

BIG KAISER



BIG KAISER PRODUCT GUIDE — TOTAL TOOLING SOLUTIONS VOL. 6



WHO WE ARE

BIG KAISER is a different kind of tooling partner. Our mission is to find the best of the best and deliver it to our customers with a personal commitment to helping them install truly efficient solutions. We have exceptionally high standards for the products we represent. The result is an all-star line-up of products that deliver true and measurable performance advantages – products that are engineered to exacting standards and then manufactured with materials and craftsmanship that enable superior performance.

As a member of the BIG DAISHOWA Group (Osaka, Japan), BIG KAISER has grown into a well-recognized global tooling provider, with manufacturing facilities in North America, Europe and Asia.

The Most Accurate and Efficient Tooling Solutions – Guaranteed



BIG KAISER — USA



BIG DAISHOWA — JAPAN



BIG KAISER — SWITZERLAND



SPERONI — ITALY



INNOTOOL — AUSTRIA



SPHINX — SWITZERLAND



HIGH PRECISION MODULAR TOOLING SYSTEM

KAISER Modular System for Boring, Drilling,
O.D. Turning, Milling, Tapping & Grooving.....4-9



DUAL CONTACT TOOL HOLDERS OVERVIEW

BIG-PLUS®, BIG Capto & HSK 10



TOOL HOLDER ACCESSORIES

Collets, Nuts, Wrenches & Pull Studs..... 11



DUAL CONTACT ROTATING TOOL HOLDERS

High Speed Collet Chucks, Milling & Hydraulic Chucks,
Damping Holders, Basic Arbors, Modular Holders
& Synchro Tapping Holders 12-17



TURNING TOOLS FOR MTC'S & LATHES

Dual Contact Modular Systems Type S/F/Basic Arbors,
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PROFIT MAKER SERIES

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Air Power Spindle & High Spindle 20-21



INDEXABLE CUTTING TOOLS

Fullcut Mill FCM/FCR, Speed Finisher,
Surface Mill, C-Cutter Mini, C-Cutter, R-Cutter,
Center Boy & BF-Cutter 22-23



SOLID CARBIDE & HSS CUTTING TOOLS

Sphinx Drills & Micro Milling Tools 24-25



MEASURING INSTRUMENTS

Speroni & Diaset Tool Presetters, Compact Sensor Series,
3-Axis Measurement Tool, Centering Tool, Dyna Line,
Dial Indicator Stands, Dyna Test & Dyna Force 26-29



ZERO- POINT MODULAR WORKHOLDING

Standard Chucks, Special Application Chucks, Pre-Assembled
Table Chucks, Multi-Axis Systems, Automation Chucks,
Robot Grippers & Mineral Cast Solutions 30-33



ACCESSORIES

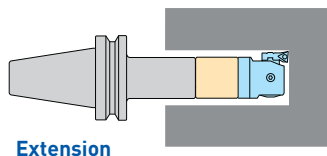
Tool Assembly/Disassembly Devices & Cleaners 34-35

BIG KAISER Modular System

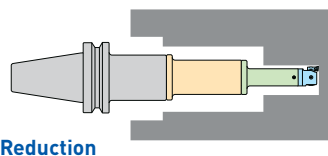
Through high precision modular technology, a wide range of selections are available for rough and finish boring — from micro to large diameter. The modular system also includes tooling solutions for O.D. turning, drilling, milling, tapping and grooving.

Standard Components for Custom Applications

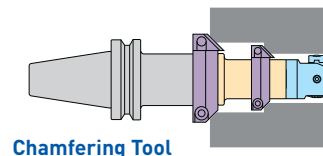
The modular system allows you to assemble standard items to optimize performance for various requirements.



Extension

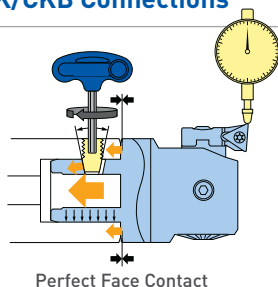


Reduction



Chamfering Tool

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

Shanks

Extensions

Reductions



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.

Shanks

Extensions

Reductions



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



Rough Boring Heads

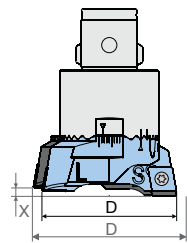


SW 319 x CKB1-CKB7 & CKN6-CKN7

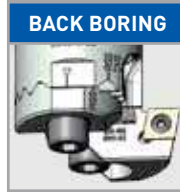
Range: $\phi.787''$ - $8.000''$

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!

AVAILABLE IN
ALUMINUM
FOR REDUCED WEIGHT



Accessory Insert Holders for Chamfering & Back Boring

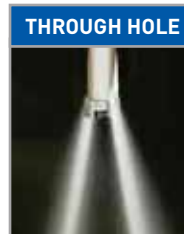
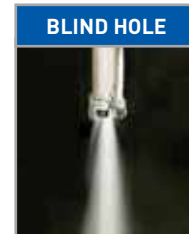


MW 'Mini' Twin Rough Boring Tool

NEW!

Range: $\phi.630''$ - $.827''$ ($\phi 16-21\text{mm}$)

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



Center-Through

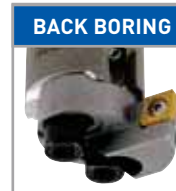
In blind hole situations, center-through coolant aids in chip evacuation. The coolant hole can be closed by the stop screw when required.



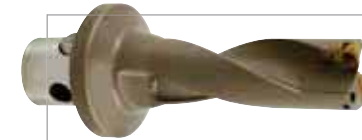
TWN 315 x CKB1-CKB7

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

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.



Indexable Insert & Spade Drills



Series 336 x CKB6-CKB7

Range: $\phi.750''$ - $2.875''$
 $\phi 31\text{mm}$ - 61mm

Large, helical flutes reinforced at the edges provide highest strength and chip space. Available in 2xD and 3xD for all sizes.



Series 337 x CKB6

Range: $\phi 16\text{mm}$ - 30mm

This straight flute design guarantees a short distance for chip evacuation, high radial and torsional rigidity, and very high cutting performance. Available in 3xD & 4xD for all sizes.



Series 340 x CKB6

Range: $\phi.531''$ - $2.500''$

High performance spade drills with production levels exceeding uncoated HSS drills by at least 50%.

Deep Hole Rough Boring Solutions



SW Roughing Head x CKB4-CKB6

NEW!

Range: $\phi 1.614''$ - $4.331''$

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



Insert Holders: Type CC
RSS*, $\phi.787''$ - $8.000''$
High feed rates



Insert Holders: Type CC
DVS*, $\phi.787''$ - $8.000''$
Double stock removal,
half the feed rate



Insert Holders: Type SP/SC
RSS*, $\phi.787''$ - $8.000''$
4 cutting edges, lead angle 6°



Hydraulic Chucks

AVAILABLE IN
BCV40/50 &
BBT40/50

CKB Heavy Metal Bars

CKB1-CKB4
Max Bore Depth: $13.750''$
Range: $\phi.787''$ - $2.598''$

Series 112 High Precision Finish Boring Heads



112 boring heads are 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.

The BIG KAISER 112 heads feature highly accurate and smooth micrometer adjustment precision. Each head is available with either inch graduations (.0002" on diameter) or metric graduations (.005mm on diameter) easily read by large dials. The wide space between graduations allows diameter corrections of .0001" and finer with the naked eye, but Vernier precision allows exacting corrections of $\pm 0.00005"$ ($\pm 0.001\text{mm}$). All tool carrier movement is strictly radial, making length corrections required on angular mounted boring tools unnecessary. The locking system prevents any diameter shift under locking action forces and maintains diameter under all cutting conditions, assuring of the highest repeatability.



EWN 04-7 x CK1

Range: $\pm 0.016"$ - $\pm 0.276"$ & $\pm 4\text{mm}$ - 7mm
1 Div= $\pm 0.0005"$ ($\pm 0.0001"$ Vernier)
 $\pm 0.01\text{mm}$ ($\pm 0.002\text{mm}$ Vernier)

Also available in $\pm 6\text{mm}$ & $\pm 10\text{mm}$ straight shank type.



AVAILABLE IN
DIGITAL

EWN 2-32 x CK5/ER32

Range: $\pm 0.079"$ - $\pm 1.260"$ & $\pm 2\text{mm}$ - 32mm
1 Div= $\pm 0.0002"$ ($\pm 0.00005"$ Vernier)
 $\pm 0.01\text{mm}$ ($\pm 0.002\text{mm}$ Vernier)



EWB 2-50 x CK6 — Auto-Balance Type

Range: $\pm 0.079"$ - $\pm 1.969"$ & $\pm 2\text{mm}$ - 50mm
1 Div= $\pm 0.0002"$ ($\pm 0.00005"$ Vernier)
 $\pm 0.005\text{mm}$ ($\pm 0.001\text{mm}$ Vernier)

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.



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

EWN 2-50XL x CK6

Range: $\pm 0.079"$ - $\pm 3.150"$ & $\pm 3.150"$ - $6.000"$
 $\pm 2\text{mm}$ - 80mm & $\pm 80\text{mm}$ - 152mm
1 Div= $\pm 0.0002"$ ($\pm 0.00005"$ Vernier)
 $\pm 0.005\text{mm}$ ($\pm 0.001\text{mm}$ Vernier)

Heads also accept outboard mounted insert holders. With 3 additional insert holders and one spacer, the boring range of $\pm 3.150"$ - $6.000"$ is reached.



Boring Kit EWN 2-50XL

Range: $\pm 0.700"$ - $6.000"$

All components and inserts included.



EWD 2-54 x CK6

Range: $\pm 0.079"$ - $\pm 2.126"$ & $\pm 2\text{mm}$ - 54mm
Digital Resolution: $\pm 0.00005"/\phi$ or $\pm 0.001\text{mm}/\phi$



EWN 04-15 x CK3

Range: $\pm 0.016"$ - $\pm 0.590"$ & $\pm 4\text{mm}$ - 15mm
1 Div= $\pm 0.0005"$ ($\pm 0.0001"$ Vernier)
 $\pm 0.01\text{mm}$ ($\pm 0.002\text{mm}$ Vernier)



EWN 04-22 x CK4/ER25

Range: $\pm 0.079"$ - $\pm 0.866"$ & $\pm 2\text{mm}$ - 22mm
1 Div= $\pm 0.0005"$ ($\pm 0.0001"$ Vernier)
 $\pm 0.01\text{mm}$ ($\pm 0.002\text{mm}$ Vernier)



EWB 2-32 x CK5 — Auto-Balance Type

Range: $\pm 0.079"$ - $\pm 1.260"$ & $\pm 2\text{mm}$ - 32mm
1 Div= $\pm 0.0002"$ ($\pm 0.00005"$ Vernier)
 $\pm 0.01\text{mm}$ ($\pm 0.002\text{mm}$ Vernier)



NEW!

EWD EVO

Range: $\pm 0.079"$ - $\pm 2.126"$ & $\pm 2\text{mm}$ - 54mm
Digital Resolution: $\pm 0.00005"/\phi$ or $\pm 0.001\text{mm}/\phi$

A digital boring head designed to be synched with the new BIG KAISER app. Users will be able to read the cutting diameter change, determine optimal cutting parameters and log historical adjustments for all tools ever synched with it.

