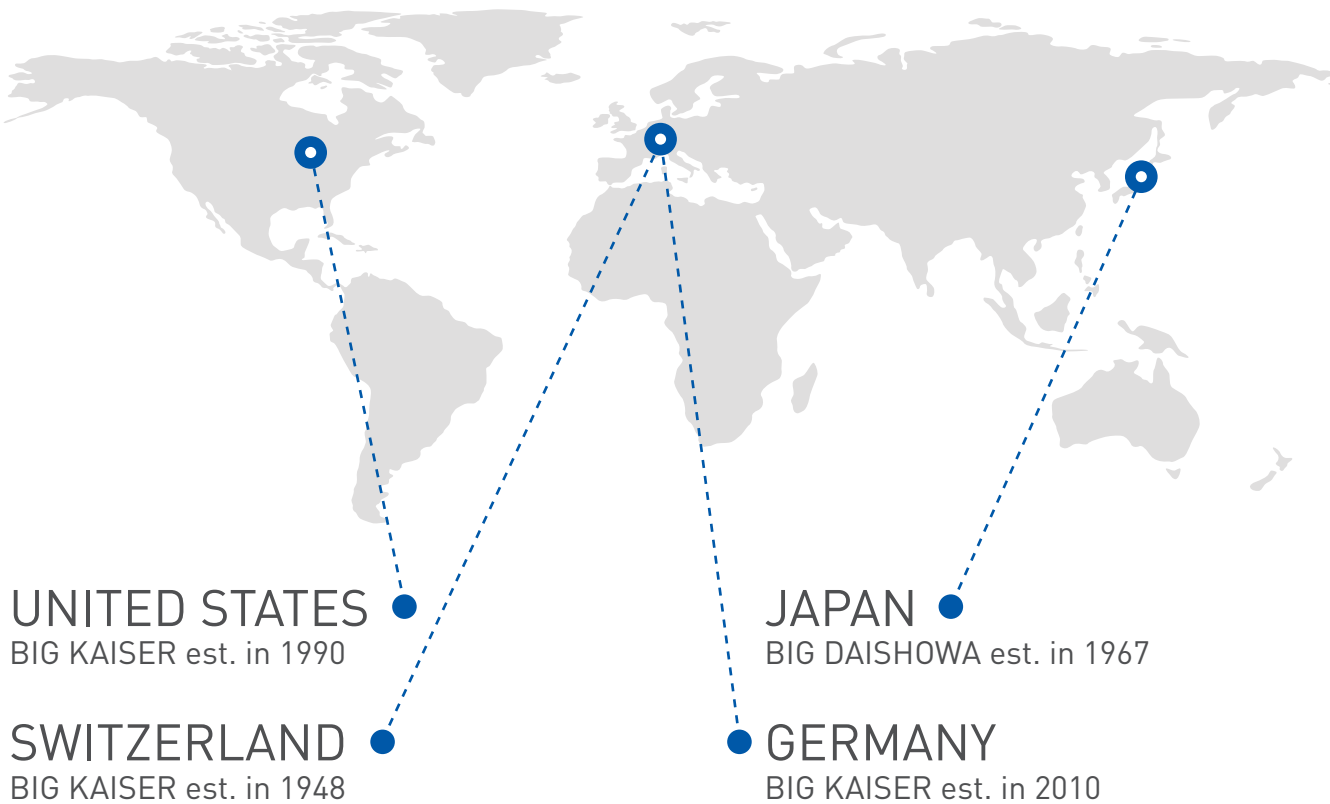


# BIG KAISER



## BIG KAISER PRODUCT GUIDE — TOTAL TOOLING SOLUTIONS 2018-2019

Founded in 1948, BIG KAISER designs, manufactures and markets premium high-precision tooling systems and solutions for the automotive, military, aerospace, energy, and micro-technology industries. The global company has facilities in Japan, Switzerland, Germany and the USA. The product portfolio comprises of more than 20,000 precision tools, which adhere to the highest quality standards. A trend-setter in precision, performance, innovation and service, BIG KAISER is proud of its in-house production of digital displays and direct electronic measuring systems for digital precision boring heads to ensure absolute setting accuracy and eliminate operating errors. BIG KAISER is part of the family owned BIG Daishowa Group with 900 employees worldwide.



BIG KAISER — USA



BIG KAISER — SWITZERLAND



BIG DAISHOWA — JAPAN



BIG KAISER — GERMANY

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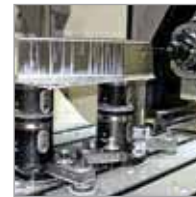
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## BIG-PLUS TOOLING SYSTEM

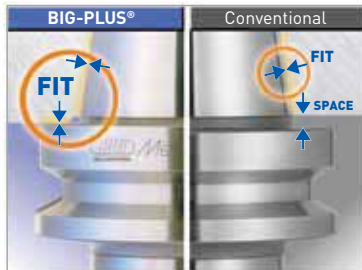
### Simultaneous Taper & Flange Fit

BIG-PLUS surpasses all other spindle concepts while offering interchangeability with existing machines and tool holders.

- Improved surface finish & dimensional accuracy
- Extended tool life
- Prevention of fretting corrosion caused by heavy cutting
- Elimination of Z-axial movement at high speeds



The BIG-PLUS Spindle System is based on the most current available standards in ASME B5.50, JIS B6339 and DIN 69871. BIG-PLUS surpasses all other spindle concepts while offering interchangeability with existing machines and tool holders.



### BIG-PLUS Spindle System Machine Builders

ACCUWAY, ADVANCED MACHINE, ALEX-TECH, AMS, ANCA, AONO GIKEN, ARES, ASA TECH, AWEA, BERG SPANNTECHNIK, BOST, BROTHER, CERI, CHEVALIER, CHUO-SEIKI, CITIZEN, COLGAR, D.S. TECHNOLOGIE, DAH LIH, DAIYA SEIKI, DAITO, DIXI, DMC, DMG MORI SEIKI AD, DMG MORI SEIKI CO., LTD., DOOSAN, DYNOMAX, EGURO, ENSHU, FADAL, FAMOT, FANUC, FEMCO, FIRST, FIRST, FISCHER, FOREST-LINE, FPT, FRANZ KESSLER, FUJI SEIKI, GIDDINGS & LEWIS, GMN, GTI, HARDINGE, HARTFORD, HISION, HNK, HOMMA, HORKOS, HOWA, HST, HURCO, HWACHEON, IBAG, IBARMIA INNOVATEK, IKEGAI, INOUE KOSOKU KIKAI, JOBS, JOHNFORD, JTEKT, JUNGWOO M.S., JYOTI, KARATS, KASHIFUJI, KASWIN, KENTURN, KIRA, KITAMURA, KIWA, KMT, KOMATSU NTC, KONDIA, KOYO, KPTEC, KURAKI, LAZZATI, MAG, MAGNIX, MAKINO, MAKINO SEIKI, MANDELLI, MATSUURA, MAZAK, MECTRON, MILLTRONICS, MITSUBISHI, MITSUBOSHI KOGYO, MITSUI SEIKI, MOTOKUBO, MTE, N.S.S. NACHI, NAKAMURA, NEO, NICOLAS CORREA, NIIGATA, NIPPON BEARING, NISHIJIMAX, NISSIN-MFG, NOMURA, NORTHLAND TOOL, NSK, NUMEN, O-M, OBATAKE, OHTORI, OKK, OKUMA, OMLAT, OMY, PAMA, PIETRO CARNAGHI, PMC, QUASER, REIDEN, ROKU ROKU, ROYAL, RS TEC, SAJO, SEMPUCO, SETCO, SHAN RONG, SHODA, SHW, SKG, SKODA, SMEC, SNK, SODICK, SORALLUCE, SPINDER, SPINTEC, SPINTRUE, SPS, STARRAGHECKERT, STUDER, SUFENG, SUGINO, SUNWOO, SUPERIOR SPINDLE SERVICE, TAJMAC-ZPS, TAKAMAZ KIKAI KOUGYOU, TAKISAWA, TANABE, THETA, TONGTAI, TOS KURIM, TOS VARNSDORF, TOSHIBA, TOYO SEIKI, TSUDAKOMA, TSUGAMI, UGINT, UTSUNOMIYA, VICTOR TAICHUNG, VTEC, YU CHENG, WALDRICH COBURG, WELE, WIA, YAMASAKI GIKEN, YAMASHINA SEIKI, YASDA, YASUNAGA, YCM, YU HUNG, ZAYER

[As of June 2017]

## BIG CAPTO TOOLING SYSTEM, ISO 26623-1

Polygonal tapered dual contact system (1:20 taper) where the face and taper of a machine spindle and tool holder are in contact. This modular tooling system strengthens the performance of milling and turning operations for MTCs.

\* The trademark Capto is licensed from Sandvik Coromant



### Wide Variety

A wide variety of rotary tool holders such as the high precision Mega Chuck series are available, as well as a modular turning tool system for MTCs.

### Excellent Repeatability

High repeatability is achieved due to the perfect fit of the polygon taper to drive spindle rotation.

### Excellent Runout Accuracy

The combination of a self-centering 1:20 taper and the long taper edge ensures stable runout accuracy.



## HSK TOOLING SYSTEM

Dual contact system featuring a 1:10 taper in accordance to ISO & DIN standards. Since HSK is a hollow taper shank, the material plays a critical role for optimum performance. We use carefully selected high grade alloy steels, and all critical features are finished after heat treatment.

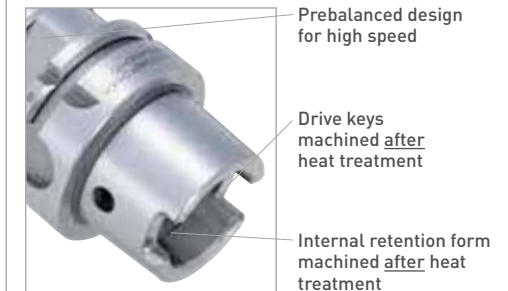


### A Variety of HSK Types and Sizes

Form A: 32/40/50/63/80/100/125

Form E: 25/32/40/50/63

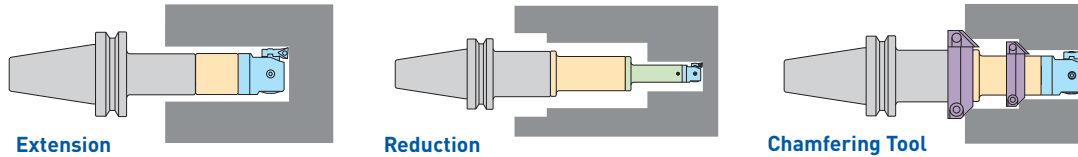
Form F: 63/80



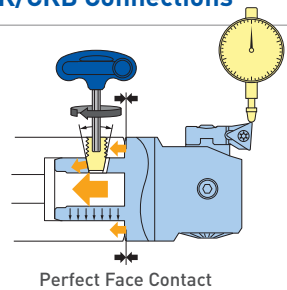
Through high precision modular technology, a wide range of selections are available for rough and finish boring — from micro to large diameter. The modular system also includes tooling solutions for O.D. turning, drilling, milling, tapping and grooving.

## Standard Components for Custom Applications

The modular system allows you to assemble standard items to optimize performance for various requirements.



## CK/CKB Connections



### CK Connection

Consists of a cylindrical male pilot and female receptacle. The connection is made by means of a radial locking screw with a 15 degree taper.

### CKB Connection

Derived from the CK connection without loss of all technical and dimensional features or interchangeability and ease of maintenance. The CKB connection is equipped with a floating drive pin which engages on both sides into respective pockets in the mating part.

