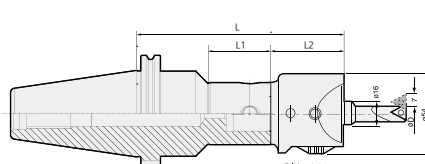


Fig.3



• Adjustment length : 17mm

C This product does not support the internal coolant system.

※ Red : Main component Blue : For separate purchase

• For more information on MD arbor, see **126p**

• For more information on BB bite, see **184p**

• For more information on the related parts, see **183p**

| | Model No. | | | Boring range (ØD) | L | L1 | L2 | Fig. | Head weight |
|-------|----------------|-----------------|-----------|-------------------|-------|-----|----|------|-------------|
| | Head model no. | Arbor Model No. | BB Bite | | | | | | |
| HSK63 | SMH4022 | HSK63A-MD40F-70 | BB16-□(S) | Ø6.0~Ø34.0 | 132.5 | 41 | 49 | 1 | 0.6 |
| | | | | | | | | | |
| | | | | | | | | | |
| SK40 | SMH4022 | SK40-MD40F-60 | BB16-□(S) | Ø6.0~Ø34.0 | 122.5 | 40 | 49 | 2 | 0.6 |
| | SMH4022 | SK40-MD40F-100 | BB16-□(S) | Ø6.0~Ø34.0 | 162.5 | 80 | 49 | 2 | 0.6 |
| SK50 | SMH4022 | SK50-MD40F-145 | BB16-□(S) | Ø6.0~Ø34.0 | 207.5 | 120 | 49 | 2 | 0.6 |
| | SMH4022 | SK50-MD40F-220R | BB16-□(S) | Ø6.0~Ø34.0 | 282.5 | 83 | 49 | 3 | 0.6 |

BB Bite(For SMH) For separate purchase

| Model No. | Boring range(ØD) | | Insert(ISO) | Screw | Kg |
|------------|------------------|-----|-------------|-----------|-----|
| | Min | Max | | | |
| BB16-7(S) | 8 | 28 | TBGT0601□□L | BFTX0204A | 0.1 |
| BB16-9(S) | 10 | 30 | TPGT0802□□L | BFTX0204A | 0.1 |
| BB16-11(S) | 12 | 32 | TPGT1103□□L | BFTX0307A | 0.1 |
| BB16-13(S) | 14 | 34 | TPGT1103□□L | BFTX0307A | 0.1 |
| BB16-15(S) | 16 | 36 | TPGT1604□□L | BFTX0307A | 0.2 |
| BB16-17(S) | 18 | 38 | TPGT1604□□L | BFTX0307A | 0.2 |



SMH SET

Small micro boring Set



SMH(SET1)



SMH(SET2)



SMH(SET4)



SET NUMBER

| TYPE | Model No. | SMH (SET1) | SMH (SET2) | SMH (SET4) | Applicable insert |
|-----------------|---------------|------------|------------|------------|-------------------|
| Boring head | SMH4022 | 1 | 1 | 1 | |
| Arbor | BT40-MD40F-60 | 1 | | | |
| Arbor | BT50-MD40F-60 | | 1 | | |
| BB Bite (STEEL) | BB16-0624(S) | 1 | 1 | 1 | WBG060102L |
| BB Bite (STEEL) | BB16-0832(S) | 1 | 1 | 1 | WBG060102L |
| 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 |
| Screw | BFTX0203A | 2 | 2 | 2 | |
| Screw | BFTX0204A | 2 | 2 | 2 | |
| Screw | BFTX0307A | 2 | 2 | 2 | |
| Wrench | LW-3 | 1 | 1 | 1 | |
| Wrench | LW-5 | 1 | 1 | 1 | |
| Wrench | TRX06 | 1 | 1 | 1 | |
| Wrench | TRX10 | 1 | 1 | 1 | |



SMB SPARE PART

Small micro boring bar related parts

Spare Part

| Type | Main purchased item | | | Item for separate purchase | |
|------------|---|---|---|---|---|
| | Boring head | Taper screw | Wrench | Boring bite | MD arbor |
| Images |  |  |  |  |  |
| Model No. | | | | | |
| SMB | SMB4022 | BTT1013F | LW-2.5 | BB18 | MD40F |






- The taper screw is built in the arbor by default.
- For more information on MD arbor, see **126p**.



KMB SPARE PART

Micro boring related parts

Spare Part

| Type | Main purchased item | | | Item for separate purchase | |
|------------|---|---|---|---|---|
| | Boring head | Taper screw | Wrench | Boring bite | MD arbor |
| Images |  |  |  |  |  |
| Model No. | | | | | |
| KMB | KMB6336 | BTT1620F | LW-4.0 | BB18 | MD63F |

- The taper screw is built in the arbor by default.
- For more information on MD arbor, see **126p**.



SMH SPARE PART

Small micro boring bar (precision type) related parts

Spare Part

| Type | Main purchased item | | | Item for separate purchase | |
|------------|---|---|---|---|---|
| | Boring head | Taper screw | Wrench | Boring bite | MD arbor |
| Images |  |  |  |  |  |
| Model No. | | | | | |
| SMH | SMH4022 | BTT1013F | LW-3.0 | BB16 | MD40F |

- The taper screw is built in the arbor by default.
- For more information on MD arbor, see **126p**.

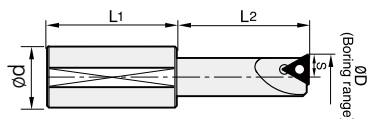


BB BITE

BB Bite(for SMB, SMH, KMB)

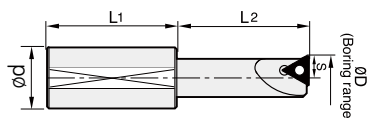


Boring bite : BB type(for SMB)



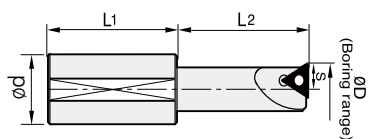
| Designation | Boring range (center) | | S | ød | L1 | L2 | Insert | Insert screw |
|--------------|-----------------------|------|-----|----|----|----|-------------|--------------|
| | Min. | Max. | | | | | | |
| BB18 - 7(S) | 7 | 27 | 3.5 | 18 | 30 | 30 | TBGT0601□□L | BFTX0204A |
| BB18 - 9(S) | 9 | 29 | 4.5 | 18 | 30 | 40 | TPGT0802□□L | |
| BB18 - 11(S) | 11 | 31 | 5.5 | 18 | 30 | 45 | TPGT1103□□L | BFTX0307A |
| BB18 - 13(S) | 13 | 33 | 6.5 | 18 | 40 | 45 | | |
| BB18 - 15(S) | 15 | 35 | 7.5 | 18 | 40 | 50 | | |
| BB18 - 17(S) | 17 | 37 | 8.5 | 18 | 40 | 50 | | |

Boring bite : BB type(for SMH)



| Designation | Boring range (center) | | S | ød | L1 | L2 | Insert | Insert screw | Wrench |
|--------------|-----------------------|------|------|----|----|----|-------------|--------------|--------|
| | Min. | Max. | | | | | | | |
| BB16 - 5(S) | 5 | 19 | 2.75 | 16 | 34 | 20 | WBG0601□□L | BFTX0203A | TRX06 |
| BB16 - 7(S) | 7 | 21 | 3.5 | 16 | 34 | 30 | TBGT0601□□L | BFTX0204A | |
| BB16 - 9(S) | 9 | 23 | 4.5 | 16 | 34 | 40 | TPGT0802□□L | BFTX0307A | TRX10 |
| BB16 - 11(S) | 11 | 25 | 5.5 | 16 | 34 | 45 | TPGT1103□□L | | |
| BB16 - 15(S) | 15 | 29 | 7.5 | 16 | 34 | 50 | TPGT1604□□L | BFTX0410A | TRX15 |
| BB16 - 19(S) | 19 | 33 | 9.5 | 16 | 34 | 60 | TPGT1604□□L | | |

Boring bite : BB type(for KMB)



| Designation | Boring range(center) | | S | ød | L1 | L2 | Insert | Insert screw | | |
|--------------|----------------------|-----------|----|-----|-----|----|--------|--------------|-------------|-----------|
| | Center | Eccentric | | | | | | | | |
| BB18 - 7(S) | 7 | 40 | 27 | 91 | 3.5 | 18 | 30 | 30 | TBGT0601□□L | BFTX0204A |
| BB18 - 9(S) | 9 | 42 | 29 | 93 | 4.5 | 18 | 30 | 40 | TPGT0802□□L | |
| BB18 - 11(S) | 11 | 44 | 31 | 95 | 5.5 | 18 | 30 | 45 | TPGT1103□□L | BFTX0307A |
| BB18 - 13(S) | 13 | 46 | 33 | 97 | 6.5 | 18 | 40 | 45 | | |
| BB18 - 15(S) | 15 | 48 | 35 | 99 | 7.5 | 18 | 40 | 50 | | |
| BB18 - 17(S) | 17 | 50 | 37 | 101 | 8.5 | 18 | 40 | 50 | | |

Standard Boring Bite(Insert type)

| Maker | Designation | Purpose of use | Boring Ø | Insert |
|-------------------------------------|-------------------------------------|---|---|---|
| Sumitomo SEI | BBPT (WBPT: Carbide Shank) | For through hole boring (for Through hole boring) for blind hole and through hole | Ø8,10,12,16 | TBGT0601□□L, TPGT0802□□L, TPGT1103□□L |
| | BBPW (WBPW: Carbide Shank) | | Ø5.5,8,10 | WBG0601□□L, WBMT0601□□L, WBG0802□□L |
| | S-SCLCR [C-SCLCR: Carbide Shank] | | Ø8,10,12,16 | CCGT0602□□, CCMT0602□□, CCGT09T3□□, CCMT09T3□□ |
| | S-STFPR [C-STFPR: Carbide Shank] | For through hole boring (for Through hole boring) | Ø12,16 | TPGT1103□□L |
| S-STUPR | Ø8 | | TBGT0601□□L, TPGT0802□□L | |
| S-SWUBR (E-SWUBR: Carbide Shank) | Ø5.5,8,10 | | WBG0601□□L, WBG0802□□L, CCMT0602□□, CCGT0602□□ | |
| S-SCLCR [C-SCLCR: Carbide Shank] | For blind hole and through hole | | Ø10,12,16 | CCMT09T3□□, CCGT09T3□□ |
| S-SCLPR [C-SCLPR: Carbide Shank] | (for Stop and through hole boring) | | Ø8,10,12,16 | CPGT0802□□, CPGT0903□□ |



BH

Square boring bite for BSA



Boring

Fig.1

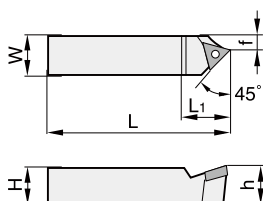
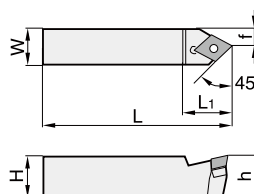


Fig.2



| Model No. | Fig. | W=H | h | L | L1 | f | Usable insert | Insert screw | Insert wrench |
|-----------|------|-----|------|-----|----|------|---------------|--------------|---------------|
| BH408 | 1 | 8 | 7.8 | 40 | 9 | 3.2 | TPGT0802□□L | BFTX0204A | TRX06 |
| BH410 | 2 | 10 | 9.8 | 50 | 10 | 4.2 | CPMT0602□□ | BFTX02056N | TRX08 |
| BH413 | 2 | 13 | 12.8 | 60 | 14 | 6.2 | CPMT0803□□ | BFTX0307N | TRX10 |
| BH416 | 2 | 16 | 15.8 | 80 | 18 | 7.3 | CPMT0903□□ | BFTX0407A | TRX15 |
| BH419 | 2 | 19 | 18.8 | 95 | 22 | 10.3 | CPMH1204□□ | BFN0511T | TRX20 |
| BH425 | 2 | 25 | 24.8 | 125 | 26 | 14.2 | CPMH1604□□ | BFX0611R | LW-3.0 |

BH

Insert for Square Boring Bite

| Maker | Insert | Grade | Workpiece | Cutting |
|--------|---------------|-------|-----------|---------|
| KORLOY | CCGT0602□□-AK | H01 | Aluminium | General |
| | CCGT09T3□□-AK | | | |
| | CCGT1204□□-AK | | | |

| Maker | Insert | Grade | Workpiece | Cutting |
|------------|-----------------|------------------------|-----------------------------------|-------------------|
| SUMITOMO | TPGT0802□□ | Cermet : T1500A | Steel, Cast iron, Stainless Steel | finishing |
| | CPMT0602□□ | Coated : AC6030M | Steel | general |
| | CPMT0803□□ | Coated : AC6030M | Steel | general |
| | CPMT0903□□ | Coated: AC8015P | Steel, Alloy Steel, Cast iron | general |
| | | Coated: AC6030M | Stainless Steel | general |
| | | Cermet : T3000Z | Steel, Cast iron, Stainless Steel | finishing-general |
| | CPMH1204□□ | Coated: AC6030M | Steel, Stainless Steel | general |
| CPMH1604□□ | Coated: AC6030M | Steel, Stainless Steel | general | |

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



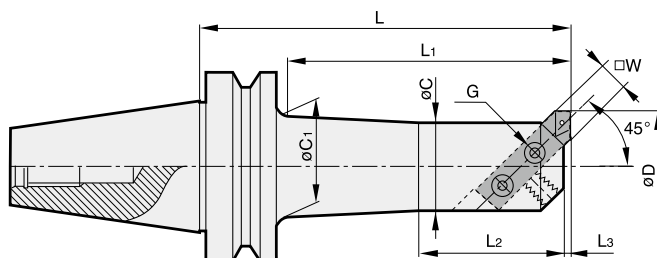
BSA

Square boring bar



MAS 403-BT
C
25
125

Shank Coolant System MIN Range MAX Range Boring



• For more information on BB bite, see **185p**.

C This product does not support the internal coolant system.

• For more information on the related parts, see **187p**.

| Model No. | ØD | | L | ØC | L1 | L2 | L3 | ØC1 | W | G | Kg | Package weight (Kg) |
|----------------|-----|-----|-----|----|-----|-----|-----|-----|------|-----|-----|---------------------|
| | MIN | MAX | | | | | | | | | | |
| BT50-BSA25-135 | 25 | 38 | 135 | 20 | 92 | 35 | 1.0 | 22 | 8 | M6 | 3.8 | 4.2 |
| BT50-BSA30-165 | 30 | 42 | 165 | 24 | 122 | 40 | 1.6 | 26 | 8 | M6 | 4.1 | 4.5 |
| BT50-BSA38-180 | 38 | 52 | 180 | 30 | 137 | 50 | 2.6 | 33 | 10 | M8 | 4.5 | 4.9 |
| BT50-BSA42-210 | 42 | 56 | 210 | 34 | 167 | 60 | 2.0 | 37 | 10 | M8 | 4.9 | 5.3 |
| BT50-BSA50-180 | 50 | 65 | 180 | 40 | 137 | 65 | 3.0 | 46 | 13 | M10 | 5.1 | 5.5 |
| BT50-BSA50-240 | 50 | 65 | 240 | 40 | 197 | 65 | 3.0 | 44 | 13 | M10 | 5.8 | 6.2 |
| BT50-BSA62-195 | 62 | 90 | 195 | 50 | 152 | 80 | 2.0 | 56 | 16 | M10 | 5.9 | 6.3 |
| BT50-BSA62-270 | 62 | 90 | 270 | 50 | 227 | 80 | 2.0 | 56 | 16.0 | M10 | 7.4 | 7.8 |
| BT50-BSA72-195 | 72 | 110 | 195 | 60 | 152 | 95 | 2.4 | 66 | 19.0 | M12 | 6.8 | 7.2 |
| BT50-BSA72-285 | 72 | 110 | 285 | 60 | 242 | 95 | 2.4 | 66 | 19.0 | M12 | 9.1 | 9.5 |
| BT50-BSA90-210 | 90 | 125 | 210 | 75 | 167 | 110 | 4.0 | 80 | 19.0 | M12 | 9.1 | 9.5 |




BSA SPARE PART

Boring bar related parts



Main components

| Spare Part | | Main components | |
|------------|--------|--|---------|
| Type | | Set screw | |
| Model No. | Images |  | |
| | BSA25 | | BTF0606 |
| BSA30 | | BTF0606 | |
| BSA38 | | BTF0808 | |
| BSA42 | | BTF0810 | |
| BSA50 | | BTF1012 | |
| BSA62 | | BTF1016 | |
| BSA72 | | BTF1216 | |
| BSA90 | | BTF1220 | |
| BSA105 | | BTF1225 | |

For separate purchase

| Spare Part | | For separate purchase | |
|------------|--------|---|---|
| Type | | Bite | Wrench |
| Model No. | Images |  |  |
| | BSA25 | | BH408 |
| 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 |

- For more information on BH boring bite, see **185p**

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

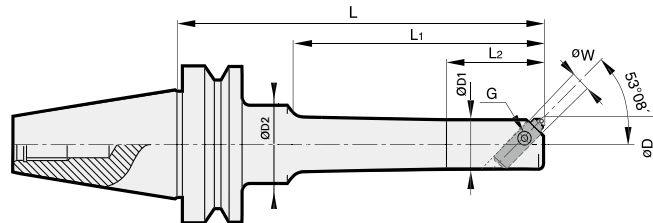
TAUMAX

OTHER



BT-BKA

FZ Micro boring bar



C This product does not support the internal coolant system.

※ Red : Main component Blue : For separate purchase

※ For more information on the boring range and insert used, see the FZ unit table.

• The boring unit is an item for separate purchase.

• For more information on the FZ unit, see **190p**

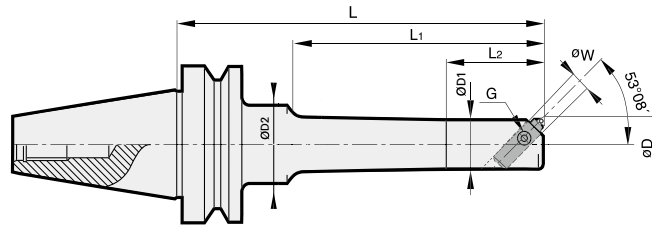
• For more information on the related parts, see **191p**

| | Model No. | FZ unit | L | L1 | L2 | ØD1 | ØD2 | W | G | Kg | Package weight (Kg) |
|-------------|----------------|--------------|-----|-----|-----|-----|-----|----|-----|-----|---------------------|
| BT30 | BT30-BKA28-150 | FZ10-□□-3(S) | 150 | 123 | - | 25 | - | 10 | M6 | 0.9 | 1.0 |
| | BT30-BKA36-150 | FZ12-□□-3(S) | 150 | 125 | - | 32 | - | 12 | M8 | 1.2 | 1.3 |
| | BT30-BKA45-150 | FZ16-□□-3(S) | 150 | 128 | - | 40 | - | 16 | M10 | 1.6 | 1.7 |
| BT40 | BT40-BKA23-150 | FZ8-□□-3 | 150 | 95 | 40 | 20 | 22 | 8 | M6 | 1.6 | 1.9 |
| | BT40-BKA23-225 | FZ8-□□-3 | 225 | 95 | 40 | 20 | 22 | 8 | M6 | 2.8 | 3.1 |
| | BT40-BKA28-165 | FZ10-□□-3(S) | 165 | 122 | 50 | 25 | 26 | 10 | M6 | 1.5 | 1.7 |
| | BT40-BKA28-225 | FZ10-□□-3(S) | 225 | 125 | 50 | 25 | 26 | 10 | M6 | 2.6 | 2.9 |
| | BT40-BKA36-165 | FZ12-□□-3(S) | 165 | 133 | 60 | 32 | 35 | 12 | M8 | 1.9 | 2.1 |
| | BT40-BKA36-225 | FZ12-□□-3(S) | 225 | 193 | 60 | 32 | 35 | 12 | M8 | 2.8 | 3.1 |
| | BT40-BKA45-165 | FZ16-□□-3(S) | 165 | 133 | 70 | 40 | 44 | 16 | M10 | 2.3 | 2.6 |
| | BT40-BKA45-225 | FZ16-□□-3(S) | 225 | 208 | 70 | 40 | 44 | 16 | M10 | 3.0 | 3.2 |
| | BT40-BKA56-165 | FZ20-□□-3(S) | 165 | - | 70 | 50 | 54 | 20 | M12 | 3.0 | 3.2 |
| | BT40-BKA56-240 | FZ20-□□-3(S) | 240 | - | 70 | 50 | 54 | 20 | M12 | 4.2 | 4.5 |
| | BT40-BKA72-165 | FZ25-□□-3(S) | 165 | - | - | 63 | - | 25 | M16 | 4.0 | 4.2 |
| | BT40-BKA72-240 | FZ25-□□-3(S) | 240 | - | - | 63 | - | 25 | M16 | 5.7 | 5.9 |
| | BT40-BKA90-165 | FZ32-□□-3(S) | 165 | - | 100 | 80 | - | 32 | M20 | 4.9 | 5.2 |
| | BT40-BKA90-240 | FZ32-□□-3(S) | 240 | - | 100 | 80 | - | 32 | M20 | 6.8 | 7.0 |



BT-BKA

FZ Micro boring bar



C This product does not support the internal coolant system.

※ Red : Main component Blue : For separate purchase

※ For more information on the boring range and insert used, see the FZ unit table.

• The boring unit is an item for separate purchase.

• For more information on the FZ unit, see **190p**.

• For more information on the related parts, see **191p**.

| Model No. | FZ unit | L | L1 | L2 | ØD1 | ØD2 | W | G | Kg | Package weight (Kg) |
|------------------------|--------------|-----|-----|-----|-----|-----|----|-----|------|---------------------|
| BT50-BKA23-150 | FZ8-□□-3 | 150 | 95 | 40 | 20 | 22 | 8 | M6 | 4.2 | 4.6 |
| BT50-BKA23-225 | FZ8-□□-3 | 225 | 95 | 40 | 20 | 22 | 8 | M6 | 5.3 | 5.7 |
| BT50-BKA28-165 | FZ10-□□-3(S) | 165 | 122 | 50 | 25 | 26 | 10 | M6 | 4.1 | 4.5 |
| BT50-BKA28-225 | FZ10-□□-3(S) | 225 | 122 | 50 | 25 | 26 | 10 | M6 | 5.1 | 5.5 |
| BT50-BKA36-165 | FZ12-□□-3(S) | 165 | 122 | 60 | 32 | 35 | 12 | M8 | 4.4 | 4.8 |
| BT50-BKA36-225 | FZ12-□□-3(S) | 225 | 182 | 60 | 32 | 35 | 12 | M8 | 4.9 | 5.3 |
| BT50-BKA45-165 | FZ16-□□-3(S) | 165 | 122 | 70 | 40 | 44 | 16 | M10 | 4.8 | 5.2 |
| BT50-BKA45-225 | FZ16-□□-3(S) | 225 | 182 | 70 | 40 | 44 | 16 | M10 | 5.5 | 5.9 |
| BT50-BKA56-165 | FZ20-□□-3(S) | 165 | 122 | 70 | 50 | 54 | 20 | M12 | 5.5 | 5.9 |
| BT50-BKA56-240 | FZ20-□□-3(S) | 240 | 197 | 70 | 50 | 54 | 20 | M12 | 6.7 | 7.1 |
| BT50-BKA72-165 | FZ25-□□-3(S) | 165 | 122 | 80 | 63 | 68 | 25 | M16 | 6.5 | 6.9 |
| BT50-BKA72-240 | FZ25-□□-3(S) | 240 | 197 | 80 | 63 | 68 | 25 | M16 | 8.5 | 8.9 |
| BT50-BKA90-165 | FZ32-□□-3(S) | 165 | 122 | 197 | 80 | - | 32 | M20 | 7.9 | 8.3 |
| BT50-BKA90-240 | FZ32-□□-3(S) | 240 | 197 | - | 80 | - | 32 | M20 | 10.9 | 11.3 |
| BT50-BKA110-270 | FZ32-□□-3(S) | 270 | - | - | 100 | - | 32 | M20 | 14.8 | 15.2 |
| | | | | | | | | | | |
| | | | | | | | | | | |

BT50

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

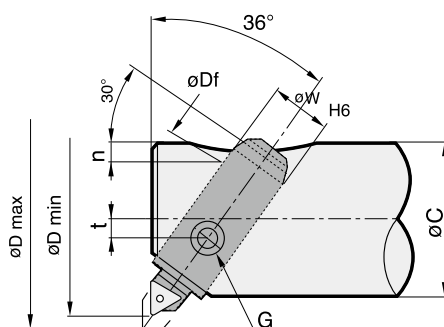
TAUMAX

OTHER



FZ UNIT

FZ Unit Inclined mounting type



C This product does not support the internal coolant system.

• For more information on the insert, see **191p**.

※ In case of one gradation adjustment, $\pm 0.02\text{mm}$

• For more information on the related parts, see **191p**.

FZ8, FZ10, FZ12, FZ16, FZ20, FZ25, FZ32

| Model No. | ØD | | Insert holder (ISO) | Insert (ISO) | ØC | n | ØDf | t | G | W | Kg | Package weight (Kg) |
|-------------------|-----|----------|---------------------|--------------|-----|-----|-----|-----|-----|----|------|---------------------|
| | MIN | MAX | | | | | | | | | | |
| FZ8-23-3(P10,K10) | 23 | 29(32) | 8Z3 (Brazed tip) | - | 20 | 3 | 8 | 1.5 | M6 | 8 | 0.04 | 0.04 |
| FZ8-26-3(P10,K10) | 26 | 32(34) | 8Z3 (Brazed tip) | - | 20 | 3 | 8 | 1.5 | M6 | 8 | 0.04 | 0.04 |
| FZ10-28-3(S) | 28 | 34(38) | U10Z3S | TBGT0601□□L | 25 | 3.5 | 8 | 2 | M6 | 10 | 0.1 | 0.1 |
| FZ10-32-3(S) | 32 | 38(44) | U10Z3S | TBGT0601□□L | 25 | 3.5 | 8 | 2 | M6 | 10 | 0.1 | 0.1 |
| FZ12-36-3(S) | 36 | 44(48) | U12Z3S | TBGT0601□□L | 32 | 4 | 10 | 2.5 | M8 | 12 | 0.1 | 0.1 |
| FZ12-40-3(S) | 40 | 48(55) | U12Z3S | TBGT0601□□L | 32 | 4 | 10 | 2.5 | M8 | 12 | 0.1 | 0.1 |
| FZ16-45-3(S) | 45 | 54(60) | U16Z3S | TBGT0802□□L | 40 | 6.5 | 12 | 3 | M10 | 16 | 0.1 | 0.0 |
| FZ16-50-3(S) | 50 | 59(68) | U16Z3S | TBGT0802□□L | 40 | 6.5 | 12 | 3 | M10 | 16 | 0.1 | 0.1 |
| FZ20-56-3(S) | 56 | 68(78) | U20Z3S | TBGT0802□□L | 50 | 7 | 16 | 5 | M12 | 20 | 0.2 | 0.2 |
| FZ20-64-3(S) | 64 | 76(90) | U20Z3S | TBGT0802□□L | 50 | 7 | 16 | 5 | M12 | 20 | 0.2 | 0.2 |
| FZ25-72-3(S) | 72 | 88(100) | U25Z3S | TPGT1103□□L | 63 | 8 | 20 | 4 | M16 | 25 | 0.3 | 0.3 |
| FZ25-80-3(S) | 80 | 96(114) | U25Z3S | TPGT1103□□L | 63 | 8 | 20 | 4 | M16 | 25 | 0.3 | 0.3 |
| FZ32-90-3(S) | 90 | 114(126) | U32Z3S | TPGT1103□□L | 80 | 10 | 25 | 6 | M20 | 32 | 0.6 | 0.6 |
| FZ32-100-3(S) | 100 | 124(140) | U32Z3S | TPGT1103□□L | 80 | 10 | 25 | 6 | M20 | 32 | 0.6 | 0.6 |
| FZ32-110-3(S) | 110 | 134(150) | U32Z3S | TPGT1103□□L | 100 | 10 | 25 | 12 | M20 | 32 | 0.7 | 0.7 |
| FZ32-125-3(S) | 125 | 149(175) | U32Z3S | TPGT1103□□L | 100 | 10 | 25 | 12 | M20 | 32 | 0.8 | 0.8 |



FZ UNIT SPARE PART

FZ unit related parts



Spare Part

| TYPE | Main components | | | | | For separate purchase |
|-----------------------------|-----------------|-------------|--------------|-------------|----------|-----------------------|
| | Housing | Spindle | Insert screw | Torx Wrench | L-Wrench | Torx Wrench |
| Images | | | | | | |
| Model No. | | | | | | |
| FZ8-23, 26-3, P10 | 8-23, 26-3 | 8Z3(P10) | - | - | LW-1.5 | R0/N0 |
| FZ8-23, 26-3, K10 | 8-23, 26-3 | 8Z3(P10) | - | - | LW-1.5 | R0/N0 |
| FZ10-28, 32-3(S) | 10-28, 32-3 | U10Z3-TB06 | BFTX0204A | TRX6 | LW-2.0 | R2/N1 |
| FZ12-36, 40-3(S) | 12-36, 40-3 | U12Z3-TB06 | BFTX0204A | TRX6 | LW-2.5 | R2A/N2 |
| FZ16-45, 50-3(S) | 16-45, 50-3 | U16Z3-TP08 | BFTX0204A | TRX6 | LW-3.0 | N3 |
| FZ20-56, 64-3(S) | 20-56, 64-3 | U20Z3-TP08 | BFTX0204A | TRX6 | LW-4.0 | R4/N4 |
| FZ25-72, 80-3(S) | 25-72, 80-3 | U25Z3-TP11 | BFTX0307A | TRX10 | LW-4.0 | ZV25 |
| FZ32-90, 100, 110, 125-3(S) | 32-90, 100-3 | UZ32Z3-TP11 | BFTX0307A | TRX10 | LW-5.0 | R5/N5 |



INSERT

FZ Unit, FF Unit

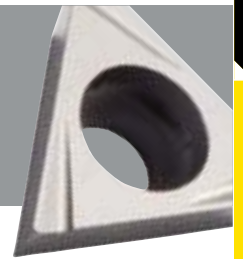


Fig. 1
(With Chip Breaker)

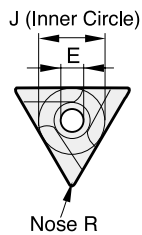
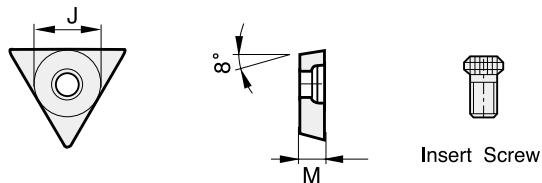


Fig. 2
(Without Chip Breaker)



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

| INSERT | Fig. | J | R | M | E | Insert screw | Wrench |
|-------------|------|------|-----|------|-----|--------------|--------|
| TBGT0601□□L | 1 | 3.97 | 0.2 | 1.59 | 2.2 | BFTX0204A | TRX6 |
| TPGT0802□□L | 1 | 4.76 | 0.2 | 2.38 | 2.4 | BFTX0204A | TRX6 |
| TPGT1103□□L | 1 | 6.35 | 0.4 | 3.18 | 2.8 | BFTX0307A | TRX10 |

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER

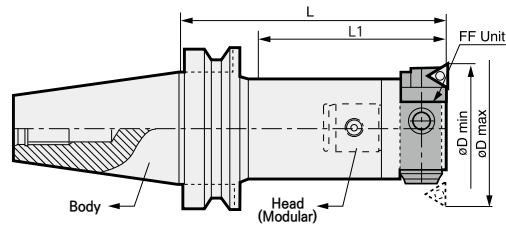


BT-BCF

Micro boring bar



| | | | | |
|---------------|----------------|-----------|-----------|--------|
| MAS 403-BT | C | 29.5 | 141 | |
| Shank | Coolant System | MIN Range | MAX Range | Boring |



C This product does not support the internal coolant system.

※ Red : Main component Blue : For separate purchase

※ The bodies, boring units, and head sets are sold individually.

- For more information on FF boring unit, see **194p**
- For more information on the applicable insert, see **195p**
- For more information on the related parts, see **194p**

| | Model No. | | | ØD | | L | L1 | Kg | Kg (Package weight) |
|------|-----------------|---------|-------------|------|-----|-----|-----|-----|------------------------|
| | Arbor Model No. | Head | Boring unit | MIN | MAX | | | | |
| BT30 | BT30-MD25F-90 | BCF2530 | FF10-30(S) | 29.5 | 42 | 140 | 93 | 0.3 | 0.6 |
| | BT30-MD32F-80 | BCF3239 | FF12-39(S) | 39 | 50 | 140 | 99 | 0.4 | 0.7 |
| | BT30-MD40F-80 | BCF4047 | FF16-47(S) | 47 | 66 | 170 | 109 | 0.6 | 0.9 |
| | BT30-MD50F-70 | BCF5058 | FF20-58(S) | 58 | 83 | 125 | 98 | 1 | 0.9 |
| BT40 | BT40-MD25F-95 | BCF2530 | FF10-30(S) | 29.5 | 42 | 145 | 72 | 0.3 | 1.1 |
| | BT40-MD32F-100 | BCF3239 | FF12-39(S) | 39 | 50 | 160 | 96 | 0.4 | 1.1 |
| | BT40-MD40F-115 | BCF4047 | FF16-47(S) | 47 | 66 | 175 | 120 | 0.6 | 1.6 |
| | BT40-MD50F-105 | BCF5058 | FF20-58(S) | 58 | 83 | 175 | 143 | 1 | 1.8 |
| | BT40-MD63F-110 | BCF6379 | FF25-79(S) | 79 | 108 | 180 | 148 | 1.7 | 2.4 |
| | BT40-MD80F-100 | BCF100 | FF32-100(S) | 100 | 141 | 200 | 168 | 3.8 | 2.9 |
| BT50 | BT50-MD25F-105 | BCF2530 | FF10-30(S) | 29.5 | 42 | 155 | 72 | 0.3 | 3.8 |
| | BT50-MD32F-110 | BCF3239 | FF12-39(S) | 39 | 50 | 170 | 96 | 0.4 | 4 |
| | BT50-MD40F-195 | BCF4047 | FF16-47(S) | 47 | 66 | 255 | 143 | 0.6 | 4.8 |
| | BT50-MD50F-225 | BCF5058 | FF20-58(S) | 58 | 83 | 295 | 195 | 1 | 6 |
| | BT50-MD63F-195 | BCF6379 | FF25-79(S) | 79 | 108 | 265 | 222 | 1.6 | 6.8 |
| | BT50-MD80F-175 | BCF100 | FF32-100(S) | 100 | 141 | 275 | 232 | 3.8 | 8 |

※ Right-angled type micro boring bar

※ Boring unit (Insert)

- FF10-30(S) / FF12-39(S) (TBGT0601□□□)
- FF16-47(S) / FF20-58(S) (TPGT0802□□□)
- FF25-79(S) / FF32-100(S) (TPGT1103□□□)



BT-BCF

Micro boring bar



MAS 403-BT
C
138
450
Boring

Shank Coolant System MIN Range MAX Range Boring

Fig.1

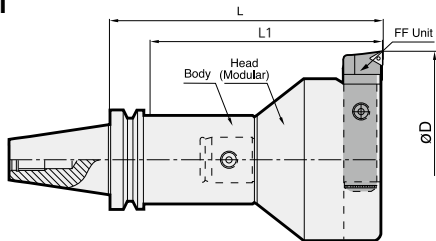
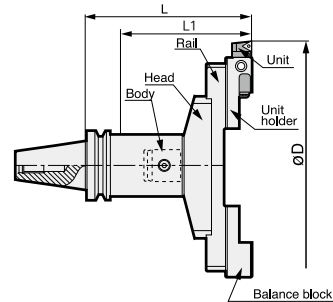


Fig.2



1DIV. = Ø0.02mm

C This product does not support the internal coolant system.

※ Red : Main component Blue : For separate purchase

※ The bodies, boring units, and head sets are sold individually.

- For more information on MD arbor, see **126p**
- For more information on FF boring unit, see **194p**
- For more information on the applicable insert, see **195p**
- For more information on the related parts, see **194p**

| | Model No. | | | ØD | | L | L1 | Fig | Kg (Package weight) |
|----------------|-----------------|-----------------|-------------|-----|-----|-----|-----|------|------------------------|
| | Arbor Model No. | Head set | FF Unit | MIN | MAX | | | | |
| BT50 | BT50-MD90F-75 | BCF138 | FF32-138(S) | 138 | 159 | 175 | 120 | 1 | 8 |
| | BT50-MD90F-145 | BCF138 | FF32-138(S) | 150 | 159 | 245 | 190 | 1 | 9 |
| | BT50-MD90F-75 | BCF150 | FF32-138(S) | 170 | 171 | 175 | 120 | 1 | 9.6 |
| | BT50-MD90F-145 | BCF150 | FF32-138(S) | 190 | 171 | 245 | 190 | 1 | 12.4 |
| | BT50-MD90F-195 | BCF150 | FF32-138(S) | 210 | 171 | 295 | 240 | 1 | 15.4 |
| | BT50-MD90F-75 | BCF170 | FF32-138(S) | 230 | 191 | 175 | 120 | 1 | 9.8 |
| | BT50-MD90F-145 | BCF170 | FF32-138(S) | 250 | 191 | 245 | 190 | 1 | 12.6 |
| | BT50-MD90F-195 | BCF170 | FF32-138(S) | 355 | 191 | 295 | 240 | 1 | 15.8 |
| | BT50-MD90F-75 | BCF190 | FF32-138(S) | 138 | 211 | 175 | 120 | 1 | 10.2 |
| | BT50-MD90F-145 | BCF190 | FF32-138(S) | 150 | 211 | 245 | 190 | 1 | 13 |
| | BT50-MD90F-195 | BCF190 | FF32-138(S) | 170 | 211 | 295 | 240 | 1 | 16.1 |
| | BT50-MD90F-75 | BCF210 | FF32-138(S) | 190 | 231 | 175 | 120 | 1 | 10.5 |
| | BT50-MD90F-145 | BCF210 | FF32-138(S) | 210 | 231 | 245 | 190 | 1 | 13.4 |
| | BT50-MD90F-195 | BCF210 | FF32-138(S) | 230 | 231 | 295 | 240 | 1 | 16.5 |
| | BT50-MD90F-75 | BCF230 | FF32-138(S) | 250 | 251 | 175 | 120 | 1 | 13.1 |
| | BT50-MD90F-145 | BCF230 | FF32-138(S) | 355 | 251 | 245 | 190 | 1 | 15.6 |
| | BT50-MD90F-195 | BCF230 | FF32-138(S) | 170 | 251 | 295 | 240 | 1 | 18.2 |
| | BT50-MD90F-75 | BCF250FS | FF25-79(S) | 190 | 355 | 182 | 182 | 2 | 14.3 |
| | BT50-MD90F-145 | BCF250FS | FF25-80(S) | 210 | 355 | 252 | 252 | 2 | 17.2 |
| | BT50-MD90F-195 | BCF250FS | FF25-81(S) | 230 | 355 | 302 | 302 | 2 | 21.2 |
| BT50-MD90F-75 | BCF350FS | FF25-82(S) | 250 | 450 | 182 | 182 | 2 | 16.4 | |
| BT50-MD90F-145 | BCF350FS | FF25-83(S) | 355 | 450 | 252 | 252 | 2 | 19 | |
| BT50-MD90F-195 | BCF350FS | FF25-84(S) | 250 | 450 | 302 | 302 | 2 | 20.8 | |

※ Modular type micro boring bar

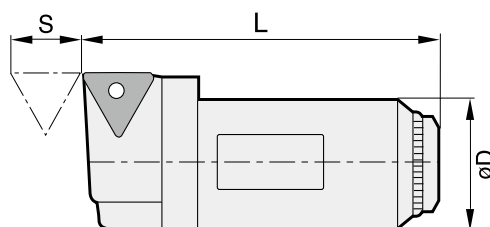
※ Boring unit (Insert)

- FF10-30(S) / FF12-39(S) (TBGT0601□□L)
- FF16-47(S) / FF20-58(S) (TPGT0802□□L)
- FF25-79(S) / FF32-100(S) (TPGT1103□□L)



FF

FF Unit_micro boring unit



| | Model No. | ØD | L | S | Usable insert |
|---------|-------------|----|------|-----|---------------|
| FF Unit | FF10-30(S) | 10 | 28.5 | 3.5 | TBGT0601□□L |
| | FF12-39(S) | 12 | 37.5 | 3.5 | TBGT0601□□L |
| | FF16-47(S) | 16 | 45 | 5 | TPGT0802□□L |
| | FF20-58(S) | 20 | 56 | 7 | TPGT0802□□L |
| | FF25-79(S) | 25 | 77.5 | 8 | TPGT1103□□L |
| | FF32-100(S) | 32 | 97 | 11 | TPGT1103□□L |
| | FF32-138(S) | 32 | 131 | 11 | TPGT1103□□L |

C This product does not support the internal coolant system.



FF UNIT SPARE PART

FF Unit related parts

Spare Part

| Type | Main components | | |
|-------------|-----------------|-------------|--------|
| | Clamp screw | Torx Wrench | Wrench |
| Images | | | |
| Model No. | | | |
| 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-4 |
| FF25-79(S) | BFTX0307A | TRX10 | LW-4 |
| FF32-100(S) | BFTX0307A | TRX10 | LW-5 |



INSERT

Boring Insert

| INSERT | Applicable item (boring head) |
|-------------|---|
| CCET0301□□L | FBB15C(FBH15,FBH18) |
| CCET0401□□L | FBB20N-C, FBB20N-1-C(FBH1920B) FBB26N-C, FBB26N-1-C(FBH2526B) |
| CCMT0602□□L | BCC28(DBC2528S),BCC35(DBC3235S), FBB33N-C, FBB33N-1-C(FBH3233B), FBH42N-C, FBH42N-1-C(FBH4042B), FBH53N-1-C(FBH5053B) |
| CCGT0602□□L | |
| CPMT0602□□L | BH410(BSA38,BSA42) |
| CPMT0803□□L | BH413(BSA50) |
| CCMT09T3□□L | |
| CCGT09T3□□L | BCC46(DBC4046S),BCC58(DBC5058S), FBB53N-C, FBH53N-1-C09(FBH5053B), FBB68N-C, FBB68N-C09, FBB68N-1-C09(FBH6368B, FBH6398B, FBH8098B), FBB130-C09(FBC130,FBC175,FBC220,FBC265,FBC310,FBC385,FBC460) |
| CPMT0909□□ | BH416(BSA62) |
| CCMT1204□□L | |
| CCGT1204□□L | BCC74(DBC6374S),BCC94(DBC8094),BCC120(DBC120S), BCC1348(TBC130,TBC175,TBC220,TBC265), BCC1354(TBC310,TBC385,TBC460) FBB130-C12(FBC130,FBC175,FBC220,FBC265,FBC310,FBC385,FBC460) |
| CPMH1204□□ | BH419(BSA72,BSA90) |
| WBG0601□□L | BB16-5(S)(SMH4022) |
| TBGT0601□□L | BB16-7(S), BB18-7(S)(KMB6336,SMB4022) FZ10-28-3(S),FZ10-32-3(S)(BSA30) FZ12-36-3(S),FZ12-40-3(S)(BSA38) FF10-30(S)(BCF2530),FF12-39(S)(BCF3239) |
| TPGT0802□□L | |
| TPGW0802□□ | BB16-9(S)(SMH4022),BB18-9(S)(KMB6336,SMB4022) BH408(BSA25, BSA28), FBB20N,FBB20N-1(FBH1920B), FBB26N,FBB26N-1(FBH2526B), FBB33N,FBB33N-1(FBH3233B), FBB42N, FBB42N-1(FBH4042B) FZ16-45-3(S),FZ16-50-3(S)(BSA42) FZ20-56-3(S),FZ20-64-3(S)(BSA50) FF16-47(S)(BCF4047), FF20-58(S)(BCF5058) |
| TPGT1103□□L | FBB42N-T11,FBB42N-1-T11(FBH4042B), FBB53N-11, FBB53N-1-T11(FBH5053B) FBB68N-11,FBB68N-1-T11(FBH6368B, FBH6398B, FBH8098B) FBB130-T11(FBC130,FBC175,FBC220,FBC265, FBC310,FBC385,FBC460) BB16-11(S),15(S),19(S)(SMH4022) BB18-11(S),13(S),15(S),17(S)(KMB6336,SMB4022) FZ25-72-3(S),FZ25-80-3(S)(BSA62) FZ32-90-3(S), FZ32-100-3(S)(BSA72) FZ32-110-3(S),FZ32-125-3(S)(BSA90) FF25-79(S)(BCF6379,BCF250FS,BCF350FS), FF32-100(S)(BCF100), FF32-138(S)(BCF138,BCF170,BCF190,BCF210,BCF230) |
| TPGT1604□□L | BB16-19(S)(SMH4022) |
| CPMH1604□□ | BH425(BSA105) |

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



Angular head

DINOX NC TOOLING SYSTEM

| | |
|-------------------|-----|
| ANGULAR HEAD | 198 |
| SAH | 201 |
| MAH | 202 |
| KHU | 204 |
| HRAG | 206 |
| KAG | 208 |
| KAH | 210 |
| KAC | 212 |
| POSITIONING BLOCK | 214 |



ANGULAR HEAD

Angular head



MAH

Rigidity-reinforced side lock type MAH (Reinforced series) / Angle adjustment type angular head



MAH that supports mold machining by improving the performance of the current universal-type product

- Stable machining of large-sized mold
- Supports ball endmill 32mm in diameter (D)
- Improves the rigidity of the KHU type



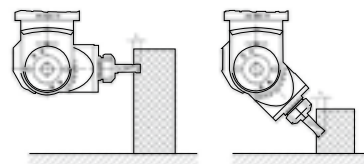
KHU

Collet type KHU (Free angle) / Angle adjustment type angular head



Wide machining angle range from 0° to 90°

- HSK and SK types are customizable.