MAX
30,000
RPM

MAX
20,000
RPM

Series 310 High Precision Finish Boring Heads



EW x M6 & M10 Threaded Micro Head

Range: ϕ .590"- ϕ .866" & ϕ 15mm-22mm
1 Div= ϕ .0005" (ϕ .0001" Vernier) &
 ϕ .01mm (ϕ .002mm Vernier)
For use with ϕ 14mm or ϕ 5/8" carbide bar.



EWN x CKB1-CKB7

Range: ϕ .787"- ϕ 8.000" & ϕ 20mm-203mm
1 Div= ϕ .0005" (ϕ .0001" Vernier) &
 ϕ .01mm (ϕ .002mm Vernier)

Largest work range of any system using three insert holders per head. Simply reversing the standard insert holder permits back boring.



EWD x CKB4-CKB7

Range: ϕ 1.614"- ϕ 8.000" & ϕ 41mm-203mm
Digital Resolution: .00005"/ ϕ or .001mm/ ϕ

Utilizes program 310 EWN insert holders for standard and back boring and features an IP 69K seal rating.



EWD EVO

NEW!

Range: ϕ 1.614"- ϕ 8.000" & ϕ 41mm-203mm
Digital Resolution: .00005"/ ϕ or .001mm/ ϕ

A digital boring head designed to be synched with the new BIG KAISER app. Users will be able to read the cutting diameter change, determine optimal cutting parameters and log historical adjustments for all tools ever synched with it.



EWB x CK3-CK6

Range: ϕ 1.260"- ϕ 4.134" & ϕ 32mm-105mm
1 Div= ϕ .0005" (ϕ .0001" Vernier) &
 ϕ .01mm (ϕ .002mm Vernier)

High speed auto-balance boring head. Bore diameter adjustment simultaneously compensates imbalance over entire work range.



EWB-AL x CK6-CK7

Range: ϕ 3.937"- ϕ 8.000" & ϕ 100mm-203mm
1 Div= ϕ .0005" (ϕ .0001" Vernier) &
 ϕ .01mm (ϕ .002mm Vernier)

High tensile aluminum with hard coating results in tool weight 1/3 that of steel and equipped with a highly accurate self-balancing mechanism.



EWBD-AL 68/100 x C6

NEW!

Range: ϕ 2.677"- ϕ 6.024" & ϕ 68mm-153mm
Digital Resolution: .00005"/ ϕ or .001mm/ ϕ

World's first all aluminum tool body with polygon taper for lightweight tool assembly. Automatic self balancing over the full diameter range assures vibration-free finish boring.



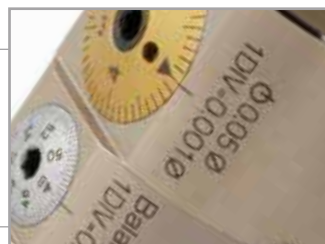
Series 309 Ultra Precision Finish Boring Heads



EWB-UP x CK2-CK6

Range: ϕ .984"- ϕ 3.937" & ϕ 25mm-100mm
1 Div= ϕ .00005" or ϕ .001mm

The revolutionary EWB-UP sets new standards for adjustment accuracy and balance quality.



Deep Hole Finish Boring Solutions



Hydraulic Chucks

AVAILABLE IN
BCV40/50 &
BBT40/50

CKB Carbide Bars

CKB1-CKB3
Max Bore Depth: ϕ 13.052"
Range: ϕ .787"- ϕ 2.362"



Smart Damper Shanks & Extensions

CK4-CK6
Range: ϕ 1.614"- ϕ 8.000"

During deep-hole finish boring, a unique dynamic damping system eliminates vibration for higher productivity. Quiet, vibration-free boring with Smart Damper long projection tools provides better surface finishes and higher metal removal rates.

The Smart Damper system new EWN/EWD finish boring heads shorten the distance from the damper and the cutting edge, so higher damping effects minimizes the chatter or vibration.

Smart Damper EWN/EWD

NEW!

CKB4-CKB6
Range: ϕ 1.614"- ϕ 5.906" (ϕ 41-150mm)



.0005" ACCURACY	.00005" ACCURACY
.0001" Vernier Precision	IP 69K Seal Rating

Finish Boring of Ductile Nodular Cast Iron

Tool Holder	Cutting Speed [SFM]				Result
	80	165	325	500	
Competitor (w/o damping system)					Outperforms competitor's holder by 6X higher productivity.
SMART DAMPER Built-in damping mechanism					Superior surface finish and better tool life due to the increased cutting speed.

X = Vibration O = Acceptable = Excellent Surface Finish

Series 318 Large Diameter Boring System



UP TO 6,600 SFM

Larger Tapers Extendable Up To $\phi 118$!"

AVAILABLE IN DIGITAL

Series 318 x CKB6 & CKN6
Range: $\phi 7.76$ "-13.39"
Tapers: ISO40, HSK-A63 & C5/6

Series 318 x CKB7 & CKN7
Range: $\phi 7.76$ "-24.49"
Tapers: ISO50, HSK-A100/125 & C8

318 XL Finish Boring Tools
Range: $\phi 24.48$ "-118.15"

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

Large diameter face grooving up to $\phi 80$!"

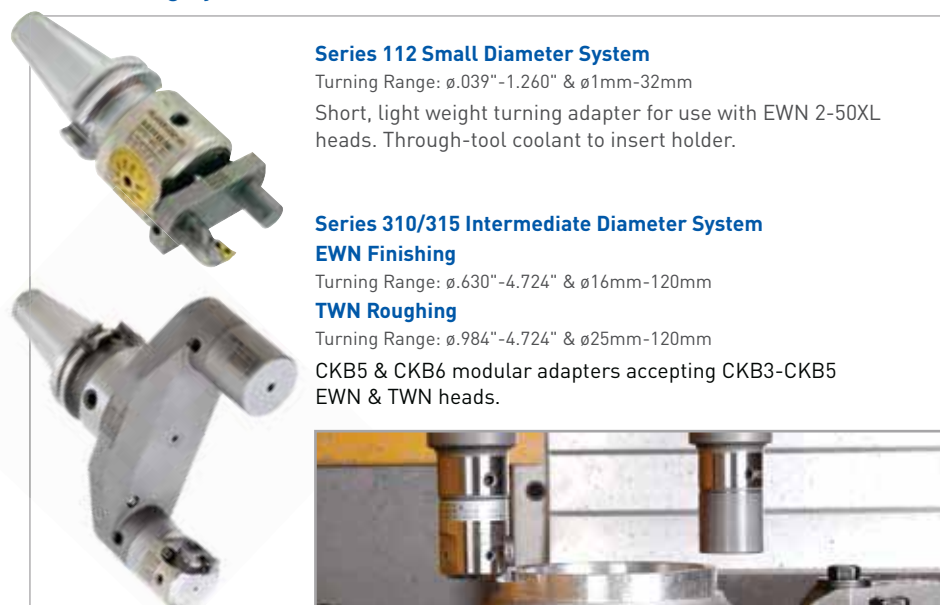
Turning Adapters



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.

WTO QuickFlex® Adapter
Finishing Range: $\phi .016$ "-2.913 ($\phi 4$ mm-74mm)
Roughing Range: $\phi .630$ "-2.598 ($\phi 16$ mm-66mm)
For the WTO quick-change tooling system QuickFlex®. This offers the possibility for precise and fast machining of cross holes.

O.D. Turning Systems



Series 112 Small Diameter System
Turning Range: $\phi .039$ "-1.260" & $\phi 1$ mm-32mm
Short, light weight turning adapter for use with EWN 2-50XL heads. Through-tool coolant to insert holder.

Series 310/315 Intermediate Diameter System
EWN Finishing
Turning Range: $\phi .630$ "-4.724" & $\phi 16$ mm-120mm
TWN Roughing
Turning Range: $\phi .984$ "-4.724" & $\phi 25$ mm-120mm
CKB5 & CKB6 modular adapters accepting CKB3-CKB5 EWN & TWN heads.



Series 318 Light Weight Large Diameter System
EWN Finishing
Turning Range: $\phi 1.929$ "-18.740" & $\phi 49$ mm-476mm
TWN Roughing
Turning Range: $\phi 2.283$ "-18.740"
Turning adapter for use with EWN/TWN x CKB5 heads.

Series 318 X-Large Diameter System
EWN Finishing
Turning Range: $\phi 18.47$ "-112.44"

Mega ER Grip



ALSO AVAILABLE IN
BCV, BBT, HSK,
BIG CAPTO & NC LATHE

Also available in N/C Lathe type.
See Pg. 19

CKB4-CKB7
Range: $\phi.075''$ - $.787''$

For drills, reamers, taps and finishing end mills.

Incredibly low runout will provide dramatic payback by improving machining capability & reducing production costs.



Mega ER Perfect Seal

Capable of sealing high pressure coolant up to 7Mpa.



Mega ER Nut

A notch-free nut prevents vibration and noise. 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 itself.



ER Nut

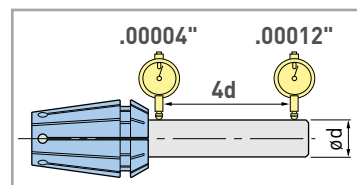
Basic nut with surface treatment for friction reduction.



ERC Collet

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

Guaranteed Max Runout



All BIG Collets are AA Grade and inspected twice for accuracy

Milling Tools



45° Face
Milling
CKB6



90° Shoulder
Milling
CKB6



New Hi-Power Milling Chucks

CKB6 & CKB7
Range: $\phi.750''$ - $1.250''$ & $\phi 20\text{mm}$ - 32mm



End Mill Adapters

CKB4-CKB7
Range: $\phi.1875''$ - $2.000''$
 $\phi 6\text{mm}$ - 40mm



Shell Mill Adapters

CKB4-CKB7
Pilot: $\phi.500''$ - $2.000''$

Grooving Tools



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



$\phi 16\text{mm}/27\text{mm}$ Pilot
 $\phi 1.970''$ & $\phi 8.270''$



NEW!

SW 319
CKB5-CKB7
 $\phi 2.087''$ - $\phi 7.992''$



CKB4-CKB6
 $\phi 16\text{mm}/27\text{mm}$ Pilot



10mm Shank
 $\phi.465''$

Chamfering Tools



C-Cutter 45°

CKB2-CKB6
Min Chamfer: $\phi.197''$
Max Chamfer: $\phi 3.937''$

Long parallelogram shaped insert achieves ideal cutting performance.



C-Cutter Mini 45°

CKB1-CKB5
Min Chamfer: $\phi.866''$
Max Chamfer: $\phi 2.441''$

For front chamfering, back chamfering and even light face milling.



R-CUTTER

CKB3 & CKB5

NEW!

Ultra high feed radius chamfer mill for front and back radius chamfering.

EXCELLENT SHARPNESS

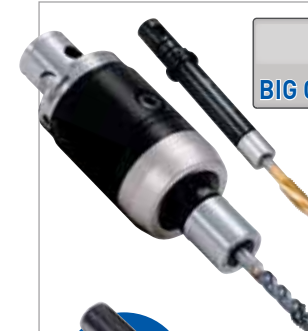
High Rake
Angle



Unique Insert Geometry

High rake angle reduces cutting resistance and minimizes burrs.