AVAILABLE IN  
CV40/45/50, BCV40/50, BT30/40/50, BBT30/40/50,  
HSK-A25/32/40/50/63/80/100/125, HSK-E25/32/40/50/63, HSK-F63/80M & C5/6/8



## CKN Connection



AVAILABLE IN  
CV40/50, BCV40/50, BT40/50,  
BBT40/50 & HSK-A63/100

The CKN connection is almost 100% compatible with CKB and is based on a 3-screw connection with double connector steel couplings and aluminium tubes as extensions, allowing the highest torque transmission. By tightening the 3 screws, the slotted male connection expands and gives additional rigidity to the tool connection.



## Boring Tool App **NEW!**



Enhances user interface while assembling and running our boring tools. The app will help operators determine optimal cutting parameters and provide operating manual information.

- Cutting data calculator
- Calculator for adjusting tools
- Quick access to operating manuals



### Settings

Set default language and units of measurement



### Tool Overview

Get application-specific cutting data



### Application Data

Receive insert recommendation and operating parameters



### Tool Tips

Reminders pop-up to aid with tool assembly optimization

## MEGA CHUCK SERIES – Best Suited for High Speed Applications

Mega Chucks are a multi-functional high speed holder series designed to optimize high speed and precise cutting with drills and end mills. All components, including body, collet, nut and clamping wrench are specifically designed for balanced high speeds.

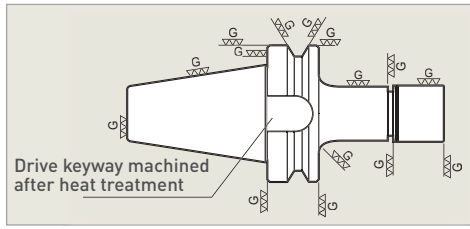
ALL MEGA CHUCKS AVAILABLE IN  
BCV, BBT, HSK &  
BIG CAPTO



### Precision Ground and Balanced for High Speed Machining

Mega Chucks are micro mirror finished on all surfaces to ensure perfect concentricity for high speed machining. The Mega Chucks are then balanced with a high precision dynamic balancing machine.

- Micro mirror ground finish on all surfaces
- Balanced with a high precision dynamic balancing machine



### MEGA MICRO CHUCK



Clamping Range:  $\phi.018$ "-.317"

For micro drill & end mill applications. Super slim design with  $\phi.394$ " nut prevents interference with workpieces and jigs. "Taper Type" features a super slim tapered design for added rigidity during micro end milling.

#### MEGA MICRO SEALED & JET COOLANT NUT

For Mega Micro 6S & 8S. Unique design increases sealing performance with higher coolant pressure to create a perfect seal.



#### World's Smallest Clamping Intervals

##### MEGA MICRO COLLET

Wide coverage for small shanks is available with clamping intervals of  $\phi.004$ " ( $\phi.1$ mm).



Compact in size, but excellent clamping force for small precision applications.

### Wrenches



The Mega Wrench has a uniquely designed one-way clutch system with a roller bearing and ratchet function that is capable of safely and evenly applying force on the entire nut periphery.

AVAILABLE IN  
DIGITAL

### MEGA NEW BABY CHUCK

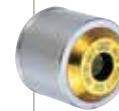


Clamping Range:  $\phi.010$ "-1.000"

For drills, reamers, taps and finishing end mills.

World's highest precision & multi-purpose collet chuck system is well accepted and recognized by the market for its high speed application and its guaranteed 1 micron runout.

**NEW SIZE!** New size added to allow up to  $\phi 1$ " cutting tools!



MAX COOLANT PRESSURE  
1,000  
PSI

#### MEGA PERFECT SEAL

Unique design increases sealing performance with higher coolant pressure. Remove the PS Ring to supply coolant to the cutting tool periphery.

#### High Precision Collet



##### NEW BABY COLLET

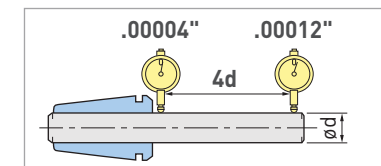
Clamping Range:  $\phi.010$ "-1.000" &  $\phi.5$ mm-25.4mm

The world's highest precision collet was developed based on BIG's long experience and know-how, and each is inspected twice to guarantee the maximum runout tolerance permitted.



All BIG Collets are  
AA Grade and inspected  
twice for accuracy

#### Guaranteed Max Runout





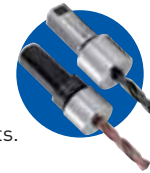
## MEGA ER GRIP



Clamping Range:  $\phi.075$ " -  $.787$ "

For drills, reamers, taps and finishing end mills.

The total precision of our collet, nut and body when used together shatter the common standard of ER collet chucks. Incredibly low runout will provide dramatic payback by improving machining capability & reducing production costs.



MAX  
33,000  
RPM

Also available in  
N/C Lathe type.  
See Pg. 15



### MEGA ER PERFECT SEAL

For two-way coolant supply.

### THROUGH TOOLS



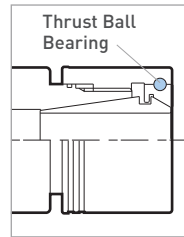
### JET THROUGH



### MEGA ER NUT

A notch-free nut prevents vibration and noise. Steel balls in the thrust bearing are retained by a mechanism inside the nut designed for high speed operation.

Mega Nut is the recommended nut to achieve high accuracy and clamping force.



### MEGA ER SOLID NUT

Slot-free outer diameter increases rigidity of the nut.



### ER NUT

Basic nut with surface treatment for friction reduction.

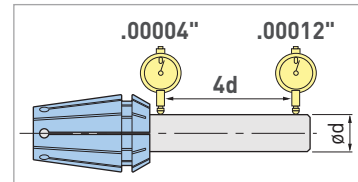
## Best Runout Accuracy in The World



### ERC COLLET

Each ERC collet is inspected twice ( $0^\circ$  and  $180^\circ$ ) at four times diameter to guarantee the runout accuracy.

## Guaranteed Max Runout



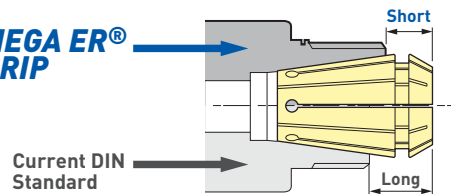
**1 $\mu$ m**  
AT COLLET NOSE  
3 $\mu$ m at end of test bar

All BIG Collets are AA Grade and inspected twice for accuracy

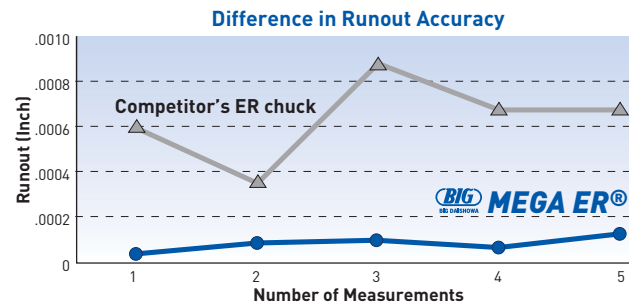
## High Rigidity Body

By increasing the contact length of the internal taper of chuck bodies, the undesired overhang of the collet is reduced. This modification of the current DIN standard improves 3 of the most important requirements a collet chuck: rigidity, runout accuracy & clamping force.

### MEGA ER<sup>®</sup> GRIP



High precision runout accuracy less than  $.00012$ " ( $3\mu$ m) at  $4xD$  improves the workpiece surface finish and extends tool life. Repeatability has less than  $.00006$ " ( $1.5\mu$ m) of variance!



## MEGA E CHUCK



Clamping Range:  $\phi.125$ " -  $.500$ "

Exclusively for high speed finish end milling.

The advanced tapered body technology enhances rigidity to prevent chatter and deflection with precision.

MAX  
35,000  
RPM



Slit-through coolant with standard Mega E Nut

### MEGA E PERFECT SEAL

Optional sealed collet nut for coolant through tools. Remove the internal PS Ring to supply coolant to the cutting tool periphery.

However, by using the standard Mega E nut, coolant can still be directed to the cutting tool through slits in the collet, as seen above.

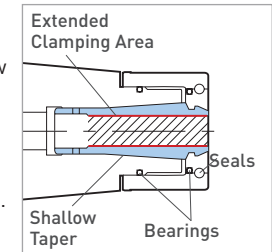
## Powerful Clamping Force



### MEGA E COLLET

Exact sizes, shallow taper and extended clamping length enhances the

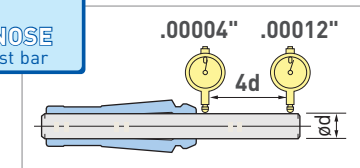
clamping and self-centering forces for stable performance.



**1 $\mu$ m**  
AT COLLET NOSE  
3 $\mu$ m at end of test bar

All BIG Collets are AA Grade and inspected twice for accuracy

## Guaranteed Max Runout



## NEW HI-POWER MILLING CHUCK



Clamping Range:  $\phi$ .500"-1.500" (12-32mm)

For heavy duty end milling.

The thick wall body and high gripping force ensures high rigidity and stable performance. Fine and narrow slits in the body make the clamping part deform properly to ensure even and strong gripping force and stable runout. Now available in BIG-PLUS as standard.

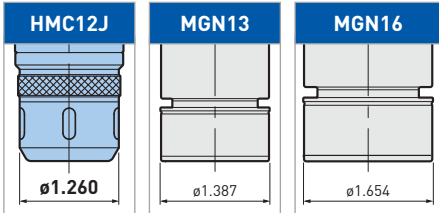
See PJC collets on Pg. 9 for reduction and coolant delivery options.



**NEW!**

**HMCJ Type**

Clamping Range:  
Beginning at  
 $\phi$ .500" ( $\phi$ 12mm)



**JET THROUGH**

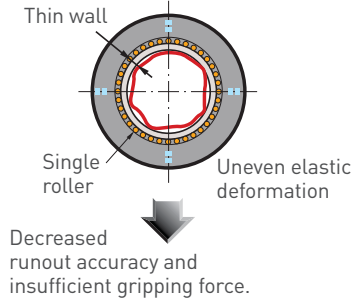


Also available in  
 $\phi$ 12mm straight  
shank type.

**Powerful Clamping for Heavy Cutting**

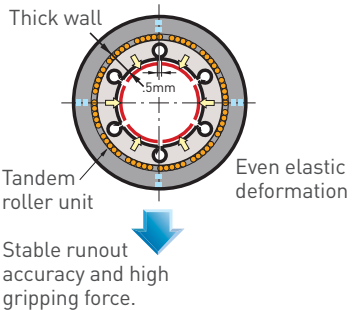


**CONVENTIONAL MILLING CHUCKS**



**No escape route for oil film which causes processing failure. Remaining oil film reduces gripping power and may cause slip.**

**BIG HMC**



**The narrow slit maintains an escape route for any oil film.**

## MEGA DOUBLE POWER CHUCK



Clamping Range:  
 $\phi$ .625"-1.500" (16-42mm)

For heavy duty end milling.

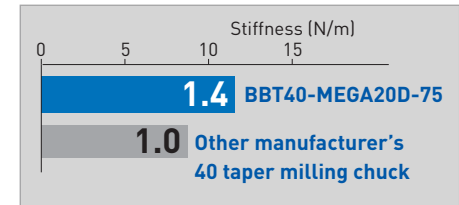
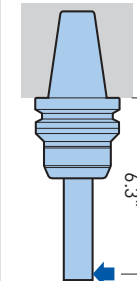
Complete contact of nut and body achieves high rigidity, close to that of an integral tool to ensure heavy cutting without chatter. Notch free nut makes high speeds possible.