BT50-KHU20-195



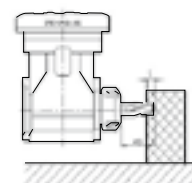
KAH

Modular type KAH (90° type) / Fixed angle-type angular head



Availability in adjusting horizontal machining angle up to 360°.

- To use Tap-exclusive collet, please contact us in advance.
- HSK and SK types are customizable



BT50-KAH20-200



ANGULAR HEAD

Angular head



HRAG

Attachment type HRAG (Reinforced type) / Attachment-type angular head



HRAG that improves the rigidity of the attachment-type bracket by 200%

- Provides stable operation of the face mill cutter
- Improves the rigidity of the KAG type



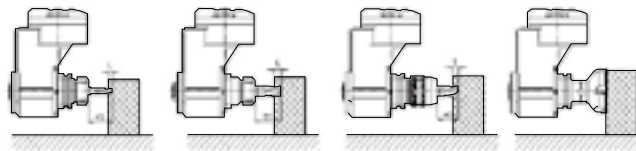
KAG

Attachment type KAG / Attachment-type angular head



Wide horizontal machining angle range from 0° to 360°

- Compatible with various tools for BT40 and BT30.
- HSK and SK types are customizable.



KAC

Modular type KAC (45° type) / Fixed angle-type angular head



Availability in adjusting horizontal machining angle up to 360°.

- HSK and SK types are customizable.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

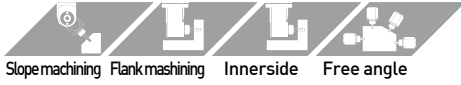
OTHER

1:1 Chat



ANGULAR HEAD

Angular head



Slopemachining Flankmashing Innerside Free angle

Features

- Effect of two machines with one
- Various angle machining available
- Light aluminium body

MAKING

| | | | | | | |
|-------------|---|--------------|---|-----------|---|------------|
| BT50 | — | KHU | — | 10 | — | 195 |
| Spindle | | Angular Head | | Tool Dia. | | Length |



Names of each part

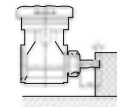


Various machinings

0°-90° slope angle adjustment angular head (MAH, KHU)



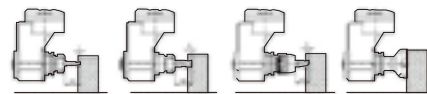
Fixed slope angle 90-degree type angular head (KAH)



Fixed slope angle 45-degree type angular head (KAC)



Attachment-type angular head (HRAG, KAG)



Components





BT-SAHA

Slim Angular Head



| | | | | | |
|------------|---------|---------|----------|---------------|--------------------|
| MAS 403-BT | 3,500 | | | | |
| Shank | Max RPM | Milling | Drilling | Flank mashing | Inner side mashing |

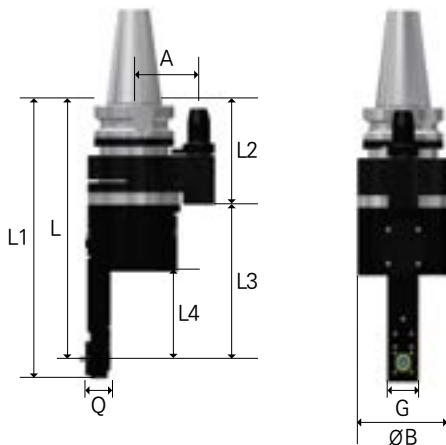
Features

- Angular head for narrow inside boring (min. inner diameter of workpiece: $\varnothing 40$, min. boring width: 32mm)
- MAX 3,500RPM, Spindle: applied rotation ratio = 1:1.37
- Boring range: $\varnothing 3$, $\varnothing 4$, $\varnothing 6$

NAMING

| | | | | | |
|-------------|---|-------------------|-----------|---|------------|
| BT50 | — | SAH | 6 | — | 277 |
| Spindle | | Slim Angular head | Tool Dia. | | Length |

Details



Machining Features



Min. $\varnothing 40$ Hole (except tool projection)

Min. 32mm gap (except tool projection)

| Item | L | L1 | L2 | L3 | L4 | A | Q | G | $\varnothing B$ | Rotation ratio (IN:OUT) | Rotation direction | MAX RPM | Weight (Kg) |
|----------------|-----|-----|-------|-------|------|---------|------|----|-----------------|-------------------------|--------------------|---------|-------------|
| BT50-SAHA6-277 | 277 | 298 | 183.5 | 166.5 | 93.5 | 80(110) | 31.5 | 40 | 76 | 1:1.37 | CW:CCW | 3,500 | 14 |

Clamping Force

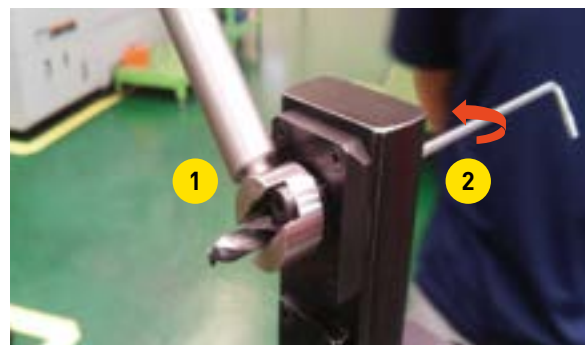
| | Measurement | Measured value (N-m) | | | |
|----------------|----------------|----------------------|-----|-----|---|
| Clamp torque | 2 | 2.5 | 3 | 3.5 | 4 |
| Clamping Force | Not measurable | 5.5 | 6.5 | 7 | 7 |

※ The moderate clamp torque of collet is 3.5N-m.

Exclusive collet

| | Model No. | Clamping Range |
|--|-----------|----------------|
| | SAH6-C3 | 3 |
| | SAH6-C4 | 4 |
| | SAH6-C6 | 6 |

How to clamp



1. Couple the tool with SAH dedicated collet
2. Insert the coupled tool into SAH and fix it with a dedicated tightening jig
3. Turn the bolt using a hexagonal wrench

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



BT-MAH

MAH for mold(0° - 90°)



Features of rigidity reinforced type

MAH for mold machining

MAH ideal for mold machining by improving the performance of conventional universal type products

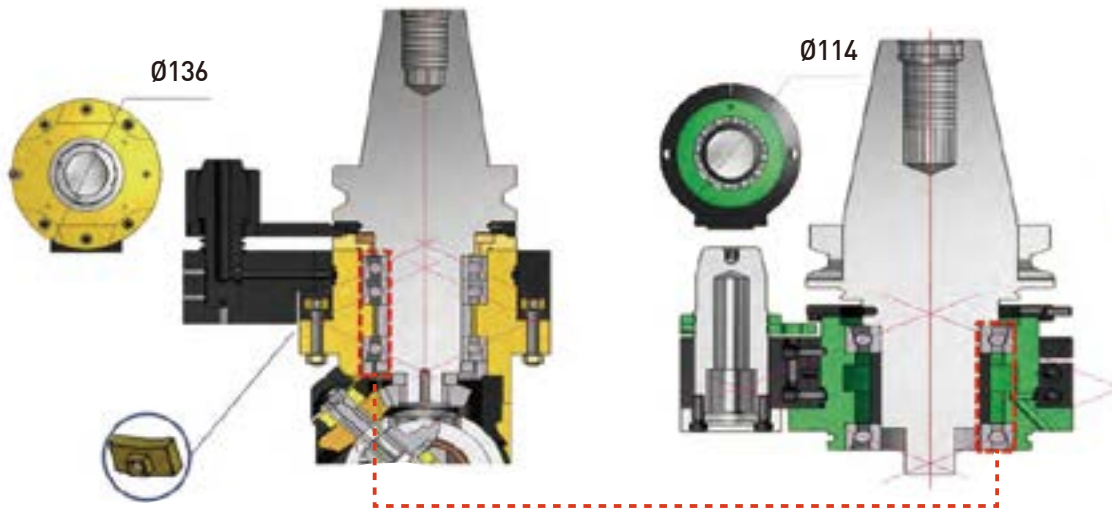
- Stability on large mold machining
- Tool diameter (D) 32mm ball end mill usable



Features of MAH (For mold machining) and its comparison with KHU

MAH

KHU



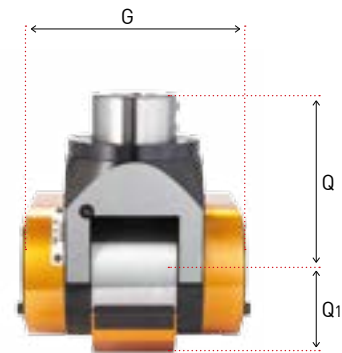
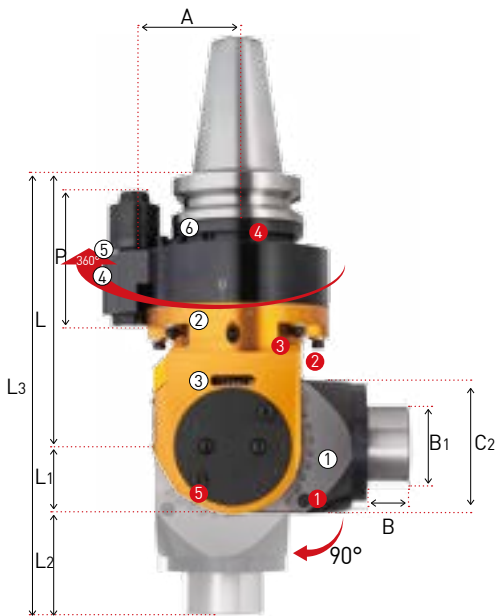
| | KHU | MAH | MAH Advantages |
|------------------------|------|-------|------------------------------|
| Lock type (Joint Type) | Bolt | T-nut | Torsional strain improvement |
| Bearing | 2pcs | 3pcs | |

C This product does not support the internal coolant system.

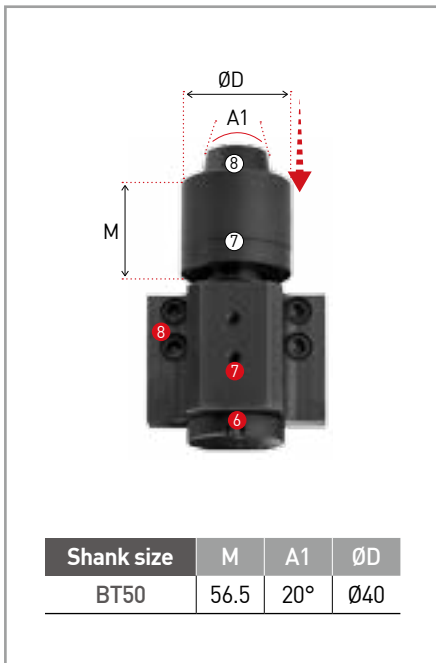


BT-MAH

MAH for mold(0° - 90°)



POSITIONING PIN



| Shank size | M | A1 | ØD |
|------------|------|-----|-----|
| BT50 | 56.5 | 20° | Ø40 |

| NO | Name |
|----|--|
| ① | Slope angle split gradation (Angles vertically splittable between 0 and 90°) |
| ② | Rotation angle split gradation (360° adjustment) |
| ③ | Head |
| ④ | Positioning pin part |
| ⑤ | Jaw key |
| ⑥ | Positioning ring |
| ⑦ | Positioning cover |
| ⑧ | Positioning pin |

| NO | Parts name | Model No. |
|----|---|-----------|
| ① | Slope angle split gradation screw | BT1216 |
| ② | Head fixing bolt | BT0645 |
| ③ | Rotation angle split gradation screw | BT0640 |
| ④ | Positioning ring set screw | MSST5-12 |
| ⑤ | Tilt Axies fixing bolt | BH0616 |
| ⑥ | Positioning pin height adjustment screw | BT0516 |
| ⑦ | Positioning pin set screw | BT0512 |
| ⑧ | Body position block set blo | BX0516 |

| Model No. | ØD | L | L1 | L2 | L3 | C | C1 | G | C2 | Q | Q1 | B | B1 | P | A | MAX RPM | Tool mounting | Kg | Package weight (Kg) |
|----------------|----|-----|----|----|-----|-----|----|----|----|-----|----|----|----|----|----|---------|---------------|------|---------------------|
| BT50-MAH32-200 | 32 | 200 | 47 | 78 | 325 | 136 | 95 | 54 | 95 | 125 | 63 | 31 | 60 | 95 | 80 | 3,000 | SIDE LOCK | 19.6 | 32.0 |

• For more information on positioning block, see **214p**

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



BT-KHU

KHU_Collet type angular head (0°-90°)



KHU

Adjustable angle-type angular head that enables flexible machining

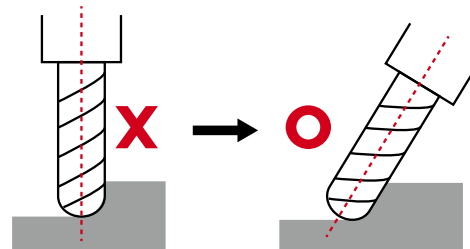
- Wide vertical (0°~90°) and horizontal (0°~360°) machining angle range
- To use Tap-exclusive collet, please contact us in advance.
- HSK and SK types are customizable.



Precautions



Do not inject cutting oil direct to the angular head body.



Be sure to give a slope to the cutting edge of a ball end mill when machining it as the ball end mill edge is worn out and the surface roughness of the workpiece becomes defective.

Machining Example

Model : BT50-KHU20-195

| Cutting tool | Workpiece | Cutting depth | RPM | Feed (mm/rev) | Feed (mm/rev) | Cutting angle |
|--|-----------|---------------|------|---------------|---------------|---------------|
| Ø16-2 Flute Endmill(HSS), Over length-40mm | S45C | 2 | 600 | 48 | 0.04 | 90° |
| | AL | 3 | 1200 | 168 | 0.07 | |
| | S45C | 3 | 600 | 48 | 0.04 | 45° |
| | AL | 5 | 1200 | 144 | 0.06 | |

Spare Part

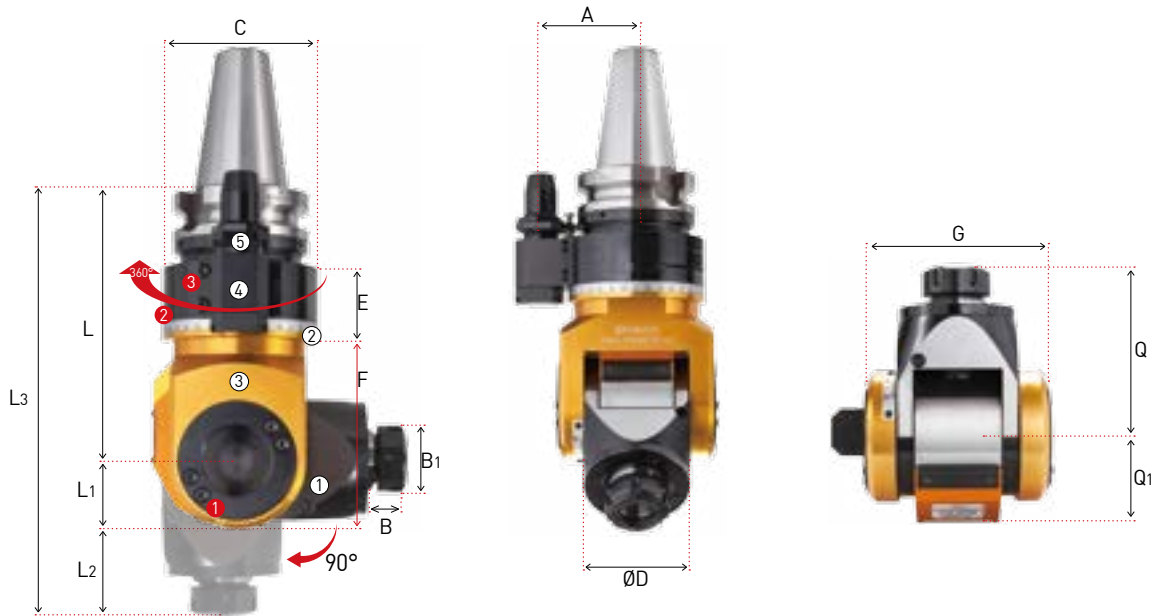
| Angular head | Main components | | For separate purchase |
|--------------|-----------------|---------|-----------------------|
| | Nut | Spanner | GERC Collet |
| KHU10 | R16-AH | S-25 | GERC16-øD |
| KHU20 | RU32-AH | 48-52 | GERC32-øD |

C This product does not support the internal coolant system.

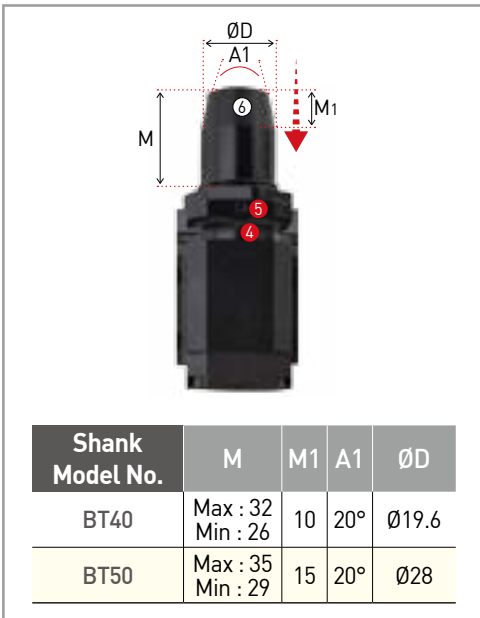


BT-KHU

KHU_Collet type angular head (0°-90°)



POSITIONING PIN



| Shank Model No. | M | M1 | A1 | ØD |
|-----------------|----------------------|----|-----|-------|
| BT40 | Max : 32 Min : 26 | 10 | 20° | Ø19.6 |
| BT50 | Max : 35 Min : 29 | 15 | 20° | Ø28 |

| NO | Name |
|----|--|
| ① | Slope angle split gradation [Angles vertically splittable between 0 and 90°] |
| ② | Rotation angle split-gradation [360° freely selectable] |
| ③ | Head |
| ④ | Positioning pin parts |
| ⑤ | Jaw key |
| ⑥ | Height adjusting wrench hole |

| NO | Parts name | Model No. |
|----|----------------------------|-----------|
| ① | Tilt Axes fixing bolt | BH0630 |
| ② | Bracket angle fixing bolt | BX0630 |
| ③ | Position block fixing bolt | BX0512 |
| ④ | Set screw | BT0404 |
| ⑤ | Fixing bolt | BX05630 |

| Model No. | ØD (Clamping Range) | B | B1 | C | E | F | C2 | L1 | L2 | L3 | L | ØD | A | G | Q | Q1 | Gear ratio | Rotation direction versus spindle | MAX RPM | Applicable collet | Kg | Package weight (Kg) |
|----------------|---------------------|----|----|-----|----|-----|-----|-----|----|----|-----|----|----|-----|-----|----|------------|-----------------------------------|---------|-------------------|------|---------------------|
| BT40-KHU10-160 | 1.0~10.0 | 22 | 28 | 96 | 51 | 98 | 96 | 160 | 33 | 54 | 247 | 58 | 65 | 90 | 87 | 40 | 1:2 | Normal rotation | 6,000 | GERC16 | 8.3 | 15.2 |
| BT50-KHU10-180 | 1.0~10.0 | 22 | 28 | 114 | 53 | 103 | 114 | 180 | 33 | 54 | 267 | 84 | 80 | 90 | 87 | 40 | 1:2 | Normal rotation | 6,000 | GERC16 | 11.5 | 23.9 |
| BT50-KHU20-195 | 1.0~20.0 | 29 | 50 | 114 | 53 | 132 | 114 | 195 | 47 | 73 | 315 | 84 | 80 | 124 | 120 | 63 | 1:1 | Normal rotation | 3,000 | GERC32 | 17.9 | 30.3 |

- For more information on the applicable collet, see **75p**.
- For more information on positioning block, see **214p**.



BT-HRAG

HRAG(90° fixed)



| | | | | | | | | |
|------------|----------------|---------|---------|----------|---------|--------|---------|-------------|
| MAS 403-BT | C | 3,000 | Milling | Drilling | Reaming | Facing | Tapping | Side Cutter |
| Shank | Coolant System | Max RPM | | | | | | |



HRAG

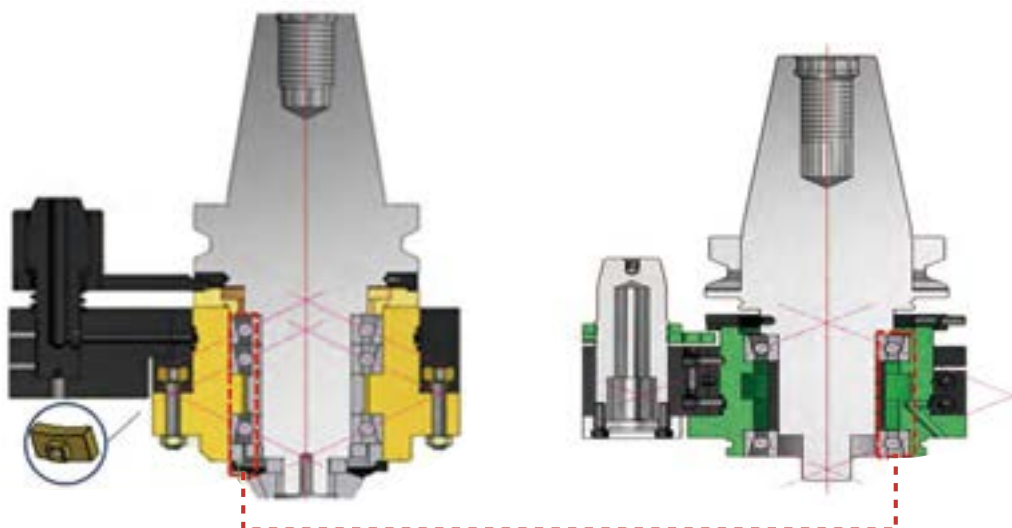
HRAG that improves the rigidity of the attachment-type bracket by 200%

- Provides stable operation of the face mill cutter
- Enhances compatibility with the machining device due to easy bracket disassembly/assembly even on the BT50 shank
- Improves product life cycle

HRAG (rigidity-reinforced type) features and comparison with KAG

HRAG

KAG



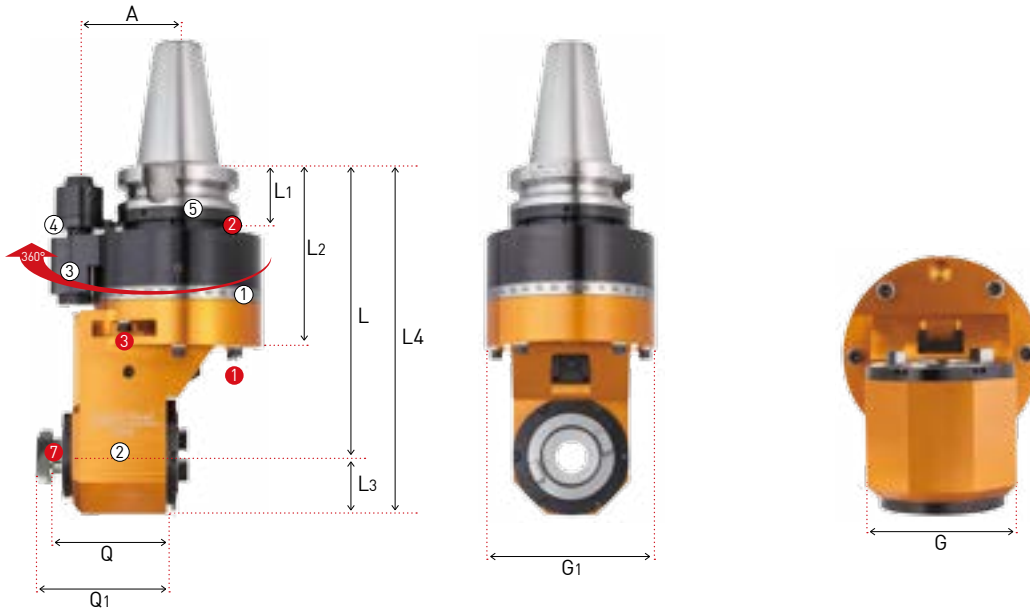
| | KHU | HRAG | HRAG Advantages |
|------------------------|------|-------|------------------------------|
| Lock type (Joint Type) | Bolt | T-nut | Torsional strain improvement |
| Bearing | 2pcs | 3pcs | |

C This product does not support the internal coolant system.

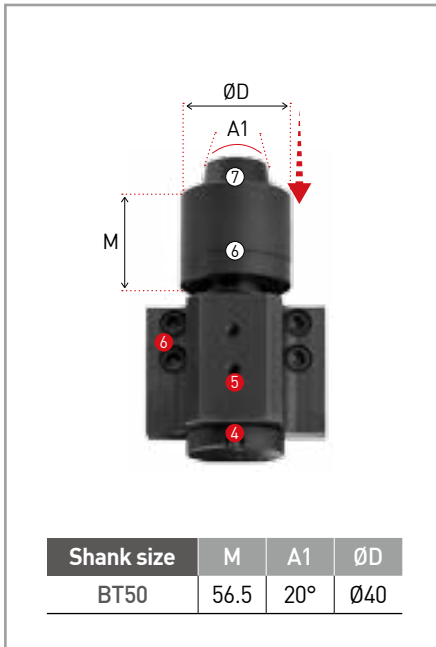


BT-HRAG

HRAG(90° fixed)



POSITIONING PIN



| NO | Name |
|----|--|
| ① | Rotation angle split gradation (360° adjustment) |
| ② | Head |
| ③ | Positioning pin part |
| ④ | Jaw key |
| ⑤ | Positioning ring |
| ⑥ | Positioning cover |
| ⑦ | Positioning pin |

| NO | Parts name | Model No. |
|----|---|-----------|
| ① | Head fixing bolt | BX0660 |
| ② | Positioning set screw | MSST5-12 |
| ③ | Rotation angle split gradation screw | BT0648 |
| ④ | Positioning pin height adjustment screw | BT0516 |
| ⑤ | Positioning pin set screw | BT0512 |
| ⑥ | Body position block set screw | BX0516 |
| ⑦ | BT / NT bolt | |

| Model No. | L | L1 | L2 | Q | Q1 | A | G1 | G | MAX RPM | Mounting tool shank | Kg |
|-----------------|-----|------|-----|----|-----|----|-----|----|---------|---------------------|------|
| BT50-HRAG40-230 | 230 | 56.5 | 145 | 89 | 101 | 80 | 136 | 93 | 3,000 | BT/NT40 | 18.2 |

• For more information on positioning block, see **214p**

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



BT-KAG

KAG(90° Fixed type)

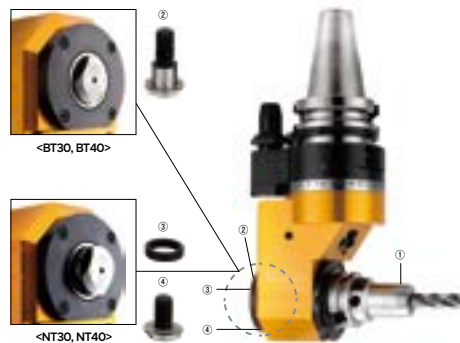


KAG

- Wide horizontal machining angle range from 0° to 360°
- Compatible with various tools such as BT40 and BT30.
- HSK and SK types are customizable.
- Coolant types are to be ordered separately.

How to tighten the tool

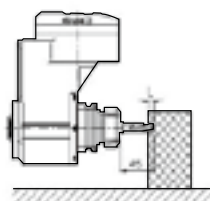
1. Insert the tool ① into the angular head spindle.
2. Tightly secure the tool ① using the fixing bolt ②. (BT type)
3. Tighten the tool ① by putting the ring on the bolt. (NT type)



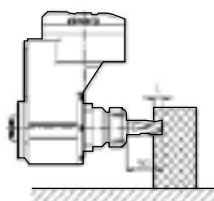
Machining Example

Model : BT50-KAG40-230

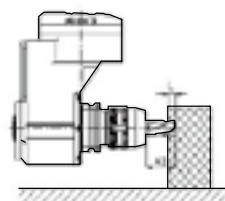
| Cutting tool | Workpiece | Cutting depth | RPM | Feed (mm/rev) | Feed (mm/rev) |
|--|-----------|---------------|-------|---------------|---------------|
| BT40-SDC20-60 Ø12-2 Flute Endmill (HSS) | S45C | 3 | 400 | 72 | 0.09 |
| | | 3 | 200 | 36 | 0.09 |
| NT40-SDC20-60 Ø20-2 Flute Endmill (HSS) | S45C | 4 | 500 | 50 | 0.05 |
| | AL | 10 | 1,000 | 100 | 0.05 |
| BT40-NPM20-85 Ø20-2 Flute Endmill (HSS) over hang 40mm | S45C | 3 | 400 | 72 | 0.09 |
| | | 3 | 400 | 36 | 0.09 |
| | AL | 5 | 400 | 72 | 0.09 |
| | | 5 | 480 | 86 | 0.09 |
| | | 10 | 400 | 72 | 0.09 |
| | | 10 | 320 | 58 | 0.09 |
| BT40-FMA25.4-45 Ø80 Shoulder mill (5 Flute-50L) | S45C | 2 | 400 | 120 | |
| | | 1 | 200 | 60 | |
| | AL | 2 | 600 | 150 | |
| | | 1 | 600 | 150 | |



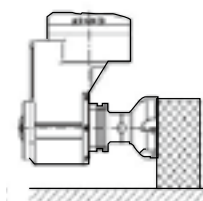
BT40-SDC20-60
(Ø12 E/M)



NT40-SDC20-60
(Ø20 E/M)



BT40-NPM20-85
(Ø20 E/M)



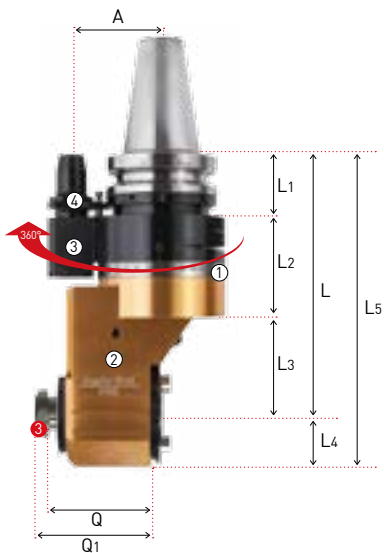
BT40-FMA25.4-45
(Ø80 Shoulder Mill)

C This product does not support the internal coolant system.

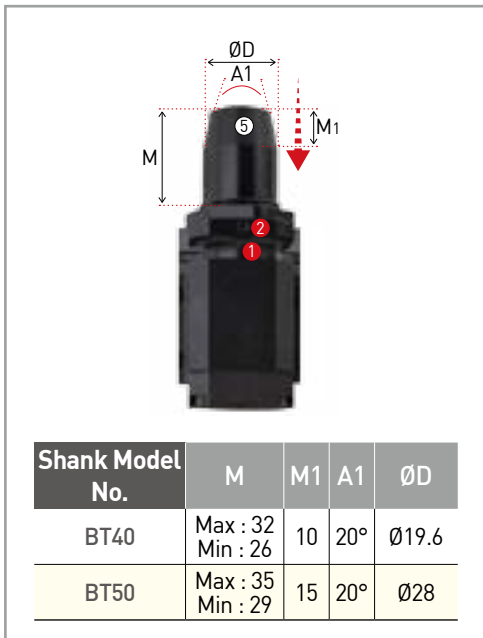


BT-KAG

KAG(90° Fixed type)



POSITIONING PIN



| NO | Name |
|----|---|
| ① | Rotation angle split-gradation (360° freely selectable) |
| ② | Head |
| ③ | Positioning pin part |
| ④ | Jaw key |
| ⑤ | Height adjusting wrench hole |

| NO | Parts name | Model No. |
|----|--------------|-----------|
| ① | Set screw | BT0404 |
| ② | Fixing bolt | BX50630 |
| ③ | BT / NT bolt | |

| Model No. | L | L1 | L2 | L3 | L4 | Q | Q1 | A | C | G | Gear ratio | Rotation direction versus spindle | MAX RPM | Holder shank mounted | Kg | Package weight (Kg) |
|----------------|-----|----|----|----|------|----|----|----|-----|----|------------|-----------------------------------|---------|----------------------|------|---------------------|
| BT40-KAG30-195 | 195 | 44 | 86 | 65 | 37.5 | 66 | 70 | 65 | 96 | 75 | 1:1 | Normal rotation | 4,000 | BT/NT30 | 7.2 | 14.0 |
| BT50-KAG40-230 | 230 | 57 | 88 | 85 | 46.5 | 89 | 94 | 80 | 114 | 93 | 1:1 | Normal rotation | 3,000 | BT/NT40 | 15.7 | 28.1 |

• For more information on positioning block, see **214p**.



BT-KAH

KAH_Collet type angular head (90° fixed type)



KAH

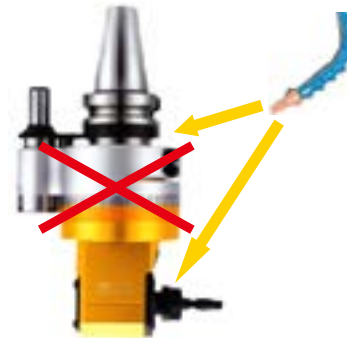
Adjustable angle-type angular head that enables flexible machining

- Adjusting angle up to 360°.
- To use Tap-exclusive Collet, please contact us in advance.
- HSK and SK types are customizable.



Coolant

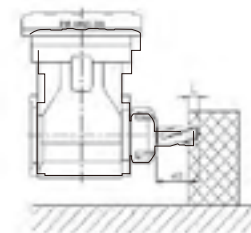
- ATC (automatic tool change) available
- The tool turns in the opposite direction of the spindle.
- Do not inject cutting oil direct to the angular head body.



Machining Example

Model : BT50-KAH20-200

| Cutting tool | Workpiece | Machining depth | RPM | Feed (mm/min) | Feed (mm/rev) |
|--|-----------|-----------------|------|---------------|---------------|
| Ø16-2 Flut Endmill(HSS), Over length -40mm | (rpm) | 3 | 700 | 98 | 0.07 |
| | | 4 | 500 | 60 | 0.06 |
| | Al | 7 | 900 | 72 | 0.04 |
| | | 4 | 1800 | 144 | 0.04 |



BT50-KAH20-200

Spare Part

| Angular head | Main Components | | Components Not Included |
|--------------|-----------------|---------|-------------------------|
| | Nut | Spanner | |
| KAH7 | R11-AH | S-17 | GERC Collet |
| KHU10 | R16-AH(M20) | S-25 | GERC11-øD |
| KAH13 | RU20-AH | 35-38 | GERC16-øD |
| KHU20 | RU32-AH | 48-52 | GERC20-øD |
| | | | GERC32-øD |

C This product does not support the internal coolant system.



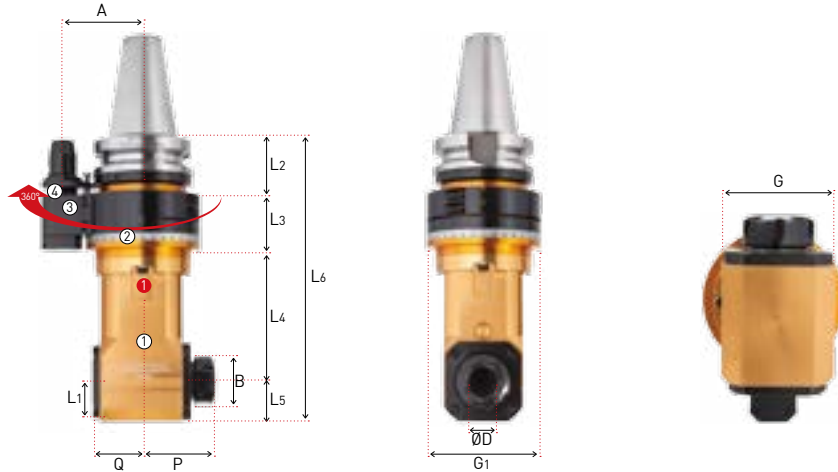
BT-KAH

KAH_Collet type angular head (90° fixed type)



MAS 403-BT C 5,000

Shank Coolant System Max RPM Milling Drilling Free angle Inner side mashing



POSITIONING PIN

| Shank Model No. | M | M1 | A1 | ØD |
|-----------------|----------------------|----|-----|-------|
| BT40 | Max : 32 Min : 26 | 10 | 20° | Ø19.6 |
| BT50 | Max : 35 Min : 29 | 15 | 20° | Ø28 |

| NO | Name |
|----|---|
| ① | Head |
| ② | Rotation angle split-gradation (360° freely selectable) |
| ③ | Positioning pin parts |
| ④ | Jaw key |
| ⑤ | Height adjusting wrench hole |

| NO | Parts name | Model No. |
|----|--------------------------|-----------|
| ① | Bolt for fixing the head | BX0618 |
| ② | Set screw | BT0404 |
| ③ | Fixing bolt | BX50630 |

| Model No. | ØD | L | L1 | L2 | L3 | L4 | L5 | L6 | B | A | P | Q | G | G1 | Gear ratio | MAX RPM | Applicable 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 | 3,500 | 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 | 3,500 | 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 | 3,500 | GERC16 | 11 |
| BT50-KAH13-260 | 1.0~13.0 | 260 | 28 | 57 | 54 | 149 | 28 | 288 | 35 | 80 | 53 | 35 | 60 | 96 | 1:1 | 3,500 | 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 | 20 | 80 | 71 | 49 | 76 | 96 | 1:1 | 3,500 | GERC32 | 12.4 |

• For more information on positioning block, see **214p**.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



BT-KAC

Modular type KAC(45° Fixed type)



| | | | | |
|---------------|----------------|---------|-----------------|---------|
| MAS 403-BT | C | 5,000 | | |
| Shank | Coolant System | Max RPM | Slope machining | Milling |

KAC

Fixed angle type angular head that enables flexible machining

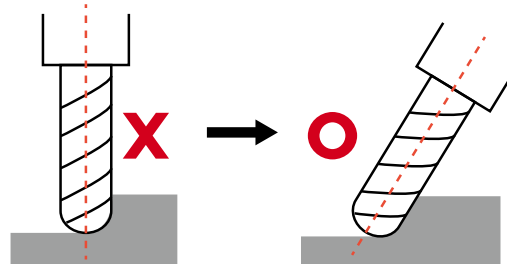
- Adjusting angle up to 360°.
- To use Tap-exclusive Collet, please contact us in advance.
- 45-degree fixed type angular head
- For BT40 types, please contact us separately.



Precautions



Do not inject cutting oil direct to the angular head body.



Be sure to give a slope to the cutting edge of a ball end mill when machining it as the ball end mill edge is worn out and the surface roughness of the workpiece becomes defective.

Spare Part

| Chuck | Main Components | | Components Not Included |
|-------|-----------------|---------|--------------------------|
| | Nut | Spanner | |
| KAC10 | R16-AH (M20) | S-25 | GERC Collet GERC16-øD |
| KAC10 | RU20-AH | 35-38 | GERC20-øD |
| KHU20 | RU32-AH | 48-52 | GERC32-øD |

※ To order nuts, please contact us in advance.

C This product does not support the internal coolant system.



BT-KAC

Modular type KAC(45° Fixed type)



POSITIONING PIN

| Shank Model No. | M | M1 | A1 | ØD |
|-----------------|----------------------|----|-----|-------|
| BT40 | Max : 32 Min : 26 | 10 | 20° | Ø19.6 |
| BT50 | Max : 35 Min : 29 | 15 | 20° | Ø28 |

| NO | Name |
|----|---|
| ① | Head |
| ② | Rotation angle split-gradation (360° freely selectable) |
| ③ | Positioning pin parts |
| ④ | Jaw key |
| ⑤ | Height adjusting wrench hole |

| NO | Parts name | Model No. |
|----|--------------------------|-----------|
| ① | Bolt for fixing the head | BX0618 |
| ② | Set screw | BT0404 |
| ③ | Fixing bolt | BX50630 |

| Model No. | ØD | L | L1 | L2 | L3 | B | G | G1 | P | Q | A | MAX RPM | Applicable collet | Kg |
|----------------|----------|-----|----|----|-----|----|----|----|----|----|----|---------|-------------------|------|
| BT50-KAC10-240 | 1.0~10.0 | 240 | 57 | 54 | 129 | 28 | 60 | 96 | 25 | 54 | 80 | 5,000 | GERC16 | 9.7 |
| BT50-KAC13-240 | 1.0~13.0 | 240 | 57 | 54 | 129 | 28 | 60 | 96 | 25 | 54 | 80 | 5,000 | GERC20 | 10.7 |
| BT50-KAC20-250 | 2.0~20.0 | 240 | 57 | 54 | 139 | 50 | 72 | 96 | 30 | 60 | 80 | 3,500 | GERC32 | 11.7 |

- For more information on the applicable collet, see **75p**.
- For more information on positioning block, see **214p**.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



POSITIONING BLOCK

Positioning block (For BT40)

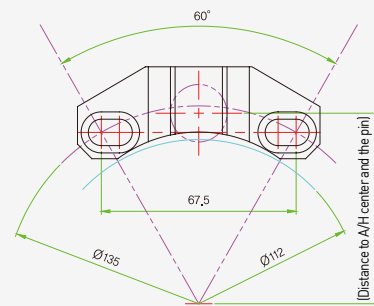
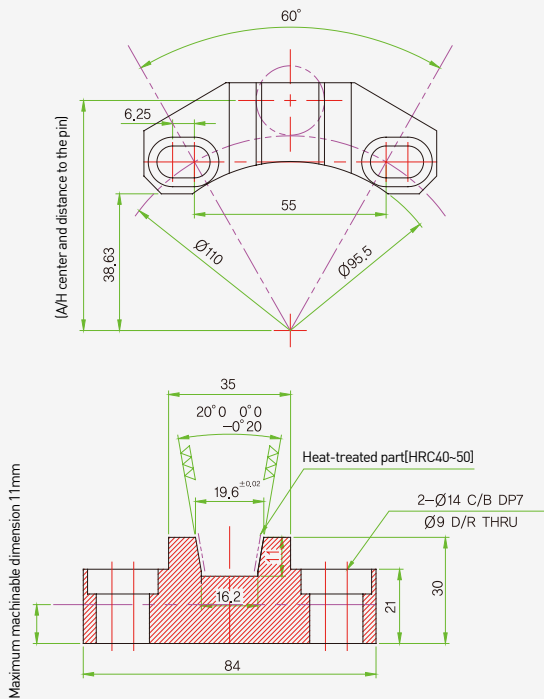
How to install the positioning block on the machine

For BT40

1. Customer standard type-A group(60°) Standard type-A(60°)

- In case Min. PCD=110mm
- Spindle diameter less than $\varnothing 94$ available
- Keep the minimum distance 55mm between bolts

- In case Max. PCD=135mm
- Spindle diameter less than $\varnothing 112$ available
- Keep the minimum distance 67.5mm between bolts

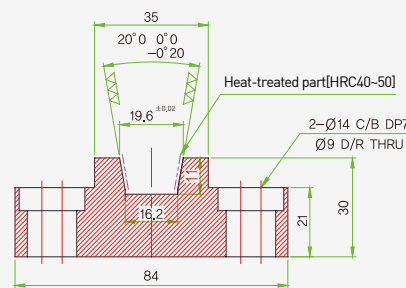
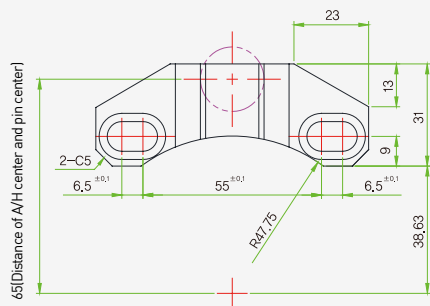


Semi-finishing : Requires block height machining

- The customer must machine the bottom of the block in person to use for use after determining the block height to avoid interference.