Tapping Holders



ALSO AVAILABLE IN
BCV, BBT, HSK,
BIG CAPTO, SS & NC LATHE

Tapping Range:
No.2-AU13/8 (ANSI)
M2-M36 (JIS/DIN/ISO)



Also available in
N/C Lathe type.
See Pg. 19

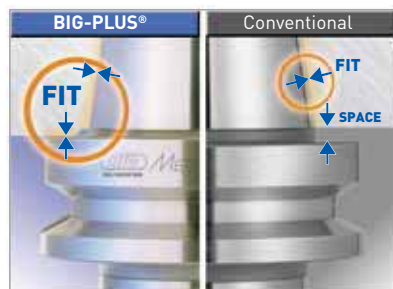
BIG-PLUS® Tooling System

BIG-PLUS® is based on the most current available standards for MAS 403, DIN 69871 and ASME B5.50-1994 (7:24 taper). In this system, the taper and face of a machine spindle and tool holder are simultaneously fit. However, the system is completely interchangeable, meaning conventional spindles and tooling are compatible with BIG-PLUS® spindles and tooling.



Dual Contact System

A simultaneous fit system between the taper and face of a machine spindle with a tool holder greatly increases rigidity and improves the repeatability during ATC, and eliminates axial movement at high speeds.



ACCURWAY, ADVANCED MACHINE, ALEX-TECH, AMS, ANCA, AONO GIKEN, ARES, ASA TECH, AWEA, BERG SPANNTECHNIK, BOST, BROTHER, CHEVALIER, CHUO-SEIKI, CITIZEN, COLGAR, CROSS HÜLLER EX-CELL-O LAMB, D.S. TECHNOLOGIE, DAH LIH, DAIYA SEIKI, DIXI, DMC, DMG MORI SEIKI AD, DMG MORI SEIKI CO. LTD., DOOSAN, DYNOMAX, EGURO, ENSHU, FADAL, FAMOT, FANUC, FEMCO, FIRST, FISCHER, FOREST-LINE, FPT, FRANZ KESSLER, FUJI SEIKI, GIDDINGS & LEWIS, GUN, GTI SPINDLE TECHNOLOGY, HARDINGE, HARTFORD, HIGH SPEED TECHNOLOGIES, HISION, HNK, HOMMA, HORKOS, HOWA, HST, HURCO, HWACHEON, IBAO, IBARMIA INNOVATEK, IKEGAI, INOUE KOSOKU KIKAI, JOHN FORD, JTEKT, JUNGWOO M.S., JYOTI, KARATS, KASHIFUJI, KASWIN, KENTURN, KITAMURA, KIWA, KWT, KOMATSU NTC, KONDIA, KOYO, KPTC, KURAKI, LAZZATI, 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, NISHIJIMA, NISSIN-MFG, NOMURA, NORTHLAND TOOL, NSK, NYMEN, O-M, OBATAKE, OHTORI, OKK, OKUMA, OMLAT, OMV, PAMA, PIETRO CARNAGHI, PMC, QUASER, REIDEN, ROKU ROKU, ROYAL, SAJO, SEMPUCO, SETCO, SHAN RONG, SHODA, SHW, SKG, SKODA, SMEC, SNK, SODICK, SORALUCE, SPINDER, SPINTEC, SPINTRUE, SPS, STARRAGHECKERT, STUDER, SUCINO, SUNWOO, SUPERIOR SPINDLE SERVICE, TAJMAC-ZPS, TAKAMAZ, KIKAI KOUJYU, TAKISAWA, TANABE, THETA, TONGTAL, TOS KURIM, TOS VARNSDORF, TOSHIBA, TOYO SEIKI, TSUDAKOMA, TSUGAMI, UGINT, UTSUNOMIYA, VICTOR TAICHUNG, VTEC, YU CHENG, WALDRICH COBURG, WELE, WIA, YAMASAKI GIKEN, YAMASHINA, YASDA, YASUNAGA, YCM, YU HUNG, ZAYER

(As of August 2016)

BIG Capto Tooling System

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 MTC's.

* The trademark Capto is licensed from Sandvik Coromant



Wide Variety

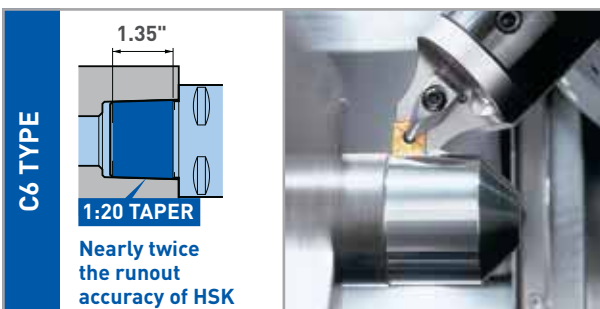
A wide variety of rotary tool holders such as the high precision Mega Chuck series are available, as well as a modular turning tool system for MTC's.

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 assures 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.

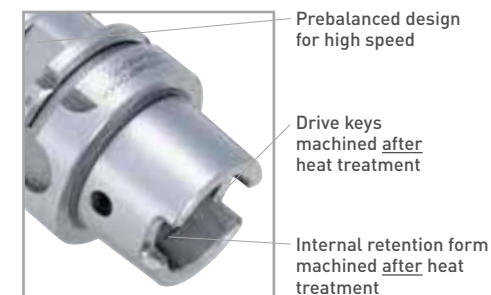


A Variety of HSK Types and Sizes

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

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

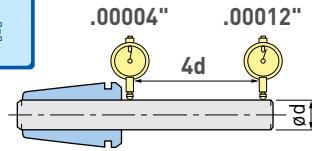
Form F: 63/80



Collets



Guaranteed Max Runout



All BIG Collets are AA Grade and inspected twice for accuracy

New Baby Collet

Clamping Range: ϕ .010"-1.000"
 ϕ .5mm-25.4mm

For use with Mega New Baby Chuck, Angle Heads, Hi-Jet Holder & High Spindle.



New Baby Collet for End Mill

Clamping Range: ϕ .125"-.750"
 ϕ 3mm-20mm

For use with Mega New Baby Chuck when end milling.



Mega Micro Collet

Clamping Range: ϕ .018"-.317"
 ϕ .5mm-8mm

For use with Mega Micro Chuck & Air Power Spindle.



Mega E Collet

Clamping Range: ϕ .125"-.500"
 ϕ 3mm-12mm

For use with Mega E Chuck.



ERC Collet

Clamping Range: ϕ .075"-.787"
 ϕ 2mm-20mm

For use with Mega ER Grip.



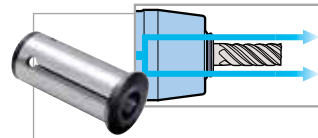
ERC Collet for End Mill

Clamping Range: ϕ .125"-.750"
 ϕ 3mm-20mm

For use with Mega ER Grip when end milling.



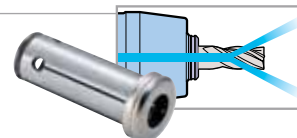
Reduction Collets



PJC

Clamping Range: ϕ .250"-1.000"
 ϕ 3mm-25mm

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



PSC

Clamping Range: ϕ .250"-1.000"
 ϕ 3mm-25mm

For coolant through tools in Hydraulic Chucks.



Straight Collet

Clamping Range: ϕ .250"-1.000"
 ϕ 6mm-32mm

Reduction sleeve for smaller diameter cutters in Milling Chucks.

Wrenches

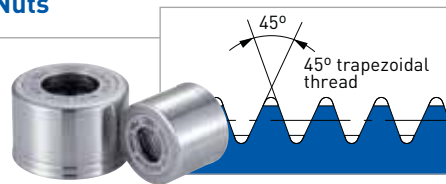


The Mega Wrench has a uniquely designed one-way clutch system with a roller bearing and ratchet function that is capable of safely and evenly applying force on the entire nut periphery.

AVAILABLE IN DIGITAL



Nuts



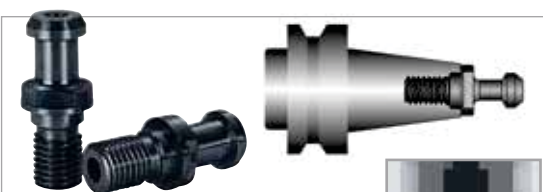
The nut design is a key factor to achieve the highest precision of a collet.

A 45° trapezoidal thread offers less friction and better alignment to the center when clamping a collet.

Since the threads greatly influence accuracy, they are ground after heat treatment. Therefore, bad influence from clamping action is eliminated, which enhances clamping performance.

The ball bearing tapered raceway inside the nut eliminates any torsion, resulting in a smooth, stable collapse of the collet.

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.



Sealed Nuts



Baby Perfect Seal

Cutter Shank: ϕ .118"-.787"
 ϕ 3mm-20mm



Mega Perfect Seal

Cutter Shank: ϕ .118"-.787"
 ϕ 3mm-20mm



Mega E Perfect Seal

Cutter Shank: ϕ .125"-.500"
 ϕ 3mm-12mm



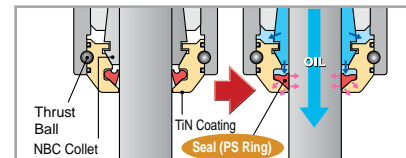
Mega ER Perfect Seal

Cutter Shank: ϕ .118"-.787"
 ϕ 3mm-20mm

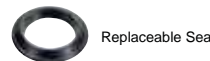


Mega Micro Sealed Nut

Cutter Shank: ϕ .118"-.315"
 ϕ 3mm-8mm



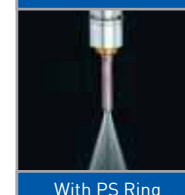
MAX COOLANT PRESSURE
1,000
PSI



Two Way Coolant with Reliable Supply to the Tool Tip!

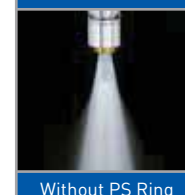
Unique design increases sealing performance with higher coolant pressure to create a "perfect seal". Remove the PS ring to supply coolant to the cutting tool periphery.

THROUGH TOOLS



With PS Ring

JET THROUGH



Without PS Ring

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.

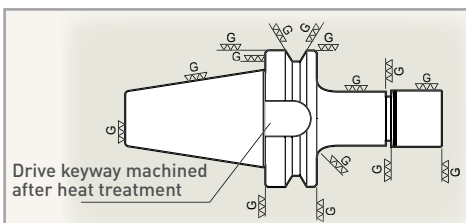
ALL MEGA CHUCKS AVAILABLE IN
BCV, BBT, HSK &
BIG CAPTO



Precision Ground and Balanced for High Speed Machining

Mega Chucks are micro mirror finished on all surfaces to assure 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 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

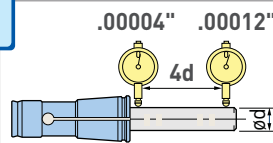
Wide coverage for small shanks is available with clamping intervals of $\phi.004$ " ($\phi.1$ mm).