**MAX**  
**30,000**  
**RPM**

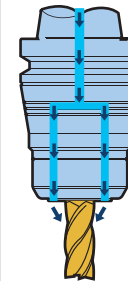
**Powerful Clamping Force**

Deflection test to compare with other manufacturer's milling chuck proves that the Mega Double Power Chuck has achieved 1.4 times higher rigidity.



**Secure Coolant Supply**

Designed to delivered the most effective coolant supply. Collets available for reduction and more directed coolant delivery. See Pg. 9.



**Coolant is reliably directed to cutting tool periphery from chuck nose.**

**JET THROUGH**





## MEGA PERFECT GRIP MILLING CHUCKS



Clamping Range:  $\phi$ .750"-1.250"

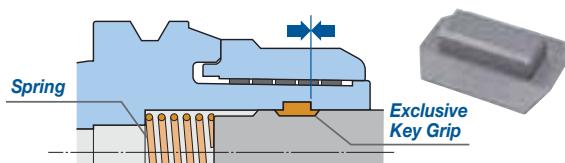
For heavy duty end milling.

High-performance no-slip, anti-pullout milling chuck for use with standard Weldon flat milling cutters. Mega Perfect Grip combines the cutting performance of heavy-duty milling chucks with security against pullout of solid side lock tool holders. High pressure and high volume, jet-through coolant is a standard feature providing an ideal solution for milling Heat Resistant Super Alloys (HRSA) such as titanium or inconel.



### Non-Pullout Mechanism

The Key Grip engages in the groove of the chuck body to ensure no tool pullout and also maintains contact with the stopper pin to prevent slip under high torque.



## HYDRAULIC CHUCKS



Now available in  $\phi$ 4mm-20mm straight shank type.

### High Precision Runout Accuracy Less Than .00012" (3 $\mu$ m)

High precision runout accuracy less than .00012" (3 $\mu$ m) at 4xD improves the workpiece surface finish and extends tool life.

Repeatability is less than .00006" (1.5 $\mu$ m).

### HYDRAULIC CHUCK

Clamping Range:  $\phi$ .250"-1.250" ( $\phi$ 6mm-32mm)

The ideal tool holder for machining processes that require high accuracy and excellent surface finish, such as with drills, reamers, ball mills, end mills, diamond reamers and grinding tools.

### HDC JET-THROUGH COOLANT



Available in HSK-A63.

Clamping Range:  $\phi$ 4mm-32mm

Three coolant holes precisely directed to the cutting edges to increase tool life and improve surface finishes.

### HYDRAULIC CHUCK SUPER SLIM



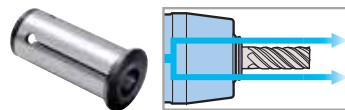
MAX  
45,000  
RPM

Available in HSK-E25/32/40 for  $\phi$ 3mm shanks.

Clamping Range:  $\phi$ .125"-.472" ( $\phi$ 3mm-12mm)

Slim design eliminates interference; ideal for 5-axis machining.

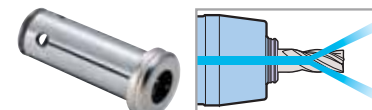
## Reduction Collets



### PJC

Clamping Range:  $\phi$ .250"-1.000"  
 $\phi$ 3mm-25mm

For coolant to cutting tool periphery in Hydraulic and Milling Chucks.



### PSC

Clamping Range:  $\phi$ .250"-1.000"  
 $\phi$ 3mm-25mm

For coolant-through tools in Hydraulic Chucks.



### Straight Collet

Clamping Range:  $\phi$ .250"-1.000"  
 $\phi$ 6mm-32mm

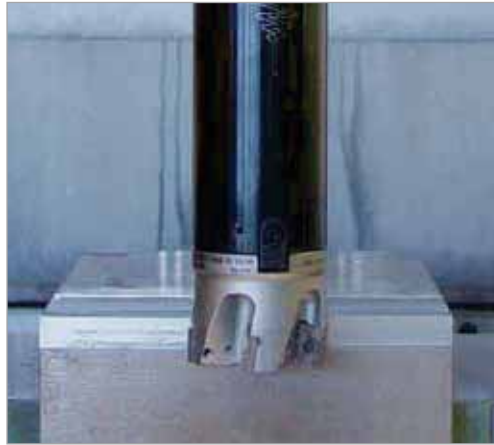
Reduction sleeve for smaller diameter cutters in Milling Chucks.

## SMART DAMPER MILLING



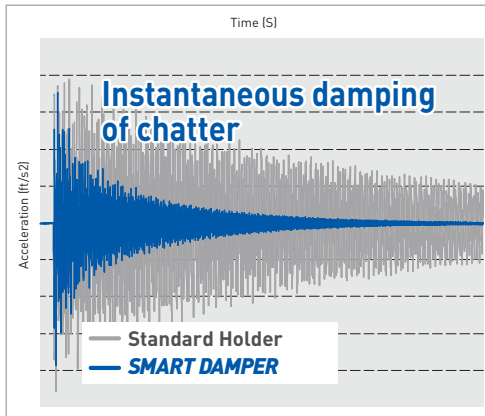
Pilot:  $\varnothing 22\text{mm}$  &  $\varnothing 27\text{mm}$   
 $\varnothing .750''$  &  $\varnothing 1.000''$

AVAILABLE IN  
BCV, BBT  
& HSK



### Integrated Damping System for Milling

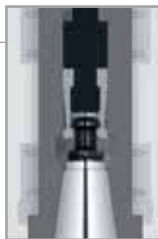
During extended reach face milling, a unique dynamic damping system eliminates vibration for higher productivity. Quiet, vibration-free milling with Smart Damper long projection tools provides better surface finishes and higher metal removal rates.



RATIO  
**6:1** L/D

**Tool Holders with Built-in Damping System**  
Face Mills:  $\varnothing 2.500''$  -  $3.000''$

## Pull Stud Bolts



Tensile strength improved by utilizing tool steel (H13) or die steel. Tool holders may be pulled out of the machine spindle at high speeds due to strong centrifugal forces. High tensile strength retention knobs are recommended to protect against this.

## MILLING HOLDERS



### End Mill Holder

Clamping Range:  $\varnothing .250''$  -  $2.000''$   
Gage Length:  $3.000''$  -  $8.000''$   
Tapers: BCV40/50, BBT30/40, HSK-A40/50/63/125 & C6/8



### Shell Mill Holder

Pilot Range:  $\varnothing .750''$  -  $2.500''$   
Gage Length:  $2.000''$  -  $12.000''$   
Tapers: BCV40/50, BBT30/40, HSK-A40/50/63/100/125 & C4/5/6/8



Available in High Rigidity Type ASME B5.50-2015



### Shrink Fit Holder

Clamping Range:  $\varnothing .250''$  -  $1.250''$   
Gage Length:  $3.500''$  -  $6.500''$   
Tapers: BCV40/50, BBT40, C5/6/8 HSK-A50/63/100, HSK-E32 & C6

\*Also available with metric clamping sizes.



### Blank Bar

Body Size:  $\varnothing 2.500''$  -  $6.000''$   
Gage Length:  $6.000''$  -  $8.000''$   
Tapers: BCV40/50

## MODULAR HOLDERS



### BIG Capto

BCV/BBT  $\rightarrow$  C5/6/8

\* The trademark Capto is licensed from Sandvik Coromant



### BIG KAISER CKB & CKN

For entire modular system overview, see Pg. 5.



### BIG Komet ABS

BCV/BBT  $\rightarrow$  ABS40-100 C5/6/8  $\rightarrow$  ABS50-80

\* The trademark ABS is licensed from Komet

## MEGA SYNCHRO TAPPING HOLDER



AVAILABLE IN  
BCV, BBT, HSK,  
BIG CAPTO & CKB

### MGT 6-MGT 20

TAPPING RANGE: No.2-AU<sup>3</sup>/<sub>4</sub> (ANSI) & M2-M20 (JIS/DIN/ISO)

47 bodies and 258 tap holders available to improve thread quality and tool life during rigid tapping. Reduces thrust loads caused by synchronization errors up to 90%. Super slim nuts and varied length tap holders provide optimal access to confined areas which eliminates the need for special length taps.



### Coolant Through Center Capability for All Models

Coolant is supplied both through the tool and to the tool periphery simultaneously.



Also available in  
straight shank &  
N/C Lathe type.  
See Pg. 15

### MGT 3

TAPPING RANGE: No.0-6 (ANSI) & M1-M3 (JIS/DIN/ISO)



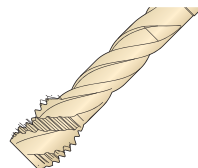
### MGT 36

TAPPING RANGE: AU<sup>7</sup>/<sub>8</sub>-AU<sup>13</sup>/<sub>8</sub> (ANSI) & M20-36 (JIS/DIN/ISO)

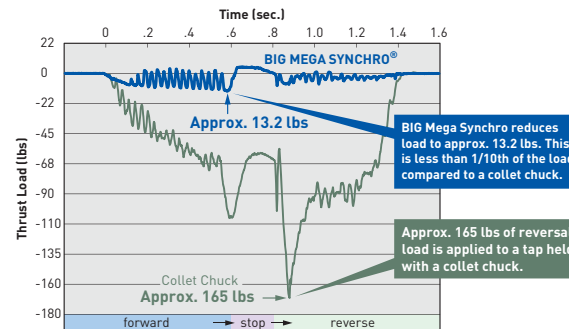
### Spiral Tap

AU:1/4-20, N=1,000 RPM

Spiral grooves on spiral tap cause loading in the reverse direction, similar to an end mill.



\* Measured by Kistler Dynamometer



### THROUGH TOOLS



Coolant is Supplied Through Both the Tool and Slits of the Tap Holder

### JET THROUGH



Coolant is Supplied Through Slits of the Tap Holder



### Secure Drive

The body and tap holder are fixed with a drive key in the rotation direction as well as the square of the tap.





AVAILABLE IN  
BCV, BBT & HSK



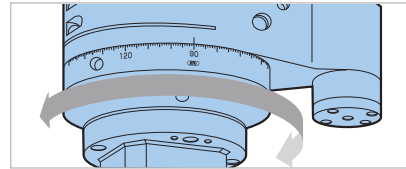
### Innovative Sealing Method

The advanced non-contact sealing method prevents coolant and particle contamination better than any other sealing method.



### Cutter Head Adjustable 360°

All cutter heads are adjustable a full 360°. Reference faces are provided on both sides for easy setting of cutter direction.



Wide range of compact and rigid heads, from fixed 90° milling chuck types to universal angle types, suitable for all types of machining applications to eliminate multiple setups. Custom made Angle Heads available.

### A Large Range Available for Your Required Applications



#### AG90 SERIES NBS Type

High precision collet for  $\phi 0.010'' - .787''$ .



#### AG90 SERIES Build-Up Type

Multiple quick change adapters available for drilling, milling and tapping.

\*Coolant-through spindle version also available.



#### AG90 SERIES Small Bore Type

For operations inside of bores as small as  $\phi 1.181''$ .



#### AG90 SERIES NBS Extra Long Type

Gage lengths up to 24" available,  $\phi 0.010'' - .787''$ .



#### AGU30 Type

Spindle adjustable from 0° to 30°,  $\phi 0.098'' - .787''$ .



#### AG90 SERIES Compact Type

For light duty precision drilling,  $\phi 0.098'' - .512''$ .