※ Minimum block height: 19mm (based on the upper side)

- Only the taper part to be heat-treated
- Based on M8; in the case of less than M6, washer supplied



- DINE Inc, provide the positioning block type by default.
Customer standard type (A type)

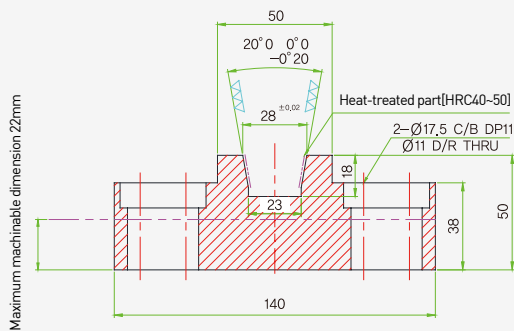
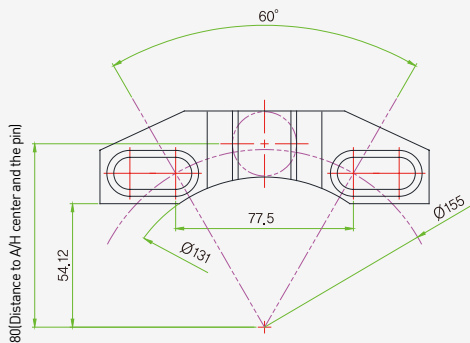


How to install the positioning block on the machine

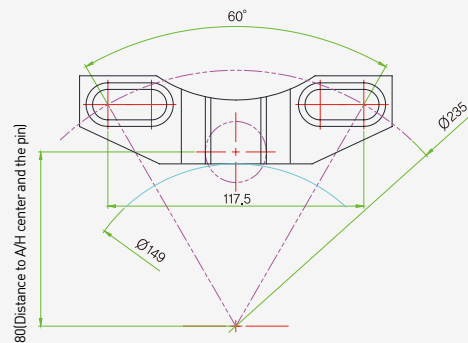
For BT50

1. Customer standard type-A group(60°) Standard type-A(60°)

- In case Min. PCD = 155
- Spindle diameter less than $\varnothing 130$ available
- Keep the minimum distance 77.5mm between bolts



- In case Max. PCD = 235
- Spindle diameter less than $\varnothing 148$ available
- Keep the minimum distance 117.5mm between bolts

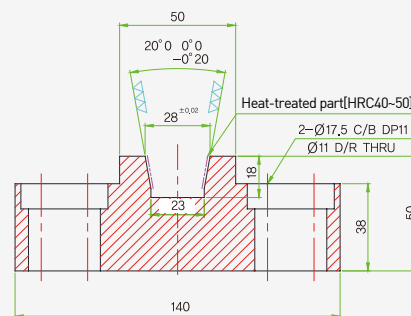
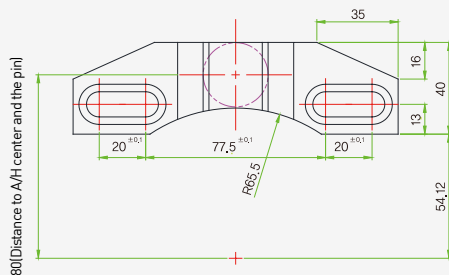


Semi-finishing : Requires block height machining

- The customer should machine the bottom of the block him/herself for use after determining the block height to avoid interference.

※ Minimum block height: 28mm (based on the upper side)

- Only the taper part to be heat-treated
- Based on M10; in the case of less than M8, washer supplied



- DINE Inc, provide the positioning block type by default.
Customer standard type (A type)

Precautions on angular head

- Make sure that all the fixing bolts for the angular head are properly tightened before starting the machine.
- Prior to the use of ATC of the machine,
 - check if conflict and interference occur between the angular head and positioning block and the machine.
 - check that the angular head is safely mounted on the tool magazine.
- Before starting the machine, check the CNC program and the status of the workpiece and also check whether or not conflict with the workpiece occurs.
- Check the rotation direction of the spindle and that of the tool. (Rotation direction check)
- Recommended hours of use : 8 hours/day
 - 30 minute rest after 2-hour operation
 - 1,500~2,000-hour durability
- Do not inject cutting oil direct to the angular head body. (Foreign substance infiltration may cause a trouble.)
- The user's arbitrary disassembly may cause a trouble, for which DINE Inc. assumes no responsibility.

Check the video for explaining product details



Click "Smart Lens"



Scan "QR Code"



Click "Guide Window"



Play the "Product Description" video



Angular head installation



SAH Slim Angular Head



cBN/PCD

DINOX NC TOOLING SYSTEM

cBN/PCD

| | |
|---|-----|
| How to indicate the model no. of insert (ISO) | 218 |
| CBN list | 220 |
| PCD list | 224 |
| cBN features | 226 |
| cBN heat-treated steel | 230 |
| cBN cast iron | 236 |
| cBN sintered parts | 238 |
| DNC100 | 240 |
| DNC250 | 241 |
| DNC300 | 242 |
| DNC350 | 243 |
| DNC400 | 244 |
| RA,GA Chip Breaker | 245 |
| DB1000 | 246 |
| DB2000 | 247 |
| DB7000 | 248 |
| DB7500 | 249 |
| cBN technical data | 250 |
| cBN cutting edge characteristics | 254 |
| cBN re-grinding | 258 |
| PCD technical data | 259 |
| PCD Chip Breaker(UC) | 262 |

How to indicate the model no. of insert (ISO)

C

N

G

M

1

2

3

4

Insert shape

Major clearance angle

Tolerance

Cross-sectional shape

1 Insert shape
C N G M 12 04 08 - VM

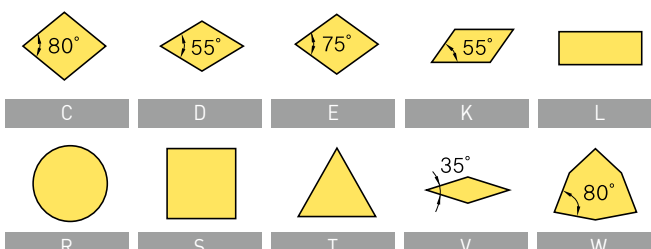


Diagram illustrating various insert shapes (C, D, E, K, L, R, S, T, V, W) and their corresponding major clearance angles (80°, 55°, 75°, 55°, 35°, 80°).

2 Major clearance angle
 C **N** G M 12 04 08 - VM

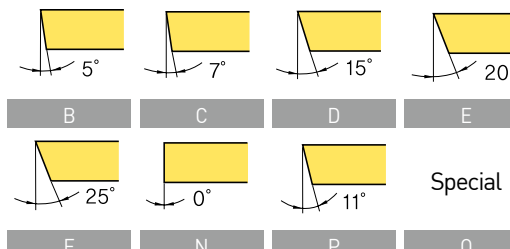
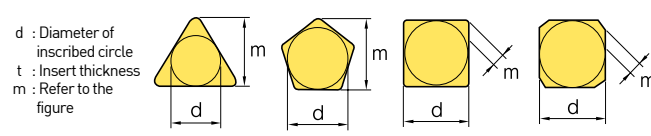


Diagram illustrating various major clearance angles (B, C, D, E, F, N, P, O) and their corresponding angles (5°, 7°, 15°, 20°, 25°, 0°, 11°, Special).

3 Tolerance
 C N **G** M 12 04 08 - VM

d : Diameter of inscribed circle
 t : Insert thickness
 m : Refer to the figure



| Class | 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 |

* Side is the one of the sintered parts

Tolerance definition of C, H, R, T, and W types of inscribed circle (Exceptions)

| d | Tolerance of d | | Tolerance of 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 |

Tolerance definition of D-type inscribed circle (Exceptions)

| d | Tolerance of d | Tolerance of 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-sectional shape
 C N G **M** 12 04 08 - VM

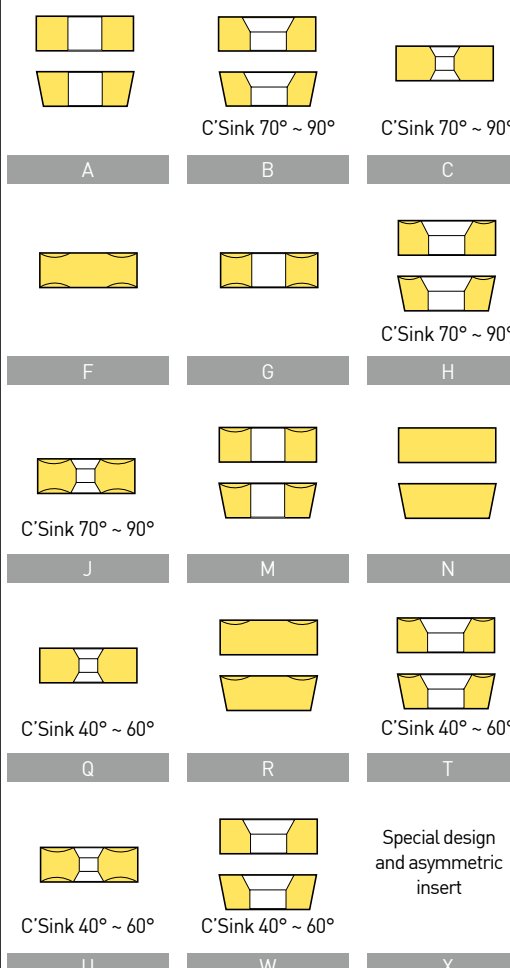


Diagram illustrating various cross-sectional shapes (A, B, C, F, G, H, J, M, N, Q, R, T, U, W, X) and their corresponding C'Sink angles (70° ~ 90°, 40° ~ 60°, Special design and asymmetric insert).

12

04

08

GA

5

Cutting edge length,
Inscribed circle diameter

6

Cutting edge height

7

Nose "r" size

8

Chip breaker

5

Cutting edge length, Inscribed circle diameter

C N G M 12 04 08 - GA

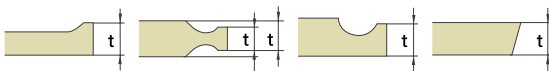
() small symbols

| Symbols | | | | | | | Inch | IC d(mm) |
|---------|----|----|----|----|----|----|--------|-------------|
| C | d | S | T | R | v | W | | |
| 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 |

6

Cutting edge height

C N G M 12 04 08 - GA



| Symbol | | Nose "r" | |
|--------|--------|----------|-------|
| 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 |

() small symbols

7

Nose "r" size

C N G M 12 04 08 - GA

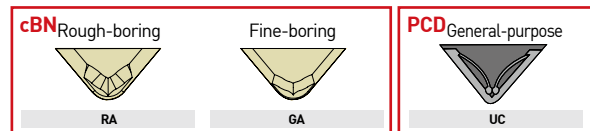


| Symbol | | Nose "r" | |
|--------|------|-------------------------------|-------|
| Metric | Inch | M, N | Inch |
| 01 | 0 | 0.1 | 0.004 |
| 02 | 0.5 | 0.2 | 0.008 |
| 04 | 1 | 0.4 | 1/64 |
| 08 | 2 | 0.8 | 1/32 |
| 12 | 3 | 1.2 | 3/64 |
| 16 | 4 | 1.6 | 1/16 |
| 20 | 5 | 2.0 | 5/64 |
| 24 | 6 | 2.4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

8

Chip breaker

C N G M 12 04 08 - GA





cBN Series

cBN Multi-corner type (Negative/positive)

※ T-2NU-□□□□△△△△△ model no. package unit is 10 EA.

| Shape | Model No. | Grade | | | | | | | | | | W (Weight) | mm | | | | | |
|------------------|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|------------|-------|-------------------------|-----------------------|---------------|------------|--------------------|
| | | DNC100 | DNC250 | DNC300 | DNC350 | DNC400 | DB1000 | DB2000 | DBN250 | DBN350 | DBN700A | | DBN20 | S (cutting edge length) | IC (inscribed circle) | T (thickness) | R (Nose R) | ∅D (hole diameter) |
| | 2NU-CNGA120404 | ● | ● | ● | ● | - | ● | - | - | - | ● | - | 9.9 | 2.7 | 12.7 | 4.76 | 0.4 | 5.16 |
| | 2NU-CNGA120404F | - | ● | - | ● | - | - | - | - | - | - | - | 9.9 | 2.7 | 12.7 | 4.76 | 0.4 | 5.16 |
| | 2NU-CNGA120404T | - | ● | - | ● | - | ● | - | - | - | - | - | 9.9 | 2.7 | 12.7 | 4.76 | 0.4 | 5.16 |
| | 2NU-CNGA120404W | - | ● | - | - | - | - | - | - | - | - | - | 9.9 | 2.7 | 12.7 | 4.76 | 0.4 | 5.16 |
| | 2NU-CNGA120404WF | - | ● | - | - | - | - | - | - | - | - | - | 9.9 | 2.7 | 12.7 | 4.76 | 0.4 | 5.16 |
| | 2NU-CNGA120408 | ● | ● | ● | ● | - | ● | ● | - | - | ● | - | 9.9 | 2.6 | 12.7 | 4.76 | 0.8 | 5.16 |
| | 2NU-CNGA120408F | - | ● | - | ● | - | - | - | - | - | - | - | 9.9 | 2.6 | 12.7 | 4.76 | 0.8 | 5.16 |
| | 2NU-CNGA120408T | - | ● | - | ● | - | ● | - | - | - | - | - | 9.9 | 2.6 | 12.7 | 4.76 | 0.8 | 5.16 |
| | 2NU-CNGA120408W | - | ● | - | ● | - | ● | - | - | - | ● | - | 9.9 | 2.6 | 12.7 | 4.76 | 0.8 | 5.16 |
| | 2NU-CNGA120408WF | - | - | - | - | - | - | ● | - | - | - | - | 9.9 | 2.6 | 12.7 | 4.76 | 0.8 | 5.16 |
| | 2NU-CNGA120412 | ● | ● | ● | ● | - | - | - | - | - | - | - | 9.9 | 2.6 | 12.7 | 4.76 | 1.2 | 5.16 |
| | 2NU-CNGA120412F | - | ● | - | ● | - | - | - | - | - | - | - | 9.9 | 2.6 | 12.7 | 4.76 | 1.2 | 5.16 |
| | 2NU-CNGA120412T | - | ● | - | ● | - | - | - | - | - | - | - | 9.9 | 2.6 | 12.7 | 4.76 | 1.2 | 5.16 |
| | 2NU-CNGA120412W | - | ● | - | - | - | ● | - | - | - | ● | - | 9.9 | 2.6 | 12.7 | 4.76 | 1.2 | 5.16 |
| 2NU-CNGA120412WT | - | - | - | - | - | ● | - | - | - | - | - | 9.9 | 2.6 | 12.7 | 4.76 | 1.2 | 5.16 | |
| T-2NU-CNGA120404 | - | ● | - | - | - | - | - | - | - | - | - | 9.9 | 2.7 | 12.7 | 4.76 | 0.4 | 5.16 | |
| T-2NU-CNGA120408 | - | ● | - | ● | - | - | - | - | - | - | - | 9.9 | 2.6 | 12.7 | 4.76 | 0.8 | 5.16 | |
| | 4NU-CNGA120404 | - | ● | - | - | - | - | - | - | - | - | 9.85 | 2.7 | 12.7 | 4.76 | 0.4 | 5.16 | |
| | 4NU-CNGA120408 | - | ● | - | ● | - | - | - | - | - | - | 9.85 | 2.6 | 12.7 | 4.76 | 0.8 | 5.16 | |
| | 4NU-CNGA120412 | - | ● | - | - | - | - | - | - | - | - | 9.85 | 2.6 | 12.7 | 4.76 | 1.2 | 5.16 | |
| | 2NU-DNGA150404 | - | ● | ● | ● | - | - | ● | ● | - | - | 12.3 | 2.6 | 12.7 | 4.76 | 0.4 | 5.16 | |
| | 2NU-DNGA150404F | - | ● | - | ● | - | - | - | - | - | - | - | 12.3 | 2.6 | 12.7 | 4.76 | 0.4 | 5.16 |
| | 2NU-DNGA150404T | - | ● | - | ● | - | - | - | - | - | - | - | 12.3 | 2.6 | 12.7 | 4.76 | 0.4 | 5.16 |
| | 2NU-DNGA150408 | - | ● | ● | ● | - | ● | ● | ● | - | - | - | 12.3 | 2.2 | 12.7 | 4.76 | 0.8 | 5.16 |
| | 2NU-DNGA150408F | - | ● | - | ● | - | - | - | - | - | - | - | 12.3 | 2.2 | 12.7 | 4.76 | 0.8 | 5.16 |
| | 2NU-DNGA150408T | - | ● | - | ● | - | ● | ● | - | - | - | - | 12.3 | 2.2 | 12.7 | 4.76 | 0.8 | 5.16 |
| | 2NU-DNGA150412 | - | ● | - | ● | - | - | - | - | - | - | - | 12.3 | 2.5 | 12.7 | 4.76 | 1.2 | 5.16 |
| | 2NU-DNGA150412F | - | ● | - | ● | - | - | - | - | - | - | - | 12.3 | 2.5 | 12.7 | 4.76 | 1.2 | 5.16 |
| | 2NU-DNGA150412T | - | ● | - | ● | - | - | - | - | - | - | - | 12.3 | 2.5 | 12.7 | 4.76 | 1.2 | 5.16 |
| | 2NU-DNGA150604 | ● | ● | - | ● | - | - | - | - | - | - | - | 15.4 | 2.5 | 12.7 | 6.35 | 0.4 | 5.16 |
| 2NU-DNGA150608 | ● | ● | - | ● | - | - | - | - | - | - | - | 15.4 | 2.5 | 12.7 | 6.35 | 0.8 | 5.16 | |
| | 4NU-DNGA150404 | - | ● | - | ● | - | - | - | - | - | - | 12.13 | 1.8 | 12.7 | 4.76 | 0.4 | 5.16 | |
| | 4NU-DNGA150408 | - | ● | - | ● | - | - | - | - | - | - | 12.13 | 2.9 | 12.7 | 4.76 | 0.8 | 5.16 | |
| | 4NU-DNGA150412 | - | ● | - | ● | - | - | - | - | - | - | 12.13 | 3 | 12.7 | 4.76 | 1.2 | 5.16 | |
| | 4NU-DNGA150608 | - | ● | - | - | - | - | - | - | - | - | 15.25 | 2.9 | 12.7 | 6.35 | 0.8 | 5.16 | |
| | 4NU-SNGA120404 | - | ● | - | - | - | - | - | - | ● | - | 9.9 | 3.1 | 12.7 | 4.76 | 0.4 | 5.16 | |
| | 4NU-SNGA120408 | - | ● | - | - | - | - | - | - | ● | - | 9.9 | 3.1 | 12.7 | 4.76 | 0.8 | 5.16 | |
| | 3NU-TNGA160404 | - | ● | - | ● | - | ● | ● | - | ● | - | 7.2 | 2.5 | 9.525 | 4.76 | 0.4 | 3.81 | |
| | 3NU-TNGA160404T | - | ● | - | - | - | - | - | - | - | - | 7.2 | 2.5 | 9.525 | 4.76 | 0.4 | 3.81 | |
| | 3NU-TNGA160408 | - | ● | - | ● | - | - | - | - | - | ● | - | 7.2 | 2.3 | 9.525 | 4.76 | 0.8 | 3.81 |
| | 3NU-TNGA160408F | - | ● | - | - | - | - | - | - | - | - | - | 7.2 | 2.3 | 9.525 | 4.76 | 0.8 | 3.81 |
| | 3NU-TNGA160408T | - | ● | - | - | - | - | - | - | - | - | - | 7.2 | 2.3 | 9.525 | 4.76 | 0.8 | 3.81 |
| | 3NU-TNGA160412 | - | - | - | ● | - | - | - | - | - | - | - | 7.2 | 2.0 | 9.525 | 4.76 | 1.2 | 3.81 |



cBN Series

cBN Multi-corner type (Negative/positive)

※ T-2NU-□□□□△△△△△ model no. package unit is 10 EA.

| Shape | Model No. | Grade | | | | | | | | | | W (Weight) | mm | | | | | |
|------------------|------------------|----------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|------------|--------|-------------------------|-----------------------|---------------|------------|--------------------|
| | | DNC100 | DNC250 | DNC300 | DNC350 | DNC400 | DB1000 | DB2000 | DBN250 | DBN350 | DBN700A | | DBNX20 | S (cutting edge length) | IC (inscribed circle) | T (thickness) | R (Nose R) | ØD (hole diameter) |
| | 2NU-VNGA160404 | ● | ● | ● | ● | - | - | - | ● | - | ● | - | 10.2 | 3.5 | 9.525 | 4.76 | 0.4 | 3.81 |
| | 2NU-VNGA160404F | - | ● | - | ● | - | - | - | - | - | - | - | 10.2 | 3.5 | 9.525 | 4.76 | 0.4 | 3.81 |
| | 2NU-VNGA160404T | - | ● | - | ● | - | - | - | - | - | - | - | 10.2 | 3.5 | 9.525 | 4.76 | 0.4 | 3.81 |
| | 2NU-VNGA160408 | ● | ● | ● | ● | - | ● | ● | ● | - | ● | - | 10.2 | 2.6 | 9.525 | 4.76 | 0.8 | 3.81 |
| | 2NU-VNGA160408F | - | ● | - | ● | - | - | - | - | - | - | - | 10.2 | 2.6 | 9.525 | 4.76 | 0.8 | 3.81 |
| | 2NU-VNGA160408T | - | ● | - | ● | - | - | ● | - | - | - | - | 10.2 | 2.6 | 9.525 | 4.76 | 0.8 | 3.81 |
| | T-2NU-VNGA160408 | - | ● | - | - | - | - | ● | - | - | - | - | 10.2 | 2.6 | 9.525 | 4.76 | 0.8 | 3.81 |
| | 2NU-CCGW060202 | - | ● | - | - | - | - | - | - | - | - | 0.9 | 2.8 | 6.35 | 2.38 | 0.2 | 2.8 | |
| | 2NU-CCGW060202T | - | ● | - | - | - | - | - | - | - | - | 0.9 | 2.8 | 6.35 | 2.38 | 0.2 | 2.8 | |
| | 2NU-CCGW060204 | - | ● | - | - | - | - | ● | - | - | - | 0.9 | 2.7 | 6.35 | 2.38 | 0.4 | 2.8 | |
| | 2NU-CCGW060204F | - | ● | - | - | - | - | - | - | - | - | 0.9 | 2.7 | 6.35 | 2.38 | 0.4 | 2.8 | |
| | 2NU-CCGW060204T | - | ● | - | - | - | - | - | - | - | - | 0.9 | 2.7 | 6.35 | 2.38 | 0.4 | 2.8 | |
| | 2NU-CCGW060208 | - | - | - | - | - | ● | - | - | - | - | 0.9 | 2.6 | 6.35 | 2.38 | 0.8 | 2.8 | |
| | 2NU-CCGW09T302 | - | ● | - | - | - | - | - | - | - | - | 4.6 | 2.7 | 9.525 | 3.97 | 0.2 | 4.4 | |
| | 2NU-CCGW09T304 | ● | ● | - | ● | - | ● | - | ● | - | ● | - | 4.6 | 2.7 | 9.525 | 3.97 | 0.4 | 4.4 |
| | 2NU-CCGW09T304T | - | ● | - | - | - | - | - | - | - | - | 4.6 | 2.7 | 9.525 | 3.97 | 0.4 | 4.4 | |
| | 2NU-CCGW09T308 | ● | ● | - | ● | - | ● | ● | - | ● | - | 4.6 | 2.6 | 9.525 | 3.97 | 0.8 | 4.4 | |
| | 2NU-CCGW09T308T | - | ● | - | - | - | - | - | - | - | - | 4.6 | 2.6 | 9.525 | 3.97 | 0.8 | 4.4 | |
| | 2NU-CCGW09T308W | - | ● | - | - | - | - | - | - | - | - | 4.6 | 2.6 | 9.525 | 3.97 | 0.8 | 4.4 | |
| | | 2NU-DCGW070204 | - | ● | - | - | - | ● | - | - | - | - | 1.3 | 2.6 | 6.35 | 2.38 | 0.4 | 2.8 |
| 2NU-DCGW070208 | | - | ● | - | - | - | - | - | - | - | - | 1.3 | 2.2 | 6.35 | 2.38 | 0.8 | 2.8 | |
| 2NU-DCGW070208T | | - | - | - | - | - | ● | - | - | - | - | 1.3 | 2.2 | 6.35 | 2.38 | 0.8 | 2.8 | |
| 2NU-DCGW11T302 | | - | ● | - | - | - | - | - | - | - | - | 4.8 | 2.6 | 9.525 | 3.97 | 0.2 | 4.4 | |
| 2NU-DCGW11T304 | | ● | ● | - | ● | - | ● | - | ● | - | - | 4.8 | 2.6 | 9.525 | 3.97 | 0.4 | 4.4 | |
| 2NU-DCGW11T304F | | - | ● | - | - | - | - | - | - | - | - | 4.8 | 2.6 | 9.525 | 3.97 | 0.8 | 4.4 | |
| 2NU-DCGW11T304T | | - | ● | - | - | - | - | - | - | - | - | 4.8 | 2.6 | 9.525 | 3.97 | 0.4 | 4.4 | |
| 2NU-DCGW11T308 | | ● | ● | - | ● | - | - | ● | - | ● | - | 4.8 | 2.2 | 9.525 | 3.97 | 0.8 | 4.4 | |
| 2NU-DCGW11T308T | | - | ● | - | - | - | - | - | - | - | - | 4.8 | 2.2 | 9.525 | 3.97 | 0.8 | 4.4 | |
| T-2NU-DCGW11T304 | | - | ● | - | - | - | - | - | - | - | - | 4.8 | 2.6 | 9.525 | 3.97 | 0.4 | 4.4 | |
| T-2NU-DCGW11T308 | | - | ● | - | ● | - | - | - | - | - | - | - | - | - | - | - | - | |
| | 3NU-TCGW090204 | - | ● | - | - | - | - | - | - | - | - | 1.6 | 2.5 | 5.56 | 2.38 | 0.4 | 2.5 | |
| | 3NU-TCGW090204F | - | ● | - | - | - | - | - | - | - | - | 1.6 | 2.5 | 5.56 | 2.38 | 0.4 | 2.5 | |
| | 3NU-TCGW090204T | - | ● | - | - | - | - | - | - | - | - | 1.6 | 2.5 | 5.56 | 2.38 | 0.4 | 2.5 | |
| | 3NU-TPGW110304 | - | ● | - | ● | - | ● | ● | - | ● | - | 2.3 | 2.5 | 6.35 | 3.18 | 0.4 | 3.4 | |
| | 3NU-TPGW110304F | - | ● | - | - | - | - | - | - | - | - | 2.3 | 2.5 | 6.35 | 3.18 | 0.4 | 3.4 | |
| | 3NU-TPGW110304T | - | ● | - | - | - | - | - | - | - | - | 2.3 | 2.5 | 6.35 | 3.18 | 0.4 | 3.4 | |
| | 3NU-TPGW110308 | - | ● | - | ● | - | ● | ● | - | ● | - | 2.3 | 2.3 | 6.35 | 3.18 | 0.8 | 3.4 | |
| | 3NU-TPGW110308F | - | ● | - | - | - | - | - | - | - | - | 2.3 | 2.3 | 6.35 | 3.18 | 0.8 | 3.4 | |
| | 3NU-TPGW110308T | - | ● | - | - | - | - | - | - | - | - | 2.3 | 2.3 | 6.35 | 3.18 | 0.8 | 3.4 | |
| | 3NU-TPGN110308 | - | - | - | - | - | ● | ● | - | - | - | 2.3 | 2.3 | 6.35 | 3.18 | 0.8 | - | |
| | 3NU-TPGN160304 | - | ● | - | - | - | - | - | - | - | - | 4.8 | 2.5 | 9.525 | 3.18 | 0.4 | - | |
| | 3NU-TPGN160308 | - | ● | - | - | - | - | - | - | - | - | 4.8 | 2.3 | 9.525 | 3.18 | 0.8 | - | |



cBN Series

cBN Multi-corner type (Negative/positive)

※ T-2NU-□□□□△△△△△ model no. package unit is 10 EA.

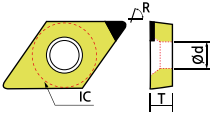
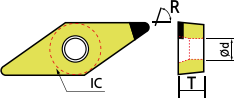
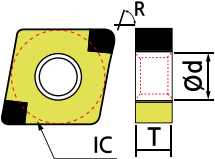
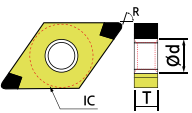
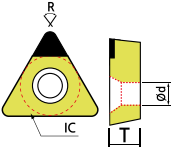
| Shape | Model No. | Grade | | | | | | | | | | | W (Weight) | mm | | | | |
|-------|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|------------|-------------------------|-----------------------|---------------|------------|--------------------|
| | | DNC100 | DNC250 | DNC300 | DNC350 | DNC400 | DB1000 | DB2000 | DBN250 | DBN350 | DBN700A | DBNX20 | | S (cutting edge length) | IC (inscribed circle) | T (thickness) | R (Nose R) | ∅D (hole diameter) |
| | 3NU-TPGB110304 | - | ● | - | - | - | - | - | ● | - | - | 2.3 | 2.5 | 6.35 | 3.18 | 0.4 | 3.4 | |
| | 3NU-TPGB110304T | - | ● | - | - | - | - | - | - | - | - | 2.3 | 2.5 | 6.35 | 3.18 | 0.4 | 3.4 | |
| | 3NU-TPGB110308 | - | ● | - | - | - | - | - | ● | - | - | 2.3 | 2.3 | 6.35 | 3.18 | 0.8 | 3.4 | |
| | 3NU-TPGB110308F | - | ● | - | - | - | - | - | - | - | - | 2.3 | 2.3 | 6.35 | 3.18 | 0.8 | 3.4 | |
| | 3NU-TPGB110308T | - | ● | - | - | - | - | - | - | - | - | 2.3 | 2.3 | 6.35 | 3.18 | 0.8 | 3.4 | |
| | 2NU-VBGW160402 | - | ● | - | - | - | - | - | - | - | - | 8.6 | 3.5 | 9.525 | 4.76 | 0.2 | 4.4 | |
| | 2NU-VBGW160404 | ● | ● | - | ● | - | ● | - | ● | - | ● | 8.6 | 3.5 | 9.525 | 4.76 | 0.4 | 4.4 | |
| | 2NU-VBGW160404F | - | ● | - | - | - | - | - | - | - | - | 8.6 | 3.5 | 9.525 | 4.76 | 0.4 | 4.4 | |
| | 2NU-VBGW160404T | - | ● | - | - | - | - | - | - | - | - | 8.6 | 3.5 | 9.525 | 4.76 | 0.4 | 4.4 | |
| | 2NU-VBGW160408 | ● | ● | - | ● | - | - | ● | ● | - | - | 8.6 | 2.6 | 9.525 | 4.76 | 0.8 | 4.4 | |
| | 2NU-VBGW160408F | - | ● | - | - | - | - | - | - | - | - | 8.6 | 2.6 | 9.525 | 4.76 | 0.8 | 4.4 | |
| | 2NU-VBGW160408T | - | ● | - | - | - | - | - | - | - | - | 8.6 | 2.6 | 9.525 | 4.76 | 0.8 | 4.4 | |
| | T-2NU-VBGW160408 | - | - | - | ● | - | - | - | - | - | - | - | 2.6 | - | - | - | - | - |
| | 2NU-VCGW160404 | - | ● | - | ● | - | - | - | - | - | - | 8.6 | 3.5 | 9.525 | 4.76 | 0.4 | 4.4 | |
| | 2NU-VCGW160404F | - | ● | - | - | - | - | - | - | - | - | 8.6 | 3.5 | 9.525 | 4.76 | 0.4 | 4.4 | |
| | 2NU-VCGW160404T | - | ● | - | - | - | - | - | - | - | - | 8.6 | 3.5 | 9.525 | 4.76 | 0.4 | 4.4 | |
| | 2NU-VCGW160408 | - | ● | - | - | - | - | - | - | - | - | 8.6 | 2.6 | 9.525 | 4.76 | 0.8 | 4.4 | |
| | 2NU-VCGW160408F | - | ● | - | - | - | - | - | - | - | - | 8.6 | 2.6 | 9.525 | 4.76 | 0.8 | 4.4 | |
| | 2NU-VCGW160408T | - | ● | - | - | - | ● | ● | - | - | - | 8.6 | 2.6 | 9.525 | 4.76 | 0.8 | 4.4 | |
| | T-2NU-VCGW160404 | - | ● | - | - | - | - | - | - | - | - | - | - | - | - | 0.4 | - | |
| | T-2NU-VCGW160408 | - | ● | - | - | - | - | - | - | - | - | - | 8.6 | 2.6 | 9.525 | 4.76 | 0.8 | 4.4 |
| | CNMA120404 | - | - | - | - | - | - | - | ● | - | - | 9.89 | 4.5 | 12.7 | 4.76 | 0.4 | 5.16 | |
| | CNMA120408 | - | - | - | - | - | - | - | ● | - | - | 9.89 | 4.5 | 12.7 | 4.76 | 0.8 | 5.16 | |
| | T-CNMA120408 | - | - | - | - | - | - | - | ● | - | - | 9.89 | 4.5 | 12.7 | 4.76 | 0.8 | 5.16 | |
| | DNMA150404 | - | - | - | - | - | - | - | ● | - | - | 12.88 | 3.7 | 12.7 | 4.76 | 0.4 | 5.16 | |
| | DNMA150408 | - | - | - | - | - | - | - | ● | ● | - | 12.88 | 3.4 | 12.7 | 4.76 | 0.8 | 5.16 | |
| | TNMA160404 | - | - | - | - | - | - | - | ● | - | - | 7.2 | 3.7 | 9.525 | 4.76 | 0.4 | 3.81 | |
| | TNMA160408 | - | - | - | - | - | - | - | ● | - | - | 7.2 | 3.5 | 9.525 | 4.76 | 0.8 | 3.81 | |
| | T-VNMA160404 | - | - | - | - | - | - | - | ● | - | - | 10.2 | 4.9 | 9.525 | 4.76 | 0.4 | 3.81 | |
| | VNMA160404 | - | - | - | - | - | - | - | ● | - | - | 12.9 | 5.8 | 9.525 | 4.76 | 0.4 | 3.81 | |
| | VNMA160408 | - | - | - | - | - | - | - | ● | - | - | 10.2 | 5.8 | 9.525 | 4.76 | 0.8 | 3.81 | |
| | CCMW09T304 | - | - | - | - | - | - | - | ● | - | - | 4.5 | 4.3 | 9.525 | 3.97 | 0.4 | 4.4 | |



cBN Series

cBN Multi-corner type (Negative/positive)

※ T-2NU-□□□□△△△△△ model no. package unit is 10 EA.

| Shape | Model No. | Grade | | | | | | | | | | | | W (Weight) | mm | | | | |
|---|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|-------------------------|------------|-----------------------|---------------|------------|--------------------|--|
| | | DNC100 | DNC250 | DNC300 | DNC350 | DNC400 | DB1000 | DB2000 | DBN250 | DBN350 | DBN700A | DBNX20 | S (cutting edge length) | | IC (inscribed circle) | T (thickness) | R (Nose R) | ∅D (hole diameter) | |
|  | DCGW11T308 | - | - | - | - | - | - | - | ● | - | - | - | 4.8 | 3.2 | 9.525 | 3.97 | 0.8 | 4.4 | |
| | T-DCGW11T308 | - | - | - | - | - | - | - | ● | - | - | - | 4.8 | 3.2 | 9.525 | 3.97 | 0.8 | 4.4 | |
|  | VBMW160404 | - | - | - | - | - | - | - | ● | - | - | - | 8.6 | 3.5 | 9.525 | 4.76 | 0.4 | 4.4 | |
| | VBMW160408 | - | - | - | - | - | - | - | ● | - | - | - | 8.6 | 3.5 | 9.525 | 4.76 | 0.8 | 4.4 | |
|  | 4NS-CNGA120408 | - | - | - | - | ● | - | - | - | - | - | 9.7 | 3 | 12.7 | 4.76 | 0.8 | 5.16 | | |
| | 4NS-CNGA120412 | - | - | - | - | ● | - | - | - | - | - | 9.7 | 2.9 | 12.7 | 4.76 | 1.2 | 5.16 | | |
|  | 4NS-DNGA150608 | - | - | - | - | ● | - | - | - | - | - | 15.1 | 2.83 | 12.7 | 6.35 | 0.8 | 5.16 | | |
| | 4NS-DNGA150612 | - | - | - | - | ● | - | - | - | - | - | 15.1 | 2.46 | 12.7 | 6.35 | 1.2 | 5.16 | | |
|  | T-TPGB110304 | - | - | - | - | - | - | - | ● | - | - | 2.3 | 3.7 | 6.35 | 3.18 | 0.4 | 3.4 | | |
| | TPGB110304 | - | - | - | - | - | - | - | ● | ● | - | 2.3 | 3.7 | 6.35 | 3.18 | 0.4 | 3.4 | | |
| | TPGB110308 | - | - | - | - | - | - | - | ● | - | - | 2.3 | 3.5 | 6.35 | 3.18 | 0.8 | 3.4 | | |



PCD Series

PCD Insert (Negative/positive)

※ T-2NU-□□□□△△△△△ model no. package unit is 10 EA.

| Shape | Model No. | Grade | | W (Weight) | mm | | | | |
|-------|------------|-------|---|------------|-------------------------|-----------------------|---------------|------------|--------------------|
| | | DP150 | | | S (cutting edge length) | IC (inscribed circle) | T (thickness) | R (Nose R) | ∅D (hole diameter) |
| | CNMM120404 | ● | - | 4.3 | 12.7 | 4.76 | 0.4 | 5.16 | |
| | CNMM120408 | ● | - | 4.2 | 12.7 | 4.76 | 0.8 | 5.16 | |
| | | | | | | | | | |
| | CCMW120404 | ● | - | 4.3 | 12.7 | 4.76 | 0.4 | 5.16 | |
| | | | | | | | | | |
| | | | | | | | | | |
| | DNMM150404 | ● | - | 3.5 | 12.7 | 4.76 | 0.4 | 5.16 | |
| | DNMM150408 | ● | - | 3.2 | 12.7 | 4.76 | 0.8 | 5.16 | |
| | | | | | | | | | |
| | CCMT060202 | ● | - | 2.8 | 6.35 | 2.38 | 0.2 | 2.8 | |
| | CCMT060204 | ● | - | 2.7 | 6.35 | 2.38 | 0.4 | 2.8 | |
| | CCMT09T304 | ● | - | 4.3 | 9.525 | 3.97 | 0.4 | 4.4 | |
| | CCMT09T308 | ● | - | 4.2 | 9.525 | 3.97 | 0.8 | 4.4 | |
| | | | | | | | | | |
| | DCMT070202 | ● | - | 3.7 | 6.35 | 2.38 | 0.2 | 2.8 | |
| | DCMT070204 | ● | - | 3.5 | 6.35 | 2.38 | 0.4 | 2.8 | |
| | DCMT11T302 | ● | - | 3.5 | 9.525 | 3.97 | 0.2 | 4.4 | |
| | DCMT11T304 | ● | - | 3.5 | 9.525 | 3.97 | 0.4 | 4.4 | |
| | DCMT11T308 | ● | - | 3.2 | 9.525 | 3.97 | 0.8 | 4.4 | |
| | | | | | | | | | |
| | DCGT11T304 | ● | - | 3.5 | 9.525 | 3.97 | 0.4 | 4.4 | |
| | | | | | | | | | |
| | | | | | | | | | |



PCD Series

PCD Insert (Negative/positive)

※ T-2NU-□□□□△△△△△ model no. package unit is 10 EA.

| Shape | Model No. | Grade | | W (Weight) | mm | | | |
|-------|------------|-------|---|------------|-------------------------|-----------------------|---------------|------------|
| | | DP150 | | | S (cutting edge length) | IC (inscribed circle) | T (thickness) | R (Nose R) |
| | TPGW080204 | ● | - | - | 6.35 | 2.38 | 0.4 | 2.4 |
| | TPGW090204 | ● | - | 3.2 | 5.56 | 2.38 | 0.4 | 2.5 |
| | TPGW090208 | ● | - | 3 | 5.56 | 2.38 | 0.8 | 2.5 |
| | TPGW110304 | ● | - | 3.7 | 6.35 | 3.18 | 0.4 | 3.4 |
| | TPGW110308 | ● | - | 3.5 | 6.35 | 3.18 | 0.8 | 3.4 |
| | VBMT110304 | ● | - | 5.8 | 6.35 | 3.18 | 0.4 | 3.4 |
| | VBMT110308 | ● | - | 4.9 | 6.35 | 3.18 | 0.8 | 3.4 |
| | VBMT160404 | ● | - | 5.8 | 9.525 | 4.76 | 0.4 | 4.4 |
| | VBMT160408 | ● | - | 4.9 | 9.525 | 4.76 | 0.8 | 4.4 |
| | VCMT110304 | ● | - | 5.8 | 6.35 | 3.18 | 0.4 | 3.4 |
| | VCMT110308 | ● | - | 4.9 | 6.35 | 3.18 | 0.8 | 3.4 |
| | VBGW160404 | ● | - | 5.8 | 12.7 | 4.76 | 0.4 | 4.4 |
| | | | | | | | | |
| | VCMT160404 | ● | - | 5.8 | 9.525 | 4.76 | 0.4 | 4.4 |
| | VCMT160408 | ● | - | 4.9 | 9.525 | 4.76 | 0.8 | 4.4 |
| | | | | | | | | |
| | TPGN110304 | ● | - | 3.7 | 6.35 | 3.18 | 0.4 | - |
| | TPGN110308 | ● | - | 3.5 | 6.35 | 3.18 | 0.8 | - |
| | SPGN090304 | ● | - | 4.1 | 9.525 | 3.18 | 0.4 | - |
| | | | | | | | | |



cBN Feature



Features

DINOX cBN features very excellent hardness and thermal resistance by adding special ceramic bonding material to cBN, its main ingredient, and sintering them at an ultrahigh-pressure high temperature. It also provides optimal conditions for productivity improvement through high-speed processing of cast iron and heat-treated steel due to its excellent strength and wear resistance.