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



All BIG Collets are AA Grade and inspected twice for accuracy

Guaranteed Max Runout



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

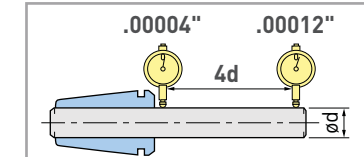
Clamping Range: $\phi.010$ "– 1.000 " & $\phi.5$ mm– 25.4 mm

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.



Mega ER Perfect Seal

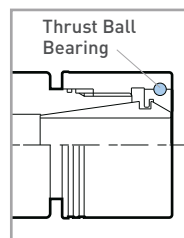
For two-way coolant supply.



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.

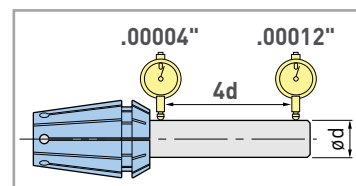
Best Runout Accuracy in The World



ERC Collet

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

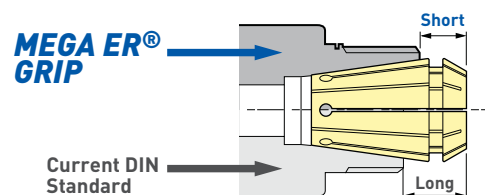
Guaranteed Max Runout



All BIG Collets are AA Grade and inspected twice for accuracy

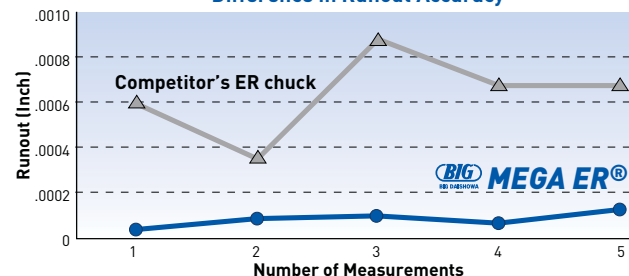
High Rigidity Body

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.



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

Difference in Runout Accuracy



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.

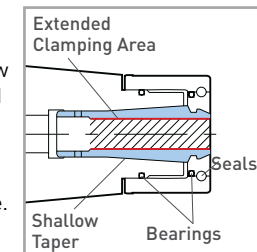
However, by using the standard Mega E nut, coolant can still be directed to the cutting tool through slits in the collet, as seen above.

Powerful Clamping Force



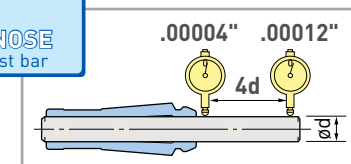
Mega E Collet

Exact sizes, shallow taper and extended clamping length enhances the clamping and self-centering forces for stable performance.



All BIG Collets are AA Grade and inspected twice for accuracy

Guaranteed Max Runout



New Hi-Power Milling Chuck



Clamping Range: ϕ .500" - 1.500" (20-32mm)

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.

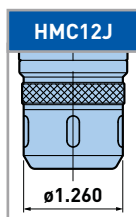
See PJC collets on Pg. 11 for reduction and coolant delivery options.



NEW!

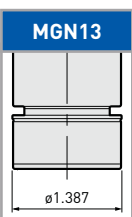
HMCJ Type

Clamping Range:
Beginning at
 ϕ .500" (ϕ 12mm)



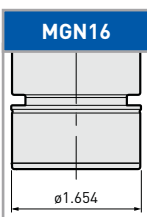
HMC12J

ϕ 1.260



MGN13

ϕ 1.387



MGN16

ϕ 1.654



JET THROUGH



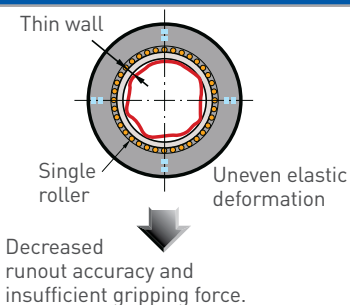
NEW!

Also available in
 ϕ 12mm straight
shank type.

Powerful Clamping for Heavy Cutting

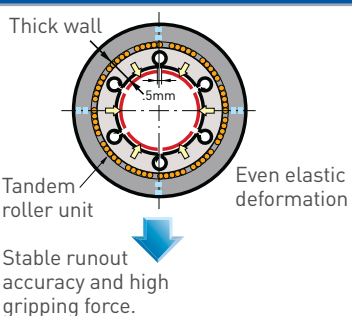


CONVENTIONAL MILLING CHUCKS



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

BIG HMC



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

Mega Double Power Chuck



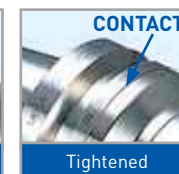
Clamping Range: ϕ .625" - 1.500"

For heavy duty end milling.

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



Released



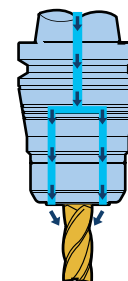
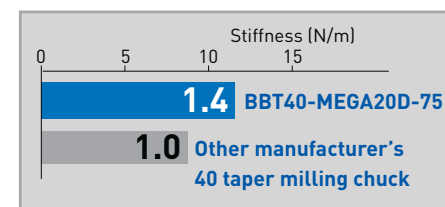
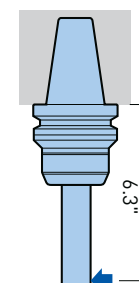
CONTACT

Tightened

MAX
30,000
RPM

Powerful Clamping Force Mega Double Power Chuck

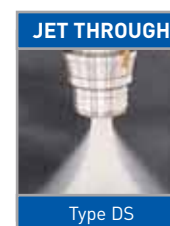
Deflection test to compare with other manufacturer's milling chuck proves that the Mega Double Power Chuck has achieved 1.4 times higher rigidity.



Secure Coolant Supply

Designed to delivered the most effective coolant supply. Collets available for reduction and more directed coolant delivery. See Pg. 11.

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



JET THROUGH

Type DS

Mega Perfect Grip Milling Chucks



Clamping Range: ϕ .750" - 1.250"

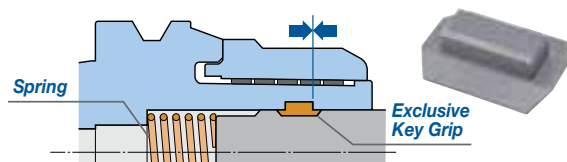
For heavy duty end milling.

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 any slip whatsoever under high torque.



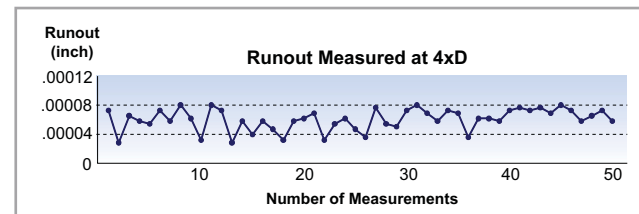
Hydraulic Chucks



Now available
in ϕ 4mm-20mm
straight shank type.

Excellent Clamping Repeatability

After 50 clamping/unclamping exercises, repeatability accuracy has less than .00006" (1.5 μ m) of variance!



Clamping Range: ϕ .250" - 1.250" (ϕ 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



Clamping Range: ϕ 4mm-32mm

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



Now available
in HSK-A63.



Hydraulic Chuck Super Slim



Clamping Range: ϕ .125" - .472" (ϕ 3mm-12mm)

Slim design eliminate interference, ideal for 5-axis machining.

High Precision Runout Accuracy Less Than .00012" (3 μ m)

High precision runout accuracy less than .00012" (3 μ m) at 4xD improves the workpiece surface finish and extends tool life. Repeatability is less than .00006" (1.5 μ m)!



Now available in
HSK-E25/32/40 for
 ϕ 3mm shanks.



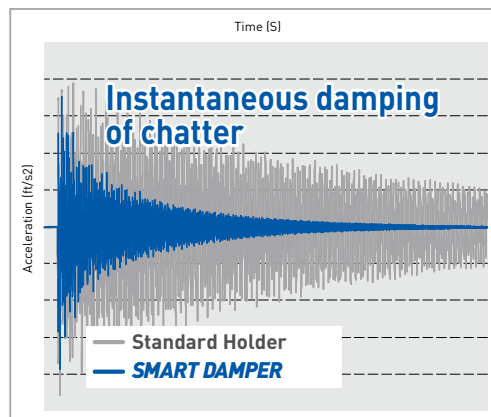
Smart Damper Milling



NEW!

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: $\varnothing 2.500"$ - $3.000"$

Face Milling of S55

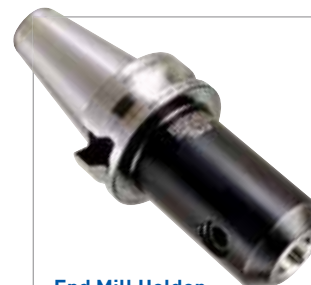
Tool Holder	Radial Depth of Cut (inches)				Result
	.20	.40	.78	1.18	
Standard Holder (w/o damping system)	○	×	×	×	6X Deeper Depth of Cut
SMART DAMPER Built-in damping mechanism BBT50-SDF36-47-170 + SDF36-FMH22DP-47-180	○	○	○	○	

× = Vibration ○ = Acceptable ● = Excellent Surface Finish

Cutting Conditions

Machine: VMC [BBT50] BIG-PLUS®
Cutter: $\varnothing 1.968"$ (4 inserts)
Speed: 300 SFM
Feed Rate: .040"/tooth
Depth of Cut: .08"
Overhang: 13.67"

Basic Arbors



End Mill Holder

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



Shrink Fit Holder

Clamping Range: $\varnothing .250"$ - $1.250"$
Gauge 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.



Shell Mill Holder

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

*BCV50 Smart Damper version available featuring an integral damping mechanism for long projection operations with a $\varnothing 1"$ pilot.



Blank Bar

Body Size: $\varnothing 2.500"$ - $6.000"$
Gauge Length: $6.000"$ - $8.000"$
Tapers: BCV40/50

Modular Holders



BIG Capto

BCV/BBT → C5/6/8

* The trademark
Capto is licensed from
Sandvik Coromant



BIG Komet ABS

BCV/BBT → ABS40-100
C5/6/8 → ABS50-80

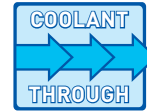
* The trademark ABS is
licensed from Komet



BIG KAISER CKB & CKN

For entire modular system
overview, see Pg. 4-9.

Mega Synchro Tapping Holder



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

MGT 6-MGT 20

Tapping Range: No.2-AU $\frac{3}{4}$ (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.