#### AG90 SERIES HMC Type

For milling cutters  $\phi .250'' - 1.250''$ .



#### AGU SERIES Universal Type

Adjustable from 0° to 90° in 1° increments,  $\phi 0.098'' - .787''$ .



#### AG45 Series NBS Type

High precision collet for  $\phi 0.010'' - .787''$ .

## HI-JET HOLDER



MAX COOLANT PRESSURE  
**284**  
PSI

MAX  
**10,000**  
RPM



Coolant inducer designed with the bearings in a separate housing from the coolant. This eliminates coolant leakage into the bearings and wear damage to the body, extending the life of the tool.

### Four Types of HI-JET HOLDERS



New Baby Chuck



TG Collet Chuck



Side Lock



CKB Shank

## AIR POWER SPINDLE

AVAILABLE IN  
BCV, BBT & HSK

RBX5

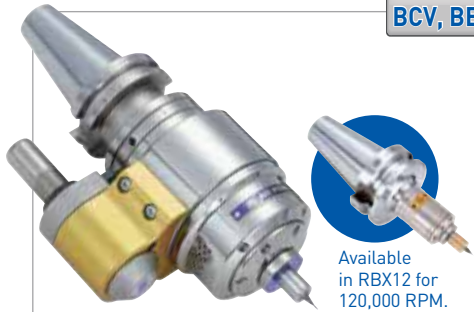
MAX  
50,000  
RPM

RBX7

MAX  
80,000  
RPM

RBX12

MAX  
120,000  
RPM



Available  
in RBX12 for  
120,000 RPM.

### No Need To Rotate Machine Spindle

Clamping Range:  $\phi$ .018"-.159"

Super precise air-driven spindle technology enables high-speed micro machining on existing machining centers.

### RBX Type

For small diameter drills and end mills. Air supplied via stop block or through the machine spindle. All models are variable speed.

## World's Smallest Clamping Intervals



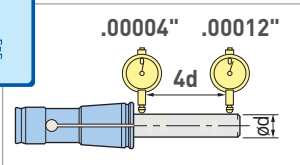
### MEGA MICRO COLLET

- Wide coverage for small shanks is available with clamping intervals of  $\phi$ .004" ( $\phi$ .1mm)
- Compact in size; excellent clamping force for small precision applications



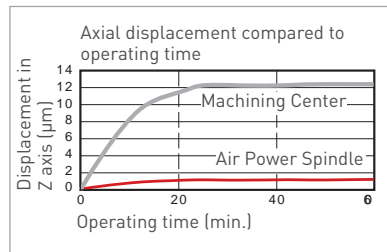
All BIG Collets are AA Grade and inspected twice for accuracy

### Guaranteed Max Runout

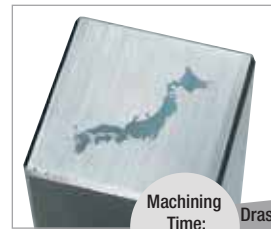


### Minimal Thermal Displacement

The air turbine drive prevents thermal expansion of the spindle, which is essential for die sinking and high accuracy micro machining.



## Drastic Time Reduction and Superior Surface Finish



Machining Time:  
450 min.

With machining center  
20,000 RPM

Drastic time reduction!  
Improved surface finish!

Machining Time:  
120 min.

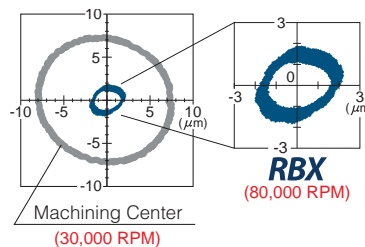
With Air Power Spindle  
80,000 RPM

Map of Japan milled with R.004" ball nose end mill  
Material: Prehardened Steel HRC40

### Dynamic Runout Accuracy

High runout accuracy with the Mega Micro Collet, even at high speeds of 80,000 RPM.

Plotted position of a test bar at the max. spindle speed



## HIGH SPINDLE



Clamping Range:  $\phi$ .059"-.630"

Multiplies existing machining center spindle speed 4, 5 or 6 times.

Higher speed machining increases productivity with greater accuracy and superior finishes.



MAX  
20,000  
RPM



### High Precision Collet NEW BABY COLLET

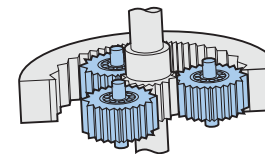
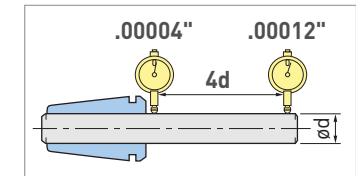
Clamping Range:  $\phi$ .010"-.787" &  $\phi$ .5mm-20mm

The world's highest precision collet was developed based on BIG's long experience and know-how. Each collet is inspected twice to guarantee the maximum runout tolerance permitted.



All BIG Collets are AA Grade and inspected twice for accuracy

### Guaranteed Max Runout



### Reinforced Gear Driving System

The planetary gears achieve smooth operation with minimal heat generation and high torque transmission.

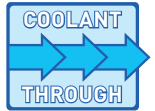
### Multi-Directional Coolant Supply

Universal coolant nozzles are capable of being adjusted to suit the length of the cutting tool. Thus, the maximum coolant delivery to the cutting edge is ensured.



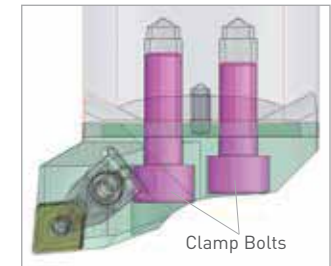
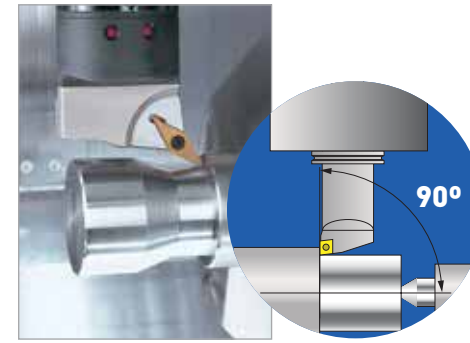
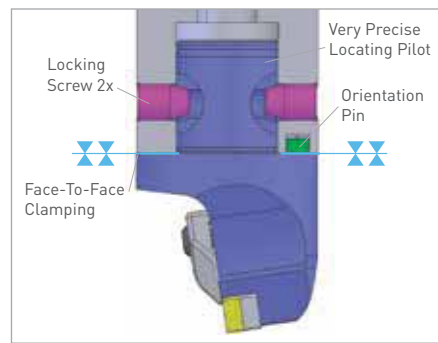
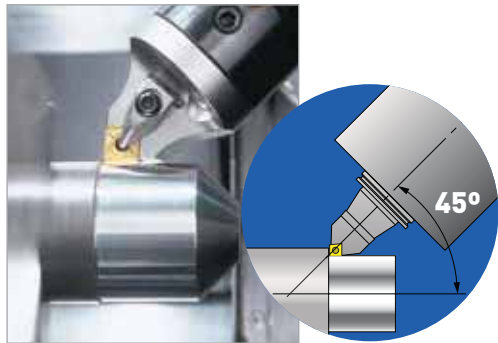
## Revolutionary

The first modular tooling system for turning applications on MTCs (Mill-Turn Centers). A modular tooling system offers better efficiency, material selection, heat treatment and optimal tool lengths. Serious damage to tool holders caused by broken inserts can now be easily and economically replaced.



### DUAL CONTACT 45° TILT STYLE TYPE S FOR MTC

### DUAL CONTACT 90° RIGHT ANGLE STYLE TYPE F FOR MTC

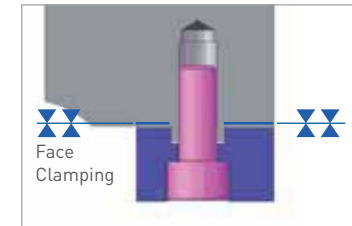


#### Secure and Rigid Clamping

Type S Cartridges are located in the basic holder by means of a precision ground pilot and secured by two opposing radial screws with a 15° taper. With a slight offset to locating sockets, high face-to-face clamping force of the two components is generated. To maintain precise locations and orientation, an additional locating pin is included for positive transfer of cutting torque.

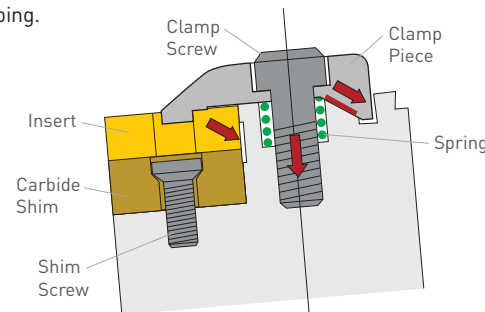
#### Simple and Positive Clamping

Type F uses two clamping bolts that press the cartridge onto the basic holder. The torque is transmitted by an interlocking drive slot.



#### Safe and Easy Clamping of Inserts

The double-clamping system simultaneously pushes an insert downward and draws it into the contact faces to achieve secure and rigid clamping.



BCV40/50  
BBT40/50      C5/C6/C8      HSK-T63/100



BCV40/50  
BBT40/50      C5/C6/C8      HSK-T63/100

#### 17 Cartridges for 45° Tilt Style Type S



Right hand, left hand and neutral cartridges available, as well as integral models. Also part of the MTC turning tool program are square tool holders and boring bar holders.

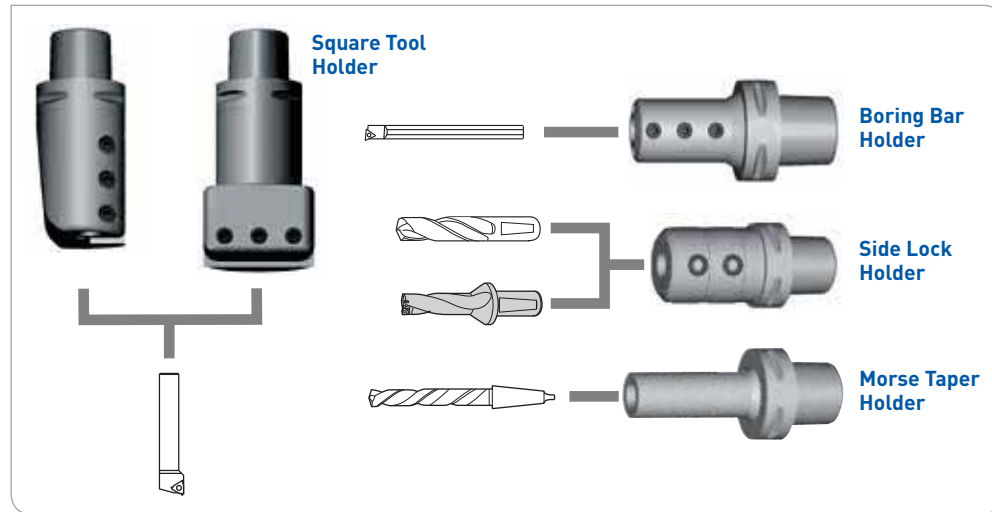
#### 36 Cartridges for 90° Right Angle Style Type F



Right hand and left hand cartridges available. Also part of the MTC turning tool program are square tool holders and boring bar holders.