High accuracy

Wear resistance

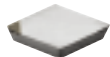
Productivity improvement



cBN Type



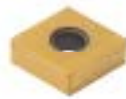
Re-polishing type



One-use type



Multi-corner type



Multi-corner type (coating)

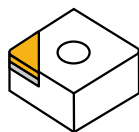


NS Type



NT Type

Re-grinding type



e.g.) CNGA120408

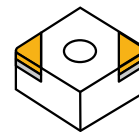
- Stable and long tool life
- Excellent wear resistance, high hardness
- 3-4 time re-polishing is possible, which reduces tool expenses

Multi-corner type (coated/non-coated)



Coated CBN

Non-coated CBN

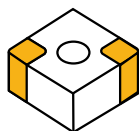


e.g.) 2NU-CNGA120408

- Simple corner management
- Strong welding surface
- Possible to create an effect of several cBNs with one insert

NS, NT Type

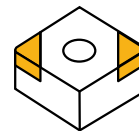
NS Type



e.g.) 4NS-CNGA120408

- Specialized high cutting depth
- Excellent machining performance in spite of variable cutting depth

NT Type



e.g.) 2NT-CNGA120408

- High cutting depth versus general brazing type
- Economical cBN

High cutting depth and high feed available; excellent machining performance in spite of variable cutting depth
Universal machining available; stable and efficient machining versus general brazing inserts



cBN Feature

Applications by grade and textural characteristics

| Textural characteristics | Texture | cBN content | Grade name | Workpiece, Applications | Features |
|---|---------|-------------|--|--|--|
| Mostly cBN particles combine by themselves | | High ▲ | DB7000 DB7500 | Cemented carbide alloy, chilled cast iron, Ni-hard cast iron, Iron metal sintered alloy, heat-resistant alloy, cast iron | <ul style="list-style-type: none"> High cBN content and texture where cBN particles strongly combine by themselves Suitable for cutting machining of high-hardness materials such as cast iron, heat-resistant alloy, Cemented carbide alloy, etc. |
| Mostly cBN particles combine by means of bonding material | | Low ▼ | DB1000, DB2000, DBN250, DBN350, DBN500, DBNX20, DBNX25, DNC100, DNC250, DNC300, DNC350, DNC400 | Alloy steel, titanium steel, carbon tool steel, bearing steel, dice steel, ductile cast iron | <ul style="list-style-type: none"> cBN particles strongly combine by special ceramic bonding material Features excellent wear resistance and tenacity in cutting heat-treated steel due to its high cBN retention capacity |

Grade map




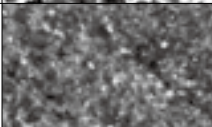
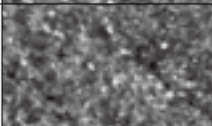

| Workpiece | Type | High-speed continuous | Continuous | Low/medium interrupted | High interrupted | |
|-----------|----------------------|-----------------------|------------|------------------------|-------------------|--------|
| | Usage classification | H01 | H10 | H20 | H30 | |
| | Coated cBN | DNC100 | | DNC250 | DNC300 NEW | DNC350 |
| | | DB1000 | | DB2000 | DBNX20 | DBNX25 |
| | | | | | | |
| | Usage classification | 1 | 10 | 20 | 30 | |
| | Non-coated cBN | DB7500 | DB7000 | | | |
| | Usage classification | K01 | K10 | K20 | K30 | |
| | Non-coated cBN | DBN500 | | DB7000 | DBNS800 | |
| | | | | | | |
| | Usage classification | S01 | S10 | S20 | S30 | |
| | Non-coated cBN | DB7000 | DBNS800 | | | |



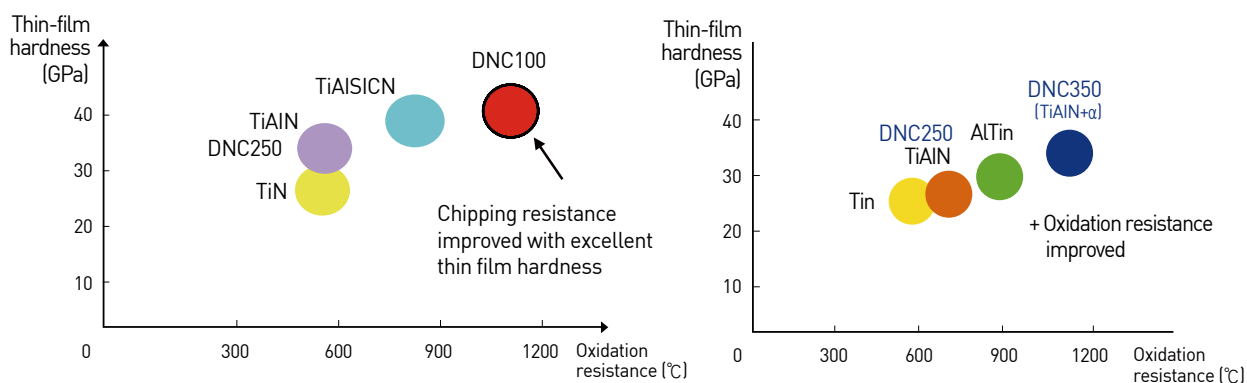
cBN Feature

Coating information

Characteristics

| Classification | Grade | Texture | Binder | CBN content (%) | Grain size (μm) | Hardness HV (Gpa) |
|---|-----------------------|---|--------|-----------------|------------------------------|-------------------|
|  | DNC100 |  | TiN | 50 - 55 | 2 | 31 - 34 |
| | DNC250 |  | TiC | 65 - 70 | 6 | 32 - 34 |
| | ^{NEW} DNC300 |  | TiN | 65 - 70 | 4 | 29 - 31 |
| | DNC350 |  | TiN | 60 - 65 | 1 | 33 - 35 |
| | DNC400 |  | TiN | 65 | 3 | - |

Coated thin-film characteristics


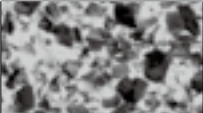

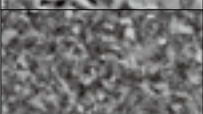







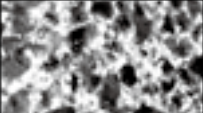



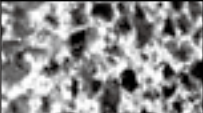





cBN Feature

Non-coating information

Characteristics

| Classification | Grade | Texture | Binder | CBN content (%) | Grain size (μm) | Hardness HV (Gpa) |
|---|---------|---|-------------|-----------------|-----------------|-------------------|
|  | DB1000 |  | TiCN | 40 - 45 | 1 | 27 - 31 |
| | DB2000 |  | TiN | 50 - 55 | 2 | 31 - 34 |
| | DBNX20 |  | TiN | 55 - 60 | 3 | 31 - 33 |
| | DBNX25 |  | TiN | 65 - 70 | 4 | 29 - 31 |
| | DBN250 |  | TiN | 50 - 55 | 2 | 31 - 34 |
| | DBN350 |  | TiN | 60 - 65 | 1 | 33 - 35 |
|  | DB7000 |  | CO compound | 90 - 95 | 2 | 41 - 44 |
| | DB7500 |  | CO compound | 90 - 95 | 1 | 41 - 44 |
|  | DBN500 |  | TiC | 65 - 70 | 6 | 32 - 34 |
| | DBNS800 |  | Al compound | 85 - 90 | 8 | 39 - 42 |
| | DB7000 |  | CO compound | 90 - 95 | 2 | 41 - 44 |
|  | DBNS800 |  | Al compound | 85 - 90 | 8 | 39 - 42 |
| | DB7000 |  | CO compound | 90 - 95 | 2 | 41 - 44 |

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



cBN Heat treated steel



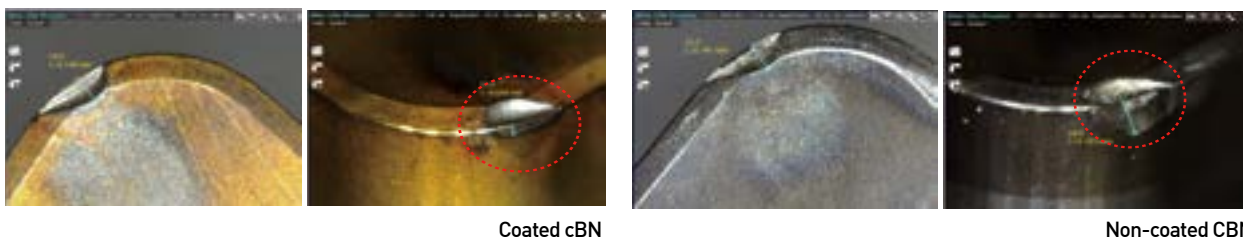
Features and cutting conditions of cBN grade

| Classification | Grade | | Insert color | Applications | Cutting conditions | | |
|----------------|----------------------|-----------------------|--------------|---|--------------------------|---------------|----------------|
| | Coated or non-coated | Name | | | Cutting speed Vc(m/min) | | Feed f(mm/rev) |
| | | | | | 0 50 100 150 200 250 300 | | |
| | Coated | DNC100 | | For high-speed, continuous cutting | 180 300 | 0.03 -0.30 | 0.03 -0.30 |
| | | DNC250 | | For continuous, low interrupted cutting | 120 220 | 0.05 -0.30 | 0.05 -0.30 |
| | | ^{NEW} DNC300 | | For low/medium interrupted cutting | 90 250 | 0.05 -0.20 | 0.05 -0.25 |
| | | DNC350 | | For medium/high interrupted cutting | 90 150 | 0.05 -0.30 | 0.05 -0.50 |
| | | DNC400 | | For low/medium interrupted cutting | 80 200 | 0.05 -0.30 | 0.05 -0.50 |
| | Non-coated | DBNX20 | | For high efficiency cutting | 120 150 | 0.03 -0.30 | 0.03 -0.50 |
| | | DBNX25 | | For high-speed interrupted cutting | 150 200 | 0.03 -0.30 | 0.03 -0.50 |
| | | DBN250 | | For low/medium interrupted cutting | 80 120 | 0.03 -0.20 | 0.03 -0.30 |
| | | DBN350 | | For high interrupted cutting | 80 110 | 0.03 -0.20 | 0.03 -0.30 |
| | | DB1000 | | For high-speed, continuous cutting | 130 250 | 0.03 -0.15 | 0.03 -0.20 |
| | | DB2000 | | For low/medium interrupted cutting | 80 200 | 0.03 -0.20 | 0.03 -0.30 |

Comparison of coated and non-coated cBNs

| Machining information | | | | | | | | | |
|-----------------------|-----------|--------|-----------------------|------------------|------------------|----------------------------|----------|----------|--|
| Vc(m/min) | f(mm/rev) | ap(mm) | No. of machining ops. | Cutting distance | Workpiece | Heat treated | Hardness | Size | |
| 200 | 0.1 | 0.1 | 20 times | 6km | SCM415 round rod | Carburizing heat treatment | 58~62 | Ø105*150 | |

Wear loss (coating superior)



Surface roughness (non-coating superior)

| Surface roughness | | | |
|-------------------|----------|----------|----------|
| Grade | 8 times | 12 times | 20 times |
| Non-coated CBN | Ra 0.431 | Ra 0.477 | Ra 0.492 |
| Coated cBN | Ra 0.579 | Ra 0.631 | Ra 0.792 |

※The details may vary according to machining environments.



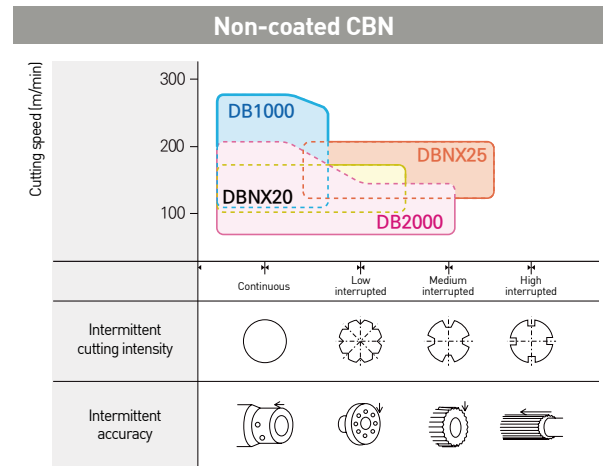
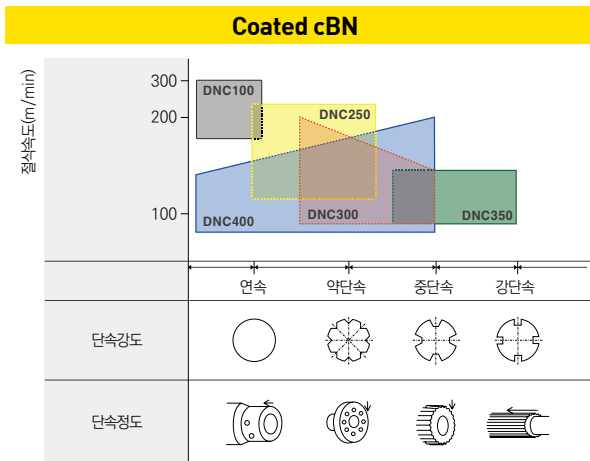
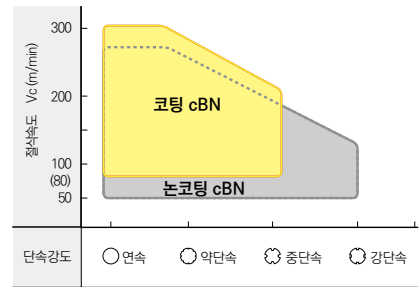
cBN Heat treated steel



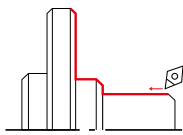
Applicable area

- **Coated cBN** : Suitable for all heat-treated steel machining as it is excellent in high-speed high-efficiency machining
- **Non-coated cBN** : Suitable for machining of high-hardness heat-treated steel or parts to which cutting speed is limited

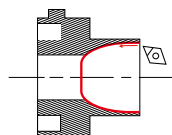
| Series | Usable area |
|---------------------|--|
| Coated cBN | <ul style="list-style-type: none"> • Ideal for heat-treated steel machining • Machining requiring high speed and high precision • Machining requiring high efficiency such as carburized layer removal |
| Uncoated cBN | <ul style="list-style-type: none"> • Small parts not requiring high cutting speed • Machining materials including much hard particles such as mold parts • Applicable even in case of an unstable machine setup |



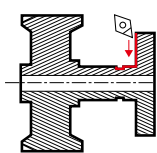
Recommended Machining Works



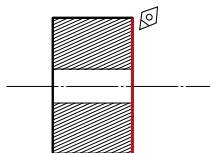
외경가공



내경(곡면) 가공

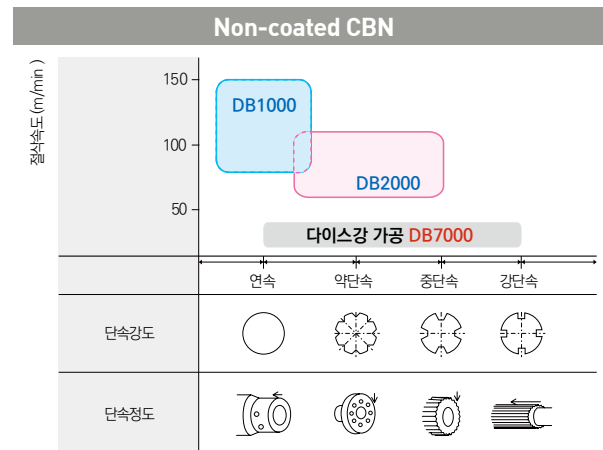


폭 결정, 홈 가공



단면 가공

Dice steel





cBN Heat treated steel

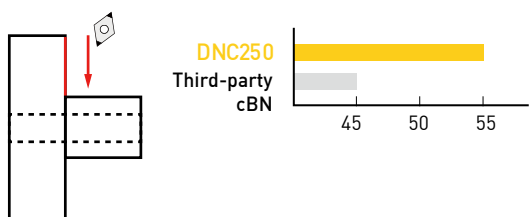


Example of machining of coated grades

Machining example

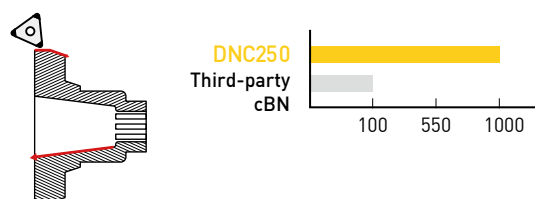
DNC250 TEST RESULT

| Grade | DNC250 | Third-party cBN |
|------------------------|------------------------------|-----------------|
| INSERTS | 2NU-DNGA150408 | |
| Parts name (workpiece) | H6 Swash plate (FCD55 Plate) | |
| Vc(m/min) | | |
| f(mm/rev) | 0.06 | |
| ap(mm) | 0.05 - 0.10 | |
| Dry/wet cutting | Wet cutting | |



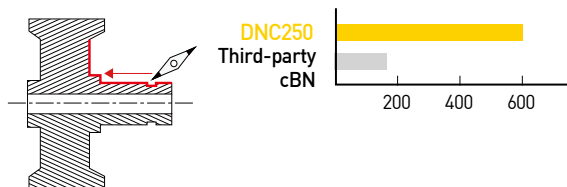
DNC250 TEST RESULT

| Grade | DNC250 | Third-party cBN |
|------------------------|--------------------------|-----------------|
| INSERTS | 3NU-TNGA160408 | |
| Parts name (workpiece) | Shaft UD Brake(SCR420HB) | |
| Vc(m/min) | 160 | |
| f(mm/rev) | 0.08 | |
| ap(mm) | 0.425 | |
| Dry/wet cutting | Wet cutting | |



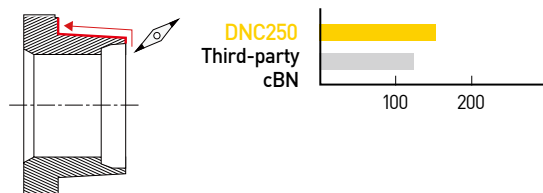
DNC250 TEST RESULT

| Grade | DNC250 | Third-party cBN |
|------------------------|----------------------------|-----------------|
| INSERTS | 2NU-VCGW160408 | |
| Parts name (workpiece) | Trans driver gear (SCM422) | |
| Vc(m/min) | 90 | |
| f(mm/rev) | 0.15 | |
| ap(mm) | 0.15 | |
| Dry/wet cutting | Wet cutting | |



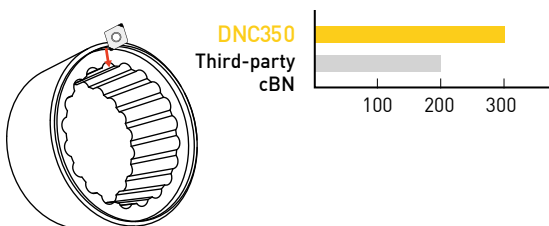
DNC250 TEST RESULT

| Grade | DNC250 | Third-party cBN |
|------------------------|---------------------------|-----------------|
| INSERTS | 2NU-VNGA160408 | |
| Parts name (workpiece) | CLUTCH BODY (SCr420 8903) | |
| Vc(m/min) | 140 | |
| f(mm/rev) | 0.12 | |
| ap(mm) | 0.025/0.075 | |
| Dry/wet cutting | Wet cutting | |



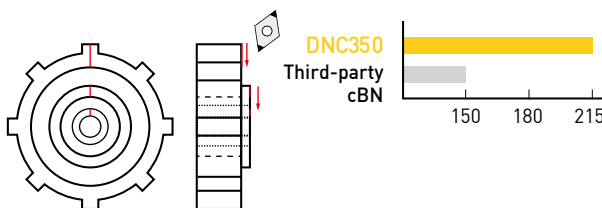
DNC350 TEST RESULT

| Grade | DNC350 | Third-party cBN |
|------------------------|----------------------|-----------------|
| INSERTS | 2NU-CNGA120408 | |
| Parts name (workpiece) | Anulus Gear (SCR420) | |
| Vc(m/min) | 200 | |
| f(mm/rev) | 0.05 - 0.08 | |
| ap(mm) | 0.4 | |
| Dry/wet cutting | Wet cutting | |



DNC350 TEST RESULT

| Grade | DNC350 | Third-party cBN |
|------------------------|----------------------|-----------------|
| INSERTS | 2NU-CNGA120404 | |
| Parts name (workpiece) | Retainer (SAPH440-P) | |
| Vc(m/min) | 150 | |
| f(mm/rev) | 0.20 | |
| ap(mm) | 0.10-0.20 | |
| Dry/wet cutting | Wet cutting | |



※The details may vary according to machining environments.



cBN Heat treated steel

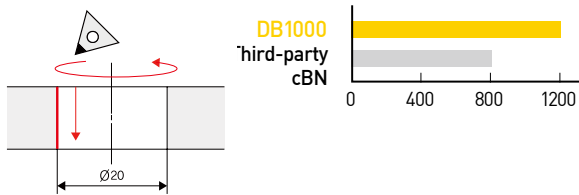


Uncoated grade machining example

Machining example

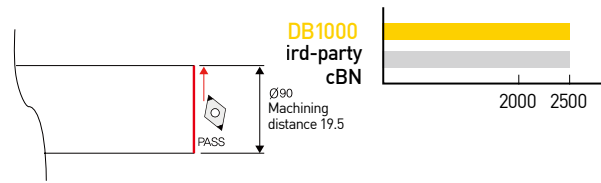
DB1000 TEST RESULT

| Grade | DB1000 | Third-party cBN |
|------------------------|--|-----------------|
| INSERTS | NU-TPGW110304 | |
| Parts name (workpiece) | Inner diameter boring machining (SUJ2) | |
| Vc(m/min) | 120 | |
| f(mm/rev) | 0.06 | |
| ap(mm) | 0.2 | |
| Dry/wet cutting | Wet cutting | |



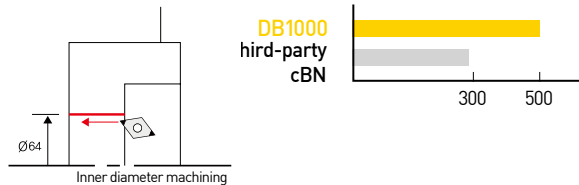
DB1000 TEST RESULT

| Grade | DB1000 | Third-party cBN |
|------------------------|----------------|-----------------|
| INSERTS | 2NU-CNGA120408 | |
| Parts name (workpiece) | | |
| Vc(m/min) | 282 | |
| f(mm/rev) | 0.1 | |
| ap(mm) | 0.1 | |
| Dry/wet cutting | Wet cutting | |



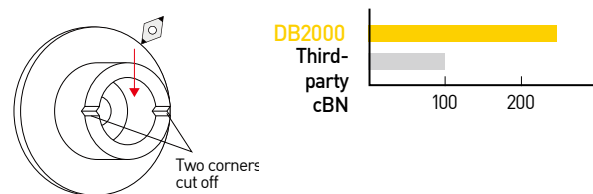
DB1000 TEST RESULT

| Grade | DB1000 | Third-party cBN |
|------------------------|------------------|-----------------|
| INSERTS | 2NU-CNGA120412-W | |
| Parts name (workpiece) | Reactor | |
| Vc(m/min) | 210 | |
| f(mm/rev) | 0.15 | |
| ap(mm) | 0.23 | |
| Dry/wet cutting | Wet cutting | |



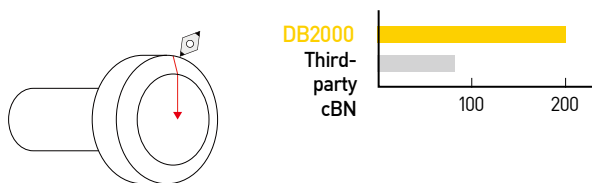
DB2000 TEST RESULT

| Grade | DB2000 | Third-party cBN |
|------------------------|--------------------------|-----------------|
| INSERTS | 2NU-DNGA150408 | |
| Parts name (workpiece) | Poly slide (SCM415H CVT) | |
| Vc(m/min) | 150 | |
| f(mm/rev) | 0.1 | |
| ap(mm) | 0.2 | |
| Dry/wet cutting | Wet cutting | |



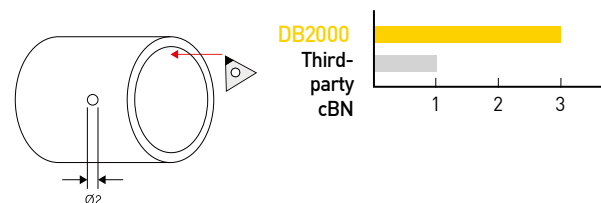
DB2000 TEST RESULT

| Grade | DB2000 | Third-party cBN |
|------------------------|-----------------|-----------------|
| INSERTS | 2NU-DNGA150408 | |
| Parts name (workpiece) | Plunger (SKD11) | |
| Vc(m/min) | 100 | |
| f(mm/rev) | 0.03 - 0.25 | |
| ap(mm) | 0.04 | |
| Dry/wet cutting | Wet cutting | |



DB2000 TEST RESULT

| Grade | DB2000 | Third-party cBN |
|------------------------|------------------------|-----------------|
| INSERTS | NU-TPGW110308 | |
| Parts name (workpiece) | Clutch parts (SCM415H) | |
| Vc(m/min) | 135 | |
| f(mm/rev) | 0.08 | |
| ap(mm) | 0.15 | |
| Dry/wet cutting | Wet cutting | |



※The details may vary according to machining environments.



cBN Heat treated steel

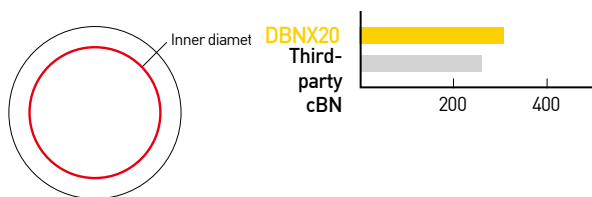


Uncoated grade machining example

Machining example

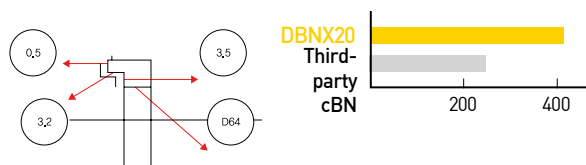
DBNX20 TEST RESULT

| Grade | DBNX20 | Third-party cBN |
|------------------------|-------------------|-----------------|
| INSERTS | VBMW160412 | |
| Parts name (workpiece) | BH-RR Outer wheel | |
| Vc(m/min) | 130 | |
| f(mm/rev) | 0.1 | |
| ap(mm) | 0.2 | |
| Dry/wet cutting | Wet cutting | |



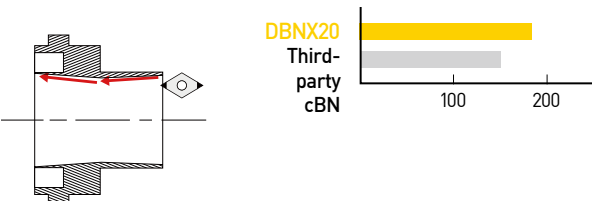
DBNX20 TEST RESULT

| Grade | DBNX20 | Third-party cBN |
|------------------------|----------------|-----------------|
| INSERTS | 2NU-CNGA120408 | |
| Parts name (workpiece) | Reactor | |
| Vc(m/min) | 221-248 | |
| f(mm/rev) | 0.1 | |
| ap(mm) | 0.2 | |
| Dry/wet cutting | Wet cutting | |



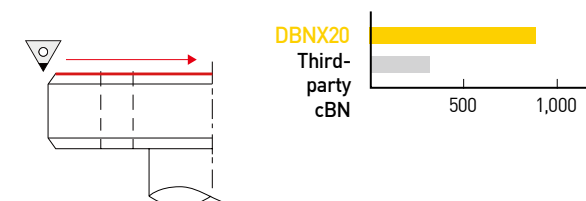
DBNX20 TEST RESULT

| Grade | DBNX20 | Third-party cBN |
|------------------------|-----------------------------|-----------------|
| INSERTS | 2NU-DNGA150612 | |
| Parts name (workpiece) | Transmission bearing (STB2) | |
| Vc(m/min) | 137 | |
| f(mm/rev) | 0.18-0.20 | |
| ap(mm) | 0.08-0.10 | |
| Dry/wet cutting | Wet cutting | |



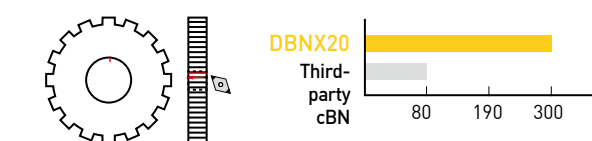
DBNX20 TEST RESULT

| Grade | DBNX20 | Third-party cBN |
|------------------------|-----------------------|-----------------|
| INSERTS | NU-TNMA160408 | |
| Parts name (workpiece) | Flange (HrC62 SCM415) | |
| Vc(m/min) | 150 | |
| f(mm/rev) | 0.1 | |
| ap(mm) | 0.12 | |
| Dry/wet cutting | Wet cutting | |



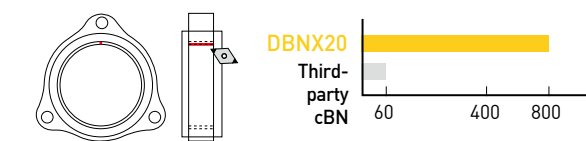
DBNX20 TEST RESULT

| Grade | DBNX20 | Third-party cBN |
|------------------------|---------------------------------|-----------------|
| INSERTS | CNMA120408 | |
| Parts name (workpiece) | Chain Sprocket (sintered alloy) | |
| Vc(m/min) | 200 | |
| f(mm/rev) | 0.1 | |
| ap(mm) | 0.1 | |
| Dry/wet cutting | | |



DBNX20 TEST RESULT

| Grade | DBNX20 | Third-party cBN |
|------------------------|------------------------------|-----------------|
| INSERTS | 2NU-DNGA150412 | |
| Parts name (workpiece) | Bearing outer wheel (S55 CR) | |
| Vc(m/min) | 190 | |
| f(mm/rev) | 0.15 | |
| ap(mm) | 0.20 | |
| Dry/wet cutting | | |



※The details may vary according to machining environments.



cBN Heat treated steel

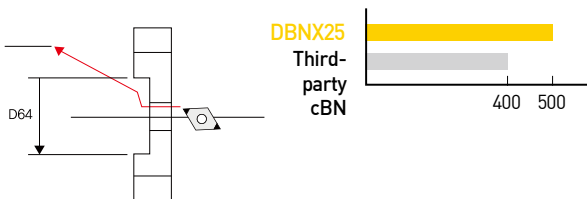


Uncoated grade machining example

Machining example

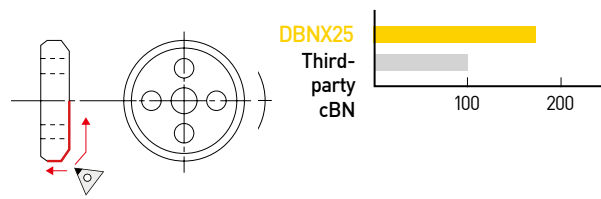
DBNX25 TEST RESULT

| Grade | DBNX25 | Third-party cBN |
|------------------------|------------------|-----------------|
| INSERTS | 2NU-CNGA120412-W | |
| Parts name (workpiece) | Reactor | |
| Vc(m/min) | 200-220 | |
| f(mm/rev) | 0.12-0.16 | |
| ap(mm) | 0.12-0.16 | |
| Dry/wet cutting | Wet cutting | |



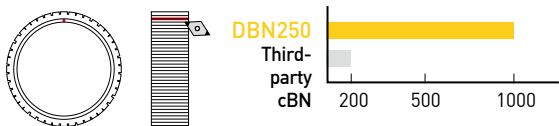
DBNX25 TEST RESULT

| Grade | DBNX25 | Third-party cBN |
|------------------------|---------------------|-----------------|
| INSERTS | NU-TNMA160408 | |
| Parts name (workpiece) | Gear (HrC60 SCM420) | |
| Vc(m/min) | 150 | |
| f(mm/rev) | 0.12 | |
| ap(mm) | 0.2 | |
| Dry/wet cutting | Wet cutting | |



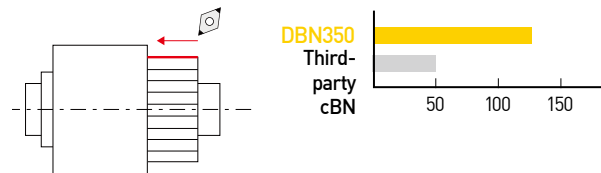
DBN250 TEST RESULT

| Grade | DBN250 | Third-party cBN |
|------------------------|-------------------------------|-----------------|
| INSERTS | 3NU-TPGB110308 | |
| Parts name (workpiece) | Sprocket Crank Shaft (SCM415) | |
| Vc(m/min) | 120-180 | |
| f(mm/rev) | 0.18 | |
| ap(mm) | 0.12 | |
| Dry/wet cutting | Wet cutting | |



DBN350 TEST RESULT

| Grade | DBN350 | Third-party cBN |
|------------------------|----------------------|-----------------|
| INSERTS | NU-CNMA120412 | |
| Parts name (workpiece) | Gear shaft (SCR420H) | |
| Vc(m/min) | 125 | |
| f(mm/rev) | 0.15 | |
| ap(mm) | 0.3 | |
| Dry/wet cutting | Wet cutting | |



※The details may vary according to machining environments.

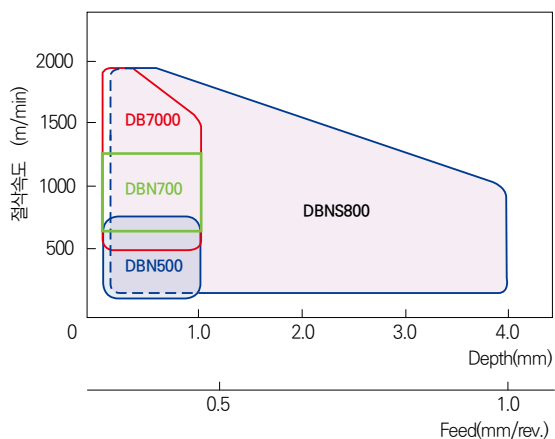


Features and cutting conditions of cBN grade

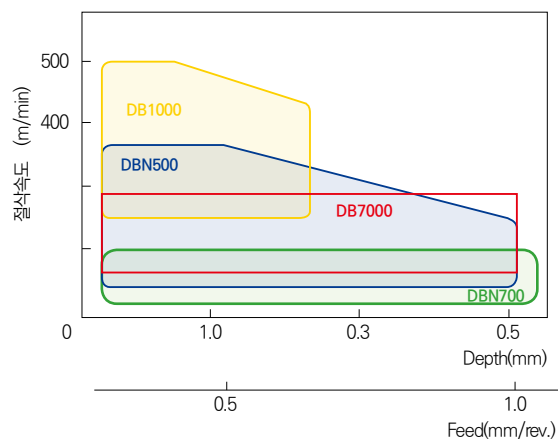
| Applications | Workpiece | Grade | Cutting conditions | | | | Feed f(mm/rev) | Cutting depth ap(mm) | | |
|--------------|-----------------|-------------------|-------------------------|--------------------------|-------------------------|------|----------------|----------------------|-----------|------|
| | | | Cutting speed Vc(m/min) | | | | | | | |
| | | | 100 | 500 | 1000 | 1500 | | | 2000 | |
| Turning | Gray cast iron | DBNS800 | 200 | [Bar chart: 200 to 2000] | | | 2000 | 0.1 ~ 1.0 | ≤4.0 | |
| | | DBN500 | 200 | [Bar chart: 200 to 700] | | | 700 | 0.1 ~ 0.5 | ≤1.0 | |
| | | DB7000 | 500 | [Bar chart: 500 to 2000] | | | 2000 | 0.1 ~ 0.5 | ≤1.0 | |
| | Alloy cast iron | DBNS800 | 200 | [Bar chart: 200 to 1000] | | | 1000 | 0.1 ~ 0.8 | ≤2.0 | |
| | | Ductile cast iron | DBN500 | 100 | [Bar chart: 100 to 350] | | | 350 | 0.1 ~ 0.4 | ≤0.5 |
| | | | DB1000 | 250 | [Bar chart: 250 to 500] | | | 500 | 0.1 ~ 0.2 | ≤0.2 |
| | | DB7000 | 80 | [Bar chart: 80 to 200] | | | 200 | 0.1 ~ 0.4 | ≤0.5 | |
| Milling | Gray cast iron | DBN700 | | [Bar chart: 800 to 2000] | | | 2000 | 0.1 ~ 0.5 | ≤0.5 | |
| | | DBNS800 | | [Bar chart: 800 to 2000] | | | 2000 | 0.1 ~ 1.0 | ≤4.0 | |

Applicable area

Gray cast iron



Ductile cast iron





cBN Cast iron



cBN grade features

| Grade | | Insert color | Applications | Features | |
|----------------|--------------------|--------------|-------------------|--|---|
| Classification | Coated or uncoated | | | | |
| | Uncoated | DBN700 | | High-speed cutting of FC / cutting of milling of FC, cutting of iron metal heat-treated parts cutting of high-hardness roll / cutting of heat-resistant ally | Grades whose material strength and thermal conductivity are improved by greatly increasing cBN content and optimizing sintered tissues |
| | | DBN500 | | FC, FCD cutting, high-hardness VSR cutting, high-hardness roll grinding cutting | For cast iron cutting, cBN sintered body formation is optimized and wear resistance and damage resistance are excellent |
| | | DB7000 | Foundry machining | For cast-iron difficult-to-cut materials machining, wear resistance and damage resistance are excellent | |
| | | DBNS800 | | Large cutting depth machining, high-precision grinding machining | The solid structure capable to be used cutting knife of entire insert, which responds brazing type machining and high-speed grinding unlike conventional brazing type |

Machining example

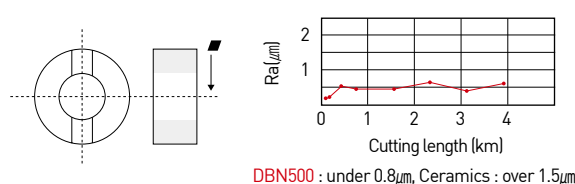
DBN500 TEST RESULT

| Grade | DBN500 | Third-party cBN |
|------------------------|--|-----------------|
| INSERTS | SPGN090308 | |
| Parts name (workpiece) | Crank bore (FC250 = FCD450 Inner boring) | |
| Vc(m/min) | 150 | |
| f(mm/rev) | 0.15 | |
| ap(mm) | 0.5 | |
| Dry/wet cutting | Wet cutting | |



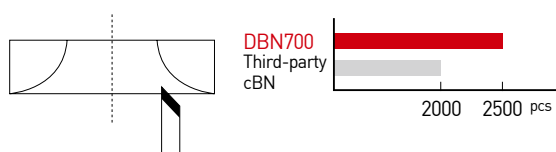
DBN500 TEST RESULT

| Grade | DBN500 | Third-party cBN |
|------------------------|---|-----------------|
| INSERTS | CNMA120412 | |
| Parts name (workpiece) | Compressor Comp (FC250 facing, Interrupted) | |
| Vc(m/min) | 400 | |
| f(mm/rev) | 0.07 | |
| ap(mm) | 0.15 | |
| Dry/wet cutting | Wet cutting | |



DBN700 TEST RESULT

| Grade | DBN700 | Third-party cBN |
|------------------------|---------------------------------------|-----------------|
| INSERTS | Special Bite | |
| Parts name (workpiece) | VSR intake (Hv250-330 Plunge Cutting) | |
| Vc(m/min) | 95 | |
| f(mm/rev) | 0.08 | |
| ap(mm) | 0.2 | |
| Dry/wet cutting | Dry cutting | |



DBN700 TEST RESULT

| Grade | DBN700 | Third-party cBN |
|------------------------|--------------------------|-----------------|
| INSERTS | SPGN090308 / TNGA150408 | |
| Parts name (workpiece) | Fly wheel (FC300 facing) | |
| Vc(m/min) | 600 | |
| f(mm/rev) | 0.15 | |
| ap(mm) | 0.2 | |
| Dry/wet cutting | Wet cutting | |



※The details may vary according to machining environments.



cBN Sintered parts

Sintering Parts



Features and cutting conditions of cBN grade

* First recommended

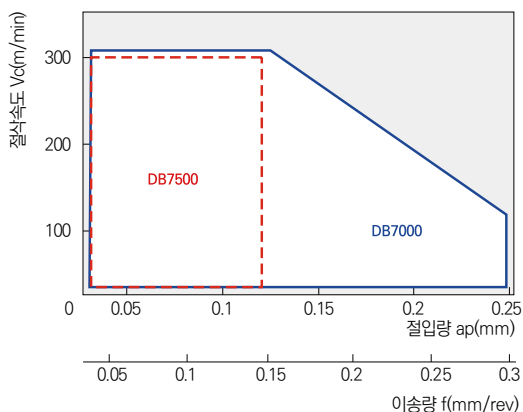
| Classification | Grade | | Insert color | Applications | Features |
|-----------------|--------------------|---------|--------------|---------------------------------|--|
| | Coated or uncoated | Name | | | |
| Sintering Parts | Uncoated | DB7000 | | High density heat treated parts | Features excellent wear resistance and damage resistance in sintered alloy machining to stably implement a long service life |
| | | DB7500* | | High density heat treated parts | Suitable for sintered alloy grinding machining by maintaining the best cutting taste |

| Workpiece | Grade | Cutting conditions | | | | | Feed f(mm/rev) | Cutting depth ap(mm) |
|------------------------|---------|-------------------------|-----------------------|-----|-----|-----|----------------|----------------------|
| | | Cutting speed Vc(m/min) | | | | | | |
| | | 100 | 150 | 200 | 250 | 300 | | |
| General sintered alloy | DB7000 | 80 | [Bar from 100 to 300] | | | 300 | 0.1 ~ 0.3 | ≤0.25 |
| | DB7500* | 80 | [Bar from 100 to 300] | | | 300 | 0.1 ~ 0.15 | ≤0.25 |

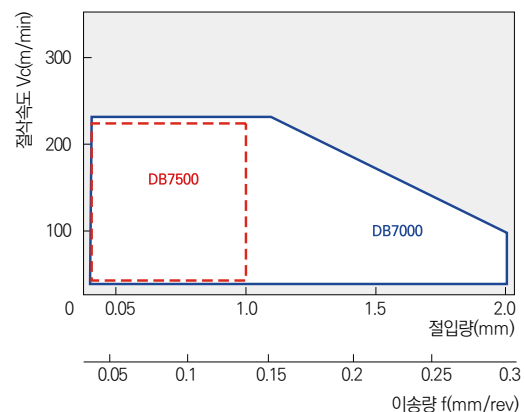
| Workpiece | Grade | Cutting conditions | | | | | Feed f(mm/rev) | Cutting depth ap(mm) |
|--|---------|-------------------------|-----------------------|-----|-----|------------|----------------|----------------------|
| | | Cutting speed Vc(m/min) | | | | | | |
| | | 100 | 150 | 200 | 250 | 300 | | |
| High-density heat-treated sintered alloy | DB7000 | 80 | [Bar from 100 to 200] | | 200 | 0.1 ~ 0.3 | ≤0.2 | |
| | DB7500* | 80 | [Bar from 100 to 200] | | 200 | 0.1 ~ 0.15 | ≤0.2 | |

Applicable area

General sintered alloy



High-density heat-treated sintered alloy



※The details may vary according to machining environments.

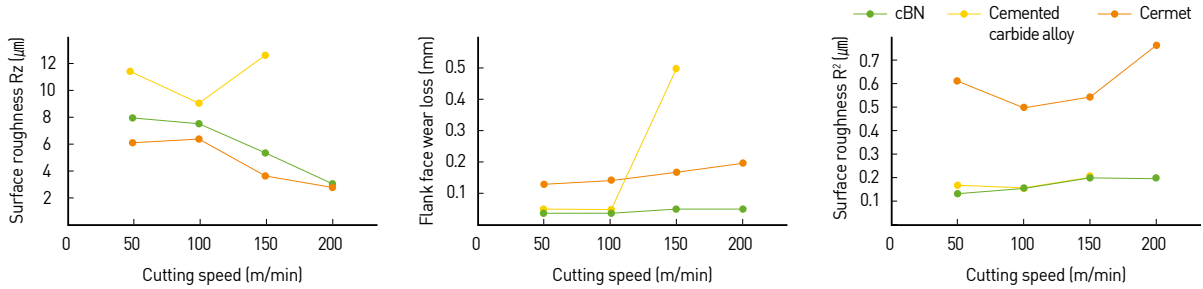


cBN Sintered parts

Sintering Parts

cBN cutting performance

Comparison of cutting performance by tool materials



- **Workpiece** : Equivalent to SMF4040
- **Details of machining** : High interrupted cross-sectional machining with a groove, hole Ø80-Ø100 (after 40 pass machining)
- **Tool model no.** : TNGA160404 / DB7000
- **Cutting conditions** : f=0.1mm/rev.ap=0.1mm, wet cutting

General sintered alloy up to Vc=100m/min can be machined even in the case of cemented carbide alloy or cermet. But after about Vc=120m/min it is rapidly worn so surface roughness is weakened and burr is expanded. On the contrary, cBN ensures reliable machining as it is excellent in surface roughness in high-speed areas, wear resistance, and burr inhibition.

Valve seat ring (VSR)

VSR is divided into VSR for Intake (IN) and VSR for Exhaust (EX). Generally, VSR for EX is of high hardness.

