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
HIGH PRECISION MODULAR TOOLING SYSTEM
KAISER Modular System for Boring, Drilling, O.D. Turning, Milling, Tapping & Grooving

DUAL CONTACT TOOL HOLDERS OVERVIEW
BIG-PLUS®, BIG Capto & HSK

TOOL HOLDER ACCESSORIES
Collets, Nuts, Wrenches & Pull Studs

DUAL CONTACT ROTATING TOOL HOLDERS
High Speed Collet Chucks, Milling & Hydraulic Chucks, Damping Holders, Basic Arbors, Modular Holders & Synchro Tapping Holders

TURNING TOOLS FOR MTC’S & LATHES
Dual Contact Modular Systems Type S/F/Basic Arbors, N/C Lathe & Smart Damper Turning

PROFIT MAKER SERIES
Angle Heads, Hi-Jet Holder, Air Power Spindle & High Spindle

INDEXABLE CUTTING TOOLS
Fullcut Mill FCM/FCR, Speed Finisher, Surface Mill, C-Cutter Mini, C-Cutter, R-Cutter, Center Boy & BF-Cutter

SOLID CARBIDE & HSS CUTTING TOOLS
Sphinx Drills & Micro Milling Tools

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

ZERO-POINT MODULAR WORKHOLDING
Standard Chucks, Special Application Chucks, Pre-Assembled Table Chucks, Multi-Axis Systems, Automation Chucks, Robot Grippers & Mineral Cast Solutions

ACCESSORIES
Tool Assembly/Disassembly Devices & Cleaners
HIGH PRECISION MODULAR TOOLING SYSTEM

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.

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.

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

Boring Tool App
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

Tool Tips
Reminders pop-up to aid with tool assembly optimization
HIGH PRECISION MODULAR TOOLING SYSTEM

Rough Boring Heads

**SW 319 x CKB1-CKB7 & CKN6-CKN7**
Range: ø0.787”-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!

**TWN 315 x CKB1-CKB7**
Range: ø0.787”-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.

**MW ‘Mini’ Twin Rough Boring Tool**
Range: ø0.630”-R27” [ø16-21mm]
Adjustable twin cutter boring tool on a ø20mm shank — ideal solution for rough and semi-finish boring of small die cast holes.

**Deep Hole Rough Boring Solutions**

**SW Roughing Head x CKB4-CKB6**
Range: ø1.614”-4.331”
The well established dynamic damper eliminates chatter in heavy work loads.

**Indexable Insert & Spade Drills**

**Series 336 x CKB6-CKB7**
Range: ø0.750”-2.875”
 ø31mm-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: ø16mm-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: ø531”-2.500”
High performance spade drills with production levels exceeding uncoated HSS drills by at least 50%.

**MW ‘Mini’ Twin Rough Boring Tool**
Range: ø0.630”-R27” [ø16-21mm]
Adjustable twin cutter boring tool on a ø20mm 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.

**Deep Hole Rough Boring Solutions**

**SW Roughing Head x CKB4-CKB6**
Range: ø1.614”-4.331”
The well established dynamic damper eliminates chatter in heavy work loads.

**Insert Holders: Type CC**
RS5*, ø787”-8.000”
High feed rates

**Insert Holders: Type CC**
DG5*, ø787”-8.000”
Double stock removal, half the feed rate

**Insert Holders: Type SP/SC**
RS5*, ø787”-8.000”
4 cutting edges, lead angle 6º

**Hydraulic Chucks**
AVAILABLE IN
BCV40/50 & BBT40/50

**CKB Heavy Metal Bars**
CKB1-CKB4
Max Bore Depth: 13.750”
Range: ø787”-2.598”
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 .00005" (.001mm). 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.

**Series 112 High Precision Finish Boring Heads**

**EWN 04-7 x CK1**
Range: ø.016”-.276" & ø.4mm-7mm
1 Div=ø.0005" (ø.001" Vernier)
ø.01mm (ø.002mm Vernier)
Also available in ø6mm & ø10mm straight shank type.