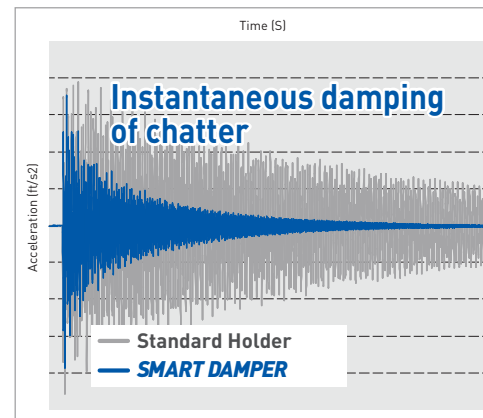
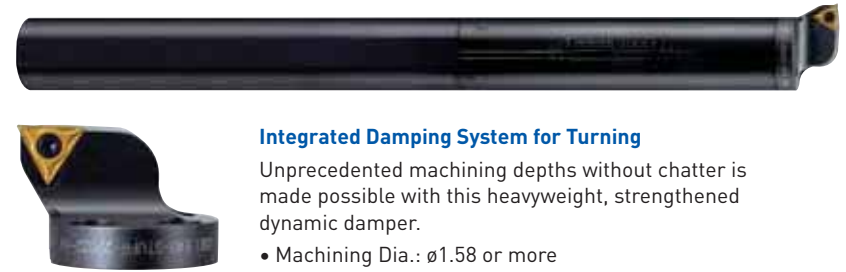
## BASIC ARBORS FOR MTC



## N/C LATHE



## SMART DAMPER TURNING



**Tool Holders with Built-in Damping System**

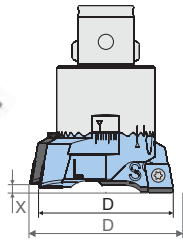
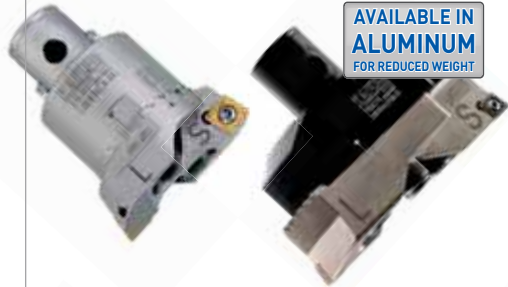


## SW 319

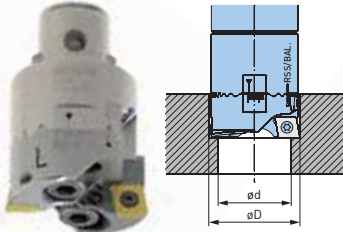
### CKB1-CKB7 & CKN6-CKN7

Range:  $\phi$ .787" - 8.000"

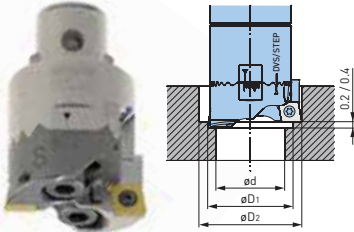
Designed with ultimate performance and versatility in mind. Balanced or stepped cutting by simply switching mounting locations of the insert holders which feature varied heights.



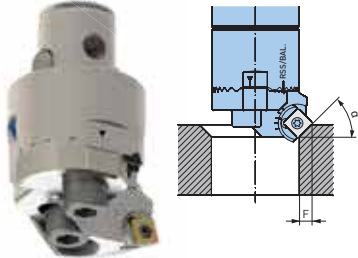
Rough Boring Balance



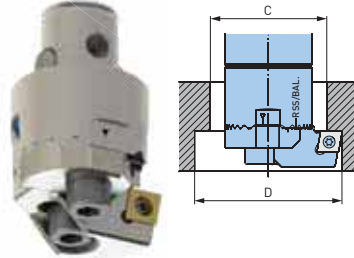
Rough Boring Step



Chamfering



Back Boring



### CKB4-CKB6

Range:  $\phi$ 1.614" - 4.331"

The well established dynamic damper eliminates chatter in heavy work loads.



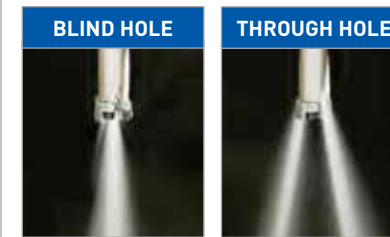
## MW



### MW 'Mini' Twin Rough Boring Tool

Range:  $\phi$ .630" - .827" ( $\phi$ 16-21mm)

Adjustable twin cutter boring tool on a  $\phi$ 20mm shank — ideal solution for rough and semi-finish boring of small die cast holes.



### Center-Through

In blind hole situations, center-through coolant aids in chip evacuation. The coolant hole can be closed by the stop screw when required.



## TWN 315



### CKB1-CKB7

Range:  $\phi$ .787" - 6.000"

Insert holders and head feature triple-contact precision and ground mating surfaces, greatly increasing the rigidity. For stable boring even in high feed, heavy duty operations. No variable insert height.

SERIES 112,  $\varnothing$ .016"-6.000"



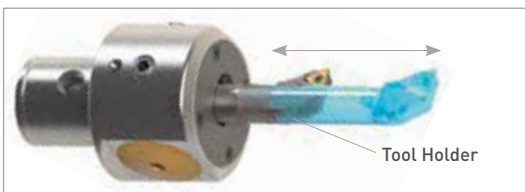
### EWB — Auto-Balance Type

Maximize cutting speeds and feeds due to an integrated counterweight, which allows for precision balancing of the tool assembly. Significant improvements to bore quality, surface finish and tool life.



### Variable Tool Length Adjustment of the Tool Holder

The EWN features variable length adjustment of the tool holders which ensures the shortest and, therefore, most rigid tool assembly.



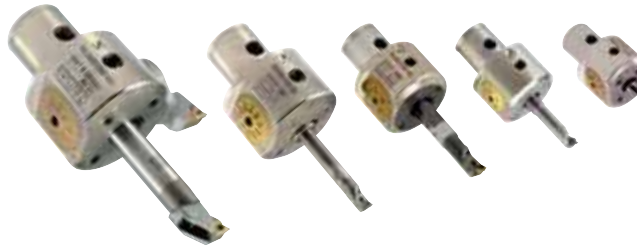
### High-Precision Finish Boring Heads

Designed for precision production boring on machining centers, jig mills, boring mills, transfer machines and high-speed milling machines. Their fully enclosed, compact and rugged design allows reliable operation, even under extreme cutting conditions.

### EWN

Setting Accuracy of  $.0001''/\varnothing$

Centric boring bars in modular and integral execution for accurate, high-performance boring operations.



INTEGRAL SHANKS AVAILABLE IN CV40, BT40, HSK-A63 & C6

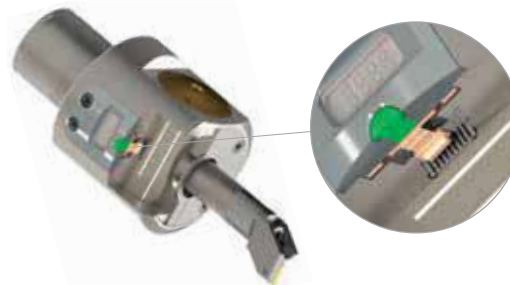
### EWE

Digital display and direct electronic measuring system on the tool carrier, feature absolute setting accuracy. The boring heads are designed for ultra precise boring operations.



### Electronic Components—Made by BIG KAISER

All electronic components are entirely developed and manufactured in the electronic lab of BIG KAISER in Switzerland. Before shipping, every digital boring head is calibrated and tested separately.



### Body Protection Grade: IP 69K

Ensures complete protection against corrosion. The built-in electronic is safe from dust and high-pressure spray water.



Single Button For The Functions "On" And "Reset"

### Digital Display With A Resolution of $.00005''/\varnothing$

Automatic off function which always stores the last displayed value and integrated power management for optimized battery life.



## SERIES 310



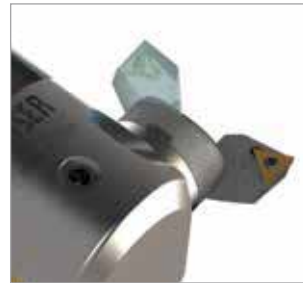
### EWN Setting Accuracy of .0001"/ø

The EWN 310 series of precision boring heads covers a range of ø.590"-8.000" with only seven precision boring heads. Due to the optimized balance over the whole adjustment range, cutting speeds up to 4,000 SFM are possible.

Precision boring heads EWN and EWE series 310 feature equal boring ranges and body dimensions and allow the use of the same accessories.

### Versatile Tool

Insert holders for many types of inserts (TP/TC, CC and different angles), as well as accessories for face grooving are available.



### Back Boring

Insert holder can be mounted in opposite direction for an easy changeover to back boring.



### EWB Auto-Balance Type

Maximize cutting speeds and feeds due to an integrated counterweight, which allows for precision balancing of the tool assembly. Significant improvements to bore quality, surface finish and tool life. Cutting speeds up to 6,600 SFM are possible.



### EWB-UP

Sets new standards for accuracy and balance.



NEW!



### EWE

The EWE 310 series of boring heads with digital technology includes the advantages of the EWN analog boring heads. Thanks to the large display with a resolution of .00005"/ø bores with extremely tight tolerances can be machined.



### Direct Measuring Dia. Allows Corrections In Both Directions

A direct electronic measuring system on the tool carrier and a resolution of .00005"/ø enable diameter corrections with unmatched accuracy.

## SERIES 318, $\phi$ 7.87"-118.00"



High-speed, lightweight aluminum system for rough and finish boring, as well as O.D. turning and grooving applications. Pinned-to-fit mounting ensures absolute safe operation in high speeds — up to 6,600 SFM. Features coolant supply through all components direct to the cutting edge.



UP TO  
**6,600**  
SFM

Larger Machines Up to  $\phi$ 118"

AVAILABLE IN  
DIGITAL



Large Diameter Face Grooving Up To  $\phi$ 80"

## TURNING ADAPTERS



### CKB ER Collet Adapters

ER25 in CKB1 & ER32 in CKB1/2

Enable the use of all BIG KAISER precision boring heads of the corresponding sizes on ER collet chucks in machining or turning centers.

## HEAVY METAL SOLID BAR



### CKB

CKB1, CKB2, CKB3 and CKB4.

Tool combinations with heavy metal boring bars give higher rigidity and damping of vibration over conventional steel shank tools when machining long bores over 5:1

## O.D. TURNING SYSTEMS

Allows for concentric location of turning attachment resulting in balance of the assembly.



### Series 112 Small Diameter System

Short, lightweight turning adapter for use with EWN 2-50XL heads. Through-tool coolant to insert holder.

- Balanced tool assembly for entire work range of  $\phi$ .039"-1.260" ( $\phi$ 1mm-32mm)



### Series 310/315 Intermediate Diameter System

CKB5 and CKB6 modular adapters accepting CKB3-CKB5 EWN and TWN heads.

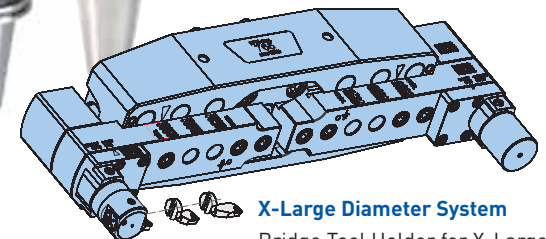
- Simple and cost effective execution
- Through-tool coolant supply
- Modular construction, extendable, for long work pieces



### SERIES 318 Large Diameter System

Turning adapter for use with EWN/TWN x CKB5 heads.