Recommended grade

| Cutting speed | Gasoline engine VSR material | Diesel engine VSR material |
|-------------------------|------------------------------|----------------------------|
| Flange cutting | DB7000 DBN350 | DB7000 DBN350 |
| Traverse cutting | DB7000 DBN500 | DB7000 DBN500 |
| Workpiece hardness (HV) | Low ◀ HV300 ▶ High | Low ◀ HV300 ▶ High |

Recommendation conditions

| Cutting speed Vc(m/min) | Feed f(mm/rev) | Cutting depth ap(mm) |
|-------------------------|----------------|----------------------|
| 50~100 | 0.03~0.2 | 0.05~0.5 |

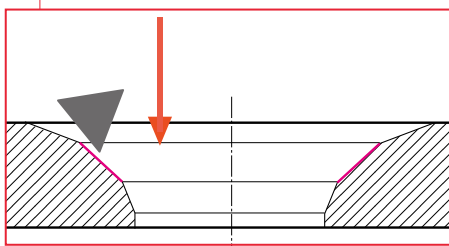
Cutting example



※Cylinder head shape

The tool service life was increased more than two fold versus conventional one when machining with DB7000 whose damage resistance is excellent.

| | |
|---------------|-----------|
| DB7000 | 2,000 pcs |
| Company A cBN | 800 pcs |



Recommendation conditions

- **Workpiece** : Sintered alloy (150-250HV)
- **Details of machining** : VSR(IN) 45-face grinding machining
- **Tool model no.** : TBGN060104 (DB7000)
- **Cutting conditions** : Vc=100m/min, f=0.08mm/rev, wet cutting

※The details may vary according to machining environments.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



DNC100

Coated cBN



Coating Heat treated steel Max Depth 0.3mm Continuous

Features

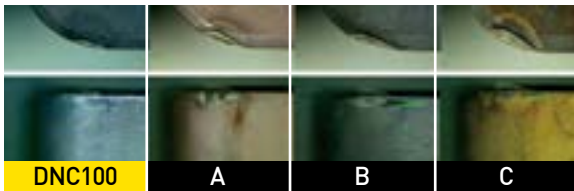
- Grade first recommended of high-speed continuous machining
- High heat resistance with high oxidation temperature
- Thin film applied with high hardness and high resistance to oxidation and chipping

| Grade | Texture | Binder | cBN content (%) | Grain size (μm) | Hardness HV (Gpa) |
|--------|---------|--------|-----------------|-----------------|-------------------|
| DNC100 | | TiN | 50 - 55 | 2 | 31 - 34 |

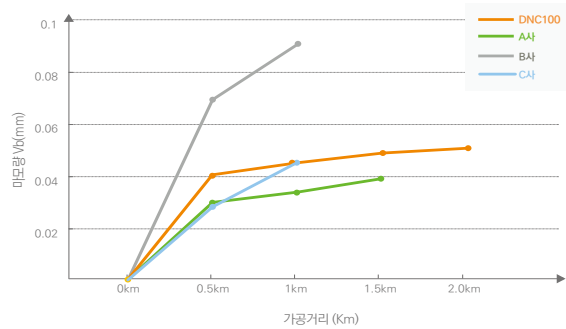


Performance comparison test

Wear resistance comparison test in high-speed machining



Wear loss



Cutting conditions

| | |
|------------------|-------------------|
| Insert model no. | 2NU-CNGA120408 |
| Test holder | DCLNL2525-M12 |
| Workpiece | SCM415 [58-62HrC] |
| Machining speed | 300m/min |
| Feed | 0.1mm/rev |
| Depth of cutting | 0.1mm |
| Dry/wet cutting | Dry machining |

Applicable area

| Cutting speed (m/min) | DNC100 | | | |
|--------------------------------|------------|-----------------|--------------------|-------------------|
| | Continuous | Low interrupted | Medium interrupted | Heavy interrupted |
| Intermittent cutting intensity | | | | |
| Intermittent accuracy | | | | |

Recommended Cutting Conditions

| | | |
|------------------------------------|------|-----|
| Cutting Speed VC (m/min) | 180 | 300 |
| Feed f(mm/rev) | 0.03 | 0.3 |
| Single cutting depth D.O.C ap (mm) | 0.03 | 0.3 |

- Improved wear resistance and oxidation resistance with high-hardness thin film adopted
- Significantly improved resistance to chipping, fracture, and wear

※The details may vary according to machining environments.



DNC250

Coated cBN



Coating Heat treated steel Max Depth 0.3mm Continuous Low interrupted

Features

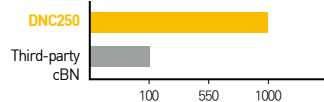
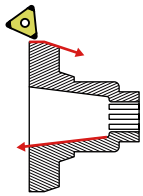
- Grade first recommended for continuous machining
- General-purpose cBN that enables machining ranging from Continuous cutting to Low interrupted cutting by PVD coating application
- Wear resistance improved

| Grade | Texture | Binder | cBN content (%) | Grain size (μm) | Hardness HV (Gpa) |
|--------|---------|--------|-----------------|-----------------|-------------------|
| DNC250 | | TiC | 65 - 70 | 4 | 32 - 34 |

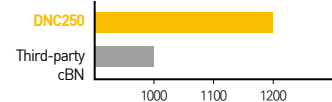
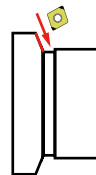


Machining example

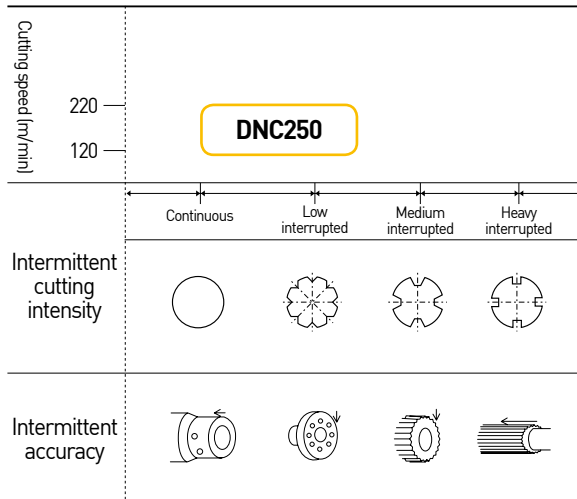
| Grade | DNC250 | Third-party cBN |
|------------------------|--------------------------|-----------------|
| INSERTS | 3NU-TNGA160408 | |
| Parts name (workpiece) | Shaft UD Brake(SCR420HB) | |
| Vc(m/min) | 160 | |
| f(mm/rev) | 0.08 | |
| ap(mm) | 0.425 | |
| Dry/wet cutting | Wet cutting | |



| Grade | DNC250 | Third-party cBN |
|------------------------|------------------------------------|-----------------|
| INSERTS | 2NU-CNGA120408 | |
| Parts name (workpiece) | Hardness : Hrc40~50 (SCM92 0HVS I) | |
| Vc(m/min) | 280 | |
| f(mm/rev) | 0.08-0.15 | |
| ap(mm) | 0.2 | |
| Dry/wet cutting | Wet cutting | |



Applicable area



Recommended Cutting Conditions

| | | |
|------------------------------------|------|-----|
| Cutting Speed Vc (m/min) | 120 | 220 |
| Feed f(mm/rev) | 0.05 | 0.3 |
| Single cutting depth D.O.C ap (mm) | 0.05 | 0.3 |



Non-coating



Coating

※The details may vary according to machining environments.



DNC300

NEW

Coated cBN



Coating Heat treated steel Max Depth Low interrupted Medium interrupted

Features

- Grade first recommended for machining ranging from Low interrupted to Medium interrupted
- Improved resistance to chipping and wear versus rival products
- Minimized coating peeling due to its stable coating

| Grade | Texture | Binder | cBN content (%) | Grain size (μm) | Hardness HV (Gpa) |
|--------|---------|--------|-----------------|-----------------|-------------------|
| DNC300 | | TiN | 65 - 70 | 4 | 29 - 31 |



Performance comparison

[Interrupted] V90 F0.1 D0.1 / SCR420H(HrC58~62) / DRy (4PATH=0.21KM)

DNC300
 Stable

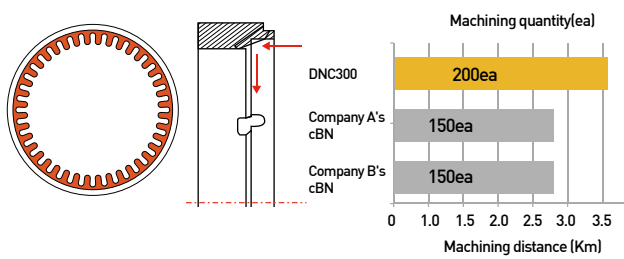
Conventional cBN
 Coated thin film

[Outer dia. interrupted] V120 F0.1 D0.1 / 9PATH

DNC300
 KT VB

Company A's cBN
 KT VB

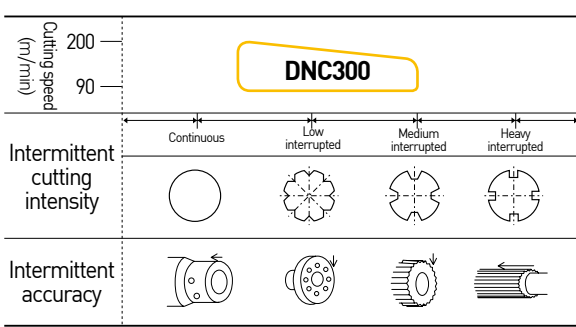
Machining example



Superior performance due to less VB wear loss of DNC 300

| Grade | DNC300 | Company A cBN | Company B cBN |
|------------------------|------------------------------|---------------|---------------|
| INSERTS | CNGA120408 | | |
| Parts name (workpiece) | Heat-treated steel (HrC57.8) | | |
| Vc(m/min) | 160 | | |
| f(mm/rev) | 0.08 | | |
| ap(mm) | 0.2-0.3 | | |
| Dry/wet cutting | Wet cutting | | |

Applicable area



Recommended Cutting Conditions

| | | |
|------------------------------------|------|------|
| Cutting Speed VC (m/min) | 90 | 200 |
| Feed f(mm/rev) | 0.05 | 0.3 |
| Single cutting depth D.O.C ap (mm) | 0.05 | 0.25 |

- Wear resistance and oxidation resistance are improved with high-hardness thin film adopted
- Significantly improved resistance to chipping, fracture, and wear

※The details may vary according to machining environments.



DNC350

Coated cBN



| | | | | |
|---------|--------------------|-----------------|-----------------|-------------------|
| | | | | |
| Coating | Heat treated steel | Max Depth 0.3mm | Low interrupted | Heavy interrupted |

Features

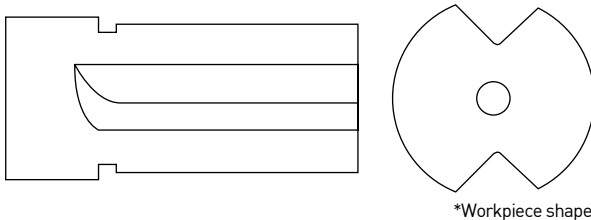
- Grade first recommended for interrupted cutting
- Maintains functionality and precision for a long time due to its advanced coating technology
- Economical due to its longer service life

| Grade | Texture | Binder | cBN content (%) | Grain size (μm) | Hardness HV (Gpa) |
|--------|---------|--------|-----------------|-----------------|-------------------|
| DNC350 | | TiN | 60 - 65 | 1 | 33 - 35 |

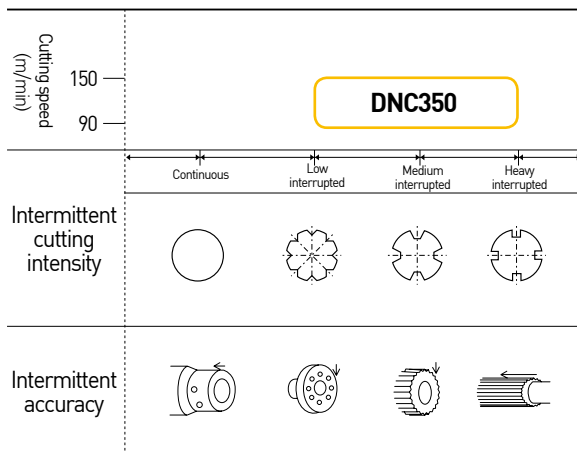


Machining example

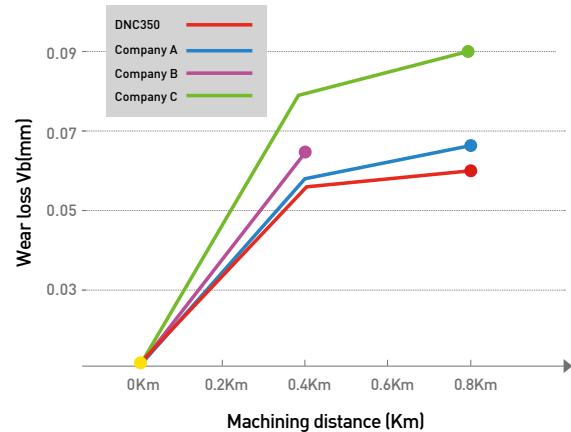
| | | |
|------------------------|------------------|-----------------|
| Grade | DNC350 | Third-party cBN |
| INSERTS | 2NU-CNGA120408 | |
| Parts name (workpiece) | SCM415(HrC58-60) | |
| Vc(m/min) | 120 | |
| f(mm/rev) | 0.1 | |
| ap(mm) | 0.1 | |
| Dry/wet cutting | Dry cutting | |



Applicable area



Wear loss



Recommended Cutting Conditions

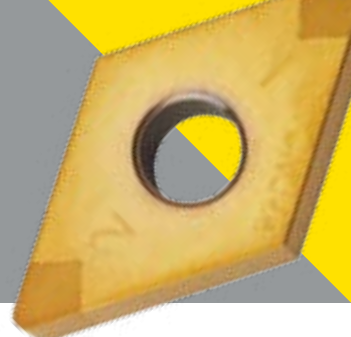
| | | |
|------------------------------------|------|------|
| Cutting Speed VC (m/min) | 90 | 150 |
| Feed f(mm/rev) | 0.05 | 0.3 |
| Single cutting depth D.O.C ap (mm) | 0.05 | 0.25 |

※The details may vary according to machining environments.



DNC400

Solid type coated cBN

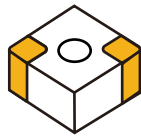


Coating Heat treated steel Max Depth 0.3mm Continuous Medium interrupted

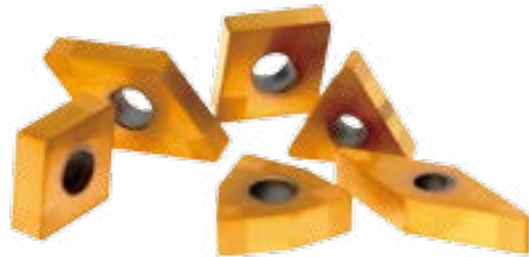
Solid type features

- Improves productivity through high-speed and high cutting depth machining
- Ideal for carburized layer removal and welded part machining
- Features excellent performance in case of cutting depth change

Solid type shape



e.g.) 4NS-CNGA120408

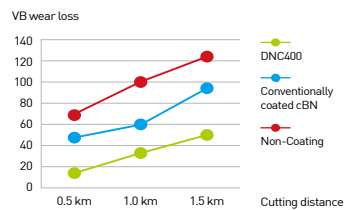


| Grade | Texture | Binder | cBN content (%) | Grain size (μm) | Hardness HV (Gpa) |
|--------|---------|--------|-----------------|-----------------|-------------------|
| DNC400 | | TiN | 65 | 3 | - |

Performance comparison

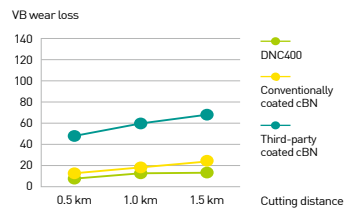
| DNC400 | Conventionally coated cBN | Non-Coating | Continuous machining |
|--------|---------------------------|-------------|----------------------|
| | | | |
| | | | |

| DNC400 | Conventionally coated cBN | Third-party coated cBN | Interrupted machining |
|--------|---------------------------|------------------------|-----------------------|
| | | | |
| | | | |



Machining conditions (Dry machining)

SUJ2 (Hardness Hrc 58-62)
Cutting Speed 150 m/min
Feed Rate 0.10 mm/rev
D.O.C 0.1 mm
Designation CNGA120408



Machining conditions (Dry machining)

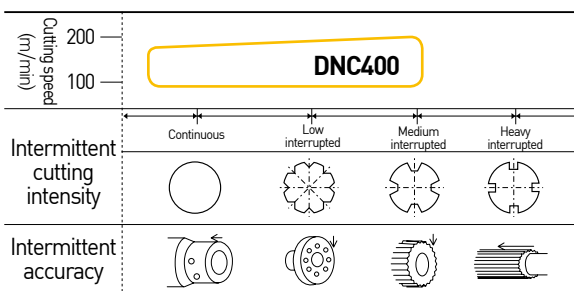
SUJ2 (Hardness Hrc 58-62)
Cutting Speed 150 m/min
Feed Rate 0.10 mm/rev
D.O.C 0.3 mm
Designation CNGA120408

Machining example

| Grade | DNC400 |
|------------------------|---------------------------|
| INSERTS | CNGA120408 |
| Parts name [workpiece] | GEAR SUN RR Cross section |
| Vc(m/min) | 126 |
| f(mm/rev) | 0.15 |
| ap(mm) | 1 |
| Dry/wet cutting | Wet cutting |

| Grade | DNC400 |
|------------------------|---|
| INSERTS | CNGA120408 |
| Parts name [workpiece] | Cross-sectional machining (SCM920 HVSI) |
| Vc(m/min) | 150 |
| f(mm/rev) | 0.1 |
| ap(mm) | 0.2 - 0.3 |
| Dry/wet cutting | Dry cutting |

Applicable area



Recommended Cutting Conditions

| | |
|------------------------------------|------------|
| Cutting Speed VC (m/min) | 80 - 200 |
| Feed f(mm/rev) | 0.05 - 0.3 |
| Single cutting depth D.O.C ap (mm) | 0.05 - 0.5 |

※The details may vary according to machining environments.



RA,GA Chip Breaker

cBN Chip Breaker

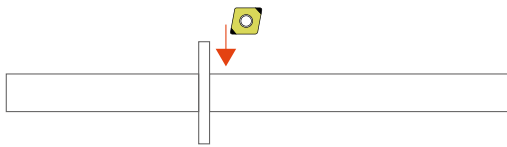


Coating Chip Breaker Max Depth

Features

- Prevents drag of chip into the workpiece during machining
- Ideal for unmanned automatic operations of the cutting process
- The RA chip breaker is for rough boring process.
- GA chip breaker is for finishing boring process.

Example of use



Non-breaker

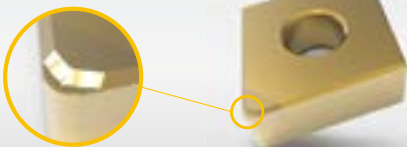


GA chip breaker

Chip Breaker

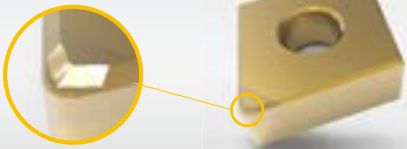
GA type

Chip breaker suitable for fine boring

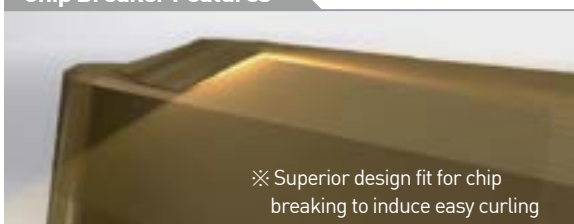


RA type

Chip breaker suitable for rough boring

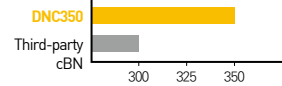


Chip Breaker Features



Applicable area

| | | |
|------------------------|---|-----------------|
| Grade | DNC350(GA) | Third-party cBN |
| INSERTS | 2NU-CNGM120412-GA | |
| Parts name (workpiece) | Input Shaft (SCM920 HVSI) | |
| Vc(m/min) | 145 | |
| f(mm/rev) | 0.1 | |
| ap(mm) | 0.4 ~ 0.5 | |
| Dry/wet cutting | Wet cutting (excellent chip breaking versus rival products) | |



Chip breaker comparison

GA Chip Breaker



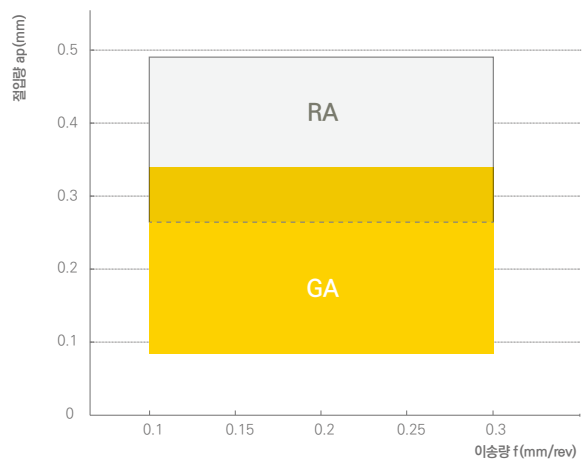
V=150m/min
f=0.15 mm/rev
ap=0.15mm

RA Chip Breaker



V=150m/min
f=0.15 mm/rev
ap=0.3mm

Applicable area



※The details may vary according to machining environments.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



DB1000

Uncoated cBN



Non **H** **0.3mm** **Continuous**

Non-Coating Heat treated steel Max Depth Continuous

Features

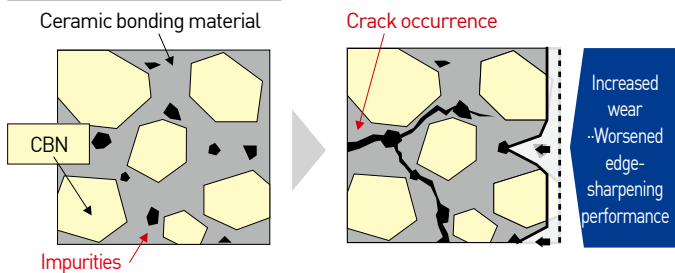
- Grade for high-speed machining with the best wear resistance among non-coated cBNs
- Features an excellent tool service life in the continuous cutting ~ Low interrupted cutting
- Focuses on wear resistance and improves fracture resistance
- Improves heat resistance and strength by high-purity TiCN ceramic bonding materials

| Grade | Texture | Binder | cBN content (%) | Grain size (μm) | Hardness HV (Gpa) |
|--------|---------|--------|-----------------|-----------------|-------------------|
| DB1000 | | TiCN | 40 - 45 | 1 | 27 - 31 |



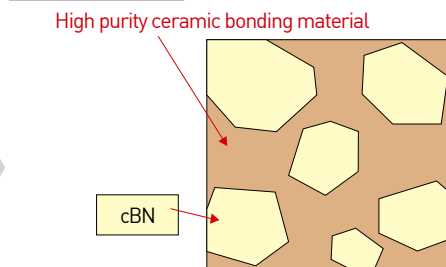
Newly developed high-purity ceramic bonding material

Conventional grade



Impurities included in conventional grade ceramic bonding materials decreased the strength and heat resistance of sintered parts, becoming the cause of crack (fracture) and wear.

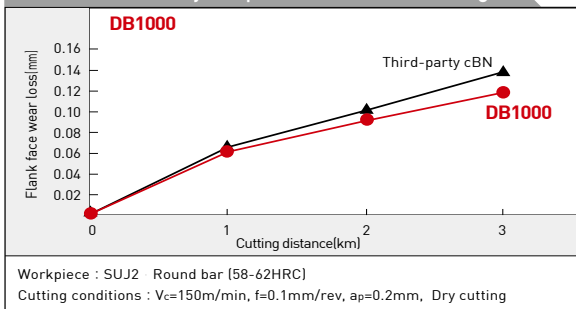
DB1000



DB1000 enhanced heat resistance and strong tenacity by reducing impurities to the very limit using the newly developed "high-purity ceramic bonding material".

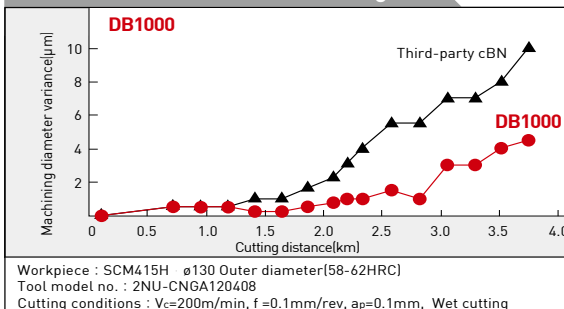
Cutting performance

Dimension accuracy comparison (continuous cutting)

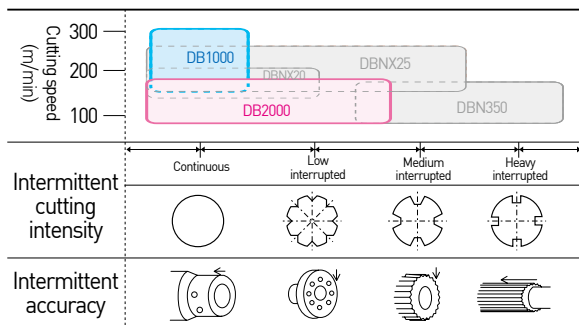


Machining precision

Wear resistance (continuous cutting)



Applicable area



Recommended Cutting Conditions

| | | |
|------------------------------------|------|------|
| Cutting Speed VC (m/min) | 130 | 250 |
| Feed f (mm/rev) | 0.03 | 0.15 |
| Single cutting depth D.O.C ap (mm) | 0.03 | 0.2 |

※ Cutting oil: Continuous cutting dry/wet, Interrupted cutting dry

※The details may vary according to machining environments.



DB2000

Uncoated cBN



Non H 0.3mm Continuous Medium interrupted
 Non-Coating Heat treated steel Max Depth Continuous Medium interrupted

Features

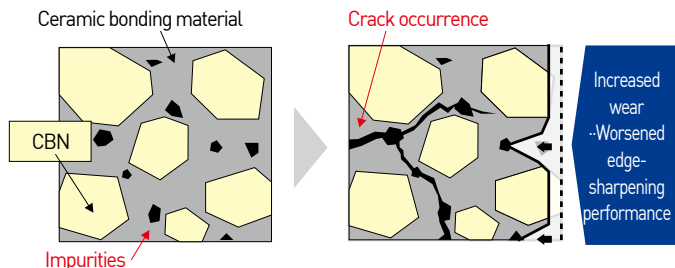
- General-purpose grade that responds to overall heat-treated steel
 - Realizes a stable tool service life ranging from continuous cutting to Low / Medium interrupted cutting
- Highly compatible with fracture resistance and wear resistance
 - Both properties greatly improved by the use of the high-purity ceramic bonding material
- Achieves a stable surface roughness based on edge-sharpening performance



| Grade | Texture | Binder | cBN content (%) | Grain size (μm) | Hardness HV (Gpa) |
|--------|---------|--------|-----------------|-----------------|-------------------|
| DB2000 | | TiN | 50 - 55 | 2 | 31 - 34 |

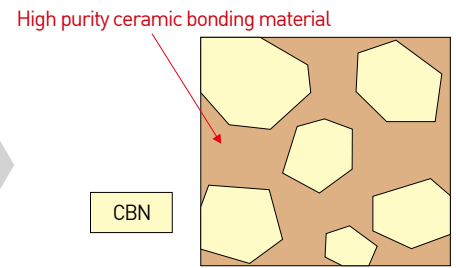
Newly developed high-purity ceramic bonding material

Conventional grade



Impurities included in conventional grade ceramic bonding materials decreased the strength and heat resistance of sintered parts, becoming the cause of cracks (fracture) and wear.

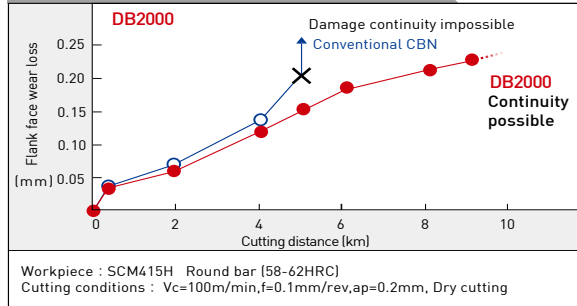
DB2000



DB2000 realizes enhanced heat resistance and strong tenacity by reducing impurities to the very limit using the newly developed "high-purity ceramic bonding material."

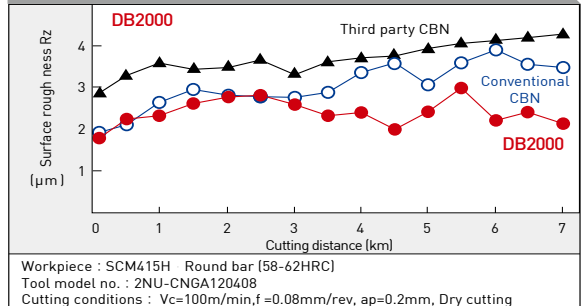
Cutting performance

Wear resistance (continuous cutting)

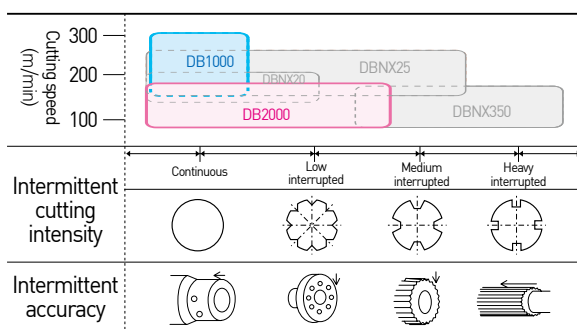


Machining precision

Surface roughness comparison (continuous cutting)



Applicable area



Recommended Cutting Conditions

| | | |
|------------------------------------|------|-----|
| Cutting Speed Vc (m/min) | 80 | 200 |
| Feed f (mm/rev) | 0.03 | 0.2 |
| Single cutting depth D.O.C ap (mm) | 0.03 | 0.3 |

※ Cutting oil: Continuous cutting dry/wet, Interrupted cutting dry

※The details may vary according to machining environments.



DB7000

Uncoated cBN



| | | | | | |
|-------------|-----------|-----------|----------------|------------|-----------------|
| Non | K | 0.5mm | Sintered parts | Continuous | Low interrupted |
| Non-Coating | Cast iron | Max Depth | Sintered parts | Continuous | Low interrupted |

Features

- Ideal for high-speed grinding machining of cast iron
- Suppresses heat crack and realizes excellent damage resistance by high-speed machining of gray cast iron
- Realizes highly efficient sintered alloy machining
- Provides a stably longer service life in case of machining of sintered alloys with diverse shape hardness by meeting the requirements for cutting edge treated products of high standard+2 types
- Responds to various difficult-to-cut materials
- Features high performance for difficult-to-cut materials such as rolls, high-speed tools, and heat resistant alloys, etc.



| Grade | Texture | Binder | cBN content (%) | Grain size (μm) | Hardness HV [Gpa] |
|--------|---------|-------------|-----------------|-----------------|-------------------|
| DB7000 | | CO Compound | 90 - 95 | 2 | 41 - 44 |

Tissue that acidized cBN sintered parts

DB7000

Fewer holes

cBN for third-party cast iron

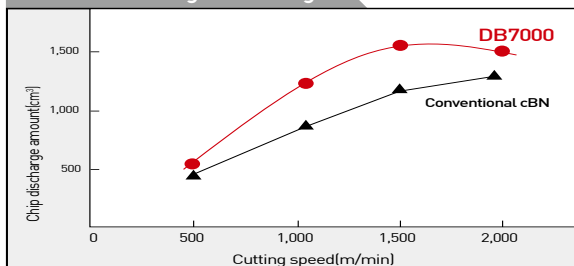
More holes

Holes generated by the elution of bonding materials due to acidizing

Provides an excellent damage resistance and an enhanced inter-cBN particle coherence by sintering intermediate particle cBNs in high density to realize the best content Ensures a long service life and stable machining in high-speed grinding of hard-to-cut materials of cast iron sintered alloys

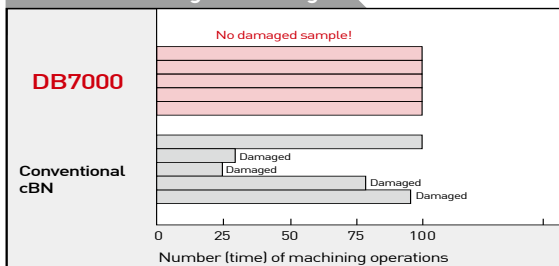
Cutting performance

Cast iron milling machining



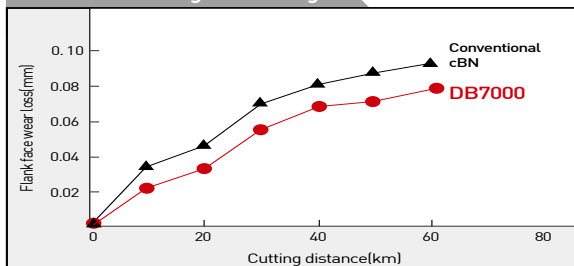
Workpiece : FC250(Pearl lite)
Tool model no. : FMU4100R SNEW1203ADTR
Cutting conditions : Vc=500-2,000m/min, f=0.2mm/rev, ap=0.3mm, Dry cutting

Cast iron turning machining



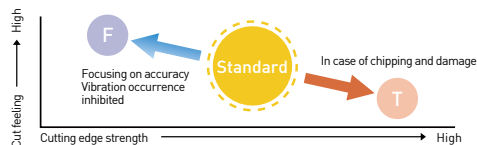
Workpiece : FC300(Pearl lite)
Tool model no. : 2NU-CNGA120408
Cutting conditions : Vc=800m/min, f=0.15mm/rev, ap=0.2mm, Wet cutting

Cast iron turning machining

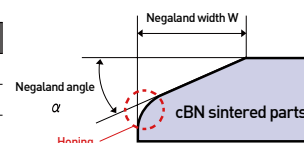


Workpiece : SMF4040(70HRB, Interrupted machining)
Tool model no. : 2NU-CNGA120408
Cutting conditions : Vc=250m/min, f=0.1mm/rev, ap=0.3mm, Dry cutting

Recommended cutting edge treatment



| Item | TYPE | Honing | Negaland | Angle |
|------------|--------|--------|----------|-------|
| Sharp | F TYPE | — | — | — |
| Standard | N/A | N/A | 0.12 | 15° |
| Reinforced | T TYPE | N/A | 0.12 | 25° |



※The details may vary according to machining environments.



DB7500

Uncoated cBN

Non Sintered parts 0.5mm Continuous Low interrupted
 Non-Coating Sintered parts Max Depth Continuous Low interrupted

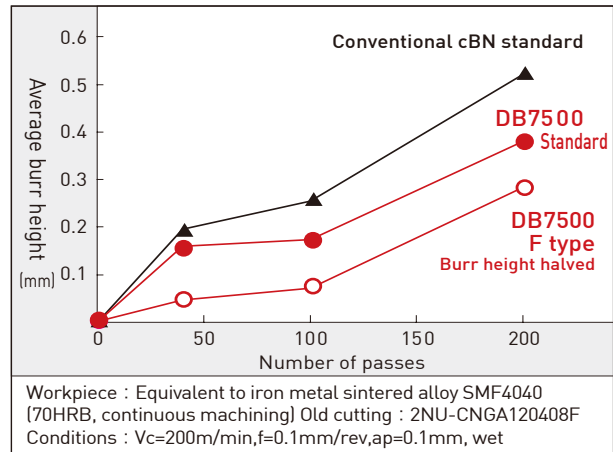
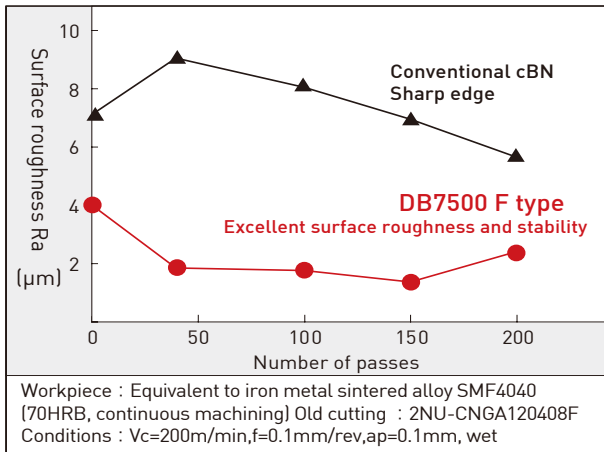
Features

- Ideal for grinding machining of sintered alloys
- Realizes excellent surface roughness and machined surface quality
- Various shapes of sintered parts can cutting by various cutting edge treatment
- Provides burr inhibition and machining precision improvement by F type that focuses on cutting taste designed for sintered alloy machining to meet grade requirements; Features stable resistance to chipping by cutting edge reinforced T type even in case of interrupted grinding machining

| Grade | Texture | Binder | cBN content (%) | Grain size (μm) | Hardness HV (Gpa) |
|--------|---------|-------------|-----------------|-----------------|-------------------|
| DB7500 | | CO Compound | 90 - 95 | 1 | 41 - 44 |



Cutting performance



Feed-burr relationship

Workpiece : WT cross section
 Tool model no. : 3NU-TNGA160404
 Cutting conditions : Vc=200m/min, f=0.1mm/rev, ap=0.1mm, wet cutting

| | F type | Standard type | T type |
|----------|--------|---------------|--------|
| A | | | |
| B | | | |

* If Feed is more than 0.1mm/rev, the T type is superior to the standard type in terms of cutting taste and burr can be inhibited.

Recommended cutting edge treatment

High Cut feeling / Low Cutting edge strength: F (Focusing on accuracy, Vibration occurrence inhibited)
 Standard (In case of chipping and damage)
 Low Cut feeling / High Cutting edge strength: T

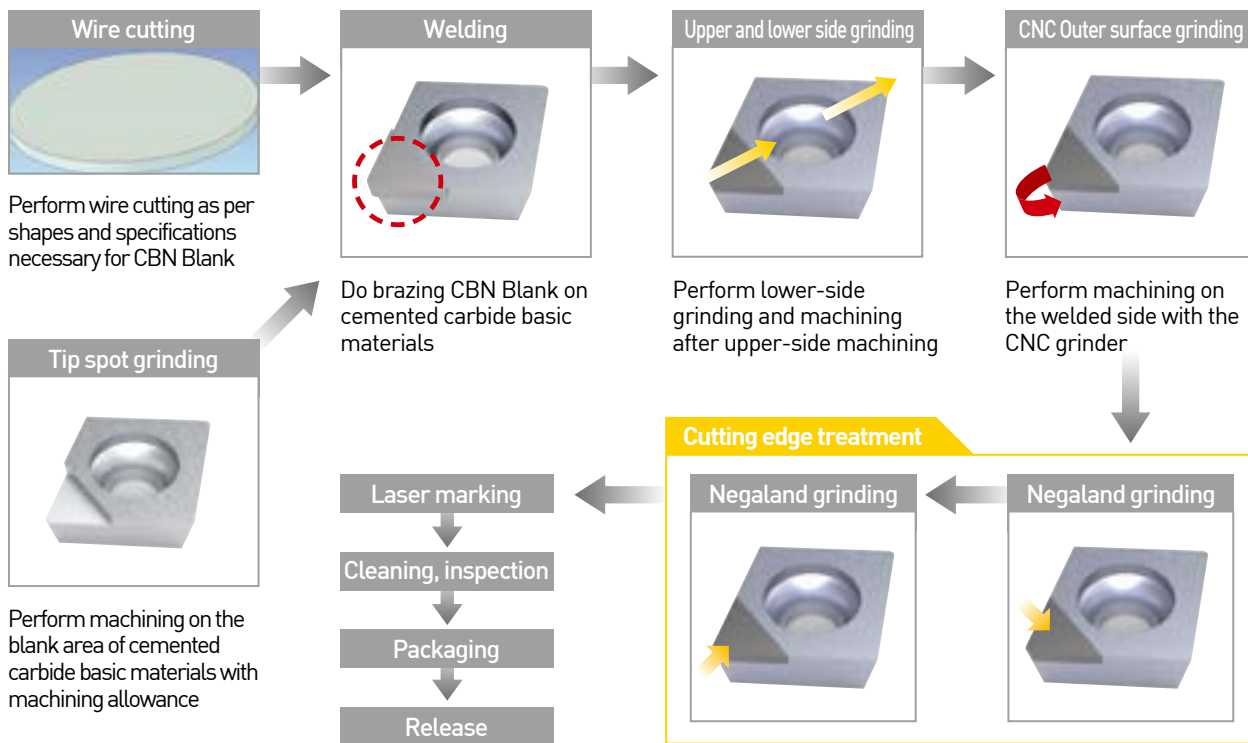
| Item | TYPE | Honing | Negaland | Angle |
|------------|--------|--------|----------|-------|
| Sharp | FTYPE | — | — | — |
| Standard | N/A | N/A | 0.12 | 15° |
| Reinforced | T TYPE | N/A | 0.12 | 25° |

※The details may vary according to machining environments.

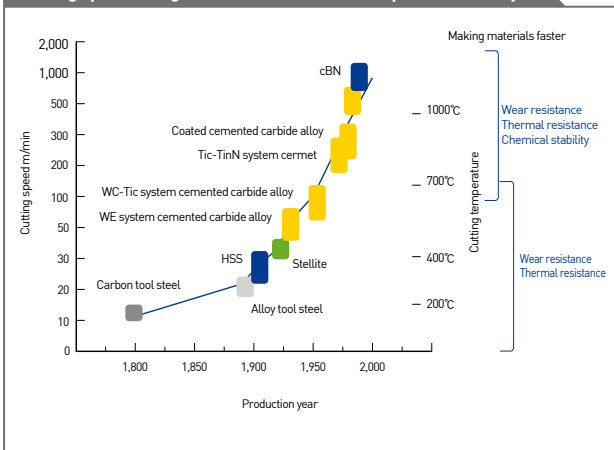


cBN Technical data

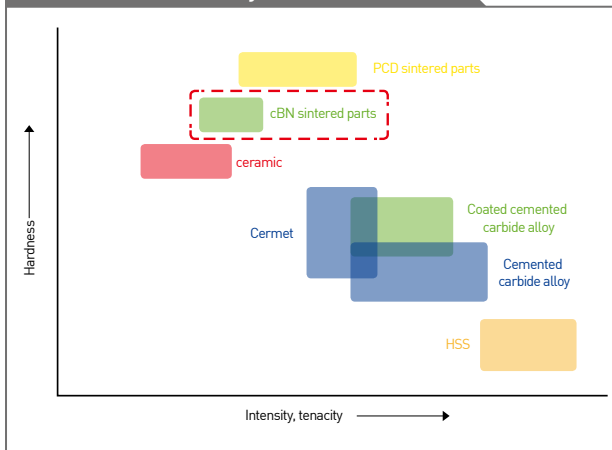
Manufacturing process of cBN



Cutting speed change and tool materials development in history



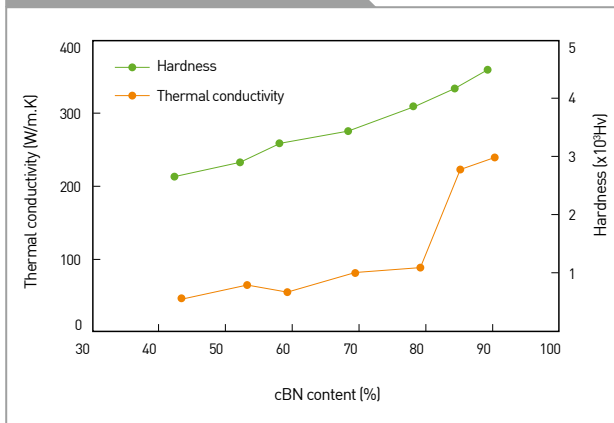
Hardness and intensity of tool materials



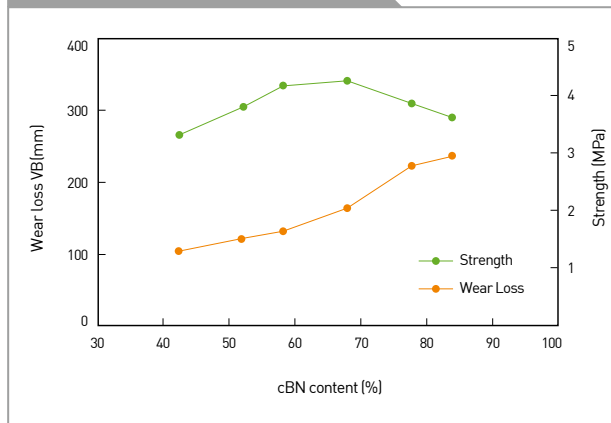


Main characteristics of cBN

Main characteristics I of cBN



Main characteristics II of cBN



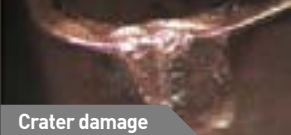








cBN machining workpieces and advantages of cutting machining

| Workpiece | Representative parts | Advantages of cutting machining | Corresponding grade |
|----------------------|---|---|--|
| Heat-treated steel | Transmission gear Driving shaft Shafts Valves Hydraulic parts, etc. | 1) Improved workpiece phenomenon accuracy 2) Responding to machining of composite parts and micro parts 3) Machining efficiency improved, grinding/polishing minimized 4) Investment equipment cost reduced 5) Environmental measures | DNC100,DNC250 DNC300,DNC350 DNC400 DB1000, DB2000 DBN250, DBN350 DBNX20, DBNX25 |
| Casting | Engine block Cases Brake disks, etc. | 1) Responding to high-speed machining 2) Responding to hard to cut material casting 3) Machining efficiency improved | DBNS800, DBN500 DB7000 |
| Sintered alloy | VVT(VTC) parts Various sprocket rotas, oil pump parts valve seats | 1) Improved workpiece phenomenon accuracy 2) Responding to heat treatment sintered parts and composite parts 3) Capacity utilization (longer tool service life) 4) High-speed, high-efficiency machining | DBN500 DB7000, DB7500 |
| Heat resistant alloy | Jet engine parts, etc. | 1) Machining efficiency improved 2) Workpiece machining surface roughness improved | DBNX20 |



Causes of and measures for tool damage

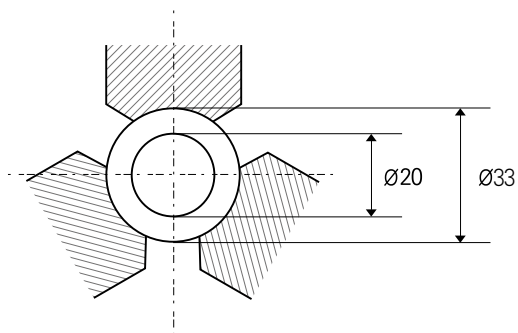
| Insert damage type | Causes | Measures |
|---|--|--|
|  <p>Flank face wear</p> | <ul style="list-style-type: none"> • Insufficient of wear resistance of tool grade • Too high cutting speed | <ul style="list-style-type: none"> • Select high wear resistance grade • Decrease cutting speed • Reduce to less than V_c 200m/min. (Measures to increase feed and decrease machining distance are effective.) • Enlarge clearance angle |
|  <p>Crater wear</p> | <ul style="list-style-type: none"> • Insufficient of crater wear resistance of tool grade • Too high cutting speed | <ul style="list-style-type: none"> • Change to high-sufficiency machining grade • Decrease cutting speed and increase feed (Low speed, high feed) • Reduce to less than V_c 200m/min. (Measures to increase feed and decrease machining distance are effective.) |
|  <p>Crater damage</p> | | |
|  <p>Flaking damage</p> | <ul style="list-style-type: none"> • Insufficient tenacity of tool grade • High radial cutting force | <ul style="list-style-type: none"> • Use high tenacity grade • Increase cutting edge strength (Enlarge Negaland angle and perform honing) • In case of sufficient tenacity of grade, increase cutting taste |
|  <p>Just prior to corner wear</p> | <ul style="list-style-type: none"> • High stress of boundaries | <ul style="list-style-type: none"> • Change to grade with strong resistance to corner wear • Increase cutting speed (more than 150m/min) • Change feed to a regular number of machining • Enlarge the Negaland angle and perform honing operation |
|  <p>Previous corner chipping</p> | <ul style="list-style-type: none"> • Great impact on the front cutting edge and large number of times | <ul style="list-style-type: none"> • Change to a grade with high resistance to damage • Increase feed (Impact of interruption reduced and chipping inhibited) • Enlarge the Negaland angle and perform honing operation |
|  <p>Horizontal corner chipping</p> | <ul style="list-style-type: none"> • Great impact on the horizontal cutting edge and large number of times | <ul style="list-style-type: none"> • Change to a grade with high resistance to damage • Decrease feed • Enlarge horizontal cutting edge angle • Increase R size • Enlarge the Negaland angle and perform honing operation |
|  <p>Crack</p> | <ul style="list-style-type: none"> • Large heat impact | <ul style="list-style-type: none"> • In case of wet cutting machining → dry cutting recommended • Change to high thermal conductivity grade • Decrease V_c, f, a_p to reduce machining load |
|  <p>Built up edge</p> | <ul style="list-style-type: none"> • Too low cutting speed • Strong affinity of the workpiece with the tool | <ul style="list-style-type: none"> • Increase cutting speed • Select a shape whose slope angle is larger than the workpiece • Select a grade whose tenacity is better than the workpiece |



Heat-treated steel high-precision machining points

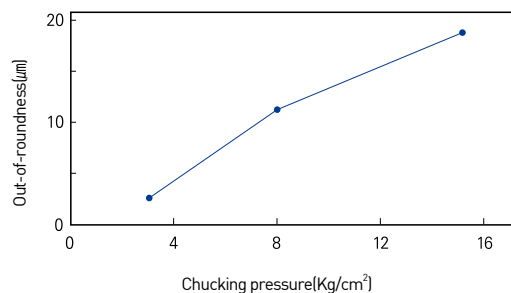
| Perform chucking to apply to the workpiece as equally as possible | | |
|---|------|-----|
| | Good | Bad |
| Out of roundness | | |
| Perform chucking in the vicinity of machining range | | |
| | Good | Bad |
| Cylindricity | | |

Relationship of chucking pressure and out-of-roundness



Machining conditions

- Machine: General-purpose N/C lathe
- Workpiece: SUJ2 HRC60
- Chuck: 3Jaw
- Tool: DBN250
TPGW160404



Cutting condition

- V=150m/min
- f=0.04mm/rev.
- d=0.1mm wet cutting

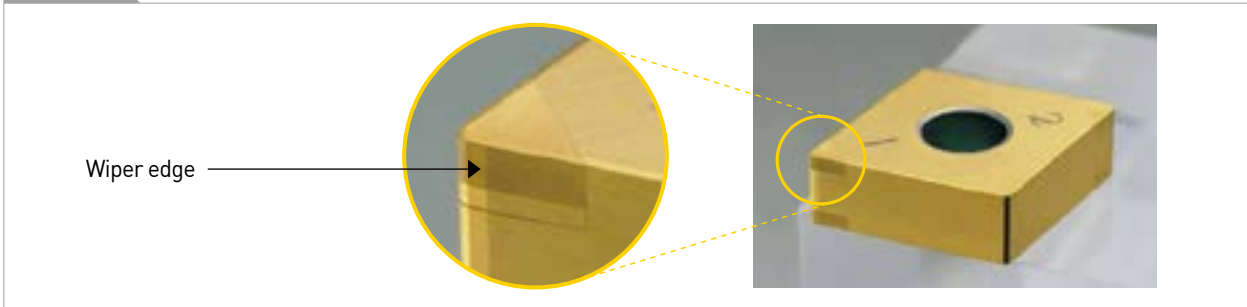
An appropriate chuck pressure is necessary for an excellent machining.