**EWN 04-15 x CK3**
Range: ø.016”-.590” & ø.4mm-15mm
1 Div=ø.0005" (ø.001" Vernier)
ø.01mm (ø.002mm Vernier)

**EWN 04-22 x CK4/ER25**
Range: ø.079”-.866” & ø2mm-22mm
1 Div=ø.0005" (ø.001" Vernier)
ø.01mm (ø.002mm Vernier)

**EWN 2-32 x CK5/ER32**
Range: ø.079”-.1260" & ø2mm-32mm
1 Div=ø.0002" (ø.0005" Vernier)
ø.01mm (ø.002mm Vernier)

**EWB 2-50 x CK6 — Auto-Balance Type**
Range: ø.079”-1.260" & ø2mm-32mm
1 Div=ø.0002" (ø.0005" Vernier)
ø.01mm (ø.002mm 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.

**EWB 2-50XL x CK6**
Range: ø.079”-3.150" & ø3.150”-6.000" ø2mm-80mm & ø80mm-152mm
1 Div=ø.0002" (ø.0005" Vernier)
ø.005mm (ø.001mm Vernier)
Heads also accept outboard mounted insert holders. With 3 additional insert holders and one spacer, the boring range of ø3.150”-6.000” is reached.

**Boring Kit EWN 2-50XL**
Range: ø.700”-6.000”
All components and inserts included.

**EWB 2-54 x CK6**
Range: ø.079”-2.126" & ø2mm-54mm
Digital Resolution: .00005”/ø or .001mm/ø

**EWB 2-54 XL x CK6**
Range: ø.079”-2.126" & ø2mm-54mm
Digital Resolution: .00005”/ø or .001mm/ø

**EWD 2-54 x CK6**
Range: ø.079”-2.126" & ø2mm-54mm
Digital Resolution: .00005”/ø or .001mm/ø

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.

**EWD EVO**
Range: ø.079”-2.126" & ø2mm-54mm
Digital Resolution: .00005”/ø or .001mm/ø

**INTEGRAL SHANKS AVAILABLE IN CV40, BT40, HSK-A63 & C6**
Series 310 High Precision Finish Boring Heads

EW x M6 & M10 Threaded Micro Head
- Range: ø.590”-ø.866” & ø15mm-22mm
- 1 Div= ø.0005” (ø.0001” Vernier) & ø.01mm (ø.002mm Vernier)
- For use with ø14mm or ø5/8” carbide bar.

EW x CKB1-CKB7
- Range: ø.787”-ø.800” & ø20mm-ø203mm
- 1 Div= ø.0005” (ø.0001” Vernier) & ø.01mm (ø.002mm Vernier)
- Largest work range of any system using three insert holders per head. Simply reversing the standard insert holder permits back boring.

EW x CKB4-CKB7
- Range: ø1.614”-ø.800” & ø41mm-ø203mm
- Digital Resolution: .00005”/ø or .001mm/ø
- Utilizes program 310 EWN insert holders for standard and back boring and features an IP 69K seal rating.

EWD EVO
- Range: ø1.614”-ø.800” & ø41mm-ø203mm
- Digital Resolution: .00005”/ø or .001mm/ø
- 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.

EWBD-AL 68/100 x C6
- Range: ø2.677”-ø6.024” & ø68mm-ø153mm
- Digital Resolution: .00005”/ø or .001mm/ø
- 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

EW x CKB x CK6
- Range: ø.984”-ø.993” & ø25mm-ø100mm
- 1 Div= ø.00005” or ø.001mm
- The revolutionary EW-UP sets new standards for adjustment accuracy and balance quality.

EWD x CKB4-CKB7
- Range: ø1.614”-ø2.000” & ø41mm-ø203mm
- Digital Resolution: .00005”/ø or .001mm/ø
- Utilizes program 309 EWN insert holders for standard and back boring and features an IP 69K seal rating.