MGT 3

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

Also available in
straight shank &
N/C Lathe type.
See Pg. 19



MGT 36

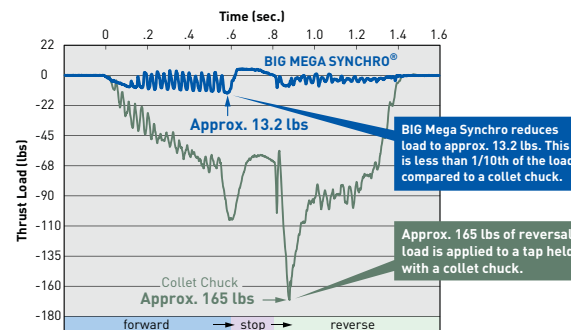
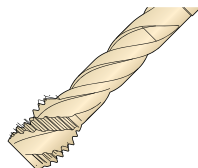
Tapping Range: AU $\frac{7}{8}$ -AU $\frac{13}{8}$ (ANSI) &
M20-36 (JIS/DIN/ISO)

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



Coolant Through Center Capability for All Models

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

THROUGH TOOLS



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

JET THROUGH

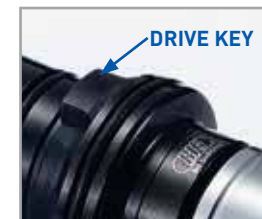


Coolant is Supplied
Through Slits of the
Tap Holder



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.

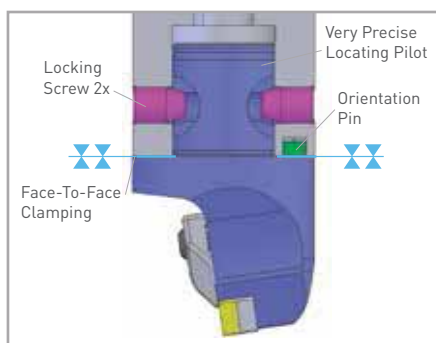


Revolutionary!

The very first modular tooling system for turning applications on MTC's (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's



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.



BCV40/50
BBT40/50

C5/C6/C8

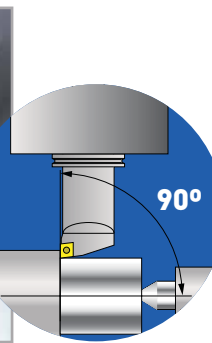
HSK-T63/100

17 Cartridges for 45° Tilt Style Type S



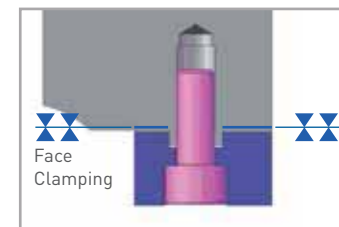
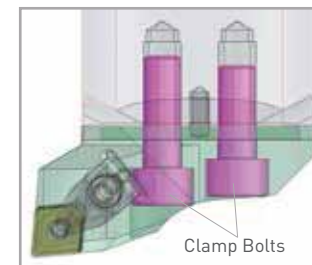
Right hand, left hand and neutral cartridges available, as well as integral models. Also part of the MTC turning tool program are square tool holders and boring bar holders.

Dual Contact 90° Right Angle Style Type F for MTC's



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.



BCV40/50
BBT40/50

C5/C6/C8

HSK-T63/100

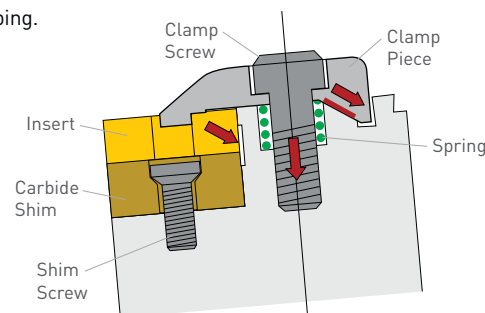
36 Cartridges for 90° Right Angle Style Type F



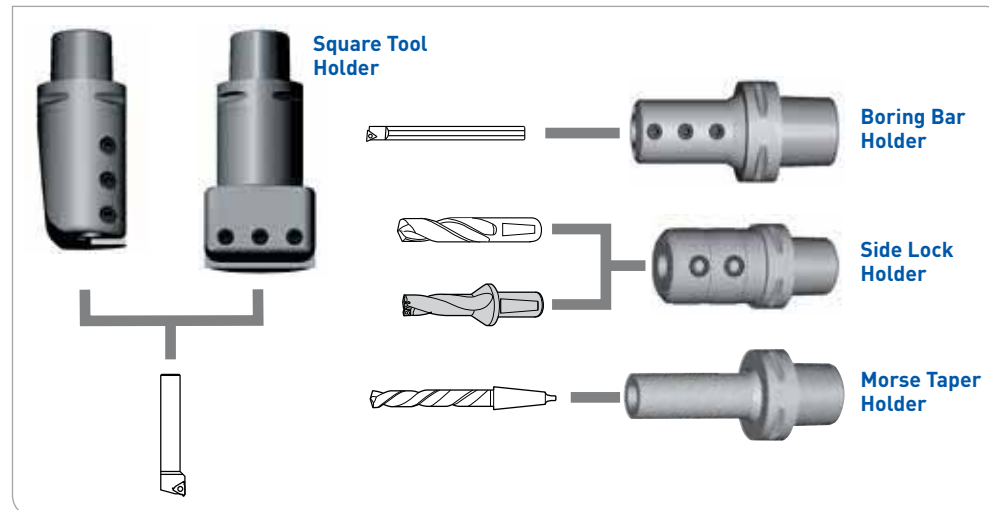
Right hand and left hand cartridges available. Also part of the MTC turning tool program are square tool holders and boring bar holders.

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.



Basic Arbors for MTC's



N/C Lathe



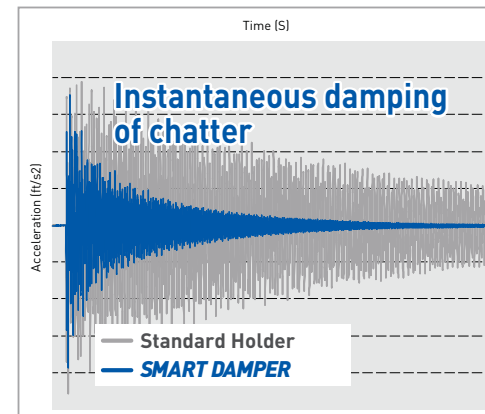
Smart Damper Turning



Integrated Damping System for Turning

Unprecedented machining depths without chatter is made possible with this heavyweight, strengthened dynamic damper.

- Machining Dia.: $\phi 1.58$ or more
- Protrusion: L/D $\phi 7 \times d$
- Three cartridge geometries



Tool Holders with Built-in Damping System



Angle Heads

AVAILABLE IN
BCV, BBT & HSK



NEW!

Coolant Through Spindle in
HMC & AG90 Build-Up Type

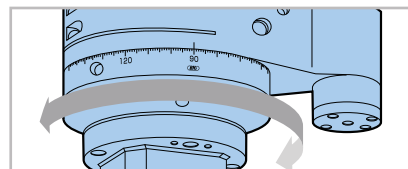
Innovative Sealing Method

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 kinds of machining applications to eliminate multiple setups. Custom made Angle Heads available.

A Large Range Available for Your Required Applications

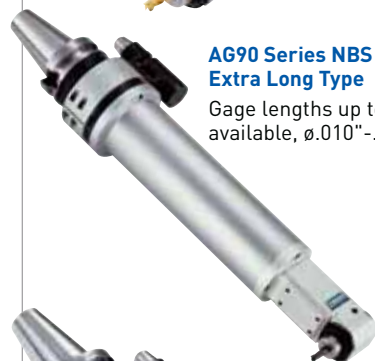
AG90 Series NBS Type

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



AG90 Series NBS Extra Long Type

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



AG90 Series HMC Type

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

*Coolant through spindle version also available.



AG90 Series Build-Up Type

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

*Coolant through spindle version also available.



AGU30 Type

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



AGU Series Universal Type

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



AG90 Series Small Bore Type

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



AG90 Series Compact Type

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



AG45 Series NBS Type

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



Hi-Jet Holder

MAX COOLANT
PRESSURE
1,000
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.

4 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

No Need To Rotate Machine Spindle!

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

Super precision 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.

NEW!

Now available
in RBX12 for
120,000 RPM.

World's Smallest Clamping Intervals

Mega Micro Collet

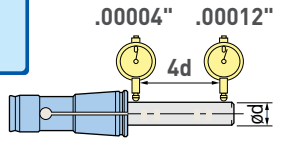
- Wide coverage for small shanks is available with clamping intervals of $\phi.004''$ ($\phi.1\text{mm}$)
- Compact in size, but excellent clamping force for small precision applications



1 μm
AT COLLET NOSE
3 μm at end of test bar

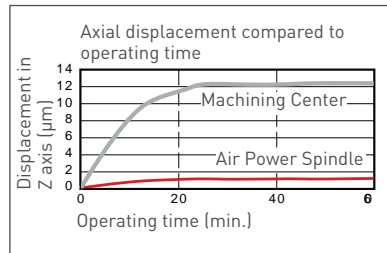
All BIG Collets are AA Grade and inspected twice for accuracy

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 & Superior Surface Finish



Machining Time:
450 min.

With machining center
20,000 RPM

Drastic time reduction!
Improved surface finish!

Machining Time:
120 min.

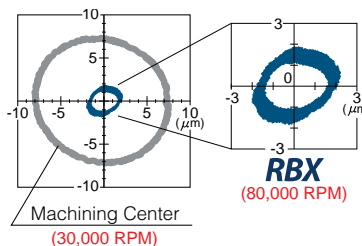
With Air Power Spindle
80,000 RPM

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: $\phi.010'' - .787''$ & $\phi.5\text{mm} - 20\text{mm}$

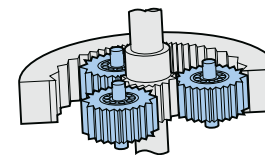
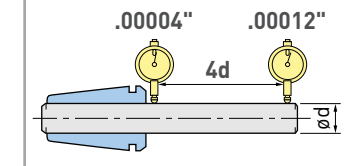
The world's highest precision collet was developed based on BIG's long experience and know-how, and each is inspected twice to guarantee the maximum runout tolerance permitted.



1 μm
AT COLLET NOSE
3 μm at end of test bar

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 assured.

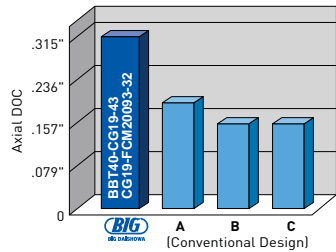


Fullcut Mill FCM Type

FCM Slot Milling • Shoulder Milling

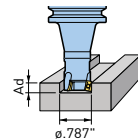
Cutter Dia.: ϕ .500" - 2.000"

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



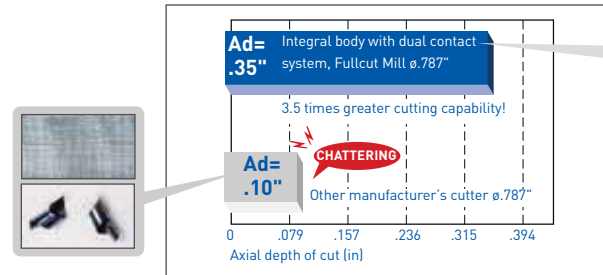
Contact Grip



Face Mill
Cutter Dia.: ϕ 50/63/80/100mm

NEW!

Excellent Cutting Performance Even with #40 Taper Machine Tools



Excellent surface finish even under difficult cutting conditions.