Characteristics of cBN cutting edge

cBN Wiper insert

Shape



Wiper edge

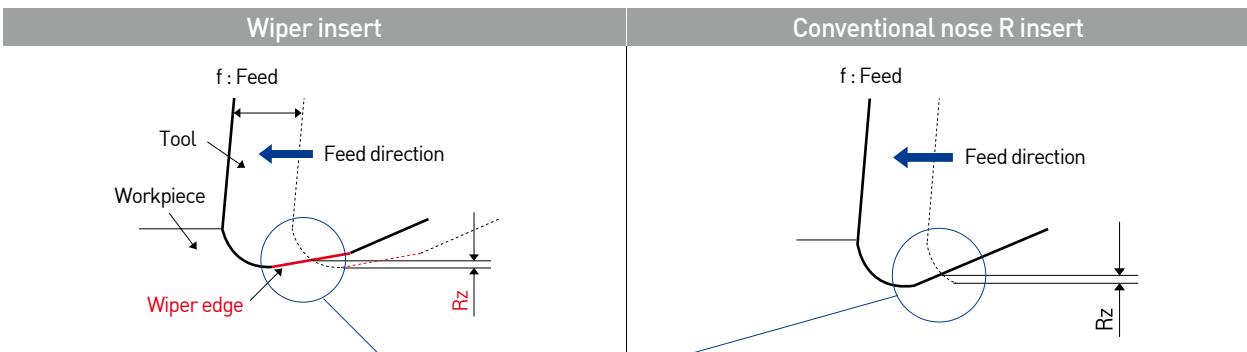
Purpose

CT reduction

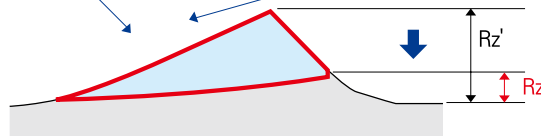
Tool service life increased

High surface roughness required

Features and performance of wiper insert



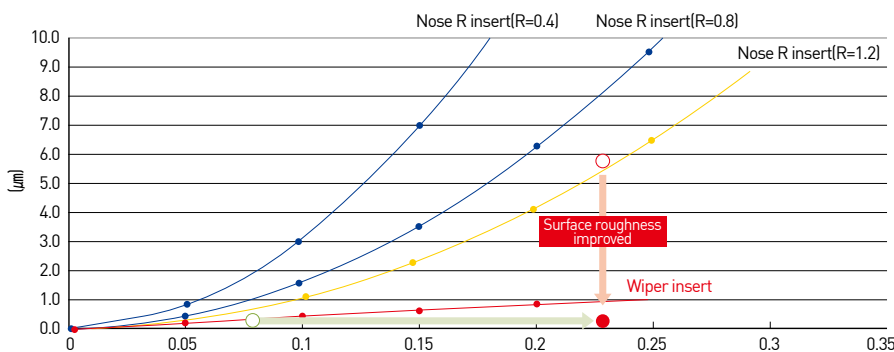
According to wiper cutting edge, the surface roughness R_z is getting smaller even in case of cutting with the same feed.



Features

1. Surface roughness improved
2. High efficiency machining based on high feed (when the surface roughness is the same)

Theoretical surface roughness of wiper insert



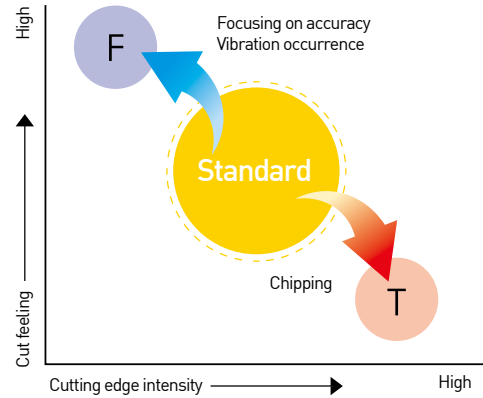
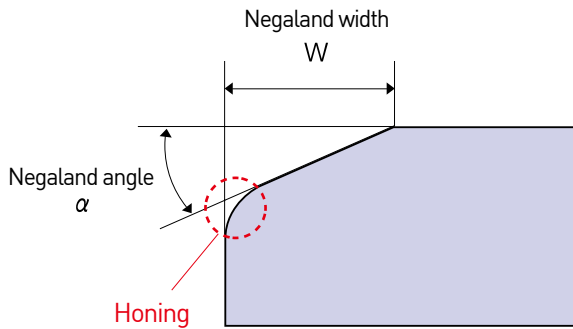
- Based on the wiper effect, surface roughness was increased 3-5 times on the same conditions!

※The details may vary according to machining environments.



Characteristics of cBN cutting edge

cBN cutting edge treatment



CNGA120408F / CNGA120408 / CNGA120408T

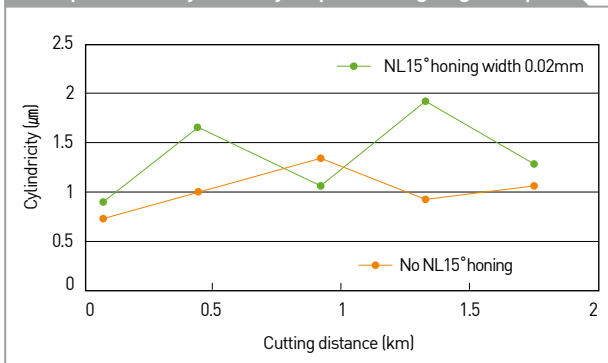
| Item | Marking | Heat-treated steel | | | Cast iron/sintered alloy | | |
|------------|---------|--------------------|----------------|----------------|--------------------------|----------------|----------------|
| | | Honing | Negaland width | Negaland angle | Honing | Negaland width | Negaland angle |
| Sharp | F | ○ | 0.12 | 15-degree | - | - | - |
| Standard* | None | ○ | 0.12 | 25-degree | N/A | 0.12 | 15-degree |
| Reinforced | T | ○ | 0.12 | 35-degree | N/A | 0.12 | 25-degree |

- First recommended cutting edge treatment : standard type*
- Apply sharp / reinforcement types according to machining conditions

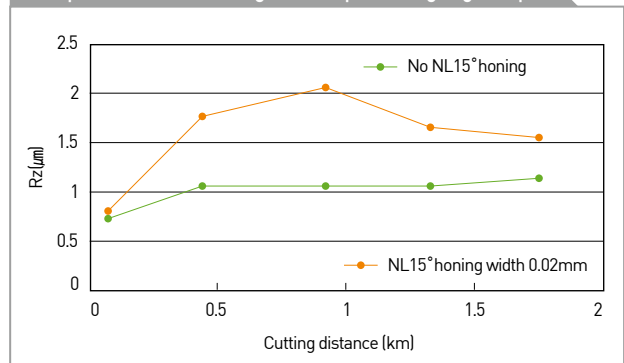
Adjust Negaland width and angle and honing amount appropriately for machining

Characteristics of cBN honing

Comparison of cylindricity as per cutting edge shape



Comparison of surface roughness as per cutting edge shape



- SCM415 Ø10 Inner diameter boring 2NU-CNGA120408 DBNX20
- V=70m/min f=0.03mm/rev d=0.05mm DRY

Giving honing increases cutting resistance to weaken machining accuracy but tends to improve surface roughness.

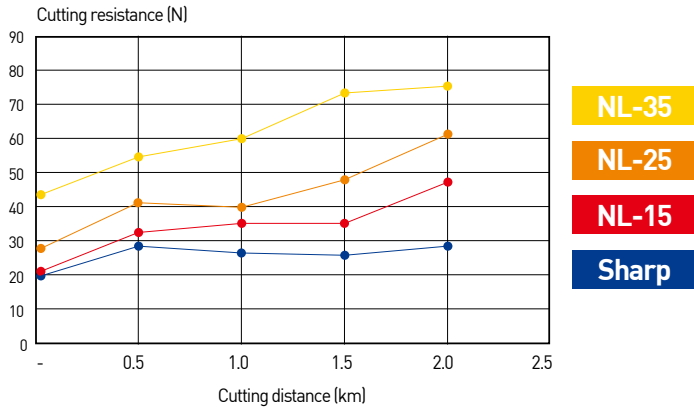
※The details may vary according to machining environments.



Characteristics of cBN cutting edge

cBN Test comparison - Negaland

Comparison of cutting resistance

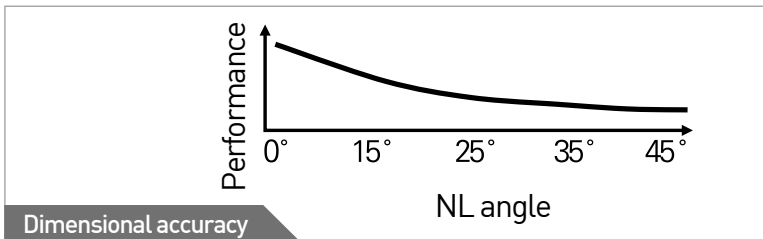


TEST information

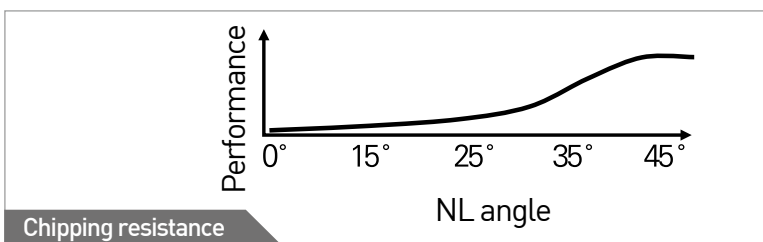
- Cutting conditions :
 - Vc 90m/min
 - fn 0.06mm/rev
 - ap 0.08mm
- Workpiece : SCM420(HRC55~57)
- Holder : DCLNR2525
- Insert : CNMA120408 / DBN250
(Standard cutting edge : Negaland angle 25°)

The smaller Negaland angle is, the smaller cutting resistance is.

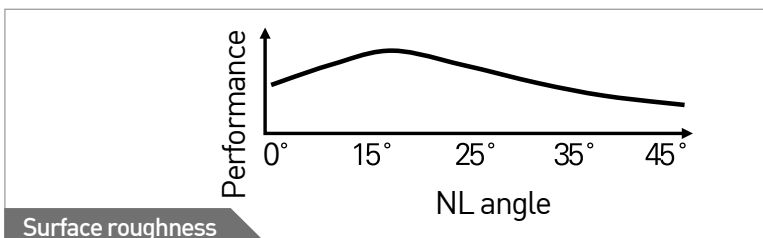
cBN (Effect of Negaland)



← Dimension accuracy increases as the cutting edge angle is getting smaller.



← Cutting edge strength increases as the cutting edge angle is getting larger.



← Surface roughness decreases as the cutting edge angle is getting larger.

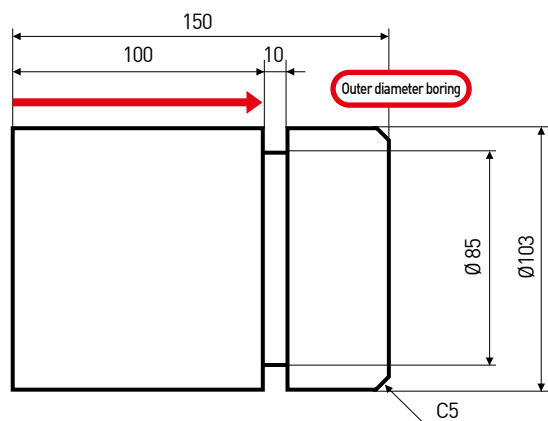


Characteristics of cBN cutting edge

cBN Test comparison - Cutting edge treatment (standard type/F type/T type)

| Workpiece (round bar) information | |
|-----------------------------------|---------------|
| Size | ∅105X 150 |
| Material | SCM415 |
| Heat treated | Carburization |
| Hardness | HRC58~62 |

| Insert information 2NU-CNGA120408 | | | |
|-----------------------------------|------------------------|------------|--------|
| Grade | Cutting edge treatment | Negaland | Honing |
| DB1000 | Standard type | 0.12 X 25° | 0.010 |
| DB1000 | F type | 0.12 X 15° | 0.010 |
| DB1000 | T type | 0.12 X 35° | 0.010 |



Results analysis

- Wear loss : T type > Standard type > F type
- Surface roughness : Standard type > T type > F type
 - With 20 times of machining, surface roughness is machined at 8/12/20 time.
- Remarks :
 - Theoretically, F type (sharp type) is excellent in surface roughness, but under the machining condition of $V=200/f=0.1/ap=0.1$, the surface roughness due to initial chipping occurrence of F type is shown inferior.

| Comparison of surface roughness | | | |
|---------------------------------|------------------|-------------------|-------------------|
| Grade | 8-time machining | 12-time machining | 20-time machining |
| DB1000 | Ra 0.431 | Ra 0.477 | Ra 0.492 |
| DB1000F | Ra 0.629 | Ra 0.754 | Ra 0.821 |
| DB1000T | Ra 0.496 | Ra 0.545 | Ra 0.584 |



How to select re-grinding

1. Check for abnormality or brokenness through inspection
2. Classify re-grinding according to the size of an inscribed circle

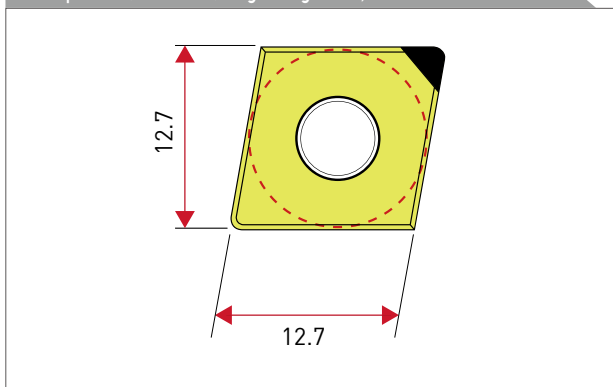
How to select re-grinding

| Model No. | New product (before use) | Class B | Class C | Class D |
|------------|--------------------------|---------|---------|---------|
| CNMA1204□□ | 12.7 | 12.5 | 12.3 | 12.1 |
| DNMA1504□□ | 12.7 | 12.5 | 12.3 | 12.1 |
| VNMA1504□□ | 9.525 | 9.4 | 9.3 | 9.2 |
| DCGW11T3□□ | 9.525 | 9.3 | 9.1 | X |
| CCGW09T3□□ | 9.525 | 9.3 | 9.1 | X |

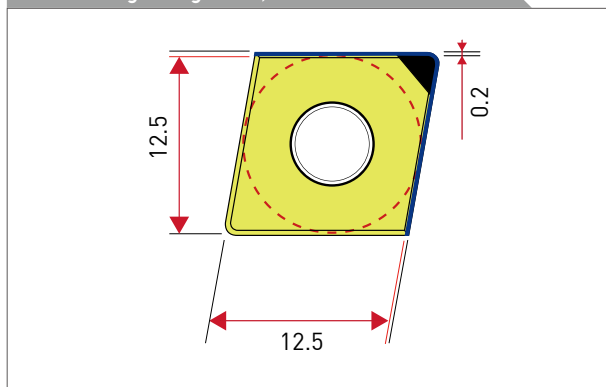
Machining example

CNMA120408 -> 0.2mm machined at one time machining

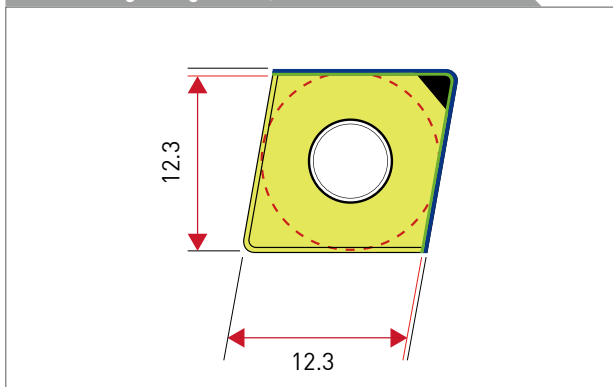
New product (before use): Re-grinding 0 time, inscribed circle 12.7mm



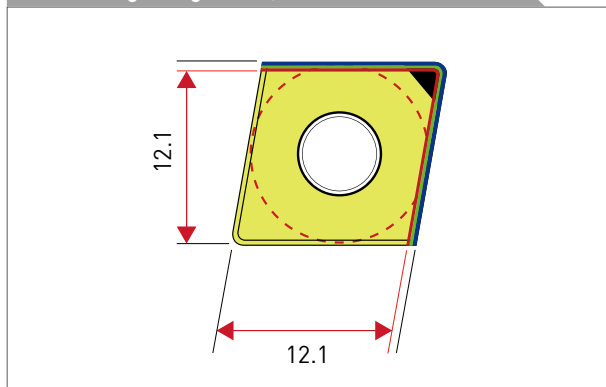
Class B: Re-grinding 1 time, inscribed circle 12.5mm



Class C: Re-grinding 2 times, inscribed circle 12.3mm



Class D: Re-grinding 3 times, inscribed circle 12.1mm





PCD Features

DINE PCD products provide very high accuracy and excellent wear resistance as they are manufactured by the ultrahigh temperature and ultrahigh pressure manufacturing process to combine diamond polycrystallines in high density.

Also as the PCD products are based on the diamond crystal particle size control technology by DINE Inc., various workpieces can be machined widely. DINE PCD products provide excellent workpiece surface roughness, high machining accuracy and long tool service life.

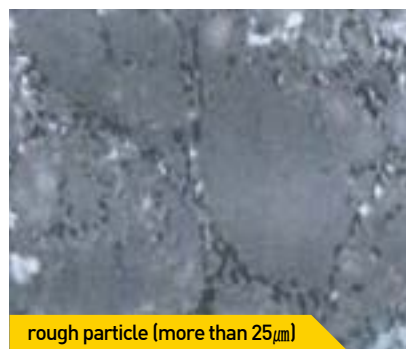
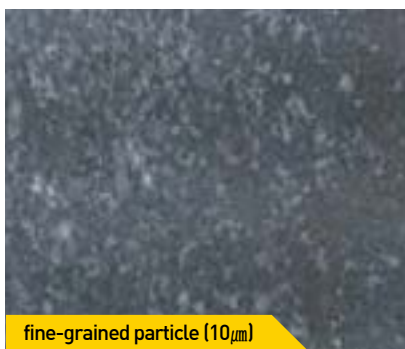
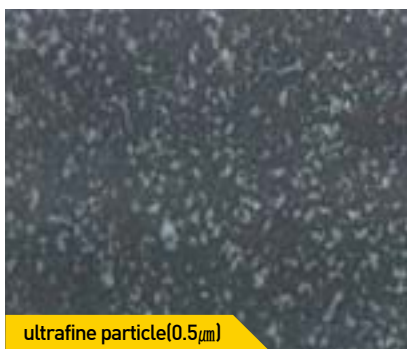
- Excellent in machining aluminium alloys and copper alloys
- Excellent in machining ceramic, high Si-aluminium alloy, stone, etc.
- Excellent in machining rubber, carbon, graphite, wood, etc.

PCD Shape



PCD Tool technology guide

1. PCD = polycrystalline diamond = particle sintered diamond
2. Composition : [diamond crystal grain + diamond additives (metal, ceramic)]
sintering by high temperature and pressure (1200°C, 50k atm)
3. Particle size : ultrafine particle (0.5µm) < fine-grained particle (10µm) < rough particle (more than 25µm)



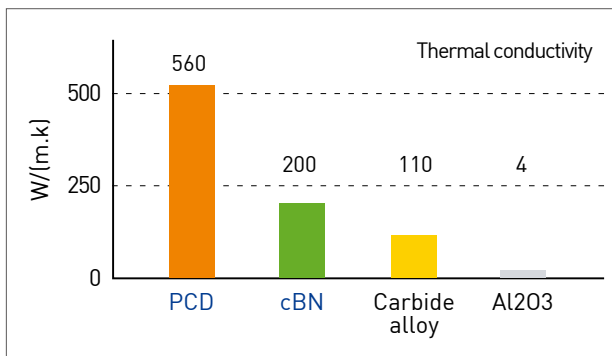
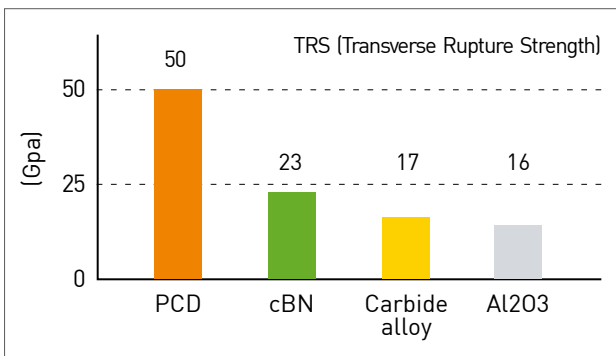
4. Application : nonferrous metals, glass fiber, woodwork, high-hardness plastic

5. Specification

- 1) rough particle => high density and thermal conductivity - excellent wear resistance but weak surface roughness.
- 2) Cutting edge oxidation occurs in case of machining high-hardness materials at low oxidation temperature



PCD



Comparison of cBN and PCD

| | | cBN | PCD |
|-------------------|---------------|---|---|
| Thermal stability | In atmosphere | Stable up to ~1300°C | Oxidation occurs at 700°C |
| | In vacuum | Stable up to ~1500°C | Stable up to ~1400°C |
| Applications | | Heat-treated steel, high-hardness materials | Nonferrous metals, glass fiber, woodwork, high-hardness plastic |

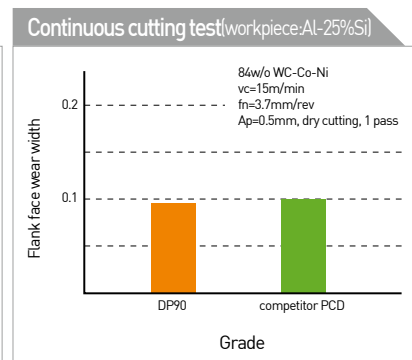
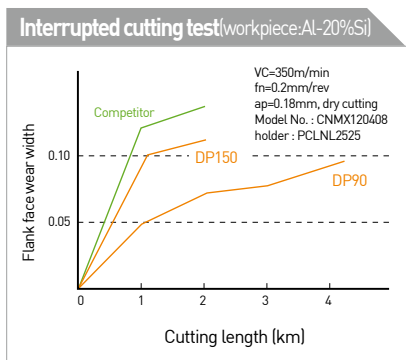
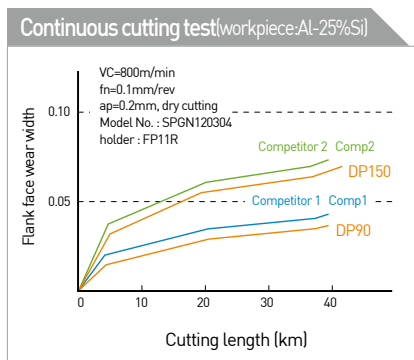
PCD Grade

| Grade | Features | Applications | Particle size (μm) | Particle | Hardness (Hv) | Deflective strength (kgf/mm ²) |
|-------|--|--|--------------------|----------|-----------------|--|
| DP90 | The largest grade diamond content by sintering rough diamond particles; Excellent wear resistance | High silicon Al alloy machining, Al composite material machining, cemented carbide alloy machining, rough boring of cemented carbide alloy, ceramic semi-sintered parts, and compound products, ceramic sintered parts machining, stone and rock machining | ≥25 | | 10,000 ~ 12,000 | 110 |
| DP150 | The same-size grade diamond particle by sintering fine-grained diamond particles; good coherent grade with workpiece machinability and wear resistance | General grinding machining of nonferrous metals; grinding surface machining of cemented carbide alloys, ceramic sintered parts, and compound products; cross-sectional machining of FRP, hard rubber, graphite, wood, and mineral board, etc. | 10 | | 10,000 ~ 12,000 | 200 |
| DP200 | Good sharpness and excellent tenacity of grade cutting edge by sintering ultrafine diamond particles | General grinding machining of nonferrous metals; grinding surface machining of cemented carbide alloys, ceramic sintered parts, and compound products; cross-sectional machining of FRP, hard rubber, graphite, wood, and mineral board, etc. | 0.5 | | 8,000 ~ 10,000 | 220 |



Recommended Cutting Conditions

| Workpiece | Cutting speed | Feed | Single cutting depth | Recommended grade | |
|-----------------------------|---------------|----------|----------------------|-------------------|-------|
| | | | | 1st | 2nd |
| Aluminium alloy (4%~8%Si) | 1,000~3,000 | 0.1~0.6 | ~3 | DP150 | DP200 |
| Aluminium alloy (9%~14%Si) | 600~2,500 | 0.1~0.5 | | | |
| Aluminium alloy (15%~18%Si) | 300~700 | 0.1~0.4 | | | |
| Copper alloy | ~1,000 | 0.05~0.2 | ~2 | DP150 | DP200 |
| Reinforced plastic | | 0.1~0.3 | | | |
| Wood | ~4,000 | 0.1~0.4 | - | | |
| Cemented carbide | 10~30 | ~0.2 | ~0.5 | DP90 | DP150 |



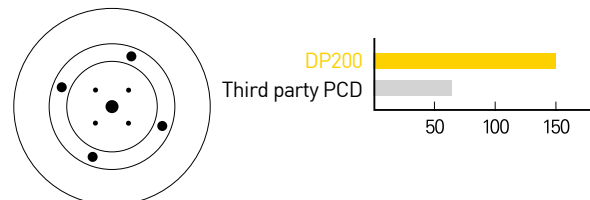
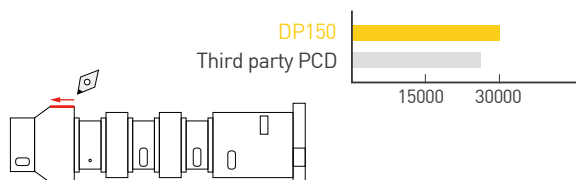
Machining example

DP150 TEST RESULT

| Grade | DP150 | Company A PCD |
|------------------------|------------------------------|---------------|
| INSERTS | DCMT11T304-UC | |
| Parts name (workpiece) | Compressor piston (AL A4000) | |
| Vc(m/min) | 400-450 | |
| f(mm/rev) | 0.12 | |
| ap(mm) | 1.0 ~ 1.5 | |
| Dry/wet cutting | Wet cutting | |

DP200 TEST RESULT

| Grade | DP200 | Company A PCD |
|------------------------|------------------------------------|---------------|
| INSERTS | NF-SEN09T3ADTR | |
| Parts name (workpiece) | Ring spec. outer diameter (AL6061) | |
| Vc(m/min) | 380 | |
| f(mm/rev) | 0.1 | |
| ap(mm) | 0.15 | |
| Dry/wet cutting | Dry/wet cutting | |



※The details may vary according to machining environments.



PCD Chip Breaker(UC)

New PCD insert with Chip Breaker



Features

- Productivity improved by resolving chip troubles
- Stable capacity to break chips in the large cutting area
- Excellent in machining aluminium and copper alloys
- Provides very high hardness and excellent wear resistance due to high-density combination of diamond polycrystallines

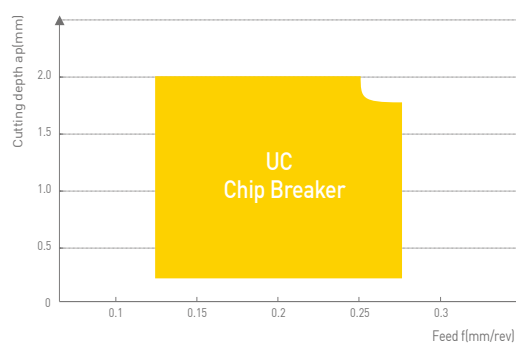


Performance Comparison Test

- Tool model no. : DCMT11T304-UC
- Workpiece: AL6061 (Ø 100*160L outer dia. boring)
- Cutting conditions : Vc=500m/min, f=0.15mm/rev, ap=0.2mm, dry cutting



Applicable area



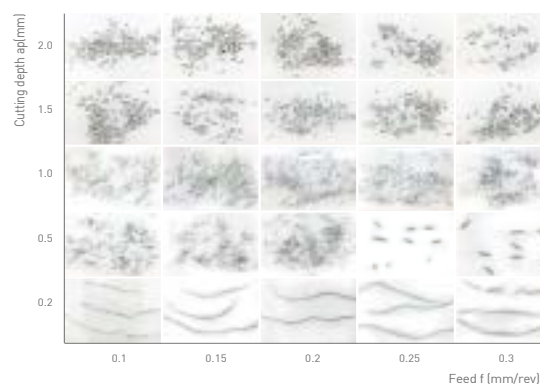
General type PCD



UC Chip breaker

Shape of chip

- Tool model no. : DCMT11T304-UC
- Workpiece: AL6061 (Ø 100*160L outer dia. boring)
- Cutting conditions : Vc=500m/min dry cutting



Chip Breaker

UC Chip Breaker

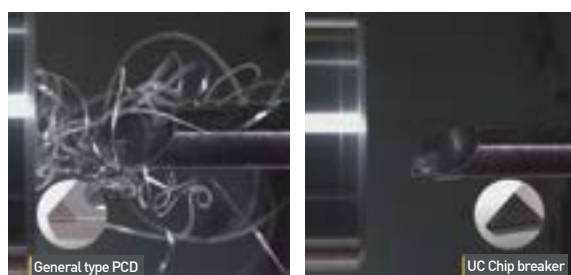


※ Excellent chip breaker design to easily make a curl

※ Excellent chip breaker design to easily make a curl



Comparison of chip rear discharge

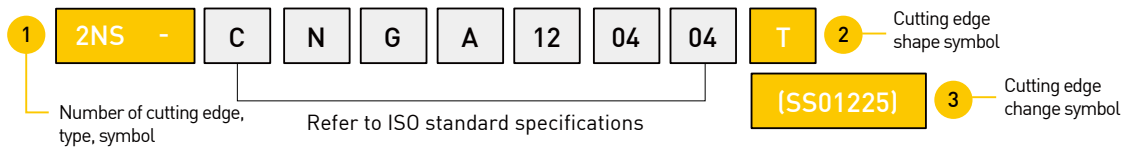




How to indicate the Model No. of Insert

How to indicate cBN cutting edge

Model No. example



1 Number of cutting edge, type symbol

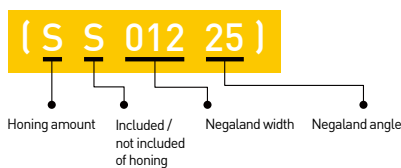
| Item | Symbol description | Symbol description |
|------------------------|--------------------|--------------------|
| Number of cutting edge | None | 1 corner type |
| | 2, 3, 4 ... | multi-corner type |

| Item | Symbol description | Symbol description | Shape |
|-------------|--------------------|---------------------------|-------|
| Type Symbol | None | Re-grinding type | |
| | NU | One use type, corner type | |
| | NS | NS type | |
| | NT | NT type | |

2 Cutting edge shape symbol

| Symbol | Symbol meaning | Symbol description | | |
|---------|------------------------------|---|----------|-----|
| None | Standard type | ISO standard insert | | |
| F | Low resistance type | Workpiece | Standard | F |
| | | Heat-treated steel grade | 25° | 15° |
| | | Cast iron grade | 15° | 0° |
| | | Wiper insert | 15° | - |
| T | Cutting edge reinforced type | Workpiece | Standard | T |
| | | Heat-treated steel grade | 25° | 35° |
| | | Cast iron grade | 15° | 25° |
| | | Wiper insert | 15° | 25° |
| W | Wiper type | Wiper insert | | |
| -GA -RA | Chip breaker type | -GA : fine-boring chip breaker -RA : rough-boring chip breaker | | |

3 Cutting edge change symbol



| Honing amount | | Honing | | Negaland width | Negaland angle |
|---------------|--------|--------|---------------|----------------|----------------|
| S | Small | S | Existence | 012 | 25 |
| M | Medium | T | Non-existence | - | - |
| L | Large | | | | |



Smart factory

DINOX NC TOOLING SYSTEM

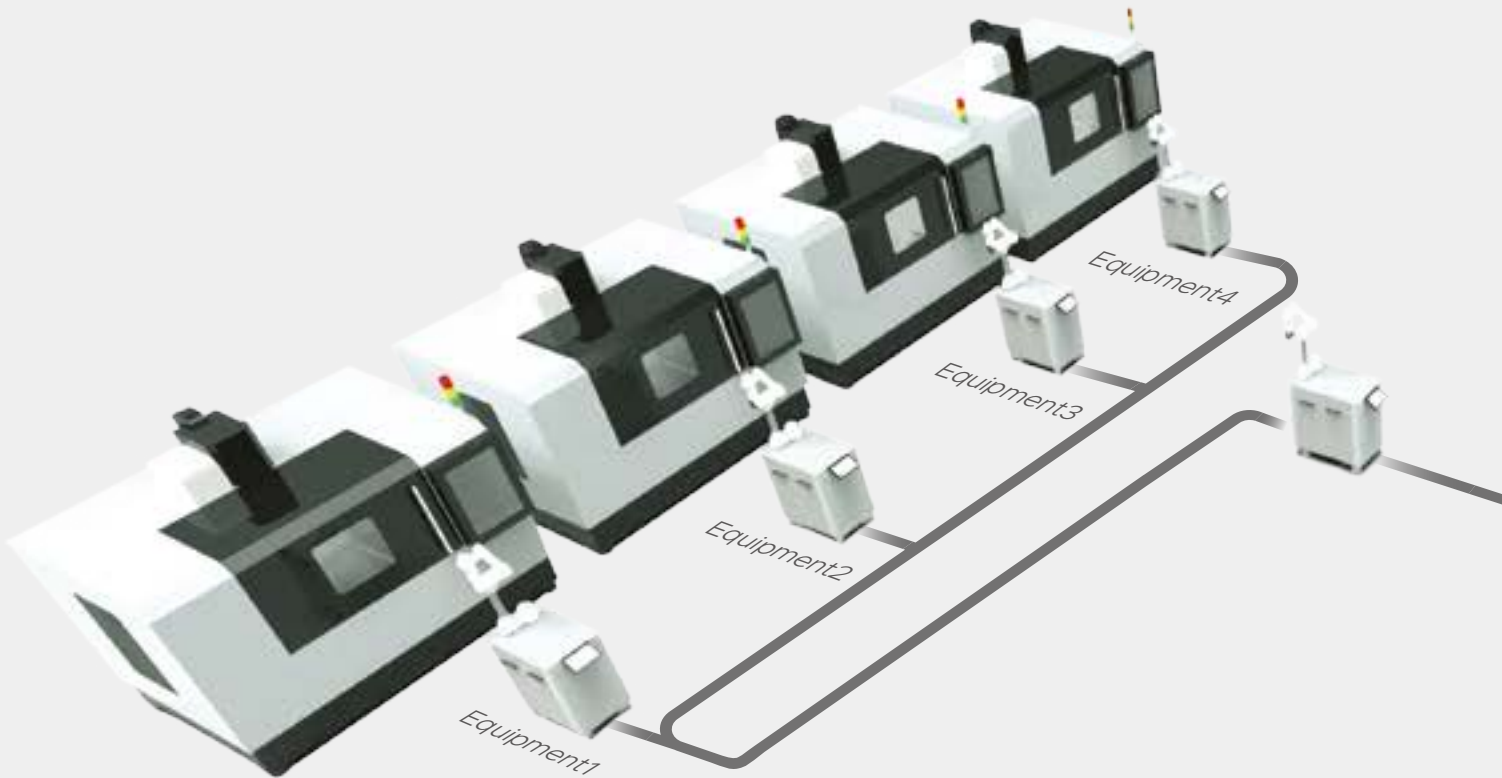
| | |
|--|-----|
| SMART FACTORY | 266 |
| MDM S/W SYSTEM | 268 |
| Collaborative Robot (Domestic Sales Only in Korea) | 270 |
| DINE'S COBOT (Domestic Sales Only in Korea) | 272 |
| TOOL MASTER (Domestic Sales Only in Korea) | 274 |
| TOOL MASTER LITE (Domestic Sales Only in Korea) | 275 |
| TOOL MASTER BASIC (Domestic Sales Only in Korea) | 276 |
| TOOL MASTER QUADRA (Domestic Sales Only in Korea) | 277 |



SMART FACTORY

SOLUTION MAP

DINE's Collaborative Robot solution that coexists with humans and creates new values



Collaborative Robot (Collaborative Robot)

- Optimized for repetitive work in a small space
- Effective for heavy work burdensome for humans

Tool Master (Tool presetter)

- Measures length correction values for tools in advance
- Setting time shortened / equipment downtime reduced

MDM (Tool management S/W)

- Tool holder information management → tool diameter, length, storage location
- Integrated management for tools, production, CAM, etc.



Chuck

Arbor / Modular

Boring tool

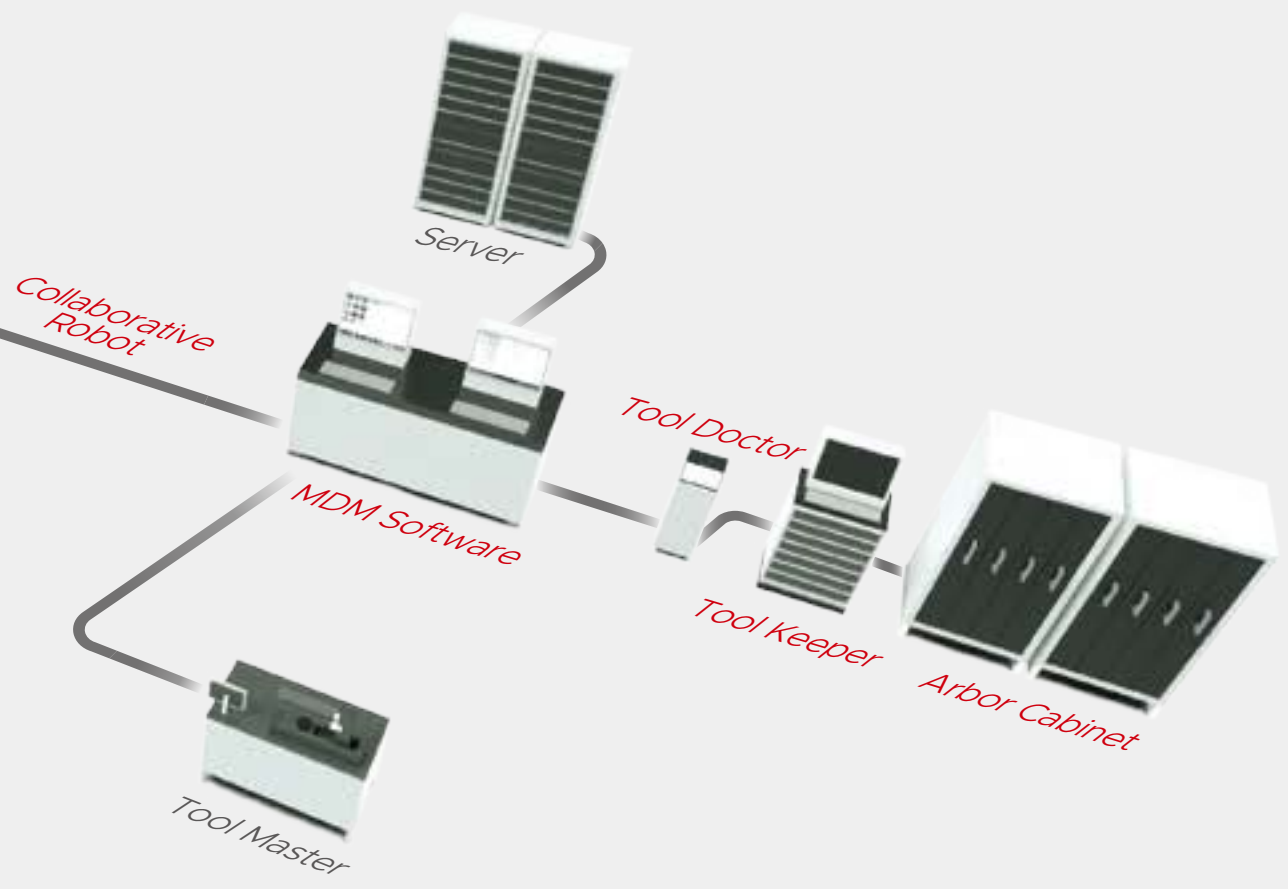
Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



Tool Doctor (Monitoring system)

- Manages production defect in mass-production process
→ Tool damage, non-machining, re-machining
- Manages the trend of tool service life

Tool Keeper (Tool management equipment)

- Day/night entering & release control
- Systematic inventory and order management
- Manages the transparency of tool usage results

Arbor Cabinet (Arbor dedicated storage box)

- Functionality of increasing space efficiency and protecting tools (foreign substance inhibited on the site)
- Operates virtual warehouse for Tool Keeper (tool location / quantity management)



MDM S/W SYSTEM

Total tool management system that enables the user to identify tool information about tool diameter, length, storage location, etc. stored in the server only by reading the 2D bar code printed on the tool (chuck). It helps all users share information so that work can be performed in an accurate and fast manner.