- Turning adapter with CK5 connection
- Can be mounted on any extension slide



### X-Large Diameter System

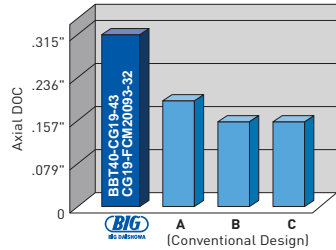
Bridge Tool Holder for X-Large Diameter Pin Turning.

## FULLCUT MILL—FCM Type

### FCM Slot Milling • Shoulder Milling

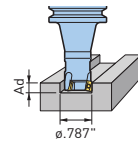
Cutter Dia.:  $\phi$ .500"-2.000"

Highly efficient end mills with low cutting resistance. Exclusive design for radial feed combines edge sharpness with rigidity such that it has no equal.



#### Cutting Conditions

Machine: BBT40 (BIG-PLUS)  
Work Material: Carbon Steel  
Cutter Speed: 495 SFM  
Feed Rate: .004 IPT



BIG-PLUS CAT & BT Integral Shank



HSK Integral Shank



BIG Capto Integral Shank



Cylindrical Shank

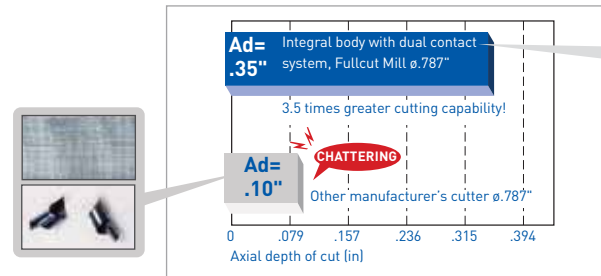


Contact Grip



Face Mill  
Cutter Dia.:  $\phi$ 50/63/80/100mm

### Excellent Cutting Performance Even with #40 Taper Machine Tools



Excellent surface finish even under difficult cutting conditions.



## SPEED FINISHER

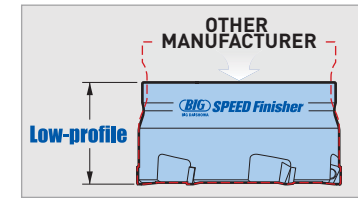
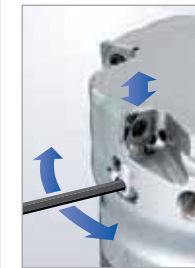


### High-Speed Cutter for Aluminum and Cast Iron

Each cutting edge height is adjustable to within 1 $\mu$ m of each other.

### Quick Adjustment of Cutting Edge Height

After clamping the insert, the lifting screw lifts up the insert directly by revolving the lifting nut from the side. Simple construction aids in easy adjustment and the fine pitch thread of the lift screw ensures precise adjustment.



### Lightweight and High Rigidity

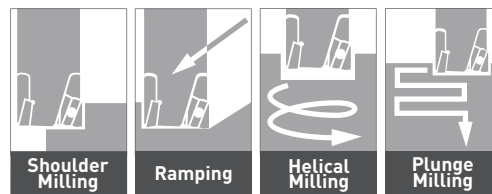
The low-profile cutter body enhances rigidity, minimizes vibration and distortion, which leads to the minimized height difference of the machined surface. Lighter weight resulting from reduced mass aids performance on small machine tools, such as BT30 spindles.

## FULLCUT MILL—FCR Type

### FCR Ramping • Helical Milling • Plunge Milling Slot Milling • Shoulder Milling

Cutter Dia.:  $\phi$ .625"-1.250"

Innovative rigid insert enables powerful and stable ramping.



BIG-PLUS CAT & BT Integral Shank



HSK Integral Shank



BIG Capto Integral Shank



Cylindrical Shank



Contact Grip



## SURFACE MILL



### 45° Approach Face Mill Cutter

Cutter Dia.:  $\phi$ 80mm

For superior surface finishes. This mill was developed based on the C-Cutter Mini chamfering tool platform, and therefore utilizes the same inserts.

### Cutting Conditions

Work Material: 1050 Steel  
Cutting Speed: 656 SFM  
Feed Rate: .008 IPT  
Axial DOC: .039"  
Radial DOC: 2.953"  
Coolant: Dry

SURFACE MILL	OTHER
Rz=1.42	Rz=9.04



## C-CUTTER MINI



**C-Cutter Mini Universal Type**  
Adjustment from 5° to 85° with a hex key.

High-performance chamfer cutter increases the feed rate up to 400% by using four inserts and reducing the cutting diameter to the lowest limit. Different models available for 30°/45°/60° front chamfering, 45° front/back chamfering and even bolt/tap hole chamfering for M8-M20 tap sizes.

**WORLD'S SMALLEST**  
□.197"

World's smallest .197" square insert with four cutting edges.

**CHAMFERING**      **BACK CHAMFERING**      **LIGHT FACE MILLING**

## R-CUTTER

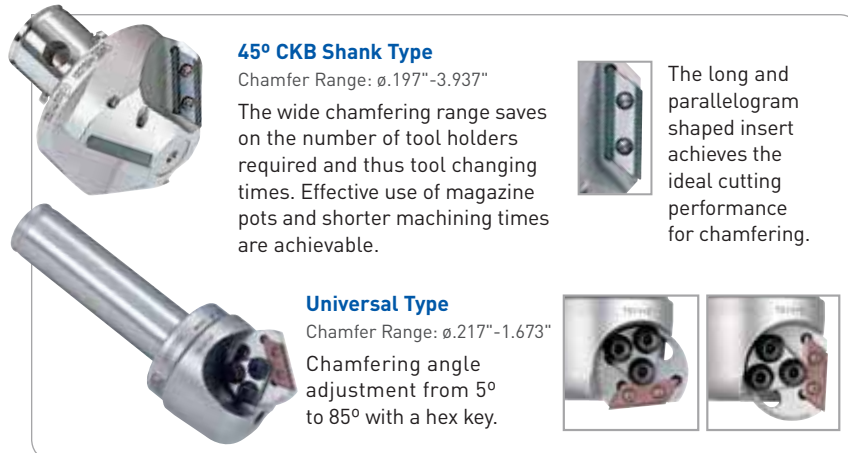


CKB3 & CKB5 Type

Ultra-high feed chamfer mill for front and back radius chamfering of .02"-.16". Single-insert models or four-insert models for higher feed rates.

**Four Indexes**  
Unique insert geometry with excellent sharpness. High rake angle reduces cutting resistance and minimizes the generation of burrs.

## C-CUTTER



**45° CKB Shank Type**  
Chamfer Range:  $\phi$ .197"-3.937"

The wide chamfering range saves on the number of tool holders required and thus tool changing times. Effective use of magazine pots and shorter machining times are achievable.

The long and parallelogram shaped insert achieves the ideal cutting performance for chamfering.

**Universal Type**  
Chamfer Range:  $\phi$ .217"-1.673"

Chamfering angle adjustment from 5° to 85° with a hex key.

## C-CUTTER MICRO



**3 FLUTES**

**NEW!**

**EFFECTIVE TWISTED EDGES**

CrN Coating

Cutter Diameter:  $\phi$ .114"-.311"

Ultra-fine diameter allows both front and back chamfering even on workpieces with complex shapes.

## BF-CUTTER



Back spot facing for cap bolt holes  $\phi$ .433"-1.890".

- Cap bolt size M6-M16
- Indexable inserts save cost
- Coolant through

## CENTER BOY



### Centering and Chamfering Tool

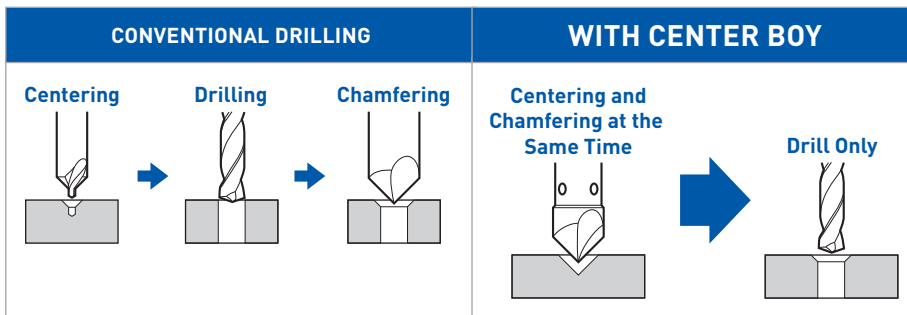
Accurate positioning in drilling and chamfering can be performed simultaneously.



### Highly Accurate Replaceable Insert

- Sharp cutting with optimum cutting edge
- No more regrinding
- Minimum interference with a slim, extended shank
- 90° and 120°

### Ease of Operation Shortens Cycle Time



## C-CENTERING CUTTER



A multifunction cutter capable of both spot drilling and chamfering.



**NEW!**

Three cutting edges enable high-speed feeding

## C-CUTTER BOY



### Chamfering Tool

Hole Diameter:  $\phi$ .20" - 1.00"

The carbide guide prevents chatter on bench drilling machines. Economical three-corner insert.

**NEW!**



Carbide Guide

### CHAMFERING TOOL FOR DRILL PRESS



### Inserts Do Not Need to be Reground

Inserts do not require regrinding. Moreover, the carbide coating insert with three usable corners offers lower cost and extended tool life.

### Carbide Guide Allows Stable Cutting

Carbide guide allows stable cutting and prevents triangular chamfering. It does not damage the body, thereby extending the life.

## GROOVING TOOLS



CKB1-CKB2  
 $\phi$ .866" &  $\phi$ 1.970"



$\phi$ 16mm/27mm Pilot  
 $\phi$ 1.970" &  $\phi$ 8.270"



10mm Shank  
 $\phi$ .465"



**SW 319**  
CKB5-CKB7  
 $\phi$ 2.087" -  $\phi$ 7.992"



CKB4-CKB6  
 $\phi$ 16mm/27mm Pilot

## MICRO DRILLS



### ø≤3mm

- 15+ different standard article numbers
- 1,700 different standard micro drills available
- Minimum diameter ø.03mm
- Standard diametrical tolerances as low as 0/- .004mm
- Utilization of modern coatings designed specifically for micro tools
- Ultra-fine flute surface finish



### Micro Tricut Drill Reamer

- Ideal tool for drill reaming steels, short chipping stainless steels, titanium and cast iron
- ø3mm reinforced shank for all diameters
- Three flute geometry allows high feed rates
- Excellent self-centering capabilities
- Fine flute surface finish for optimal chip flow
- Three distinct lands maximize guidance and produce hole tolerances ranging from H7-H9



### Deep Hole Drill

- 20xd, 40xd, 60xd & 80xd for ø.20/.40-1.50mm
- Solid carbide
- ø3mm shank for all diameters
- External coolant
- Innovative AlCrN based coating intended specifically for micro tools

## HIGH PERFORMANCE DRILLS



- ø1.00-20.00mm
- Lengths 3-30xd
- Utilization of modern coatings suitable for most common and exotic materials
- Internal coolant for most sizes
- Most geometries can be reground and recoated to decrease cost per hole



### Phoenix TC2

- 3xd, 6xd, 9xd, 12xd, 16xd, 20xd and 30xd standard flute lengths
- Two margin modified Phoenix point geometry for optimal chip formation
- Polished flutes and brushed cutting edges
- Internal coolant for all sizes and lengths
- AlCrTiN coated for ultimate wear resistance



### Quadro Plus

- 6xd & 12xd standard flute lengths
- Internal coolant for all sizes and lengths
- 0° helix angle
- Four facet, split-point geometry
- Self-centering
- Two cutting edges, four guiding edges
- Highest performing drill in short chipping aluminum and cast iron
- Straight flute design permits highest speeds and feeds by improving chip evacuation
- Best achievable size control of H7-H9