Cutting Conditions

Machine Tool: BBT40 (BIG-PLUS®)
Cutter: ϕ .787"
Work Material: Tool Steel
Spindle Speed: 2,400 RPM
Cutting Speed: 480 SFM
Feed Rate: .005 IPT



Speed Finisher

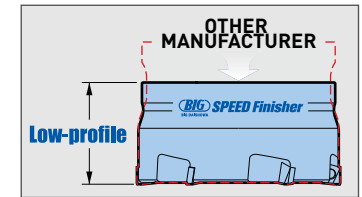
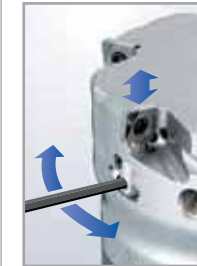


High Speed Cutter for Aluminum and Cast Iron

Each cutting edge height is adjustable to within 1 μ 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.



Light Weight & 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.: ϕ .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



Shoulder Milling



Ramping



Helical Milling



Plunge Milling



Surface Mill **NEW!**



45° Approach Face Mill Cutter

Cutter Dia.: ϕ 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

NEW!

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

NEW!
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.

4 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: ϕ .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: ϕ .217"-1.673"
Chamfering angle adjustment from 5° to 85° with a hex key.

Center Boy

Chamfer Range: ϕ .035"-.866"
90° & 120° Point Angles

Accurate centering and chamfering can be achieved in a single operation! Features sharp cutting with minimum interference thanks to a slim and extended shank.

No more regrinding thanks to a replaceable insert.

BF-Cutter

COOLANT THROUGH

Back spot facing for cap bolt holes ϕ .433"-1.024".

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

Sphinx Drills and Micro Milling Tools

With it's extensive lineup of unique geometry drills, Sphinx is the answer to problem drilling. Sphinx drills are available in a wide range of sizes, diameters and lengths and offer reliable, worry-free operations in common and exotic materials.

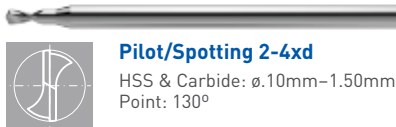
Micro Drills ($\phi \leq 3\text{mm}$)



Designed to Maximize Tool Life, Accuracy & Process Reliability

A wide variety of unique drill point geometries, flute lengths, and shank diameters are offered for use in most common and exotic workpiece materials including steel, stainless steel, titanium and aluminum. Sphinx micro drills are available in both fine-grained, high strength carbide and 8% cobalt high speed steel.

- 15+ different standard article numbers
- 1,700 different standard micro drills
- Minimum diameter $\phi.03\text{mm}$, $\phi.01\text{mm}$ increments between sizes
- Standard diametrical tolerances as low as $0/-0.004\text{mm}$
- Utilization of modern coatings designed specifically for micro tools
- Ultra-fine flute surface finish



Pilot/Spotting 2-4xd

HSS & Carbide: $\phi.10\text{mm}$ – 1.50mm
Point: 130°



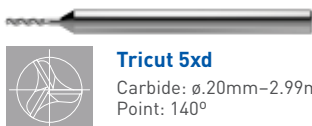
Spirec Pilot 2xd

Carbide: $\phi.10\text{mm}$ – 1.00mm
Point: 130°



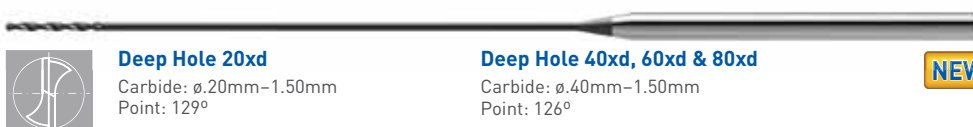
Pilot $\phi 3\text{mm}$ Shank 2xd

Carbide: $\phi.03\text{mm}$ – 2.99mm
Point: 130°



Tricut 5xd

Carbide: $\phi.20\text{mm}$ – 2.99mm
Point: 140°



Deep Hole 20xd

Carbide: $\phi.20\text{mm}$ – 1.50mm
Point: 129°

Deep Hole 40xd, 60xd & 80xd

Carbide: $\phi.40\text{mm}$ – 1.50mm
Point: 126°



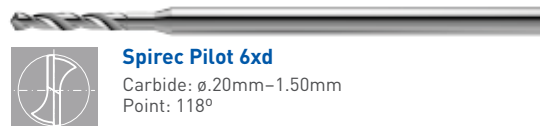
High Performance Phoenix 6xd

Carbide: $\phi.50\text{mm}$ – 2.40mm
Point: 140°



Spirec 6xd

HSS & Carbide: $\phi.05\text{mm}$ – 3.175mm
Point: 118°



Spirec Pilot 6xd

Carbide: $\phi.20\text{mm}$ – 1.50mm
Point: 118°



$\phi 3\text{mm}$ Shank 6xd & 12xd

Carbide: $\phi.03\text{mm}$ – 3.00mm
Point: 130°

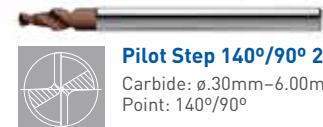
High Performance Drills



Optimize Performance and Efficiency

Advanced drill geometries featuring innovative coatings and internal coolant capable of reducing cycle time while increasing tool life in many applications. Maximize rigidity using one of seven different standard flute lengths, with specials available upon request.

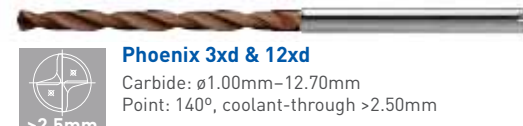
- Developed for maximum performance in most common and exotic materials
- 3-30xd standard flute lengths
- Most geometries can be reground & recoated



Pilot Step $140^\circ/90^\circ$ 2xd

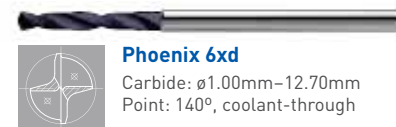
Carbide: $\phi.30\text{mm}$ – 6.00mm
Point: $140^\circ/90^\circ$

NEW!



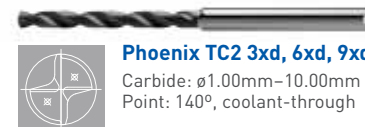
Phoenix 3xd & 12xd

Carbide: $\phi.1.00\text{mm}$ – 12.70mm
Point: 140° , coolant-through $>2.50\text{mm}$



Phoenix 6xd

Carbide: $\phi.1.00\text{mm}$ – 12.70mm
Point: 140° , coolant-through

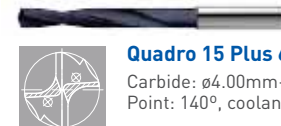


Phoenix TC2 3xd, 6xd, 9xd, 12xd, 16xd, 20xd & 30xd

Carbide: $\phi.1.00\text{mm}$ – 10.00mm
Point: 140° , coolant-through

Carbide: $\phi.1.00\text{mm}$ – 10.00mm
Point: 137° , coolant-through

NEW!



Quadro 15 Plus 6xd

Carbide: $\phi.4.00\text{mm}$ – 20.00mm
Point: 140° , coolant-through



Quadro Plus 6xd & 12xd

Carbide: $\phi.3.00\text{mm}$ – 20.00mm
Point: 140° , coolant-through

Twist Drills



A High Quality, Low Cost Solution

Sphinx solid carbide twist drills separate themselves from the competition by incorporating a high level of process accuracy and repeatability into a basic drill geometry.

- 3-10xd standard flute lengths
- Four different spot drill geometries
- External coolant for all geometries and sizes



Spotting

Carbide: $\varnothing 2.00\text{mm}$ – 20.00mm
Point: 90° , 123° & 142°



Spotting/Chamfering

Carbide: $\varnothing 1.60\text{mm}$ – 12.00mm
Point: $142^\circ/90^\circ$ chamfer



Fastcut Pilot 3xd

Carbide: $\varnothing 3.00\text{mm}$ – 20.00mm
Point: 140°



Posicut 5xd

Carbide: $\varnothing 3.30\text{mm}$ – 20.00mm
Point: 118°



Spirec 10xd

Carbide: $\varnothing 3.30\text{mm}$ – 6.00mm
Point: 118°



Spicut 10xd

Carbide: $\varnothing 7.00\text{mm}$ – 14.00mm
Point: 130°

Drill Reamers



Geometries with Three Distinct Margins

Suggested cutting tool in situations where surface finish and hole tolerance are of the utmost importance. Sphinx drill reamers separate themselves from the competition using geometries with three distinct margins. Additional contact points optimize surface finish and allow achievable hole tolerances ranging from H7 to H9.

- $\varnothing 20$ – 14.00mm
- 5-10xd standard flute lengths
- Three margins
- H7-H9 achievable hole tolerance
- Coated tools available upon request



Asycut 5xd

Carbide: $\varnothing 2.00\text{mm}$ – 14.00mm
Point: 118°



Tricut 5xd & 10xd

Carbide: $\varnothing 1.00\text{mm}$ – 14.00mm
Point: 140°

Micro End Mills



Increase Productivity

Capable of increasing productivity and meeting some of the most challenging application requirements. Produced using high quality solid carbide with a reinforced shank to maximize stability.

- 3mm or 4mm reinforced shank
- Standard coated option
- Standard 2-flute and 3-flute geometries



2-Flute End Mill .75xd, 1.5xd, 3xd, 5xd & 8xd

Carbide: $\varnothing 1.0\text{mm}$ – 2.50mm

NEW!



3-Flute End Mill 1.3xd, 2xd, 3xd & 8xd

Carbide: $\varnothing .30\text{mm}$ – 3.00mm

NEW!



Coated 3-Flute End Mill 1xd, 3xd

Carbide: $\varnothing .30\text{mm}$ – 3.00mm

NEW!



Ball Nose End Mill .75xd, 1.5xd & 3xd

Carbide: $\varnothing .20\text{mm}$ – 2.80mm

NEW!



Chamfering Mill 90°

Carbide: $\varnothing .50\text{mm}$ – 8.00mm



Engraving Mill Flat Tip w/ 30° , 40° , 50° , 60° & 90°

Carbide: $\varnothing .02\text{mm}$ – $.15\text{mm}$



Engraving Mill Radius Tip w/ 30° , 40° , 50° , 60° & 90°

Carbide: $\varnothing .04\text{mm}$ – $.10\text{mm}$

Speroni Tool Presetters

All Speroni tool presetters feature aged pearlitic cast iron construction for thermal stability, Heidenhain glass scales and Schneebberger guideways for the highest precision, and all software is developed and controlled by Speroni for unmatched reliability and innovation.



STP MAGIS 400/500/600

Combines all of the needed features and functions in one user-friendly and trouble-free screen. Provides a complete measuring and inspection solution at an affordable price and is the most rugged and dependable in its class.



STP FUTURA

The modular design allows you to choose from a vast array of configurations, including manual or CNC measurements, max tool lengths/diameters from $\varnothing 16''$ -48'', many spindle taper types and multiple control options depending on your needs.



STP FUTURA AutoShrink

A fully automated CNC preset, measure and shrink fit system. New automatic cooling design provides absolute safety and convenience, making the machine a fully automatic and "hands off" solution.