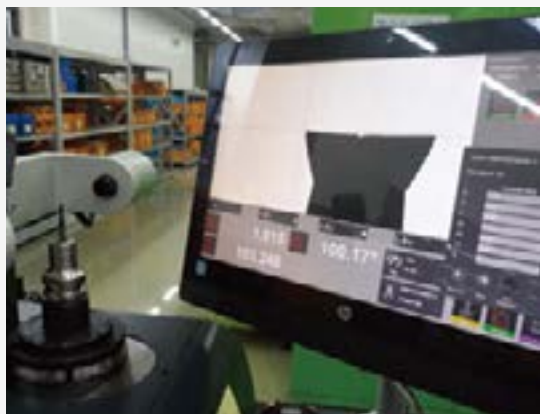
MDM System



- Assemble by searching the end tool and chuck by equipment and by process
(The protrude length of the assembly tool adjustable)
- Reduction, enlargement, and rotation of shapes available
- Aware through the development of the tool features intuitive.



- Cutting conditions can be set according to workpiece, tool, machining equipment, etc.
- Can be utilized throughout all departments by establishing the standardized cutting machining data






- Automatic measuring system using the bar code
- Automatic transfer measured data values to MCT
- Permissible tolerance test of the usable tool available
(comparison of actually measured value vs. setting tolerance)

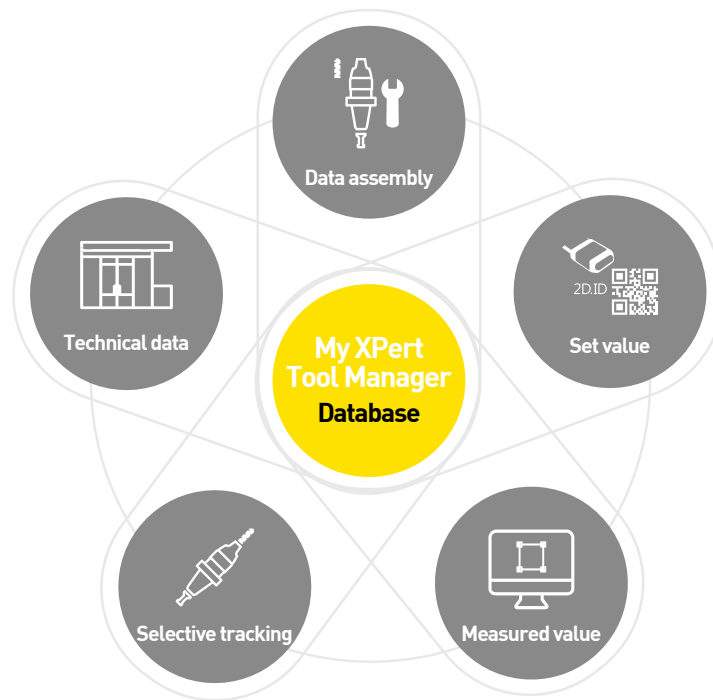


- Spot stock can be identified in real time
(The protrude length of the assembly tool adjustable)
- Preemptive inventory management process available
(priority order appropriate for safe quantity, etc.)

MDM Introduction effect

| | | |
|---|--|---|
|  | <p>Improves productivity through a shorter C/T</p> | <ul style="list-style-type: none"> • Productivity is increased 20~30% through a shorter time for tool setting and measurement. |
|  | <p>Builds an integrated management system</p> | <ul style="list-style-type: none"> • Integrated management for tools, production, and CAM, etc. is available. |
|  | <p>Increases convenience and decreases defects</p> | <ul style="list-style-type: none"> • Human errors can be prevented by automatic measurement data transfer. |

MDM System Cycle



| | |
|---------------------------|--|
| <p>Data assembly</p> | <ul style="list-style-type: none"> • Assemble the tool according to database plan/ parts list to which tool holder 2D ID is allocated. |
| <p>Set value</p> | <ul style="list-style-type: none"> • Deploy the tool to the presetter and scan 2D ID. Get the set value and measuring function from the database. |
| <p>Measured value</p> | <ul style="list-style-type: none"> • Measure the tool with the tool presetter and store a measured value in the central database in an automatic manner. |
| <p>Selective tracking</p> | <ul style="list-style-type: none"> • Re-measure or disassemble the tool in case of tool change |
| <p>Technical data</p> | <ul style="list-style-type: none"> • Set up the measured tool on the equipment and 2D ID is detected in the equipment. Exchange information with the CNC control. |



Collaborative Robot

Doosan Robotics' official distribution partner

Meet DINE's more varied collaborative robot solutions.

M Series

- Provides the world's top class stability
- Enables exquisite and delicate work
- Enables various work operations including bolting and polishing



A Series ^{NEW}

- Provides the lowest price in the industry
- Faster work speed
- Suitable for simple and repetitive work



Model No

M Series

M0609

- Payload 6kg
- Operating radius 0.9m

Optimized for fast repetitive work in a small space

M0617

- Payload 6kg
- Operating radius 1.7m

Efficient for 2 processes at least or long distance work

M1013

- Payload 10kg
- Operating radius 1.3m

Basic model fit for all work processes

M1509

- Payload 15kg
- Operating radius 0.9m

Effective for heavy goods work burdensome for humans

A Series

A0509

- Payload 5kg
- Operating radius 0.9m

Optimized for fast repetitive work in a narrow space

A0912

- Payload 9kg
- Operating radius 1.2m

Collaborative robots with fast behavior speed appropriate for all work

What is Collaborative Robot?



Safe & Fenceless

- Its built-in collision detection function protects the operator against collision
- Enables fenceless collaboration with the operator in a work environment



Easy

- Its easy programming solution enables the operator to easily change work setting in case of process change
- The customer can directly change the program through simple training.



Flexible

- Easy and simple installation. Can be installed within a small space without changing the conventional layout.
- Its 6 torque sensors enables high level tasks.

Option

M Series

Direct Control Unit-Cockpit



Ideal option that can maximize the convenience of direct teaching

Anti Stain Paint (Navy Color)



Dust and pollution proof paints used

Common option

Dart Platform



Software that enables the control of the robot from a PC

A Series

Direct Control Unit-Cockpit



Ideal option that can maximize the convenience of direct teaching

Smart Pendant



Ultra-small pendant only with necessary functions

FT-Sensor



Precise force detection sensor necessary for exquisite and delicate work (6-axis single mounting)

Accessories

Water Jacket



Moisture infiltration prevented to protect the robot from being polluted by liquids

Mobile Base



Robots and controllers embedded to be moved and redeployed freely on the site

Smart Vision Module



On-board image process that enables vision work without a separate PC

Dress Pack



Arrange various harnesses connected to the end tool of the robot for work efficiency



DINE'S COBOT

WE COEXIST WITH HUMANS

DINE's cobot model line-up

M0609

- Robot with 6kg of payload and 0.9m of operating radius
- Optimized for fast repetitive work in a small space

- Payload : 6kg
- Reach : 900mm



M0617

- Robot with 6kg of payload and the industry's longest operating radius (1.7m)
- Most efficient for 2 work processes at least or long distance work

- Payload : 6kg
- Reach : 1,700mm



M1013

- Robot with 10kg of payload and 1.3m of operating radius
- Basic model fit for all work processes

- Payload : 10kg
- Reach : 1,300mm



M1509

- Robot with the industry's largest payload (15kg) and 0.9m of operating radius
- Effective for heavy goods work burdensome for humans

- Payload : 15kg
- Reach : 900mm



A0509 NEW

- Robot with 5kg of payload and 0.9m of operating radius
- Entry-type collaborative robot fit for fast repetitive work in a narrow space

- Payload : 5kg
- Reach : 900mm



A0912 NEW

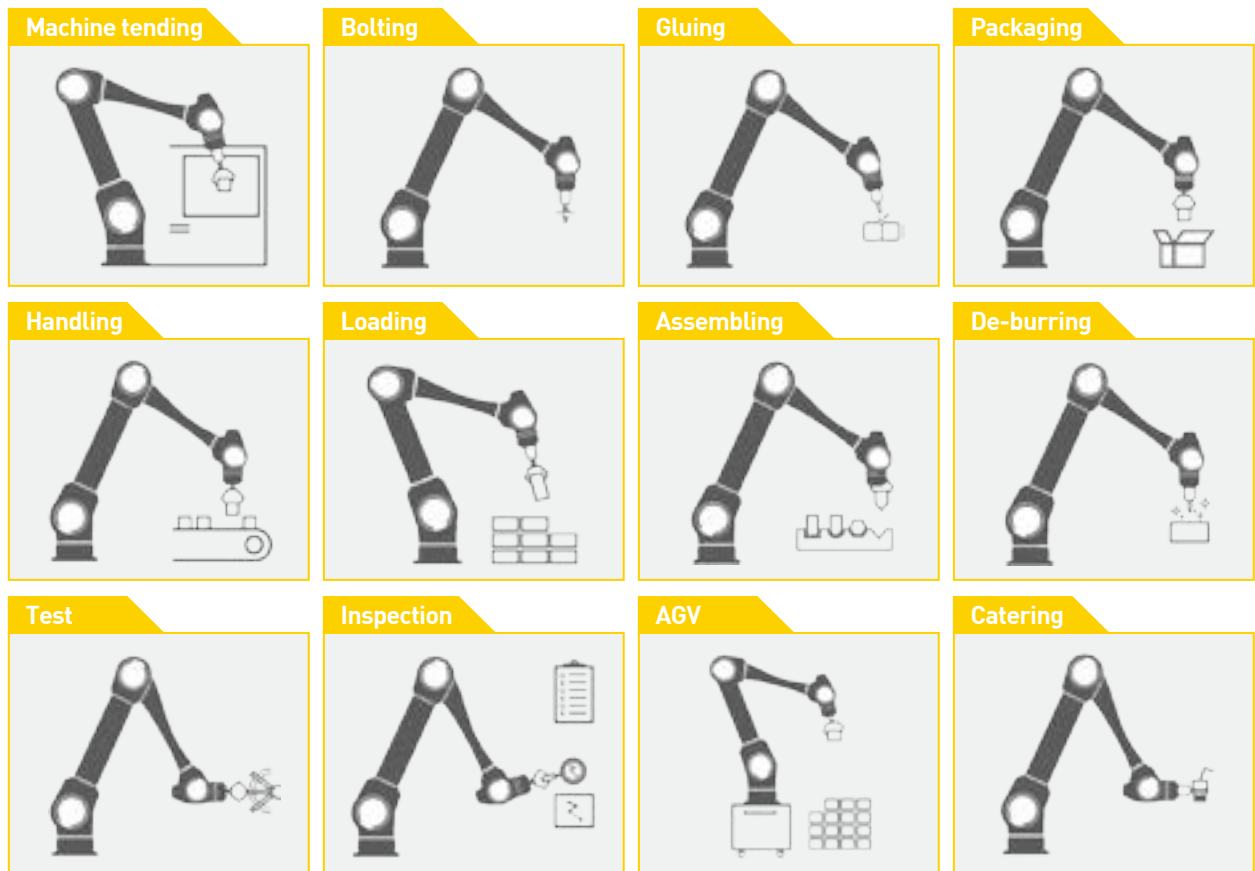
- Robot with 9kg of payload and 1.2m of operating radius
- Entry-type collaborative robot fit for all work processes with fast behavior

- Payload : 9kg
- Reach : 1200mm





Application



Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



TOOL MASTER

Swiss Made/Produced

Tool Master is a tool presetter by Swiss EVOSET with more than 25-year's experience.

Tool presetter : equipment that measures length correction values for tools before installation in the equipment

Why use it? : It helps cost reduction through productivity improvement due to reduced equipment downtime as well as a shorter setting time.

the smart way of tool presetting!

Payback formula

Using Tool Master reduces a setting time by about 3 minutes per tool.

For example, if you re-setup 20 tools 4 times in a week, you will get another 240 minute production time in a week and additional 192 hours in a year. Multiplying it by your company's equipment production cost per hour, you will get cost reduction to be obtained by using Tool Master. You can calculate an investment payback period through this.

Be sure to consider Tool Master in the case of the company with equipment and tools or the company that frequently sets up tools.

70 seconds



Tool Master 0

250 seconds



Tool Master X

Full line-up of TOOL MASTER

| | TOOL MASTER Lite | TOOL MASTER Basic | TOOL MASTER Quadra |
|--|-------------------------|--|---|
| Version | Economy type | General entry type | General type |
| Measurement method | Contact type | Non-contact type (camera) | Non-contact type / Contact type (option) |
| Scale | General scale | Sylvac scale | Glass scale |
| Measuring range Norm. (Ømm/Lmm) Max. (Ømm/Lmm) | X250 / Z0 ... Z300 | X400 / 40 ... 600 Z400 / 40 ... 600 | X400 / 40 ... 600 Z400 / 40 ... 600 |
| Rapid feed | Manual (by hand) | By pressing the handle button | By pressing the handle button |
| Tool port | Needle bearing ISO40/50 | Needle bearing ISO40/50 | Needle bearing ISO40/50 or ISO40/50 KV spindle (Air intake spindle) |
| Measurement method | Digital reader (0.01mm) | EyeRay® Hawk | EyeRay® Buzzard or Hawk TipRay with Dial indicator |



TOOL MASTER LITE

Swiss Made/Produced

TM Lite is a simple-design economy-type tool presetter that can only measure simple diameter and tool length.



Features

- Tool setting time reduced
- Excellent quality versus price (economy type)
- Easy operation due to simple structure
- Needle bearing tool port
- Digital reader (0.01mm unit)
- No electricity or air needed .
- Weight : 23KG
- Size : 410 x 150 x h540
- AA battery

TECHNICAL DATA

| | |
|--------------------------------|---|
| Item | Manual drive |
| Measurement range | ∅ mm 250 / L mm 0...300 |
| How to fix the axis | Mechanical type |
| Fine-adjustment | X axis fine tuning |
| Measured value indication unit | 0.01mm |
| How to measure | Contact type using a cemented carbide tip |



Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



TOOL MASTER BASIC

Swiss Made/Produced

TM Basic is an economical and efficient start-up solution with all standard measurement functions.



Features

- Plug & Work solution
- Simple operation method
- Compact structure and robust body
- HP-PC 20" screen solution
- Fast cutting edge focusing
- Telecentric lens type CMOS camera
- High concentricity
- Best repetitive accuracy
- ISO 50 or ISO 40 integral tool port
- PWB EyeRay® Hawk software
- X axis and Y axis endless fine tuning

Patent: Needle Bearing



TECHNICAL DATA

| | |
|---------------------|--|
| Item | Manual drive |
| Measurement range | ∅ mm 400 / L mm 40 400 ∅ mm 400 / L mm 40 600 |
| How to fix the axis | Pneumatic |
| Fine-adjustment | X-, I-, Z-axis hand wheel |
| Tool mounting | Rotary clamping or air injection type needle bearing or KV spindle |
| How to measure | Image processing through EyeRay® Hawk |



TOOL MASTER QUADRA

Swiss Made/Produced

TM Quadra is a fast and simple manual presetter with a high-accuracy measurement method suitable for all users.



Features

- Manual operation at X, I, Z, and C axes
- EyeRay® software HAWK or BUZZARD
- All in One PC 20.0" touchscreen technology
- Glass scale
- Telecentric lens type CMOS digital camera
- Cross-sectional inspection
- X axis and Y axis endless fine tuning
- ISO 50 or ISO 40 integral tool port
- Adapter and tool management
- Label printer / table
- Holder for tool storage
- Data transfer to all types of machine tools and third-party systems
- High concentricity
- Best repetitive accuracy

Applicable measurement method

TipRay : Contact type (cemented carbide tip+indicator) diameter, height only measurement



EyeRay Hawk : Non-contact type (Vision)_Basic
EyeRay Buzzard : Non-contact (Vision)_Advanced
 - Diameter, height, angle, due-diligence test, multi-cutting measurement, etc.



TECHNICAL DATA

| | |
|---------------------|---|
| Item | Manual drive Practical design and easy-to-use operation |
| Measurement range | ∅ mm 400 / L mm 40 400 ∅ mm 400 / L mm 40 600 ∅ mm 400 / L mm 40 700 ∅ mm 600 / L mm 40 400 ∅ mm 600 / L mm 40 600 |
| How to fix the axis | Pneumatic |
| Fine-adjustment | X-, I-, Z-axis hand wheel |
| Tool mounting | Rotary clamping or vacuum injection available needle bearing or KV spindle |
| How to measure | Image processing through EyeRay® Hawk or Buzzard |

For Z axis measuring range (Z40~Z605), indicate Z6 behind the product name.
 e.g.) TM Quadra EyeRay Hawk Z605

※ For a product whose measuring range is higher than the range supported, please contact us as TM5 separately.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



Comparison of components and options per model

Swiss Made/Produced

| Composition and option matters | TM Lite | TM Basic | TM Quadra | |
|-----------------------------------|-------------------------------|---------------------------------------|------------------------|--------------------------|
| | | EyeRay | EyeRay | TipRay |
| Needle bearing spindle | 0 | 0 | 0 | 0 |
| KV spindle ISO50 (air intake) | X | Option | | |
| Measurement method | Cemented carbide contact type | Non-contact 50x camera | Non-contact 50x camera | Contact type carbide tip |
| Measuring Scale | General scale | Sylvac Scale | Glass Scale | Glass Scale |
| LED Front light test function | X | Option | 0 | Option |
| 20" Monitor and built-in desktop | X | 0 | X | X |
| 20" Touchscreen All-in-One PC | X | X | 0 | 0 |
| Mouse | X | 0 | 0 | 0 |
| Keyboard | X | 0 | 0 | 0 |
| Label printer (Brother) | X | Option | 0 | Option |
| Table | X | Option | 0 | Option |
| Tool cradle (for 3 tools) | X | Option | 0 | Option |
| Test bar included or not | X | 0 | X | X |
| Data transfer | X | Option (RFID / 2DID / Post Processor) | | |
| Weight of maximum measurable tool | 20Kg | 50 Kg | | |
| Power supplied or not | Battery (AA) | Necessary | | |
| Air supplied or not | Unnecessary | Necessary | | |





ADAPTER

Swiss Made/Produced



Reduction ISO50 / 40 : ISO available for ISO 10 / 15 / 20 / 25 / 30 / 35 / 40 / 45 / 50

TM Lite / Basic / Quadra



Reduction ISO50 / 40 : HSK (Form A to F) available for HSK 25 / 32 / 40 / 50 / 63 / 80 / 100 / 125

TM Basic / Quadra



Reduction ISO50 / 40 : VDI with clamp lever available for VDI 16 / 20 / 25 / 30 / 40 / 50 / 60

TM Basic / Quadra



Reduction ISO50 / 40 : VDI with index (4x90°) available for VDI 16 / 20 / 25 / 30 / 40 / 50 / 60 / 80

TM Basic / Quadra



Reduction ISO50 : Capto 'easy' available for Capto C3 / C4 / C5 / C6 / C8 / C10

TM Basic / Quadra



Clamp insert K-HSK available for HSK 40 / 50 / 63 / 80 / 100

TM Basic / Quadra

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



TAUMAX

DINOX NC TOOLING SYSTEM

| | |
|-------------------------------------|-----|
| Power vise (PVT) | 282 |
| Power vise (PVTM) | 283 |
| Machine vise(MVT-154) | 285 |
| Taper cleaner | 286 |
| Shrink fit device | 287 |
| CLEAN-TEC FAN | 288 |
| Precise boring adjustment cartridge | 289 |
| Pull stud bolt wrench | 289 |
| Tool clamp | 290 |
| Magnetic base | 291 |



Power Vise (PVT)

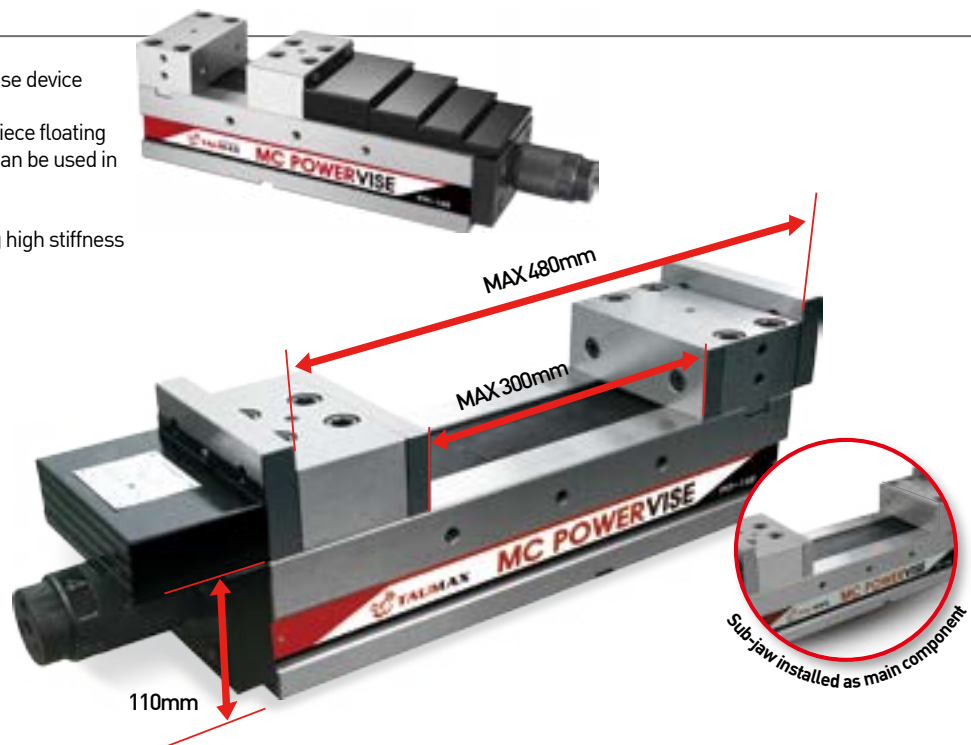
MC POWER VISE - PVT (standard type)

Features

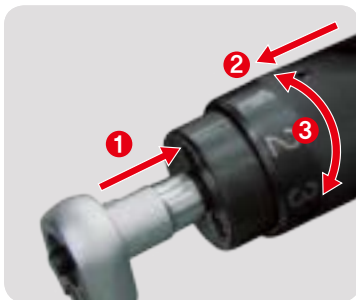
- Apparatus type power increase device adopted
- Designed to minimize workpiece floating
- Height tolerance: 0.01mm, Can be used in parallel
- Built-in IN (18T) sub-jaw
- Durability enhanced by using high stiffness materials

PVT

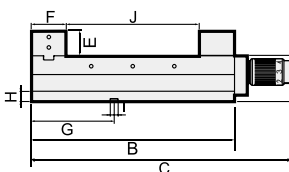
Max. opening width
(Based on 6 inches)



How to use



- ① Fix the grip after tightening by the main handle
- ② Pull the clamping force control grip toward the handle
- ③ Rotate the clamping force control grip from side to side to set the clamping force.



Clamping force

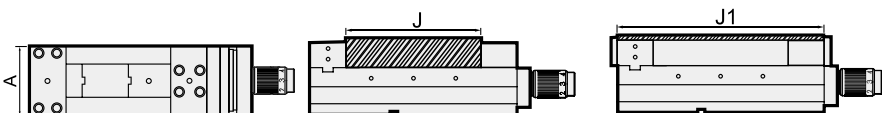
(Unit: kgf)

| Grasp step | Spec. | PVT-100 | PVT-130 | PVT-160 | PVT-200 |
|------------|-------|---------|---------|---------|---------|
| Step 1 | | 1,000 | 1,500 | 2,000 | 2,500 |
| Step 2 | | 2,000 | 2,500 | 3,000 | 3,500 |
| Step 3 | | 3,000 | 3,500 | 4,000 | 4,500 |
| Step 4 | | 3,500 | 4,500 | 5,000 | 5,500 |

Main components

| Handle | Ratchet handle | Internal sub-jaw | Accessory |
|--------|----------------|------------------|-----------|
| | | | |

※ IN/OUT Sub-jaw is the same, available as PVT Entry Type.



| Model No. | A | B | C | D | E | F | G | H | I | J | J1 | Clamping force (Kgf) | Kg |
|-----------|-----|-----|-----|-----|----|----|-----|----|----|-----|-----|----------------------|----|
| PVT-100 | 100 | 310 | 442 | 85 | 50 | 75 | 110 | 25 | 18 | 150 | 300 | 3,500 | 29 |
| PVT-130 | 130 | 410 | 542 | 100 | 55 | 80 | 135 | 25 | 18 | 240 | 400 | 4,500 | 46 |
| PVT-160 | 160 | 490 | 622 | 110 | 60 | 85 | 200 | 25 | 18 | 300 | 480 | 5,000 | 68 |
| PVT-200 | 200 | 530 | 662 | 110 | 60 | 85 | 220 | 25 | 18 | 350 | 520 | 5,000 | 91 |



Power Vise (PVTM)

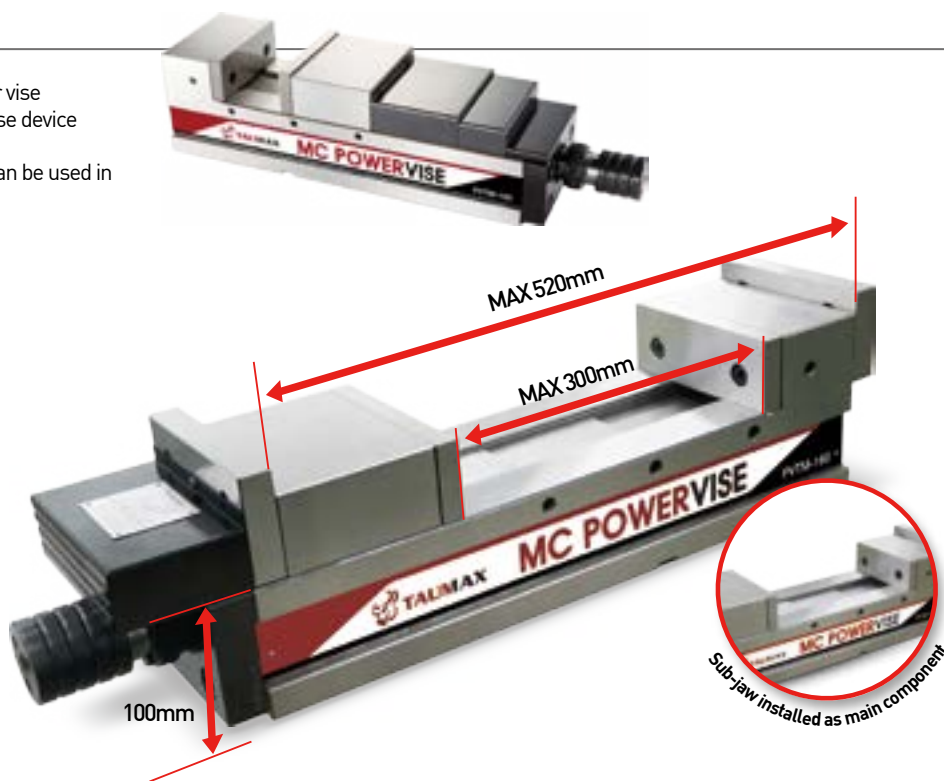
MC POWER VISE - PVTM (entry type)

Features

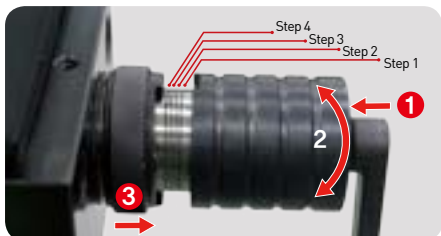
- Easy-to-use entry type power vise
- Apparatus type power increase device adopted
- Height tolerance: 0.01mm, Can be used in parallel
- Built-in IN (18T) sub-jaw

PVTM

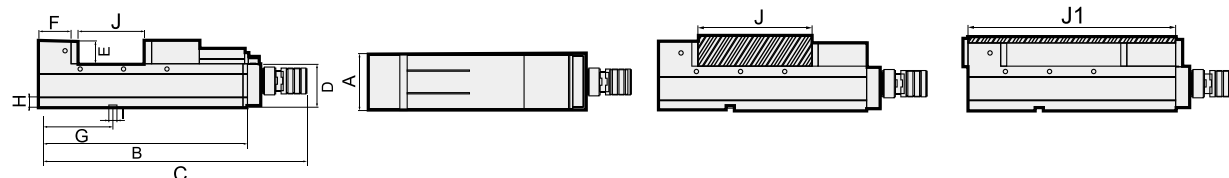
Max. opening width
[Based on 6 inches]



How to use



- ① Push it to the workpiece using the ratchet handle, a main component
- ② Apply instantaneous torque (rotation) to increase grasping power
Pull out the workpiece by turning the ratchet handle in the opposite direction after machining
- ③ Be sure to use the clutch to clamp any hard workpiece (mild steel, aluminium, copper, acryl, etc.). Otherwise, the material of the workpiece may be strained.



| Model No. | A | B | C | D | E | F | G | H | I | J | J1 | Clamping force (Kgf) | Kg |
|-----------|-----|-----|-----|-----|----|----|-----|----|----|-----|-----|----------------------|----|
| PVTM-100 | 100 | 395 | 530 | 85 | 50 | 60 | 110 | 25 | 18 | 200 | 370 | 3,500 | 28 |
| PVTM-130 | 130 | 470 | 605 | 100 | 55 | 75 | 160 | 25 | 18 | 250 | 450 | 4,500 | 45 |
| PVTM-160 | 160 | 545 | 680 | 100 | 60 | 80 | 200 | 25 | 18 | 300 | 520 | 5,000 | 68 |
| PVTM-200 | 200 | 615 | 740 | 110 | 60 | 95 | 220 | 25 | 18 | 350 | 590 | 5,000 | 91 |

Clamping force

(Unit: kgf)

| Grasp step | Spec. | PVTM-100 | PVTM-130 | PVTM-160 | PVTM-200 |
|------------|-------|----------|----------|----------|----------|
| Step 1 | | 1,500 | 2,000 | 2,000 | 2,000 |
| Step 2 | | 2,500 | 3,000 | 3,000 | 3,000 |
| Step 3 | | 3,000 | 4,000 | 4,000 | 4,000 |
| Step 4 | | 3,500 | 4,500 | 5,000 | 5,000 |

Main components

| Handle | Ratchet handle | Internal sub-jaw | Accessory |
|--------|----------------|------------------|-----------|
| | | | |

※ IN/OUT Sub-jaw is the same, available as PVT Standard Type.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



ACCESSORIES

ACCESSORIES

Built-in accessory



Handle



Ratchet handle

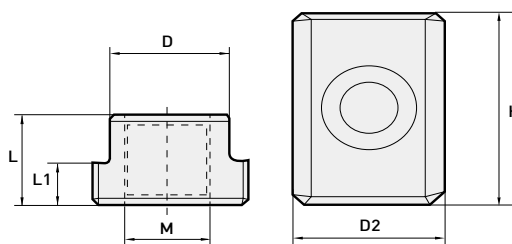


Internal sub-jaw



Accessories

Guide key



(mm)

| Model No. | D | D1 | H | M | L | L1 |
|--------------------------|----|----|----|----|----|----|
| KEY-14MM+CAP-M6*P1.0*12L | 14 | 18 | 25 | M6 | 12 | 6 |
| KEY-18MM+CAP-M6*P1.0*12L | 18 | - | 25 | M6 | 12 | 6 |

IN/OUT sub-jaw & Movable jaw/Fixed jaw

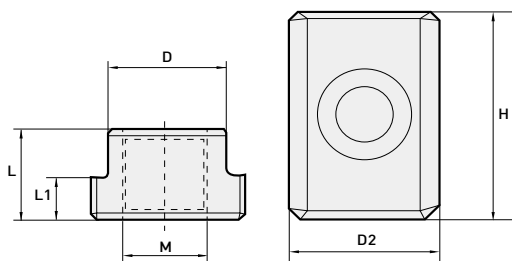


| Item | Model No. | Compatibility classification |
|----------------|----------------------|------------------------------|
| IN/OUT sub-jaw | PVT-□□□ INSIDE JAWS | PVT/M |
| | PVT-□□□ OUTSIDE JAWS | PVT/M |
| Fixed jaw | PVT-□□□ FIXED BLOCK | PVT |
| Movable jaw | PVT-□□□ SLIDER BLOCK | PVT |

※ Sub-jaw specifications are the same as the specifications included in the conventional vise.

※ OUT sub-jaws are for separate purchase.

T-nut & Bolt



(mm)

| Model No. | D | D2 | H | M | L | L1 | Compatibility classification | Components |
|--------------|------|----|----|-------------|----|----|------------------------------|--|
| T-nut & Bolt | 13.8 | 22 | 28 | M12*1.75(S) | 16 | 8 | PVT/M-100 | T-NUT/ 4 pcs. Each washer clamp/ bolt |
| | 15.5 | 25 | 28 | M12*1.75(M) | 16 | 8 | PVT/M-100,130 | |
| | 17.5 | 28 | 31 | M12*1.75(L) | 19 | 11 | PVT/M-160,200 | |

※ For other keys and T nut specifications, please contact us for the quotation separately.



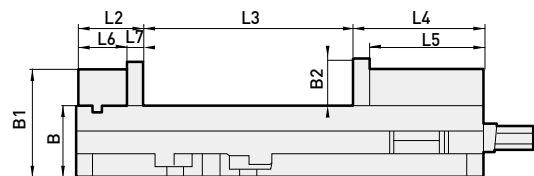
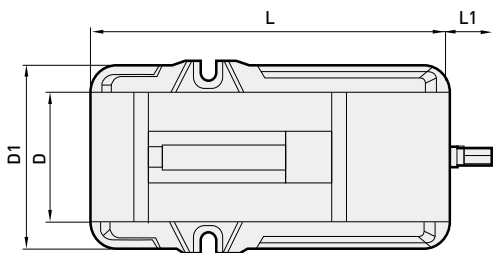
Machine Vise (MVT-154)

MC MACHINE VISE-MVT (standard type)

Features

- Provides a wide machining range (Max. opening width: 225mm)
- Durability enhanced by using high stiffness materials
- Parallel use available with basic dimensional design
- Easy to use, highly versatile machine vise

Built-in accessory



| Model No. | L | L1 | L2 | L3 | L4 | L5 | L6 | L7 | D | D1 | B | B1 | B2 | Width | Weight (kg) |
|-----------|-----|----|----|-----|-----|-----|----|----|-----|-----|----|-----|----|---------|-------------|
| MVT-154 | 438 | 5 | 70 | 225 | 141 | 123 | 52 | 18 | 154 | 213 | 73 | 111 | 48 | 154(6") | 31 |



FOR SEPARATE PURCHASE



| Model No. | Compatible specifications |
|-------------------------|---------------------------|
| Swivel Base for MVT-154 | MVT-154 |

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



TAPER CLEANER

TAPER CLEANING DEVICE

Features

- Accuracy enhanced through taper cleaning
- Tooling costs reduced by a longer cutting tool service life
- Protects the spindle of equipment
- Maintains accuracy of the contact surface for a long time
- Compact design and timer function



| Item | Model No. | Diameter | Height | Kg | Power supply | Power consumption | Specifications |
|---------------------|-----------------------------|----------|-----------|----|--------------|-------------------|----------------|
| Lower basis | Taper cleaning drive unit | 300mm | 140mm | 11 | 110-240 VAC | Max. 0.15kW | - |
| Upper cleaning part | Cleaning attachment ISO 30 | 230mm | 160-190mm | 10 | | | BT/SK/CAT30 |
| | Cleaning attachment ISO 40 | | | | | | BT/SK/CAT40 |
| | Cleaning attachment ISO 50 | | | | | | BT/SK/CAT50 |
| | Cleaning attachment HSK-63 | | | | | | HSK-63 |
| | Cleaning attachment HSK-100 | | | | | | HSK-100 |



ACCESSORIES

ACCESSORIES



| Item | Model No. | Specifications |
|-------------|---------------------|----------------|
| Spare brush | Spare brush ISO 30 | BT/SK/CAT30 |
| | Spare brush ISO 40 | BT/SK/CAT40 |
| | Spare brush ISO 50 | BT/SK/CAT50 |
| | Spare brush HSK-63 | HSK-63 |
| | Spare brush HSK-100 | HSK-100 |



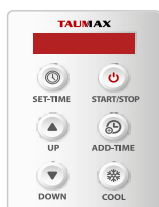
SHRINK FIT DEVICE

MH-200

Features

- 30-time continuous heating available for a maximum of 1 hour (about 2 min. per tool required)
- Enables the common use of steel, SUS material holders
- All standard taper tools can be used simply by replacing the adapter flange
- Enables replacement of heating coils with a diameter of Ø25, Ø30, Ø40 or Ø55
- Prevents chuck overheating and enables manual tool cooling through settings

Easy usage setting



| MH-200 Operating keypad | |
|-------------------------|-----------------------------------|
| START/STOP | Heating start/stop switch |
| SET-TIME | Heating time/cooling time setting |
| ADD-TIME | Overtime manual progress |
| COOL | Cooling device running |
| UP/DOWN | 10-second unit time setting |



| Model No. | WxLxH(mm) | Kg | Power supply | Max. power consumption | Frequency | Head operating range | Basic applicable tool diameter |
|-----------|-------------|----|-----------------------------------|------------------------|------------|----------------------|--------------------------------|
| MH-200 | 325x340x690 | 25 | single-phase AC 100V~240V(50.6Hz) | 3.6Kw (220V basis) | 7KHz~45KHz | 280mm | Ø4~Ø16 |



ACCESSORIES

ACCESSORIES

Heating coil



| Item | Model No. | Inner size |
|----------------|---------------------|------------|
| Heating coil | HEATING COIL-25MM | 25mm |
| | HEATING COIL-30MM | 30mm |
| | HEATING COIL-40MM | 40mm |
| | HEATING COIL-55MM | 55mm |
| Adapter flange | ST10,12,16,20,25,32 | - |

Adapter flange



Built-in product For separate-sale straight shank

※ Built-in Ø30 heating coil



CLEAN-TEC FAN

Cleaning Fan



Features

- Productivity improved as cleaning is possible without opening the CNC machine door
- The operator's safety improved as no compressed air is blown
- Electricity cost reduction due to a reduced use of compressed air
- Can be installed in ATC; production efficiency increased through automation equipment connection



| Model No. | ØD(Unfolded) | Ø Shank | Max.RPM | Kg |
|---------------|--------------|---------|---------|-----|
| Clean-Tec 160 | 160 | 20 | 12,000 | 0.2 |
| Clean-Tec 260 | 260 | 20 | 8,000 | 0.2 |
| Clean-Tec 330 | 330 | 20 | 8,000 | 0.5 |



ACCESSORIES

ACCESSORIES

Usage related photo



| Model No. | Components | Compatible specifications |
|----------------------------------|------------------|---------------------------|
| Spare Part Kit for Clean-Tec 160 | 4 wings / spring | Clean-Tec 160 |
| Spare Part Kit for Clean-Tec 260 | | Clean-Tec 260 |
| Spare Part Kit for Clean-Tec 330 | | Clean-Tec 330 |



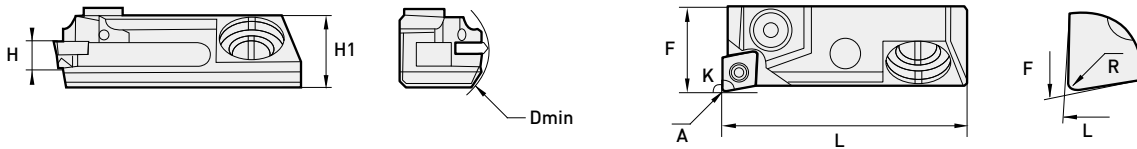
Precision micro adjusting cartridge

Precision micro adjusting cartridge



Features

- Both left-hand and right-hand versions available, internal coolant type
- Available minimum boring diameter: 28.00mm
- 90-degree, 95-degree lead angle versions
- Unit diameter adjustable up to 0.01mm within the radial adjustment 0.3mm (1 gradation adjustment radius: 0.005mm)
- Axial range adjustable: 1.0mm



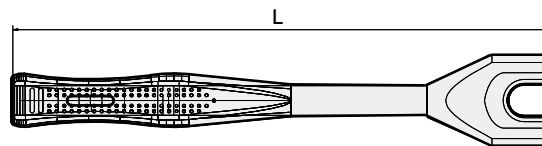
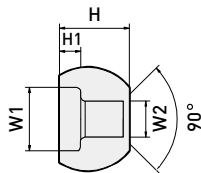
| Model No. | K | H | F | L | H1 | Dmin | R | Applicable insert |
|-------------------|----|-----|----|------|------|------|-----|-------------------|
| TMCR/L90-F16-CC06 | 90 | 8.8 | 16 | 45.8 | 13.5 | 28 | 0.4 | CC..0602.. |
| TMCR/L95-F16-CC06 | 95 | 8.8 | 16 | 45.8 | 13.5 | 28 | 0.4 | CC..0602.. |
| TMCR/L90-F16-TP09 | 90 | 8.8 | 16 | 45.8 | 13.5 | 28 | 0.4 | TP..0902.. |
| TMCR/L95-F16-TP09 | 95 | 8.8 | 16 | 45.8 | 13.5 | 28 | 0.4 | TP..0902.. |
| TMCR/L90-F20-TC11 | 90 | 8.8 | 20 | 45.8 | 13.5 | 36 | 0.4 | TC..1102.. |
| TMCR/L95-F20-TC11 | 95 | 8.8 | 20 | 45.8 | 13.5 | 36 | 0.4 | TC..1102.. |
| TMCR/L90-F20-TP11 | 90 | 8.8 | 20 | 45.8 | 13.5 | 36 | 0.4 | TP..1103.. |
| TMCR/L95-F20-TP11 | 95 | 8.8 | 20 | 45.8 | 13.5 | 36 | 0.4 | TP..1103.. |



Pull stud bolt wrench

Pullstud bolt Wrench

Work fatigue reduced by using the pullstud bolt dedicated wrench



| Model No. | L | H | H1 | W1 | W2 | Torque | Kg | Application |
|-----------------|-----|------|----|----|------|--------|------|--------------|
| PSBW-30 | 210 | 16 | 5 | 13 | 7.0 | ≤80 | 0.31 | BT30 |
| PSBW-40 | 230 | 25 | 6 | 19 | 10.0 | ≤150 | 0.43 | BT40 |
| PSBW-50 | 280 | 33 | 10 | 30 | 17.0 | ≤280 | 0.84 | BT50 |
| PSBW-40(PS-805) | 230 | 20.5 | 7 | 19 | 14.0 | ≤150 | 0.43 | JISB6339-B40 |
| PSBW-40(PS-G51) | 240 | 13 | 5 | 19 | 13.0 | ≤150 | 0.41 | Mazak BT40 |
| PSBW-50(PS-G41) | 290 | 17 | 8 | 30 | 21.0 | ≤280 | 0.73 | Mazak BT50 |

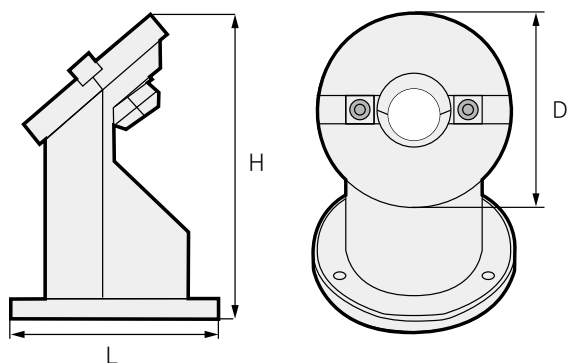


TOOL CLAMP

Tool CLAMP

Features

- For cutting tool and pullstud bolt tightening
- Enables more convenient and easier tightening in case of tool tightening using a 45-degree type
- Provides work stability by heavier load (3kg) than rival products



The tool clamp helps tighten the tool by fixing it.