Deep Hole Finish Boring Solutions

Hydraulic Chucks

CKB Carbine Bars

Smart Damper Shocks & Extensions

Smart Damper EWN/EWD

Finish Boring of Ductile Nodular Cast Iron

<table>
<thead>
<tr>
<th>Tool Holder</th>
<th>Cutting Speed (SFPM)</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitor (w/o damping system)</td>
<td>80</td>
<td>145</td>
</tr>
<tr>
<td>SMART DAMPER Ball-in-damper mechanism</td>
<td>80</td>
<td>145</td>
</tr>
</tbody>
</table>

Outperforms competitor’s holder by 6X higher productivity.
Superior surface finish and better tool life due to the increased cutting speed.
Series 318 Large Diameter Boring System

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.

Series 318 x CKB6 & CKN6
Range: ø7.76”-13.39”
Tapers: ISO40, HSK-A63 & C5/6
Series 318 x CKB7 & CKN7
Range: ø7.76”-24.49”
Tapers: ISO50, HSK-A100/125 & C8
318 XL Finish Boring Tools
Range: ø24.48”-118.15”

O.D. Turning Systems

Series 112 Small Diameter System
Turning Range: ø0.039”-1.260” & ø1mm-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: ø6.30”-4.724” & ø16mm-120mm
TWN Roughing
Turning Range: ø9.84”-4.724” & ø25mm-120mm
CKB5 & CKB6 modular adapters accepting CKB3-CKB5 EWN & TWN heads.

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: ø0.016”-2.913 (ø4mm-74mm)
Roughing Range: ø6.30”-2.598 (ø16mm-66mm)
For the WTO quick-change tooling system QuickFlex®. This offers the possibility for precise and fast machining of cross holes.

Series 318 Light Weight Large Diameter System
EWN Finishing
Turning Range: ø1.929”-18.740” & ø49mm-476mm
TWN Roughing
Turning Range: ø2.283”-18.740”
Turning adapter for use with EWN/TWN x CKB5 heads.

Series 318 X-Large Diameter System
EWN Finishing
Turning Range: ø18.47”-112.44”

Larger Tapers Extendable Up To ø118”!
Available in Digital
Large diameter face grooving up to ø80”!
Mega ER Grip

CKB4-CKB7
Range: ø.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 (0º and 180º) at four times diameter to guarantee the runout accuracy.

Guaranteed Max Runout

Milling Tools

45° Face Milling
CKB6

90° Shoulder Milling
CKB6

New Hi-Power Milling Chucks
CKB6 & CKB7
Range: ø.750"-1.250" & ø20mm-32mm

Chamfering Tools

C-Cutter 45º
CKB2-CKB6
Min Chamfer: ø.197"
Max Chamfer: ø3.937"
Long parallelogram shaped insert achieves ideal cutting performance.

C-Cutter Mini 45º
CKB1-CKB5
Min Chamfer: ø.866"
Max Chamfer: ø2.441"
For front chamfering, back chamfering and even light face milling.

R-CUTTER
CKB3 & CKB5
Ultra high feed radius chamfer mill for front and back radius chamfering.

EXCELLENT SHARPNESS

Unique Insert Geometry
High rake angle reduces cutting resistance and minimizes burrs.

End Mill Adapters
CKB4-CKB7
Range: ø.1875"-2.000" ø6mm-40mm

Shell Mill Adapters
CKB4-CKB7
Pilot: ø.500"-2.000"

Grooving Tools

ø16mm/27mm Pilot ø1.970" & ø8.270"

CKB1-CKB2
ø.866" & ø1.770"

CKB4-CKB6
ø16mm/27mm Pilot ø4.465"

NEW!

Tapping Holders

SW 319
CKB5-CKB7
ø2.087"-ø7.992"

CKB4-CKB6
10mm Shank ø4.465"

ALL BIG COLLETS ARE AA GRADE AND INSPECTED TWICE FOR ACCURACY

4d AT COLLET NOSE
3µm at end of test bar

All BIG Collets are AA Grade and inspected twice for accuracy

NEW!