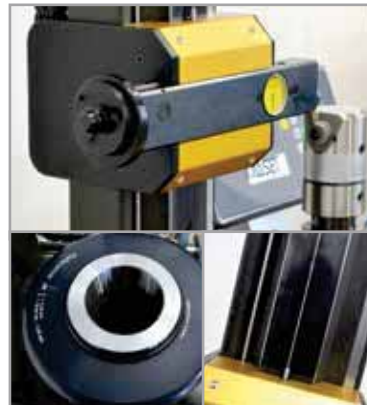
Diaset Tool Presetters



The new generation Diaset tool presetter features a column and base made out of mineral cast, which offers high rigidity and excellent temperature resistance.

High precision scales and solid guides smoothly position the indicator into position. The new digital readout features .0001" resolution.

Equipped with integral ISO50 or ISO40 tapers and reduction adapters available for other common interfaces.



Speroni Control Software

New and innovative designs have been applied to the Speroni control and software interfaces. 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 skill level machine operators can use the software whenever they need 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 & location management
- Tool assembly/disassembly management
- Post processor management

Compact Sensor Series



Base Master

High precision offset and detection tool for cutting tools, workpieces and machine tools using conductive materials. LED lamp illuminates at exactly 2" from the reference surface, and features .00004" repeatability.



NEW!

Base Master Red*

Body & measuring sensor are independent components.



Base Master Gold*

For non-conductive tools and workpieces.



Base Master Micro*

For small diameter tools.



Base Master Mini*

For small diameter tools and tight locations.



MAGNIFY UP TO 5 TIMES

PROTECTIVE COVER

*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.



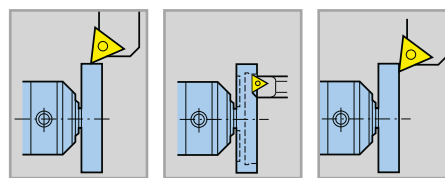
Tool Master

Defines work offsets and tool lengths for all materials, including non-conductive. Features adjustable height and an easy to read large dial. It 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.



Point Master

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



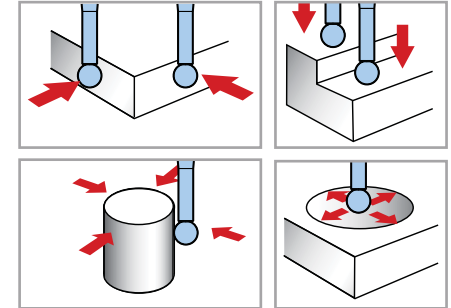
3-Axis Measurement Tool (X, Y & Z)



NEW!

3D Master Red

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



Static Dial Gauge



Centering Tool

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

NEW!

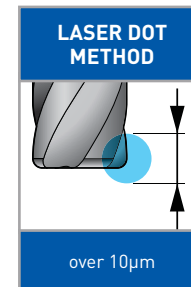
Precision Measuring of Tool Diameter and Runout Accuracy

NEW!



Dyna Line

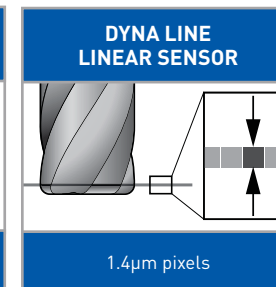
- Non-contact measuring with CMOS linear image sensor
- In-machine measuring
- Portable (usable with 6 C-Cell batteries if need be)



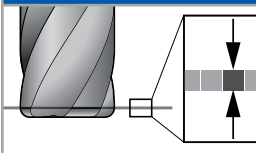
LASER DOT METHOD



over 10µm



DYNA LINE LINEAR SENSOR



1.4µm pixels

Measure at High Rotation Speeds up to 1,300 SFM

- No potential of damage to delicate tools
- Measurement range: $\phi.004'' - \phi2.000''$ ($\phi.1 - \phi50\text{mm}$)
- Indicated resolution: 1µm

Dial Indicator Stands

Articulated stands for the demanding user, offering the highest positioning precision and exact measurements in the μm 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 gauge adapter ($\varnothing.375"$)



Accu Mini Mini



Type SU/F



Type MU/F



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



Included:

Dyna Test
Aluminum Storage Case

Precision Standards of BIG Daishowa Test Arbors

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

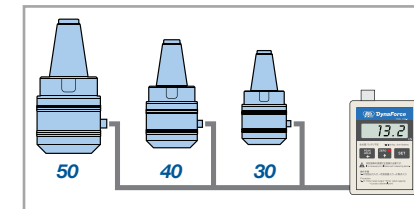
Certified runout of ≤ 1 micron at test bar nose and ≤ 3 microns at end of test bar

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.

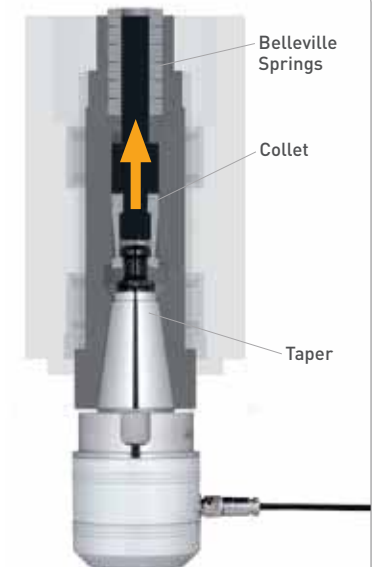


Only One Display for All Taper Sizes

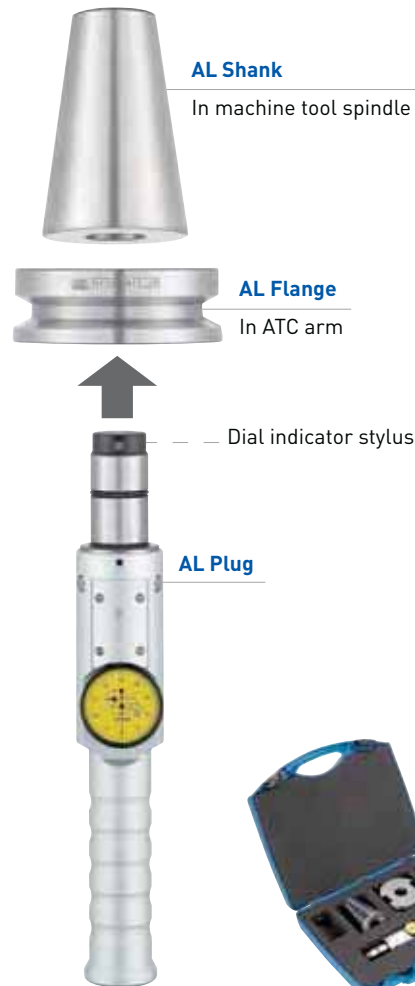


Included:

Dyna Force, Plastic Storage Case,
Display & Cable



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. The dial in dictator aids in quick adjustment.

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 highest and lowest 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.

Included:

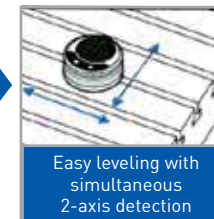
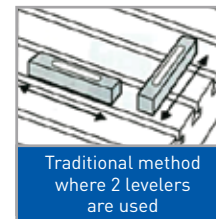
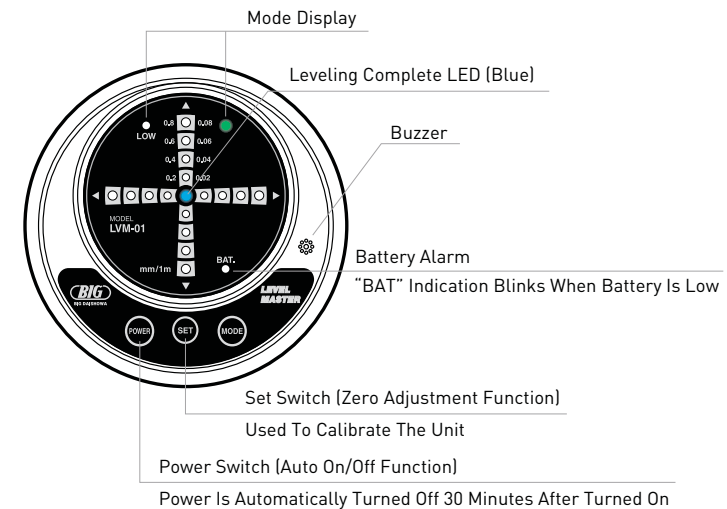
ATC Alignment Tool & Plastic Storage Case

Level Master



High precision device for the leveling of machine tool tables.

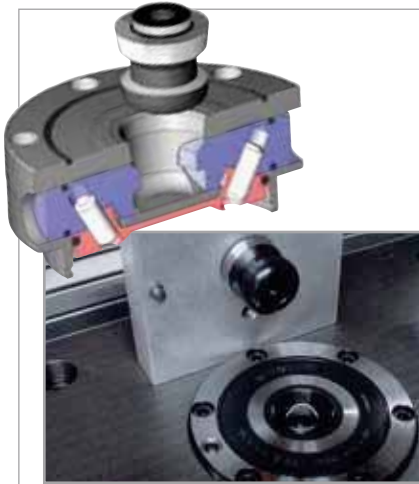
- Simultaneous 2-axis detection leveler
- LED and buzzer indication when leveling is complete
- Uses optical level sensor technology
- 10 micron per meter precision (.01mm/m)



Included:

Level Master, Aluminum Storage Case, Alkaline Batteries (AAA x 4 pcs.), Manual, Guarantee Certificate & Inspection Sheet

Unlock Zero-Point Workholding



Meeting the challenge to set up and process as efficiently as possible with a simple, repeatable and accurate zero-point clamping concept.

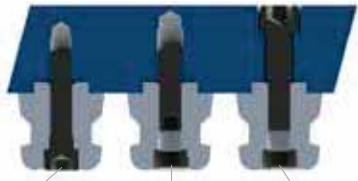
- Heavy-duty die springs
- Air pressure to unclamp
- Low profile body options
- Turbo assist clamping
- Only limited by your imagination

Knobs



Clamping Knobs

The retention knob is the heart of the system. It provides high accuracy location while also retaining the fixture.



OPTION 1
Pass Bolt
Through

OPTION 2
Captive Set
Screw

OPTION 3
Retain From
Top

Our Most Popular Chuck Size



ESM 138

Versatile features in a mid-sized diameter to fit most applications.



ESM 138 Turbo

NEW!

3x higher retention force and sealed back cover.



ERGO 138

NEW!

Low profile version with air connections at bottom or side.



EFM 138

For flange mounting into columns and fixtures.

Manual Options



ASM 120

Reduced diameter for small work or tight spaces, and a manual actuation option.



ASH 120

NEW!

The ASH 120 is the same diameter and height as its original ASM 120 version but now has a new scroll clamping actuation system.

For Smaller Applications



ASM 90

Reduced diameter for small work or tight spaces. Turbo option for increasing the holding power.



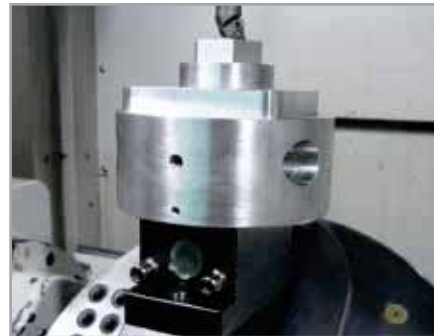
ESM 100/75

Flange mounting design with high clamping force in a small package. Edge of chuck can be used as a timing surface.