Example of use

| Model No. | Applicable shank | L | H | D | Kg |
|-----------|------------------|-----|-----|-----|----|
| TTC30 | BT30, NT30 | 119 | 169 | 114 | 3 |
| TTC40 | BT40, NT40 | | | | |
| TTC50 | BT50, NT50 | | | | |



MAGNETIC BASE

MAGNETIC BASE

Features

- Strong adsorptive power (80Kgf)
- Smooth and precise joint movement
- Ensures lightness and precision as a multi-joint model with a full aluminium body



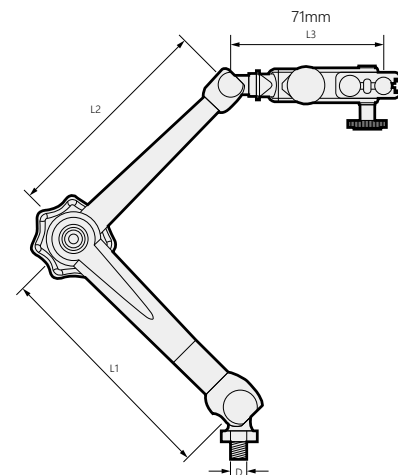
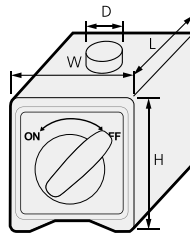
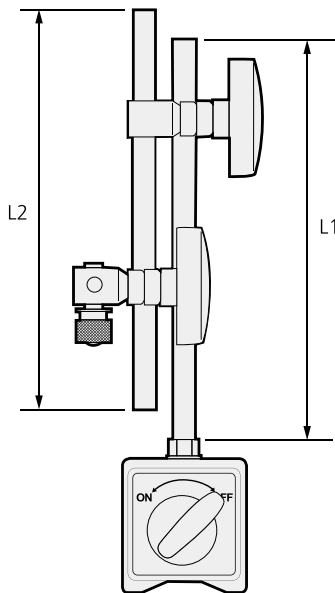
TMB-B



TMB-BV



TMB-330



| Model No. | Type | Adsorptive power (Kgf) | L1 | L2 | L3 | (L*W*H) | D | Weight (Kg) |
|-----------|------|------------------------|---------|---------|----|----------|---------|-------------|
| TMB-B | 160 | 80 | 170*Ø12 | 160*Ø10 | - | 60*50*55 | M8*1.25 | 1.6 |
| TMB-BV | 260 | 80 | 170*Ø12 | 160*Ø10 | - | 60*50*55 | M8*1.25 | 1.7 |
| TMB-330 | 330 | 80 | 130*Ø12 | 130*Ø10 | 71 | 60*50*55 | M8*1.25 | 1.5 |

※ For additional purchase of the base and TMB-B holder, please contact us.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



OTHER

DINOX NC TOOLING SYSTEM

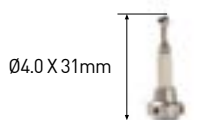
OTHER

| | |
|---------------------------------------|-----|
| DIGITAL 3D-TASTER | 294 |
| 3D-TASTER 2007 | 294 |
| HT HEIGHT TOUCH SETTER | 295 |
| DOP | 295 |
| DZH DINE Z AXIAL HEIGHT GAUGE | 296 |
| DZP DINE Z AXIAL SETTING HEIGHT GAUGE | 296 |
| DZOP DINE Z AXIAL P RESET GAUGE | 297 |
| HDG | 297 |
| ROT | 298 |
| NTSS NEW TOOL SETTING STAND | 299 |
| Shank specifications | 300 |
| Pull stud bolt | 308 |
| INDEX | 310 |



DIGITAL 3D-TASTER

- High measurement accuracy: 0.01mm
- Display indication unit: 0.005mm
- Easy to check measured values through a highly visible display
- Omnidirectional movement and measurable stylus
- Highly waterproof and shockproof structure (IP65 class)
- Convenient and simple concentricity adjustment
- Compatible with conventional styluses
- -, + indicated according to movement direction based on zero reference
- Built-in CR2032 battery



Standard type

| X,Y,Z axes Driving range | Measurement unit | Display range | Zero accuracy | Zero repetitive accuracy | Clamping shank | Battery classifications | Weight (g) |
|--------------------------|---------------------|---------------|---------------|--------------------------|------------------|-------------------------|------------|
| -2 / to 4mm | 0.005mm (5 μ m) | \pm 2mm | \pm 0.01mm | \pm 0.005mm | \varnothing 16 | CR2032 | 520 |



3D-TASTER 2007

- High measurement accuracy: 0.01mm
- Easy zero adjustment
- Highly waterproof and vibration-proof structure (IP67 class)
- Screw-type stylus
Prevents the stylus from falling out by vibration and shock
- Simple and accurate radial run-out measurement
Radial run-out measured directly from the lower part of the scanning arm.
- Radial direction and axial direction measurable with one indicator

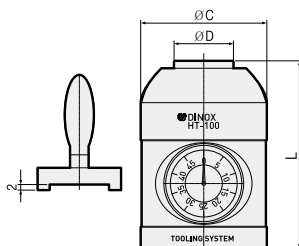


Standard type

| Measurement unit | Measurement precision | Clamping shank | Weight (g) |
|------------------|-----------------------|------------------|------------|
| 0.01mm | 0.01mm | \varnothing 16 | 397 |



HT HEIGHT TOUCH SETTER



| Model No. | ØD | ØC | L |
|-----------|----|----|-----|
| HT - 100 | 32 | 68 | 100 |

Features

- Enables the operator to easily sets up tool length at the CNC machining center
- Provides safe operation without interference between the height touch setter and tool
- Location precision : ±0.003mm



DOP DINE OPTICAL EDGE FINDER



| Model No. | G.W.WEIGHT KGS | ACCURACY | LxWxH/UNIT:mm |
|-----------|----------------|----------|---------------|
| DOP-20B | 0.3kgs | ±0.005 | 158X20X10 |

Features

- Long-time no rust as it is waterproof treated on the whole
- Note: An optical laser type cardiopulmonary system is not suitable for rotation applications.
- It sounds an alarm when touched.

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



DZH DINE Z AXIAL HEIGHT GAUGE



| Model No. | HEIGHT | G.W.WEIGHT KGS | LxWxH/UNIT:mm |
|-----------|---------------|----------------|---------------|
| DZH-50 | 50.00±0.005mm | 1.2kgs | 50X63X63 |

Features

- For setting up the cutter length of MCT/Turning
- Design setting height: 50.00±0.005mm
- Wide plane face, easy operation
- Relatively less spring ejection and designed to prevent the milling cutter or bite from breaking
- Using a polished parallel plate enables an easy setting.
- Good parallelization degree, quick use response to each direction, and good accuracy
- Using a hexagonal wrench enables an easy adjustment of the height of the measuring stand.
- Using a hexagonal wrench enables an immediate zero (0) adjustment.
- Magnetic attachment type



DZP DINE Z AXIAL SETTING HEIGHT GAUGE



| Model No. | HEIGHT | G.W.WEIGHT KGS | LxWxH/UNIT:mm |
|-----------|--------|----------------|---------------|
| DZP-100 | ±0.005 | 0.73kgs | 100X50X50 |

Features

- For setting the cutter length of MCT/turning
- Design setting height: 100.00±0.005mm
- Wide plane face, easy operation
- Magnetic attachment type
- Enables relatively less spring ejection; prevents the milling cutter or bite from breaking
- Using a polished parallel plate enables an easy setting.
- Good parallelization degree, quick use response to each direction, and good accuracy



DZOP DINE Z AXIAL P RESET GAUGE



| Model No. | HEIGHT | G.W.WEIGHT KGS | LxWxH/UNIT:mm |
|-----------|--------|----------------|---------------|
| DZOP-50 | 50 | 0.6kgs | 50X53X53 |

Features

- For setting the cutter length of MCT/turning
- Design height : 50.00
- Wide plane face, easy operation
- Relatively less spring ejection and designed to prevent the milling cutter or bite from breaking
- Using a polished parallel plate enables an easy setting.
- Good parallelization degree, quick use response to each direction, and good accuracy
- It emits light when touched.
- Magnetic attached type



HDG Hydraulic expansion Chuck gauge



* The following standard is the standard for hydraulic expansion chuck sold by DINE. Therefore, for third-party products, measured values may be different.

| Model No. | HEIGHT | G.W.WEIGHT KGS | LxWxH/UNIT:mm |
|-----------|--------|----------------|---------------|
| HDG6 | Ø6 | 16 | 80이상 |
| HDG8 | Ø8 | 23 | 80이상 |
| HDG10 | Ø10 | 45 | 110이상 |
| HDG12 | Ø12 | 90 | 120이상 |
| HDG16 | Ø16 | 185 | 150이상 |
| HDG20 | Ø20 | 330 | 160이상 |

Features

- Able to minimize the defect rate due to low clamping force than required
- A hydraulic expansion chuck gauge that can determine whether clamping force is appropriate before machining
- Can prevent defective machining caused by tool fallout



ROT

Run-out tester



ISO
Shank 200mm=3μm

Product Features

- Compatible with various shanks; provides diverse lineups
- Compliant with ISO30~ISO50 (ISO: BT,SK, NT,CAT) affordable general type and multi-type that can measure the cutting edge height and outer diameter simultaneously



Model No.

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

Description

| Main component | | | | Separate sale | | |
|----------------|----------------|--------------|---------------|---------------|-----------|----------------------|
| Shank | Body | Housing | Retainer | Test bar | arm | Indicator |
| ISO50 | ROTM-BD | ROT-HS-ISO50 | ROT-RTB-ISO50 | BTN50-50-300 | MB-1030-2 | DIAL GAUGE (0.002mm) |
| ISO40 | (Multi-type) | ROT-HS-ISO40 | ROT-RTB-ISO40 | BTN40-50-300 | | |
| | ROTS-BD | ROT-HS-ISO30 | ROT-RTB-ISO30 | BTN30-30-200 | | |
| ISO30 | (General type) | | | | | |

Simple measurements

Measure run-out easily by inserting and turn the tool



① After inserting the tool

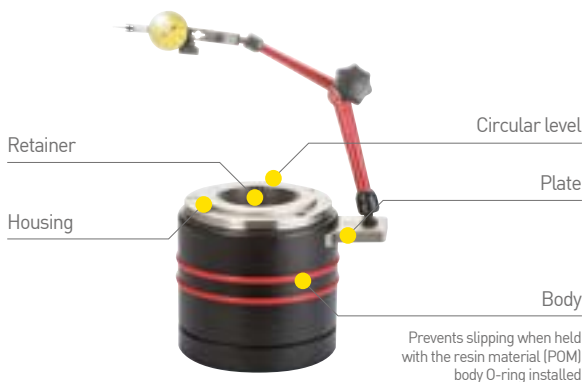
② Check R/O by turning the tool

Convenient horizontal adjustability

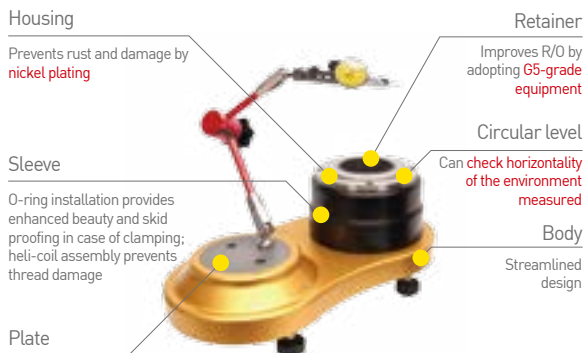


Can check horizontality by the level installed.

ROTS-General type (~Ø150)

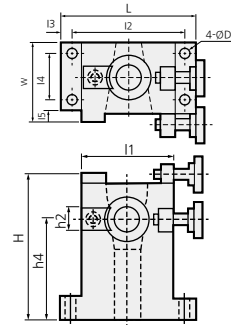


ROTM-Multi type (~Ø400)

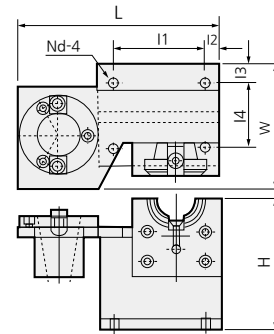




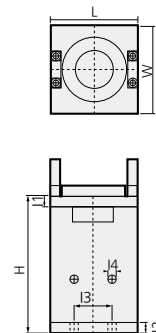
NTSS NEW TOOL SETTING STAND



| Model No. | Type | L | I1 | I2 | I3 | I4 | H | W | G.W |
|-----------|------|-----|----|----|-----|----|-----|----|-------|
| NTSS-30 | BT30 | 95 | 65 | 80 | 7.5 | 33 | 100 | 58 | 1kg |
| NTSS-40 | BT40 | 118 | 77 | 99 | 9.2 | 44 | 130 | 75 | 1.7kg |



| Model No. | Type | L | I1 | I2 | I3 | I4 | H | W | G.W |
|-----------|------|-----|-----|----|----|-----|-----|-----|--------|
| NTSS-50 | BT50 | 275 | 113 | 20 | 24 | 105 | 200 | 150 | 11.4kg |

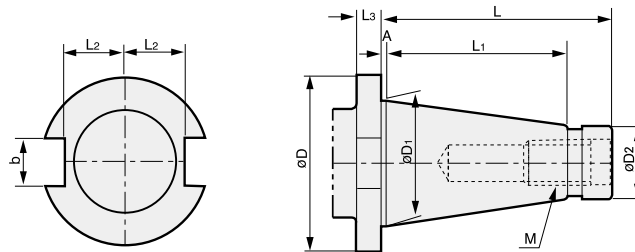


| Model No. | Type | L | I1 | I2 | I3 | I4 | H | W | G.W |
|-------------|--------|-----|----|----|----|----|-----|-----|-------|
| NTSS-HSK63A | HSK63A | 106 | 11 | 11 | 50 | 9 | 160 | 106 | 4.1kg |

Features

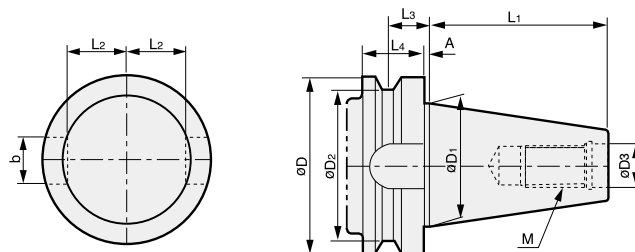
- Made of aluminium alloy
- Two types Vertical or Horizontal available All of BT, CAT, SK available

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



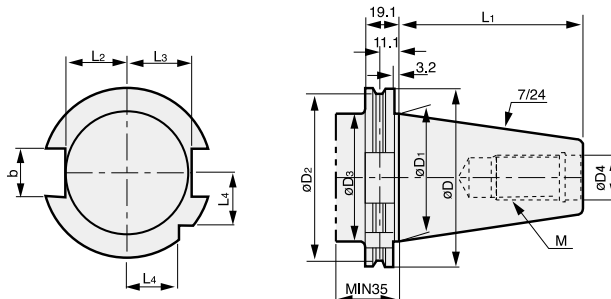
| TAPER | ØD | ØD1 | ØD2 | L | L1 | L2 | L3 | A | B | M |
|-------|-----|--------|------|-------|-------|------|----|-----|------|--------------|
| NT30 | 46 | 31.75 | 17.4 | 68.4 | 48.4 | 16.2 | 10 | 1.6 | 16.1 | UNC 1/2-13 |
| NT40 | 63 | 44.45 | 25.3 | 93.4 | 65.4 | 22.5 | 10 | 1.6 | 16.1 | UNC 5/8 -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 |

BOTTLE GRIP TAPER MAS403-BT



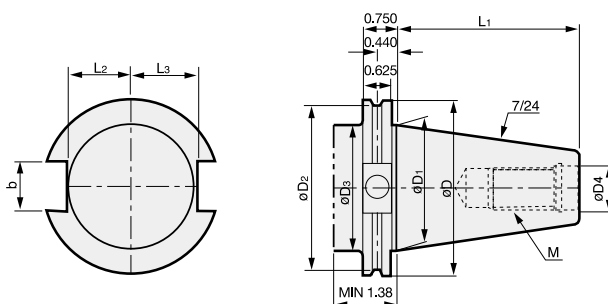
| TAPER | ØD | ØD1 | ØD2 | ØD3 | L1 | L2 | L3 | L4 | A | B | M |
|-------|-----|--------|-----|------|-------|------|------|----|---|------|------------|
| BT30 | 46 | 31.75 | 38 | 12.5 | 48.4 | 16.3 | 13.6 | 20 | 2 | 16.1 | M12 x 1.75 |
| BT40 | 63 | 44.45 | 53 | 17 | 65.4 | 22.6 | 16.6 | 25 | 2 | 16.1 | 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 |

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



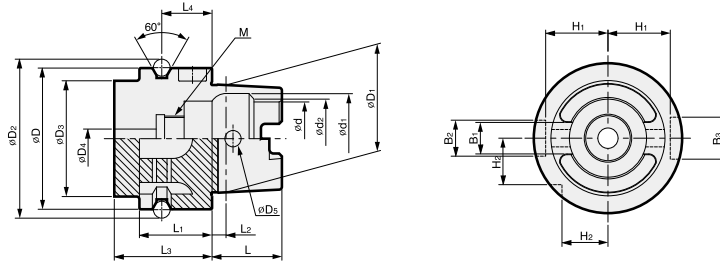
| TAPER | ØD | ØD1 | ØD2 | ØD3 | ØD4 | L1 | L2 | L3 | L4 | B | M |
|-------|-------|-------|-------|-----|-----|--------|------|------|------|------|------------|
| SK30 | 50 | 31.75 | 44.3 | 45 | 13 | 47.8 | 16.4 | 19 | 15 | 16.1 | M12 x 1.75 |
| SK40 | 63.55 | 44.45 | 56.25 | 50 | 17 | 68.4 | 22.8 | 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 |

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



| TAPER | ØD | ØD1 | ØD2 | ØD3 | ØD4 | 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 |

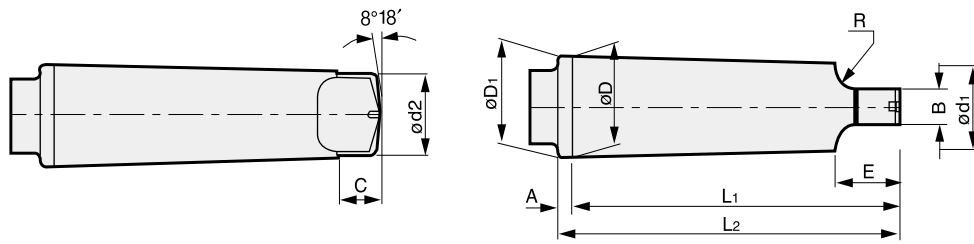
HSK SHANK DIN 69893-1, ISO 12164-1 : 2001



| 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 |

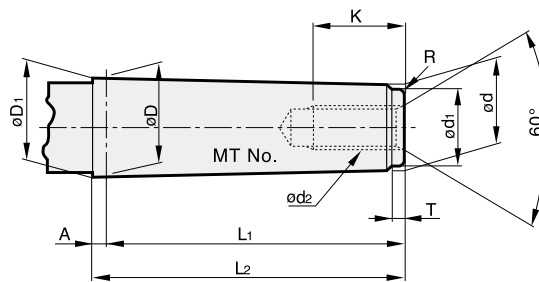
| TAPER | Ød | Ød1 | Ød2 | B1 | ØD4 | ØD5 | H1 | H2 | M |
|----------|----|------|-----|-------|-----|-----|------|------|---------|
| HSK 40A | 21 | 25.5 | 23 | 8.05 | 11 | 9 | 17.0 | 12.0 | M12×1.0 |
| HSK 50A | 26 | 32.0 | 29 | 10.54 | 14 | 12 | 21.0 | 15.5 | M16×1.0 |
| HSK 63A | 34 | 40.0 | 37 | 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) | $\varnothing D$ | A | $\varnothing D1$ | $\varnothing d1$ | L1 | L2 | $\varnothing d2$ | 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 |

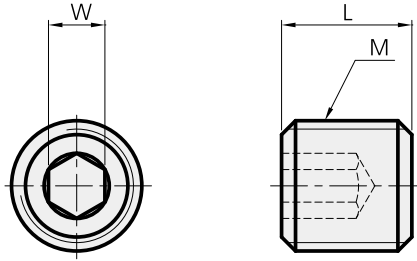
MORSE TAPER (SCREW TYPE)



| TAPER | Taper | Taper Angle(α) | $\varnothing D$ | A | $\varnothing D1$ | d | L1 | L2 | $\varnothing d1$ | 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 |

SPARE PARTS

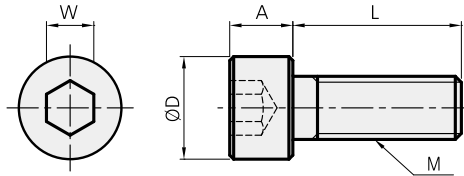
SET SCREW (BSA, BKA, FZ, FF, SLA, SMH)



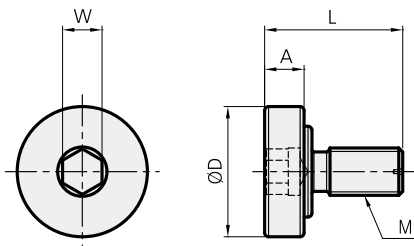
| Model No. | M | L | W |
|-------------|----------|----|-----|
| BTF0505 | M5x0.8 | 5 | 2.5 |
| BTF0606 | M6x10 | 6 | 3 |
| BTF0608 | M6x1.0 | 8 | 3 |
| BTF0808 | M8x1.25 | 8 | 4 |
| BTF0812 | M8x1.25 | 12 | 4 |
| BTF1010 | M10x1.5 | 10 | 5 |
| BTF1012 | M10x1.5 | 12 | 5 |
| BTF1016 | M10x1.5 | 16 | 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 |
| 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 (FMA, FMC, TBC, FBC, DBC)



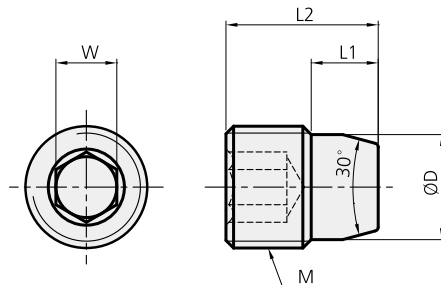
| Model No. | M | A | L | ØD | W |
|-----------|----------|----|----|-----|-----|
| BX0310 | M3x0.5 | 3 | 10 | 5.5 | 2.5 |
| BX0412 | M4x0.7 | 4 | 12 | 7 | 3 |
| BX0416 | M4x0.7 | 4 | 16 | 7 | 3 |
| BX0515 | M5x0.8 | 5 | 15 | 8.5 | 4 |
| BX0516 | M5x0.8 | 5 | 16 | 8.5 | 4 |
| BX0616 | M6x1.0 | 6 | 16 | 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 |



| Model No. | 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 |

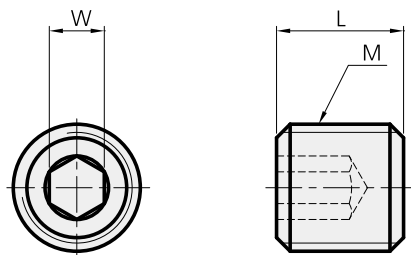
SPARE PARTS

TAPER SCREW (BASIC HOLDER) (SLA, FF, MD, EXT, RDC)



| Model No. | 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 |

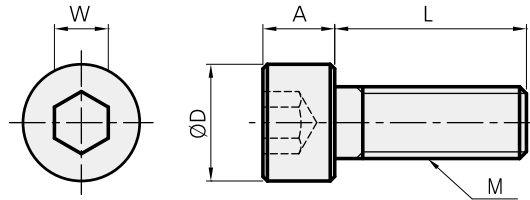
SET SCREW (TBC/FBC)



| Model No. | M | L1 | W |
|-----------|--------|----|---|
| BT0645 | M6x1.0 | 45 | 3 |
| BT0660 | M6x1.0 | 60 | 3 |

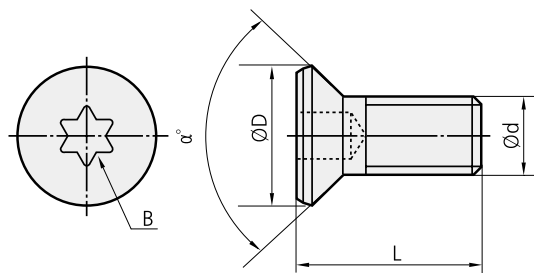
SPARE PARTS

CLAMP BOLT (FBB BITE)



| Model No. | 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



| Model No. | M | L | ØD | B | α° | (N.m) |
|------------|----------|------|------|-----|----|-------|
| BFTX0203A | 2x0.4 | 3.0 | 2.7 | T6 | 90 | 0.5 |
| BFTX0204A | 2x0.4 | 4.3 | 2.7 | T6 | 90 | 0.5 |
| BFTX0307A | 3x0.5 | 6.8 | 4.3 | T10 | 90 | 2.0 |
| BFTX0410A | 4x0.7 | 10.3 | 5.6 | T15 | 90 | 3.4 |
| BFTX02506N | 2.5x0.45 | 5.5 | 3.45 | T8 | 60 | 1.5 |



INDEX

Number o

| | | | |
|----------------|---------|------------|-----|
| □NU-CNGA□□□□□□ | cBN/PCD | cBN Series | 220 |
| □NU-DNGA□□□□□□ | cBN/PCD | cBN Series | 220 |
| □NU-VNGA□□□□□□ | cBN/PCD | cBN Series | 221 |
| 2NU-CCGW□□□□□□ | cBN/PCD | cBN Series | 221 |
| 2NU-DCGW□□□□□□ | cBN/PCD | cBN Series | 221 |
| 2NU-VBGW□□□□□□ | cBN/PCD | cBN Series | 222 |
| 2NU-VCGW□□□□□□ | cBN/PCD | cBN Series | 222 |
| 3D-TASTER 2007 | Other | 3D Taster | 294 |
| 3NU-TCGW□□□□□□ | cBN/PCD | cBN Series | 221 |
| 3NU-TNGA□□□□□□ | cBN/PCD | cBN Series | 220 |
| 3NU-TPGB□□□□□□ | cBN/PCD | cBN Series | 222 |
| 3NU-TPGN□□□□□□ | cBN/PCD | cBN Series | 221 |
| 3NU-TPGW□□□□□□ | cBN/PCD | cBN Series | 221 |
| 4NS-CNGA□□□□□□ | cBN/PCD | cBN Series | 223 |
| 4NS-DNGA□□□□□□ | cBN/PCD | cBN Series | 223 |
| 4NU-SNGA□□□□□□ | cBN/PCD | cBN Series | 220 |

A

| | | | |
|------------------|--------------|--------------------------------------|-----|
| A SERIES | Smartfactory | A series collaborative robot | 270 |
| A0509 | Smartfactory | A series collaborative robot (A0509) | 272 |
| A0912 | Smartfactory | A series collaborative robot (A0912) | 272 |
| ANGULAR HEAD | Angular head | Angular head | 198 |
| ANTI STAIN PAINT | Smartfactory | Special paint treated | 271 |

B

| | | | |
|----------------|-------------|-----------------------------|-----|
| BB BITE | Boring tool | BB Bite (For SMB, SMH, KMB) | 184 |
| BCF | Boring tool | Micro boring bar | 192 |
| BH | Boring tool | Boring bite | 185 |
| BKA | Boring tool | FZ micro boring bar | 188 |
| BORING INSERT | Boring tool | Boring insert | 191 |
| BSA | Boring tool | Boring bar | 186 |
| BSA SPARE PART | Boring tool | Boring bar related parts | 187 |

C

| | | | |
|-------------------------------|--------------|-----------------------------|-----|
| CAT SHANK | Other | CAT shank specifications | 301 |
| cBN List | cBN/PCD | cBN Series | 220 |
| cBN SERIES(Fiture) | cBN/PCD | cBN Series Features | 226 |
| cBN TECHNICAL DATA | cBN/PCD | cBN technical data | 250 |
| cBN(For Cast iron) | cBN/PCD | For cBN cast iron | 236 |
| cBN(For Heat treatment steel) | cBN/PCD | For cBN heat-treated steel | 230 |
| cBN(For Sintered metal) | cBN/PCD | For cBN sintered parts | 238 |
| CCMT□□□□□□ | cBN/PCD | PCD Series | 224 |
| CCMW□□□□□□ | cBN/PCD | cBN Series | 222 |
| CLEAN-TEC FAN | TAUMAX | Clean-Tec Fan | 288 |
| CLEAN-TEC FAN SPARE PART | TAUMAX | Clean-Tec Fan related parts | 288 |
| CNMA□□□□□□ | cBN/PCD | cBN Series | 222 |
| CNMM□□□□□□ | cBN/PCD | PCD Series | 224 |
| CNMW□□□□□□ | cBN/PCD | PCD Series | 224 |
| COLLABORATIVE ROBOT | Smartfactory | Collaborative robot | 270 |
| CS/CM(2pieces type) | Chuck | shrinking chuck 2Piece type | 50 |

D

| | | | |
|---------------------|--------------|--|-----|
| DART PLATFORM | Smartfactory | Software that enables the control of the robot from a PC | 271 |
| DB1000 | cBN/PCD | Uncoated cBN | 246 |
| DB2000 | cBN/PCD | Uncoated cBN | 247 |
| DB7000 | cBN/PCD | Uncoated cBN | 248 |
| DB7500 | cBN/PCD | Uncoated cBN | 249 |
| DBC | Boring tool | Boring tool (rough-boring) | 155 |
| DBC SPARE PART | Boring tool | Balance cut tool related parts | 158 |
| DBC(Modular type) | Boring tool | Boring tool (modular type) | 156 |
| DBCA | Boring tool | Two-way controllable DBCA | 144 |
| DBCA SPARE PART | Boring tool | Two-way controllable DBCA related parts | 158 |
| DBCA(Helical type) | Boring tool | Two-way controllable DBCA (spiral shape) | 146 |
| DBCA(Straight type) | Boring tool | Two-way controllable DBCA(straight-line shape) | 150 |

E



| | | | |
|---|--------------|--|-----|
| DC | Chuck | Straight collet | 66 |
| DCGT□□□□□□ | cBN/PCD | PCD Series | 224 |
| DCGW□□□□□□ | cBN/PCD | cBN Series | 223 |
| DCJ | Chuck | Jetcoolant collet for milling chuck | 54 |
| DCL | Chuck | Non-slip milling chuck collet | 58 |
| DCL SPARE PART | Chuck | Non-slip milling chuck collet related parts | 62 |
| DCMT□□□□□□ | cBN/PCD | PCD Series | 224 |
| DCS | Chuck | Straight collet | 64 |
| DHC | Chuck | Hydraulic expansion chuck collet | 32 |
| DHE | Chuck | Hydraulic expansion chuck | 27 |
| DHE SPARE PART | Chuck | Hydraulic expansion chuck related parts | 33 |
| DHE/S | Chuck | Slim hydraulic expansion chuck | 24 |
| DHE/S SPARE PART | Chuck | Slim hydraulic expansion chuck related parts | 26 |
| DHJ | Chuck | Hydraulic expansion chuck jetcoolant collet | 33 |
| DIGITAL 3D-TASTER | Other | Digital 3D taster | 294 |
| DIN 2080, JIS B 6101, ISO 297 : 1988[E] | Other | NT shank specifications | 300 |
| DIN 69871-1 A/B, ISO 7388/1 : 1983[E] | Other | SK shank specifications | 301 |
| DIN 69893-1, ISO 12164-1 : 2001 | Other | HSK shank specifications | 302 |
| DIRECT CONTROL UNIT-COCKPIT | Smartfactory | Direct teaching convenience option | 271 |
| DJT | Chuck | Drill chuck arbor | 67 |
| DNC100 | cBN/PCD | Coated cBN | 240 |
| DNC250 | cBN/PCD | Coated cBN | 241 |
| DNC300 | cBN/PCD | Coated cBN | 242 |
| DNC350 | cBN/PCD | Coated cBN | 243 |
| DNC400 | cBN/PCD | Coated cBN | 244 |
| DNMA□□□□□□ | cBN/PCD | cBN Series | 222 |
| DNMM□□□□□□ | cBN/PCD | PCD Series | 224 |
| DOP | Other | Optical edge finder | 295 |
| DRESS PACK | Smartfactory | Harness arrangement package | 271 |
| DSC | Chuck | Shrinking chuck | 36 |
| DSC SPARE PART | Chuck | Shrinking chuck related parts | 51 |
| DSC/M(Mono curve type) | Chuck | Shrinking chuck mono curve type | 43 |
| DSC/M(Mono slim type) | Chuck | Shrinking chuck mono slim type | 49 |
| DSC/M(Mono type) | Chuck | Shrinking chuck mono type | 44 |
| DSC/M(Straight type) | Chuck | Shrinking chuck straight type | 47 |
| DSK | Chuck | Slim collet chuck | 88 |
| DSK SPARE PART | Chuck | Slim collet chuck related parts | 91 |
| DST[PAT.] | Chuck | High-speed tapping chuck | 106 |
| DTN | Chuck | Tapping chuck | 102 |
| DZC | Chuck | Zero fit collet | 34 |
| DZH | Other | Z axial height gauge | 296 |
| DZOP | Other | Z axial P reset gauge | 297 |
| DZP | Other | Z axial setting height gauge | 296 |

F



| | | | |
|---------------|---------------|------------------------------|-----|
| ER COLLET | Chuck | ER collet | 80 |
| ER COLLET SET | Chuck | ER collet set | 83 |
| ER/L | Chuck | Non-slip collet chuck collet | 84 |
| EXT | Arbor/Modular | Extension bar | 130 |

| | | | |
|--------------------|---------------|--|-----|
| FBB BITE | Boring tool | Boring bite | 143 |
| FBC | Boring tool | Wide diameter boring for fine boring | 171 |
| FBC BITE | Boring tool | Boring bite | 175 |
| FBC SPARE PART | Boring tool | Wide diameter boring for fine boring related parts | 174 |
| FBH/B | Boring tool | Back boring balanced type | 134 |
| FBH/B SPARE PART | Boring tool | Micro boring balanced type related parts | 142 |
| FF | Boring tool | Micro boring unit | 194 |
| FF UNIT SPARE PART | Boring tool | FF unit related parts | 194 |
| FMA | Arbor/Modular | Face mill arbor | 119 |
| FMA SPARE PART | Arbor/Modular | Face mill arbor related parts | 121 |
| FMC | Arbor/Modular | Face mill arbor | 122 |
| FMC SPARE PART | Arbor/Modular | Face mill arbor related parts | 125 |
| FMD | Arbor/Modular | Basic holder | 175 |
| FT-SENSOR | Smartfactory | Precise force detection sensor | 271 |



| | | | | |
|----------|-------------------------------------|---------------|---|-----|
| G | FZ UNIT | Boring tool | FZ Micro boring unit | 190 |
| | FZ UNIT SPARE PART | Boring tool | FZ unit related parts | 191 |
| | GERC | Chuck | GERC coating collet | 75 |
| | GERC COLLET SET | Chuck | GERC collet set | 79 |
| | GSK | Chuck | High-speed slim collet chuck | 92 |
| | GSK SPARE PART | Chuck | High-speed slim collet chuck related parts | 97 |
| | HC COLLET | Chuck | HC slim collet | 98 |
| | HDG | Other | Hydraulic expansion chuck gauge | 297 |
| | HRAG | Angular head | Rigidity-reinforced angular head (90° fixed type) | 204 |
| | HT | Other | Height touch setter | 295 |
| I | INSERT | Boring tool | FZ, FF unit insert | 191 |
| | INSERT CODE SYSTEM(ISO) | cBN/PCD | How to indicate the model no. of insert (ISO) | 218 |
| K | KAC | Angular head | Fixed angle-type angular head (45°) | 212 |
| | KAG | Angular head | Angular head (90° fixed type) | 208 |
| | KAH | Angular head | Collet-type angular head (90° fixed type) | 210 |
| | KHU | Angular head | Collet-type angular head (0°-90°) | 204 |
| | KMB | Boring tool | Micro boring | 178 |
| | KMB SPARE PART | Boring tool | Micro boring related parts | 183 |
| M | M SERIES | Smartfactory | M series collaborative robot | 270 |
| | M0609 | Smartfactory | M series collaborative robot (M0609) | 272 |
| | M0617 | Smartfactory | M series collaborative robot (M0617) | 272 |
| | M1013 | Smartfactory | M series collaborative robot (M1013) | 272 |
| | M1509 | Smartfactory | M series collaborative robot (M1509) | 272 |
| | MAGNETIC BASE | TAUMAX | Magnetic base | 291 |
| | MAH | Angular head | Rigidity-reinforced angular head | 202 |
| | MAS403-BT | Other | BT shank specifications | 300 |
| | MC MACHINE VISE-MVT-154 | TAUMAX | Machine vise (standard type) | 285 |
| | MC POWER VISE-PVT | TAUMAX | Power vise (standard type) | 282 |
| | MC POWER VISE-PVTM | TAUMAX | Power vise (entry type) | 283 |
| | MD | Angular head | Modular arbor | 126 |
| | MD SPARE PART | Angular head | Modular arbor related parts | 131 |
| | MDM | Smartfactory | MDM software | 268 |
| | MH-200 | TAUMAX | Shrink fit device | 287 |
| | MH-200 SPARE PART | TAUMAX | Shrink fit device related parts | 287 |
| | MOBILE BASE | Smartfactory | Robot controller | 271 |
| | MORSE TAPER(SCREW TYPE) | Other | Morse taper (screw type) | 303 |
| | MORSE TAPER(TANG TYPE) | Other | Morse taper (tang type) | 303 |
| | MTA | Arbor/Modular | Morse taper arbor | 118 |
| N | NOTCHED ENDMILL | Chuck | Notched end mill | 63 |
| | NPM | Chuck | New power milling chuck | 52 |
| | NPM SET | Chuck | New power milling chuck set | 59 |
| | NPM SPARE PART | Chuck | New power milling chuck related parts | 61 |
| | NPU | Chuck | Drill chuck | 100 |
| | NPU SPARE PART | Chuck | Drill chuck related parts | 101 |
| | NTSS | Other | Tool setting stand | 299 |
| | OFH | Chuck | Floating holder | 110 |
| P | PCD SERIES | cBN/PCD | PCD Series | 224 |
| | PCD TECHNICAL DATA | cBN/PCD | PCD technical data | 259 |
| | POSITIONING BLOCK | Angular head | Positioning block | 212 |
| | PRECISION MICRO ADJUSTING CARTRIDGE | TAUMAX | Precision boring adjusting cartridge | 289 |
| | PULLSTUD BOLT WRENCH | TAUMAX | Pullstud bolt wrench | 289 |
| | PULLSTUD BOLT | Other | Pullstud bolt | 308 |

R

| | | | |
|--------------------|---------------|---------------------|-----|
| RA, GA CHIPBREAKER | cBN/PCD | RA, GA chip breaker | 245 |
| RDC | Arbor/Modular | Reducer bar | 130 |
| ROT | Other | Run-out tester | 298 |
| RTJW | Chuck | Jet coolant disk | 86 |

S

| | | | |
|---------------------|---------------|--|-----|
| SAH | Arbor/Modular | Slim angular head | 201 |
| SDC/P | Chuck | ER collet chuck | 68 |
| SDC/P SPARE PART | Chuck | ER collet chuck related parts | 72 |
| S-FBH/B | Boring tool | Micro boring balanced type | 140 |
| SLA | Arbor/Modular | Side lock arbor | 114 |
| SLA SPARE PART | Arbor/Modular | Side lock arbor related parts | 117 |
| SLK | Chuck | shrinking chuck 2 Piece type | 51 |
| SMART PENDANT | Smartfactory | Ultra-small pendant with necessary functions | 271 |
| SMART VISION MODULE | Smartfactory | Smart vision mobile | 271 |
| SMB | Boring tool | Small micro boring bar | 176 |
| SMB SPARE PART | Boring tool | Small micro boring bar related parts | 183 |
| SMH | Boring tool | Small micro boring bar(precision type) | 180 |
| SMH SET | Boring tool | Small micro boring set | 182 |
| SMH SPARE PART | Boring tool | Small micro boring bar(precision type) related parts | 183 |
| SPGN□□□□□□ | cBN/PCD | PCD Series | 225 |
| S-SDC | Chuck | Collet chuck straight type | 73 |

T

| | | | |
|----------------------------------|--------------|---|-----|
| T-2NU-VBGW□□□□□□ | cBN/PCD | cBN Series | 222 |
| T-□NU-VNGA□□□□□□ | cBN/PCD | cBN Series | 221 |
| T-2NU-DCGW□□□□□□ | cBN/PCD | cBN Series | 221 |
| T-2NU-VCGW□□□□□□ | cBN/PCD | cBN Series | 222 |
| TAPER CLEANING DEVICE | TAUMAX | Taper cleaning device | 286 |
| TAPER CLEANING DEVICE SPARE PART | TAUMAX | Taper cleaning device related parts | 286 |
| TBC | Boring tool | Wide diameter boring for rough boring | 166 |
| TBC SPARE PART | Boring tool | Wide diameter boring for rough boring related parts | 170 |
| TBCA | Boring tool | Aluminium wide boring tool | 160 |
| TC | Chuck | Taper collet | 65 |
| TCA | Chuck | Tap adapter | 105 |
| T-CNMA□□□□□□ | cBN/PCD | cBN Series | 222 |
| T-DCGW□□□□□□ | cBN/PCD | cBN Series | 223 |
| TER | Chuck | ER tap collet | 109 |
| TNMA□□□□□□ | cBN/PCD | cBN Series | 222 |
| TOOL CLAMP | TAUMAX | Tool clamp | 290 |
| TOOL MASTER | Smartfactory | Tool master | 274 |
| TOOL MASTER ADAPTER | Smartfactory | Tool master adapter | 278 |
| TOOL MASTER BASIC | Smartfactory | Tool master basic | 276 |
| TOOL MASTER LITE | Smartfactory | Tool master lite | 275 |
| TOOL MASTER QUADRA | Smartfactory | Tool master quadra | 277 |
| TPGB□□□□□□ | cBN/PCD | cBN Series | 223 |
| TPGN□□□□□□ | cBN/PCD | PCD Series | 225 |
| TPGW□□□□□□ | cBN/PCD | PCD Series | 225 |
| T-TPGB□□□□□□ | cBN/PCD | cBN Series | 223 |
| T-VNMA□□□□□□ | cBN/PCD | cBN Series | 222 |

U

| | | | |
|----------------|---------|-----------------|-----|
| UC CHIPBREAKER | cBN/PCD | UC chip breaker | 262 |
|----------------|---------|-----------------|-----|

V

| | | | |
|------------|---------|------------|-----|
| VBGW□□□□□□ | cBN/PCD | PCD Series | 225 |
| VBMT□□□□□□ | cBN/PCD | PCD Series | 225 |
| VBMW□□□□□□ | cBN/PCD | cBN Series | 223 |
| VCMT□□□□□□ | cBN/PCD | PCD Series | 225 |
| VNMA□□□□□□ | cBN/PCD | cBN Series | 222 |

W

| | | | |
|--------------|--------------|-----------------------------|-----|
| WATER JACKET | Smartfactory | Pollution preventing jacket | 271 |
|--------------|--------------|-----------------------------|-----|

Chuck

Arbor / Modular

Boring tool

Angular head

cBN/PCD

Smart factory

TAUMAX

OTHER



www.dinox.co.kr

Head Office [15118] 24, MTV 26-ro, Siheung-si, Gyeonggi-do, Korea | Tel. +82-31-488-6200 Fax +82-31-432-0583

Gyeongjin Branch T. +82-31-432-0989 F. +82-31-435-1044 Jungbu Branch T. +82-41-541-6688 F. +82-41-541-3553 Daegu Branch T. +82-53-252-1441 F. +82-53-255-7176

Nambu Branch T. +82-51-831-3900 F. +82-51-831-3901 Nambu Support Center T. +82-55-276-5533 F. +82-55-276-5534 Robot Division T. +82-31-433-5060 F. +82-31-434-5060

Marketing Team T. +82-31-488-6242 F. +82-31-433-1721 Technical Support Team T. +82-31-488-6250 F. +82-31-433-1723 Special Sale Team T. +82-31-488-6281 F. +82-31-433-1721

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

Branch Office in Thailand 1/38 Bangna Thani Building 19B th Floor, Bangna-Trad 34 Alley, Bangna Tai Sub-district, Bangna District, Bangkok 10260 T.+66-02-108-8911-3 E. dine.thai@dine.co.kr

Branch Office in Vietnam 4th Floor, Tower B, Golden Palace Building, Me Tri ward, Nam Tu Liem district, Hanoi, Vietnam T.+84-24-7300-6991 E. hoisukim3813@gmail.com