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

NEW!

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

Also available in BCV, BBT, HSK, BIG CAPTO & SS & NC LATHE

Also available in BCV, BBT, HSK, BIG CAPTO & NC LATHE

Mega ER Solid Nut
Slot-free outer diameter increases rigidity of the nut itself.

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

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

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

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

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

Guaranteed Max Runout

.00004" .00012"

NEW!

Tapping Range: No.2-AU1½ (ANSI)
M2-M36 (JIS/DIN/ISO)
**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.

**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.

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**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*

**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.

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**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

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**Prebalanced design for high speed**

**Drive keys machined after heat treatment**

**Internal retention form machined after heat treatment**

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[As of August 2016]
**TOOL HOLDER ACCESSORIES**

### Collets

**New Baby Collet**
- Clamping Range: ø0.010”-1.000”
- ø3mm-25mm
- For use with Mega New Baby Chuck, Angle Heads, Hi-Jet Holder & High Spindle.

**Mega Micro Collet**
- Clamping Range: ø.012”-.315”
- ø3mm-8mm
- For use with Mega Micro Chuck & Air Power Spindle.

**Mega E Collet**
- Clamping Range: ø.125”-.500”
- ø3mm-12mm
- For use with Mega E Chuck.

**ERC Collet**
- Clamping Range: ø.075”-.787”
- ø2mm-20mm
- For use with Mega ER Grip.

**ERC Collet for End Mill**
- Clamping Range: ø.125”-.750”
- ø3mm-20mm
- For use with Mega ER Grip when end milling.

**Guaranteed Max Runout**

All BIG Collets are AA Grade and inspected twice for accuracy.

**Reduction Collets**

**PJC**
- Clamping Range: ø.250”-.1000”
- ø3mm-25mm
- For coolant to cutting tool periphery in Hydraulic & Milling Chucks.

**PSC**
- Clamping Range: ø.250”-.1000”
- ø3mm-25mm
- For coolant through tools in Hydraulic Chucks.

**Straight Collet**
- Clamping Range: ø.250”-.1000”
- ø6mm-32mm
- Reduction sleeve for smaller diameter cutters in Milling Chucks.

### 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: ø.118”-.787”
- ø3mm-20mm

**Mega Perfect Seal**
- Cutter Shank: ø.118”-.787”
- ø3mm-20mm

**Mega E Perfect Seal**
- Cutter Shank: ø.125”-.500”
- ø3mm-12mm

**Mega ER Perfect Seal**
- Cutter Shank: ø.118”-.787”
- ø3mm-20mm

**Mega Micro Sealed Nut**
- Cutter Shank: ø.118”-.315”
- ø3mm-8mm

**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.

### Wrenches

**NEW**

**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.

**Max Coolant Pressure**

1,000 PSI

**Available in Digital**
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.

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: ø.018”-.317”

For micro drill & end mill applications. Super slim design with ø.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 ø.004” (ø.1mm). Compact in size, but excellent clamping force for small precision applications.

Mega New Baby Chuck

Clamping Range: ø.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 ø1” cutting tools!

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: ø.010”-1.000” & ø.5mm-25.4mm

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

Guaranteed Max Runout

All BIG Collets are AA Grade and inspected twice for accuracy

MAX COOLANT PRESSURE
1,000 PSI
Mega ER Grip

Clamping Range: ø.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 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.

Best Runout Accuracy In The World

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

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

Mega E Chuck

Clamping Range: ø.125”-.500”
Exclusively for high speed finish end milling.

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

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.

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

Guaranteed Max Runout

All BIG Collets are AA Grade and inspected twice for accuracy

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

Difference in Runout Accuracy

Competitor’s ER chuck

Mega ER®

MEGA ER® GRIP

Current DIN Standard

Short

Long

1μm at collet nose

.00004” .00012”

4d

Number of Measurements

0 .0002 .0004 .0006 .0008 .010

Runout (Inch)

Extended

Clamping Area

Seals

Shallow

Taper

Bearings

1μm at collet nose

.00004” .00012”

4d

Number of Measurements

All BIG Collets are AA Grade and inspected twice for accuracy

NEW!