## MICRO END MILLS



- ø.10-3.00mm
- ø3mm or ø4mm reinforced shank for all dia.
- Useful in ISO P, M, K, S, N and O materials (common & exotic)
- Standard coated end mills
- Standard ball nose end mills
- Standard 2-flute and 3-flute geometries
- Specials available upon request

## ENGRAVING MILLS

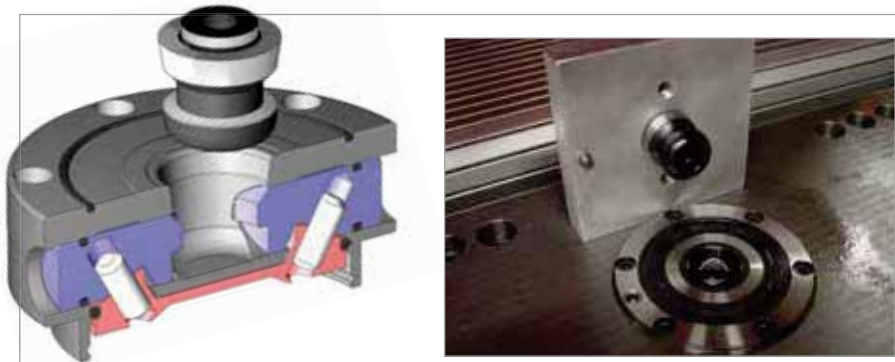


### Flat/Radius Tip

- ø.02-.15mm
- Flat and radius tip
- 30°, 40°, 50°, 60° & 90° standard point angles
- Single flute design
- 0° helix



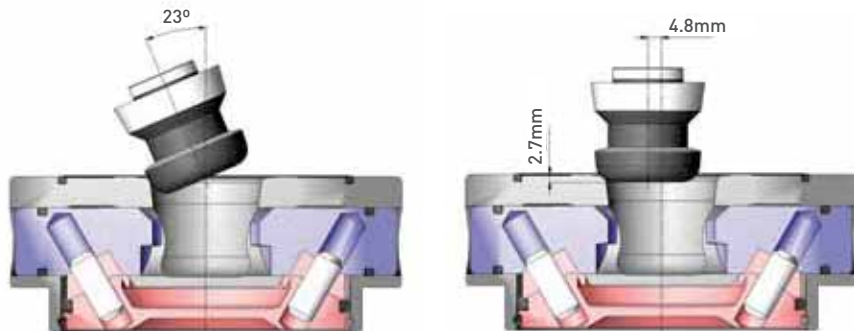
## How It Works



UNILOCK utilizes spring pressure to drive multiple clamping pins against a tapered clamping knob. Air pressure is used to compress the springs to back the clamping pins off of the clamping knob. This clamping process is achieved by bleeding the air pressure out of the chuck. To facilitate palletization, the clamping knob is attached to a base plate, fixture or directly to a workpiece. The result is quick and repeatable clamping. A hand locking version (no air required) is also available.

- Clamping mechanism: Heavy-duty die springs
- Chuck opening: Air pressure to compress springs
- Clamping stability: Low profile with matching taper wedges
- Positional accuracy: Adaptable to workpiece conformation
- Unlocking air pressure: 75 PSI
- Turbo assist clamping

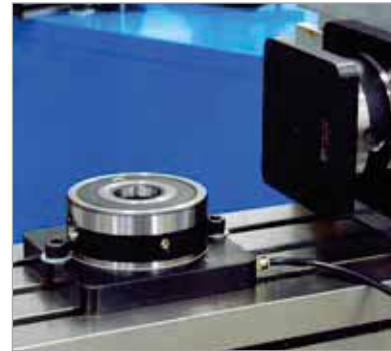
## Self-Guiding Design



UNILOCK is designed to accept warped workpieces and fixtures. The shallow clamping pocket allows a clamping knob to enter the chuck at an angle of up to 23 degrees.

The radius on the smaller bottom diameter of the clamping knob addresses out-of-position loading conditions. The knob can be used to help guide the clamping knobs to the center of the chuck.

## Easy to Get Started



Starter Kits help save time between part changes. Chucks are pre-mounted to a base plate which functions as a reference edge. With a single part number get all of the required components up and running immediately.



## Working Solutions in Minutes



Table chucks are mounted to base plates and are ready to be clamped to your workstation. These chucks are supported by pre-assembled pallets. Pneumatic kits are available so a working solution can be installed in minutes.



## Build Your Own Custom Solutions



UNILOCK components can be purchased individually for incorporation into your own custom designs.



## ROUND CHUCKS

The round UNILOCK chucks come in diameters from  $\varnothing 90\text{mm}$  to  $\varnothing 196\text{mm}$  ( $\varnothing 3.543''$  to  $\varnothing 7.716''$ ) and body styles to fit a variety of applications. Chucks can be supplied with single notches, multiple notches or bushing holes for timing. Most body forms allow the use of turbo assisted clamping for higher retention forces.



## RECTANGULAR CHUCKS

UNILOCK rectangular chucks are well suited for mono-chuck applications. Available in several sizes, and when matched to the footprint of the workpiece, they provide maximum access from the remaining five sides.

The two narrowest chucks in the UNILOCK family and can be placed very close to the edge of a fixture or workpiece.



## PRE-ASSEMBLED CHUCKS

These chucks are sold mounted to a base plate. The base plate provides easy mounting of the chucks to the machine table as well as a pre-plumbed air supply. All bases provide either notches or a ground edge to square the chucks to the machine table.



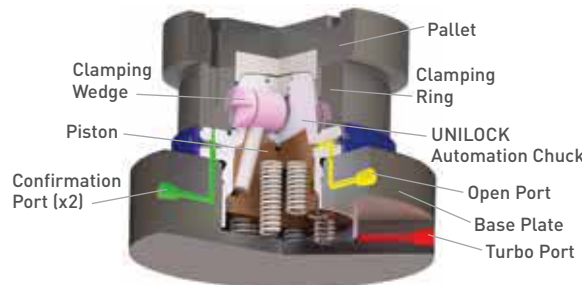
## MINERAL CAST SYSTEMS



ROC® mineral cast solutions reduce burden and transport weights and have low thermal conductivity and excellent resistance to corrosion. The finished composite structure is produced without heat to preserve the integrity of the precision machined surfaces and clamping components.

## AUTOMATION CHUCKS

UNILOCK automation chucks are expanding the role of air pressure beyond that of holding the chuck open during changeovers or assisting the springs in the clamping process. Automation chucks can confirm the presence of a clamping ring/fixture via air pressure monitoring. Air is also used to help clean the locating surfaces.



## STABILIZER SYSTEM



Provides lateral support for tall parts during machining, welding or assembly processes. Allowing the transfer of loads down to the table or base.

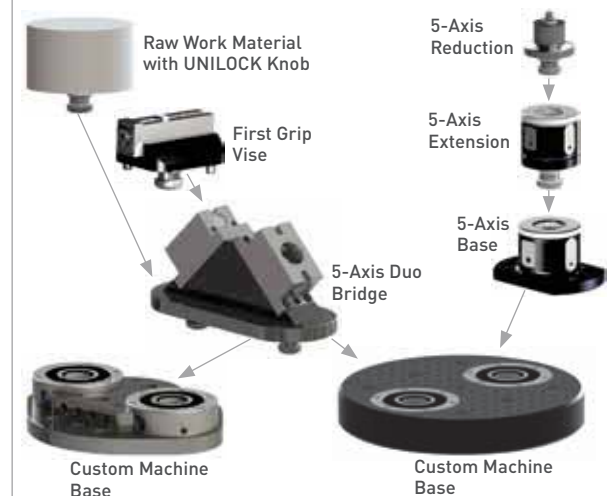
- Fine adjustment allows for adjusting the position of parts
- Magnetic base option
- Five fixed length extensions
- Two adjustable length bases

## MULTI-AXIS SYSTEMS



Multi-axis workholding products are designed to provide flexibility and functionality. These multi-axis workholding solutions locate and stabilize the workpieces without obstructing access to the top and sides of the part. They

also allow a clamped workpiece to be flipped into new orientations for subsequent machining operations without unclamping it from the workholding.



## UNIFLEX SYSTEM



**NEW!**

If the part or fixture is warped or needs to be set at an angle, the clamping ball can pivot in any direction.

The Uniflex Clamping Base allows for height adjustment and can be combined with the all UNILOCK chucks and 5-Axis components.

All SPERONI measuring instruments feature aged pearlitic cast iron construction for thermal stability, glass scales and guideways for the highest precision, and all software is developed and controlled by SPERONI for unmatched reliability and innovation.

## STP ESSENTIA

**NEW!**



The all new entry-level ESSENTIA tool presetting and measuring system. Its robust structure and user-friendly software interface allow customers to benefit from a basic, essential unit with a tangible, long-lasting performance.

## STP MAGIS

**AVAILABLE WITH CNC OPTION**



The STP MAGIS has revolutionized the value of entry-level tool measurement with unmatched ergonomic solutions. The innovative SIMPLE VISION control delivers all of the needed measuring features and functions.

## STP FUTURA



The SPERONI FUTURA line is the result of more than 50 years of experience in the design and production of tool measuring and presetting systems. The modular design allows for an array of configurations, including manual or CNC measurements, max tool lengths/diameters from 16"-48", many spindle taper types and multiple control options.



**reddot award 2014 winner**



New high-precision 50 taper vertical rotating integral spindle fully manufactured by SPERONI provides the highest precision in its class (T.I.R. max 4µ at 300mm). Taper angle tolerance AT1.

## STP FUTURA AUTOSHRINK



A fully automated CNC preset, measure and shrink fit system. Top-of-the-line in functionality, total accuracy and safety — the FUTURA AUTOSHRINK is also the only hands-off fully automatic solution on the market.



The fully Integrated and hands-off automatic positioning coil for heating and cooling of the tool holders.

## SPERONI CONTROL SOFTWARE

Our design, manufacturing and development experience is coupled with some of the most prestigious components on the world market in order to deliver unmatched reliability.



### SIMPLE VISION

Any level of machine operator can use the software to set up new tools.

- Reproducibility of measurements
- Dynamic cross hair
- Basic function for measuring length and diameter
- Numeric and graphical interface verifying runout



### EDGE

Can be used by CNC machine operators, as well as by skilled tool room personnel.

- Unlimited tool database
- Tool association to specific tool jobs
- Password management for multiple users
- Allows for integration of outside interfaces



### EDGE PRO

Fully featured software used for simple measurements to the most advanced measuring tasks.

- Track stock amounts and tool assembly
- Advanced scanning of tool profile
- Allows for guided measuring programs



### INTELLIGO

Effectively manage your warehouse and streamline your manufacturing processes while organizing all facets of your tooling resources.

- Warehouse management and location management
- Tool assembly/disassembly management
- Post processor management



## BASE MASTER

High precision offset & detection tool for cutting tools, workpieces & machine tools using conductive materials.



### BASE MASTER

LED lamp illuminates at exactly 2" from the reference surface, and features .00004" repeatability.



### BASE MASTER RED\*

Body and measuring sensor are independent components.



### BASE MASTER MINI\*

For small diameter tools and tight locations.



### BASE MASTER GOLD\*

For non-conductive tools and workpieces.



### BASE MASTER MICRO\*

For small diameter tools.



**NEW!**

ULTRA-THIN TYPE  
Ultra-compact design considering tool interference prevention.

\*The BM Gold, Micro, Mini and Red are for all materials, including non-conductive cutting tools and workpieces. All the same features as the original BM, including a magnetic base that mounts the unit horizontally, vertically or at any angle.