AFM 105/65

Excellent choice for 5-axis work cells where clearance is needed to access all sides of a part.



AFM 146

NEW!

For multiple chuck applications on multi-axis machine tables where a low stack height is important.

Special Application Chucks



EDM 100/150

Made from stainless steel and has an integrated mounting pattern for wire EDM and waterjet tables.



ISM 160

A single chuck solution for the face of 4th and 5th axis rotary tables.



ESM 180/150

NEW!

Uses the System 68 knob which allows for the use of larger fasteners. By having the highest retention forces available, it can be used in many industries that specialize in large part manufacturing.

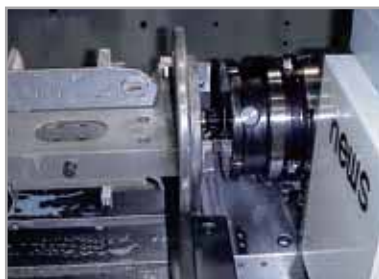


Larger & More Robust Chucks



MSM 170

Large diameter, heavy-duty, with many mounting options, including a kit to adapt to rotary indexers.



ESM 176 Turbo

Large diameter, with turbo feature for more clamping force and rigidity.



HSM 196

For lathes or mills where the center of rotation provides a through-hole to bury the workpiece.



Mono, Duo & Quad Table Chucks



MLM 150

Lightweight base plate for quick and easy mounting to tables. Optional timing notch available. Air supplied from side of base plates.



MCM 150

Execute multiple 90° indexes with index bushings. Air supplied from side of base plate.



DLM 200

Designed to accept a large single pallet or two smaller pallets. Keyways on bottom for quick positioning on work table. Optional timing notch in face of chucks.



DCM 200

Designed to process two single pallets with multiple indexes or one double pallet. Each chuck can accept a timing bushing every 90 degrees.



QCM 400

Equipped with 4 ESM 138 chucks fed with a single air connection from the side. Can be operated as a duo or quad.



NEW!

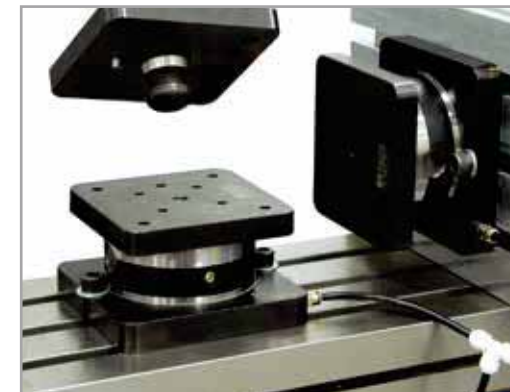
ERGO Base Stations

ESM 138 chucks save 11mm of height and are fed with a single air connection from the side.

Starter Kits



ASM 90/120 & ESM 138 chucks are mounted to universal base plates for immediate implementation out of the box. Pallets are also included.



Pallets



System 40 Mono, Duo & Quad Pallets

Pallets are blank and allow the customer to install any type of mounting hardware to them. Available in aluminum and steel.

Automation Pallet Assemblies

Complete pallet assemblies for use in Mono, Duo and Quad configurations. For companies opting to produce their own pallets, all components can be purchased individually.



DSA 110



QSA 110



QSA 125



DPA 110



QPA 110



QPA 125

Multi-Axis Systems



5-Axis Duo Bridge

This base plate can be mounted directly to the top of a 5-axis table or loaded through a pair of Unilock zero-point chucks. Two elevated Unilock chucks are mounted at 90 degrees to each other so one is out of the way while the other is being machined.



5-Axis B Style Base

NEW!

Allow for flexibility of the position of the base via the use of a slotted flange directly over t-slots. These chucks can be mounted on 50/40/M12 grids as well as on t-slot machine tables.



5-Axis Reductions & Shims

NEW!

5-Axis Reductions are used to reduce from $\varnothing 80\text{mm}$ to $\varnothing 50\text{mm}$ to clamp workpieces with limited supporting surfaces. They are also offered in 25, 50 & 75mm heights and two hardnesses. System 40 clamping knob and bolt are included.



First Grip

Minimally intrusive clamping solution for 1st operations using raw bar or plate stock. First Grip can be used in a single jaw configuration or it can be used in series to hold larger workpieces.



5-Axis Double Base

NEW!

Allows for knobs to be used on grids and t-slot tables to affix the clamping base. This offers a universal interface between your machine table and workpiece.



ER Collet Chuck

NEW!

The perfect solution for clamping shafts and other small round workpieces. The Collet Chucks fit on to any 5-Axis Base Chuck or 5-Axis Extension with a timing key, and uses standard ER40 and ER50 collets.



5-Axis Univice Synchro

NEW!

The vise is a self centering vise that will come with Unilock System 40 knobs, allowing it to be quickly installed on any 200mm pattern. Can be reconfigured with a fixed jaw.



5-Axis Table Adapters

NEW!

Allow the 5-Axis Base Chucks to be mounted anywhere they are needed in order to access the table t-slots or grid holes, all the while providing a strong foundation.



Serrated Adapter

NEW!

Used for small raw workpieces with the aid of an M10 mounting thread through the Unilock clamping knob. The workpiece is securely clamped thanks to the serrated contact surface. Fits on to any 5-Axis Base Extension with a timing key.



5-Axis Uniclamp

NEW!

The new 5-axis Uniclamp expands the First Grip part clamping system into an interface that is compatible with the Uniclamp serrated rail system.



5-Axis Air Chuck

NEW!

Allows the use of air for open and turbo functions when using with 5-Axis Base Chucks or stacking risers. These chucks utilize the System 40 clamping knobs.



5-Axis System 25

NEW!

The 5-axis system can now handle even smaller parts via the System 25 knob and chucks. Designed for small workpieces, and based off of the proven System 40 knob design.



5-Axis Base

NEW!

The new 5-Axis Base Chucks are now offered with a timing key for single base applications. New table adapters are now also offered. These chucks can be mounted on 50/40/M12 grids as well as on Unilock clamping systems using Unilock clamping knobs.



5-Axis Extensions

NEW!

Allow for additional height when paired with 5-Axis Bases. By building up different extensions, workpieces which are difficult to access or which have different heights are easy to clamp.



5-Axis Uniflex System

NEW!

Allows for up to 20mm of height adjustment. The Clamping Extension is a fixed height of 65mm and can be combined with the all Unilock chucks and 5-axis components.

Automation Chucks



ESA 120/70

NEW!

Intelligent interface and communications back to controller using standard System 40 clamping knobs.



ESA 110

Pallets seal off air passages allowing for the verification of a pallet through back pressure monitoring.



NSA 125

Two integrated pallet support pads, air verification of pallet presence and turbo assist clamping option.



ESA 185

Largest self cleaning chuck, intended for heavy machining with high retention forces — 3,300 lbs or 8,800 lbs with turbo.



Pre-Assembled Automation Solutions



ASSF 170

A stable platform is provided for all machining applications through the use of four clamping wedges and four supporting orientation pads.



ASSF 250

Designed to accept a single clamping ring at the centerline of the pallet and four clamping wedges and orientation pads.



When automation pallets need additional support or orientation, a mating cup bushing and taper cone are used. Their tight fit delivers stability and accurate orientation for large pallets.



Robot Grippers



Twin Pin Gripper

Sold as a complete assembly, the gripper is located on the robot arm or an adapter plate with two dowel pins.



Clamping Knob Gripper

Any Unilock chuck and clamping knob combination can be used as a robot gripper and coupler.

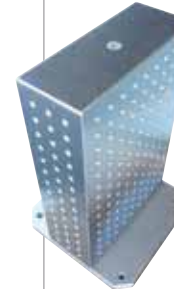


ROC® Mineral Cast



MG 100

Mineral cast towers in many different sizes and configurations integrated with Unilock chucks. The casts are low weight, have low thermal conductivity, are corrosion resistant and are damped.



SG 100

Steel encased mineral cast available with either Unilock chucks or a grid pattern.



Grid Clamping Pallets

Grid clamping pallets produced with the help of ROC® mineral casting, including a steel cover on the top of the pallet for optimal stability.



Weight Reduction Fillings

All clamping pallets and devices can be manufactured as light as possible and filled up with ROC® mineral cast.



Riser Pads

For a more flexible use of your vices, we offer riser pads for many popular vises brands.



Customized Items

ROC® mineral cast products can be customized to meet your specific needs. We gladly provide our know-how in this area.

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



NEW!

Tool Pro Stand

Safe and secure tool assembly stationed anywhere that's convenient on your shop floor.

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

Kombi Grip

Innovative 2-way clutch and needle roller clamping system assures secure clamping at the tool flange periphery of HSK & polygon tapers.



ST Lock

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



Collet Ejector

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



Tooling Mate

Replaceable adapters that feature drive keys to secure steep taper shanks, or a 2-way clutch needle and roller clamping system for HSK and polygon taper shanks.

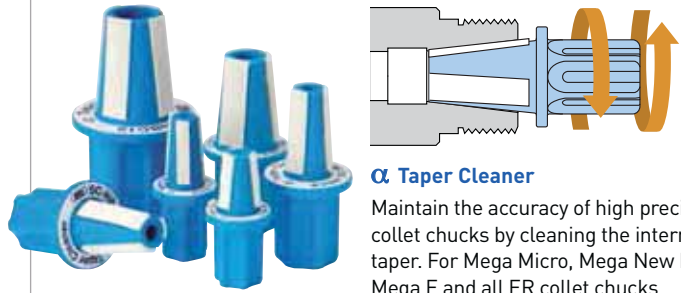


Digital Torque Wrench

For accurate tightening of collet chuck nuts to recommended values.

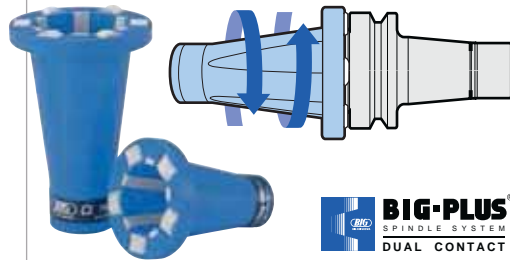


Tooling Cleaners



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 & 40 taper tool holders, which require absolute cleanliness for optimum performance.



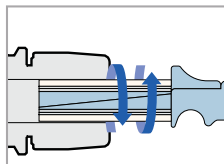
HSK External Taper Cleaner

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

Clean-Tec Chip & Coolant Fan

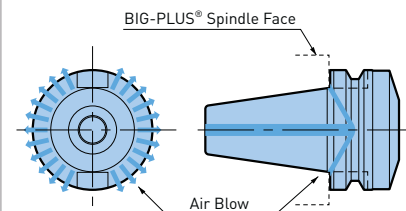
Fast, safe and automatic fans for in-process rinsing and removal of chips and coolant from tables, fixtures and workpieces without stopping production. Held in a collet chuck or end mill holder then stored in a magazine pocket.



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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