Mega ER Perfect Seal
For two-way coolant supply.

Mega ER Solid Nut
Slot-free outer diameter increases rigidity of the nut.

NEW!

ER Nut
Basic nut with surface treatment for friction reduction.

NEW!

Mega ER Nut

Thrust Ball Bearing

NEW!

Mega E Collet

Mega E Perfect Seal
For two-way coolant supply.

Mega E Nut

Mega ER Grip

Through Tools

Jet Through

MAX 33,000 RPM

MAX 35,000 RPM

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

Slit-through coolant with standard Mega E Nut

NEW!

NEW!

NEW!

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NEW!
New Hi-Power Milling Chuck

- **Clamping Range:** ø.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.

**HMCJ Type**
- Clamping Range: Beginning at ø.500” [ø12mm]

**Powerful Clamping for Heavy Cutting**

**CONVENTIONAL MILLING CHUCKS**

- **Thin wall**
- Uneven elastic deformation
- Decreased runout accuracy and insufficient gripping force.
- No escape route for oil film which causes processing failure. Remaining oil film reduces gripping power and even may cause slip.

**Mega Double Power Chuck**

- **Clamping Range:** ø.500”-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.

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

**BBT40-MEGA20D-75**

**Stiffness [N/m]**

- **Other manufacturer’s 40 taper milling chuck:** 1.0
- **Mega Double Power Chuck:** 1.4

**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.
Mega Perfect Grip Milling Chucks

Clamping Range: ø.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

Excellent Clamping Repeatability
After 50 clamping/unclamping exercises, repeatability accuracy has less than .00006” (1.5μm) of variance!

Now available in ø4mm-20mm straight shank type.

Runout Measured at 4xD

<table>
<thead>
<tr>
<th>Number of Measurements</th>
<th>Runout (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>.00004</td>
</tr>
<tr>
<td>10</td>
<td>.00006</td>
</tr>
<tr>
<td>20</td>
<td>.00008</td>
</tr>
<tr>
<td>30</td>
<td>.00012</td>
</tr>
<tr>
<td>40</td>
<td>.00012</td>
</tr>
<tr>
<td>50</td>
<td>.00012</td>
</tr>
</tbody>
</table>

Clamping Range: ø.250”-1.250” [ø6mm-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: ø4mm-32mm
Three coolant holes, precisely directed to the cutting edges to increase tool life and improve surface finishes.

Hydraulic Chuck Super Slim

Clamping Range: ø.125”-.472” [ø3mm-12mm]
Slim design eliminate interference, ideal for 5-axis machining.

High Precision Runout Accuracy Less Than .00012” (3μm)
High precision runout accuracy less than .00012” (3μm) at 4xD improves the workpiece surface finish and extends tool life. Repeatability is less than .00006” (1.5μm)!

Now available in HSK-E25/32/40 for ø3mm shanks.
DUAL CONTACT ROTATING TOOL HOLDERS

Smart Damper Milling

Pilot: ø22mm & ø27mm ø.750” & ø1.000”

Also available in integral holder with ø1.000” pilot.

Available in BCV, BBT & HSK

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.

Time (s)

Face Milling of S55

<table>
<thead>
<tr>
<th>Tool Holder</th>
<th>Radial Depth of Cut (inches)</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Holder</td>
<td>.20 &amp; .40 &amp; .75</td>
<td>1.18</td>
</tr>
<tr>
<td>SMART DAMPER</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cutter: ø1.968” (4 inserts)
Speed: 300 SFM
Feed Rate: .040”/tooth
Depth of Cut: .08”
Overhang: 13.67”

Cutting Conditions

Machine: VMC (BBT50) BIG-PLUS®

Tool Holders with Built-in Damping System
Face Mills: ø2.500”-3.000”

Big Kaizer CKB & CKN

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

Basic Arbors

End Mill Holder
Clamping Range: ø.250”-2.000”
Gauge Length: 3.000”-8.000”
Tapers: BCV40/50, BBT30/40, HSK-A40/50/63/125 & C6/8

Shell Mill Holder
Pilot Range: ø.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 ø1” pilot.