## TOOL MASTER

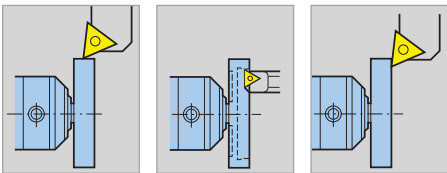


Defines work offsets and tool lengths for all materials, including non-conductive. Adjustable height and an easy-to-read large dial. Also includes an approach LED lamp and sound.

## LATHE MASTER



Quick setup of the cutting edge position without trial cutting. Capable of measuring external, internal and facing tools.



## ACCU CENTER



High-precision edge finder suitable for all materials. Repeatability within 3µm.

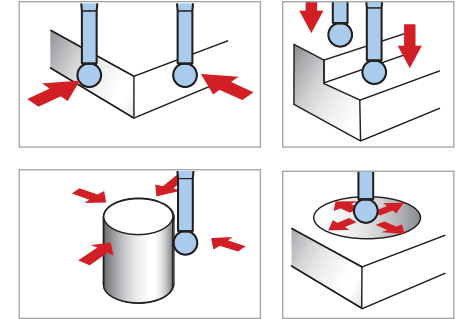


## 3D MASTER RED



### 3-Axis Measurement Tool (X, Y & Z)

- Compact design
- Applicable for all work materials
- Carbide tip stylus



## CENTERING TOOL



### Static Dial Gage

- Centering the tool holder is simplified since the dial gage position is static and in front
- Easy setting with a fine adjustment mechanism (adjustment amount: .079")
- Magnetic base allows for flexible mounting positions

## POINT MASTER



Precision 3-D touch sensor to quickly find edges and measurement locations.



## DIAL INDICATOR STANDS

Articulated stands for the demanding user, offering the highest positioning precision and exact measurements in the  $\mu\text{m}$  range.

- High clamping force thanks to a strong internal cam structure
- Extremely flexible with 360 degrees freedom of positioning controlled by one progressive clamping star grip
- Ideal design for use in measurement, inspection (quality control) and machining
- Ultra strong earth magnet holds stand firmly in place
- Each stand is equipped standard with (1) magnet, (2) extension arms, (1) dgh dove-tail adapter and (1) cylindrical gage adapter ( $\varnothing.375"$ )



Accu Mini Mini



Type SU/F



Type MU/F

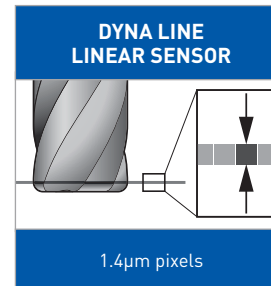
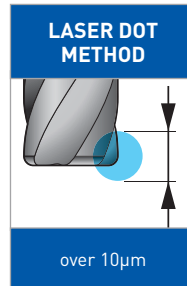


## DYNA LINE



### Precision Measuring of Tool Diameter and Runout Accuracy

- Non-contact measuring with CMOS linear image sensor
- In-machine measuring
- Portable (uses 6 C-Cell batteries)



### The Innovative Linear Image Measuring Method

CMOS sensors are often found in hi-tech equipment such as fax machines and banknote counters. With pixels measuring 1.4 $\mu\text{m}$ , Dyna Line uses the latest CMOS sensors for quick and precise measuring.



Provided with a protective case

### Measurement at High Rotation Speeds up to 1,300 sfm

- No potential of damage to delicate tools
- Measurement range:  $\varnothing.004"$ - $\varnothing2.000"$  ( $\varnothing.1$ -50mm)
- Indicated resolution: 1 $\mu\text{m}$
- Able to measure tools with an odd number of teeth

## DYNA TEST



AVAILABLE IN  
BCV, BBT & HSK

The cause of machine tool runout stems from wear of the spindle bearings. Regular inspection with Dyna Test helps identify potential problems and can reduce downtime and costly repairs of the machine tool spindle.

- Precision test bar for static runout accuracy
- Produced under a strict quality control process; calibration certificate available upon request as per ISO 9000 requirements



### Precision Standards of BIG DAISHOWA Test Arbors

Runout	.002mm (.00008")
Roundness	.001mm (.00004")
Cylindricity	.003mm (.00012")
Roughness	Rz: .6 $\mu\text{m}$ (.00002")
Taper Contact	AT1
Diameter Tol.	$\pm.005\text{mm}$ (.0002")

**Certified runout of  $\leq 1$  micron at test bar nose and  $\leq 3$  microns at end of test bar**

## DYNA CONTACT

A ceramic taper gage allowing inspection of machine spindle tapers at a glance.

- Made of ceramic
- Clearly shows up Prussian blue

**NEW!**



## DYNA FORCE

Periodical measurement of the spindle retention force avoids unknown reduced rigidity, which leads to vibrations, loss of machining quality and shortened tool life. A full length taper stabilizes the value of measurements.



## LEVEL MASTER



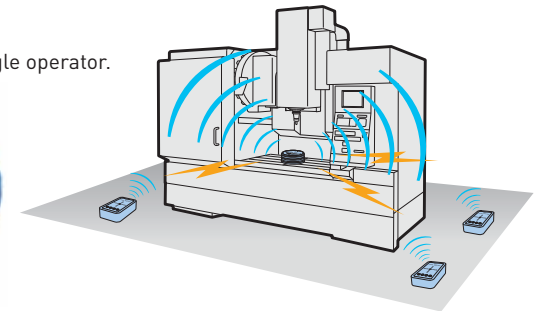
Device for the leveling of machine tool tables.

**LED & BUZZER INDICATION!**

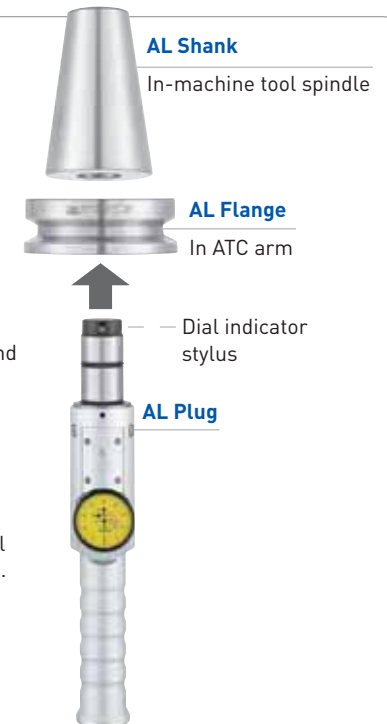
- Simultaneous two-axis detection leveler
- LED and buzzer indication when leveling is complete
- Uses optical level sensor technology
- 10 micron per meter precision (.01mm/m)

### WIRELESS TYPE

Easy and quick leveling with a single operator.



## ATC ALIGNMENT TOOL



For the maintenance of a machine tool spindle. Measure the misalignment between the ATC arm and the machine tool spindle or magazine pot center.

### How To Use

1. Load the AL Shank in the machine spindle and mount the AL Flange on the ATC arm.
2. Insert the AL Plug into the AL Flange.
3. Rotate the AL Plug and read the values of the dial indicator. This direction is the eccentric direction. Half of the gap of the values is the eccentric amount.
4. Adjust the position of the ATC arm so that the front end of the AL Plug will be inserted into the AL Flange fully.



## TOOL PRO

Unique tool holding device for the assembly and disassembly of tooling. Depressing the large gold button permits the adapter to rotate 360° and lock in 45° increments. Integral taper units and modular taper units for nearly all shank styles.

### Standard



### Vario



Quick-change system uses one permanently mounted base unit and multiple adapters for different types and sizes of tool shanks.

### Spin



### Tool Pro Stand

Safe and secure tool assembly stationed anywhere on the shop floor.



Full 360° radial tool rotation permits easy access to large diameter tools.

## KOMBI GRIP

Innovative two-way clutch and needle roller clamping system ensures secure clamping at the tool flange periphery of HSK and polygon tapers.



## ST LOCK

Ideal fixture for the set-up of cylindrical shank tool holders. Clamps  $\varnothing 20, 25$  &  $32\text{mm}$  shanks by replacing the sleeve.



## COLLET EJECTOR

Easily and quickly insert/remove small sizes of New Baby Collets from Mega Nuts and New Baby Nuts.



## TOOLING MATE

Replaceable adapters that feature drive keys to secure steep taper shanks, or a two-way clutch needle and roller clamping system for HSK and polygon taper shanks.



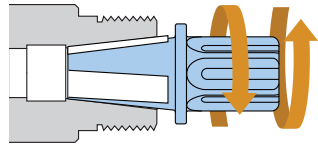
## TORQUE FIT

Tooling fixture with tightening torque indicate function.

- Torque values of all BIG KAISER collet chucks are preset
- Notification by buzzer near the correct torque
- User Mode allows setting of desired torque value

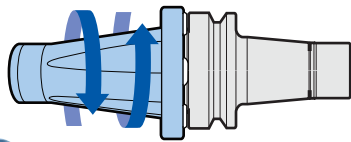


## TOOLING CLEANERS



### α TAPER CLEANER

Maintain the accuracy of high-precision collet chucks by cleaning the internal collet taper. For Mega Micro, Mega New Baby, Mega E and all ER collet chucks.



### α TOOLING CLEANER

For the cleaning of both mating surfaces of BIG-PLUS 30 and 40 taper tool holders, which require absolute cleanliness for optimum performance.



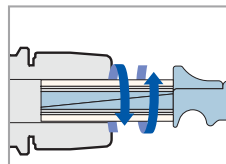
### HSK EXTERNAL TAPER CLEANER

Cleaning strips will remove even large residual particles. Sturdy construction with high oil and grease resistance.



### TK CLEANER

Perfectly cleans the clamping bore of a tool holder to maintain the high performance. Perfect for hydraulic chucks, milling chucks and shrink fit holders.

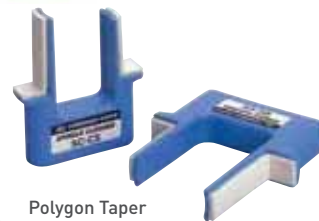
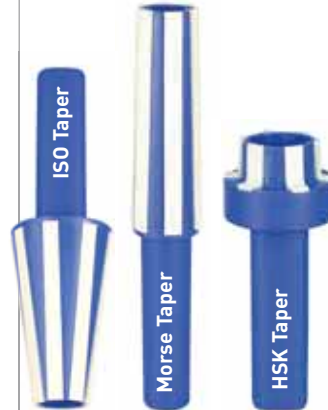


### α WIPER CLEANER

Easy cleaning of smaller cylindrical bores by simply inserting and removing before cutting tool insertion. Ideal for hydraulic chucks and shrink fit holders.

## SPINDLE CLEANERS

The unbeatable tool to ensure absolute cleanliness of tapered spindles, which maintains the precision and prolongs the life of your expensive machine tools, cutting tools and tool holders.



Polygon Taper

## T-SLOT CLEAN



Improve your work safety environment and efficiency of table cleaning. Save the time required to clean T-slots packed with chips.



T-slots packed with difficult to remove chips



T-slots protected & clear by T-Slot Clean

## CHIP & COOLANT FAN



### CHIPFAN

Fast, safe chip and coolant cleaning without stopping production

- 12,000 RPM Max
- Balanced integral design for high speed
- Made from high strength aluminum with anodized coating for long life and durability



## BIG-PLUS CLEANER



Blowing air cleans the BIG-PLUS machine spindle face of all debris.

**BIG KAISER Precision Tooling Inc.**

A Member of the BIG DAISHOWA Group

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