Shrink Fit Holder
Clamping Range: ø.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.

Blank Bar
Body Size: ø2.500”-6.000”
Gauge Length: 6.000”-8.000”

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.

Available in BCV, BBT & HSK

NEW!

Tool Holders with Built-in Damping System
Face Mills: ø2.500”-3.000”

Big Kaizer CKB & CKN

For entire modular system overview, see Pg. 4-9.
DUAL CONTACT ROTATING TOOL HOLDERS

Mega Synchro Tapping Holder

**MGT 6-MGT 20**
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)
MGT 36
Also available in straight shank & N/C Lathe type. See Pg. 19

**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.

**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.

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

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

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.

Right hand and left hand cartridges available. Also part of the MTC turning tool program are square tool holders and boring bar holders.
TURNING TOOLS FOR MTC’S & LATHES

Basic Arbors for MTC’s

N/C Lathe

Mega Micro Chuck
Clamping Range: ø.018”- .238”
(ø.45-6.05mm)
For Micro Drills, Reamers,
Taps & Finishing End Mills

New Baby Chuck
Clamping Range: ø.010”-.787”
(ø.25-20mm)
For Drills, Reamers, Taps &
Small Tool Bits

Mega ER Grip
Clamping Range: ø.108”-.787”
(ø2.5-20mm)
For Drills, Reamers, Taps &
Finishing End Mills

Mega Synchro
Tapping Range: No.0-No.6
(M1-M3)
For Micro Taps

New Baby Chuck
Clamping Range: ø.010”-.787”
(ø.25-20mm)
For Drills, Reamers, Taps &
Small Tool Bits

Mega ER Grip
Clamping Range: ø.075”-.630”
(ø1.9-16mm)
For Drills, Reamers, Taps &
Finishing End Mills

Smart Damper Turning

Integrated Damping System for Turning
Unprecedented machining depths without chatter is
made possible with this heavyweight, strengthened
dynamic damper.
- Machining Dia.: ø1.58 or more
- Protrusion: L/D ø7xd
- Three cartridge geometries

Tool Holders with Built-in Damping System
Innovative Sealing Method
The advanced non-contact sealing method prevents coolant and particle contamination better than any other sealing method.

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.

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.

AG90 Series NBS Type
High precision collet for ø.010”-.787”.

AG90 Series Build-Up Type
Multiple quick change adapters available for drilling, milling & tapping.
*Coolant through spindle version also available.

AG90 Series Small Bore Type
For operations inside of bores as small as ø1.181”.

AG90 Series Compact Type
For light duty precision drilling, ø.098”-.512”.

AGU30 Type
Spindle adjustable from 0° to 30°, ø.098”-.787”.

AGU Series Universal Type
Adjustable from 0° to 90° in 1° increments, ø.098”-.787”.

AG45 Series NBS Type
High precision collet for ø.010”-.787”.

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

Innovative Seals
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.

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

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.

A Large Range Available for Your Required Applications

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**PROFIT MAKER SERIES**

**Air Power Spindle**

**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 ø.004” (ø.1mm)
- Compact in size, but excellent clamping force for small precision applications

**Guaranteed Max Runout**

- .00004” .00012”

**All BIG Collets are AA Grade and inspected twice for accuracy**

**Drastic Time Reduction & Superior Surface Finish**

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

- Machining Center 20,000 RPM
- With Air Power Spindle 80,000 RPM

- Drastic time reduction! Improved surface finish!

- Machining Time: 450 min.
- Machining Time: 120 min.

**Minimal Thermal Displacement**

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

- 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**

**No Need To Rotate Machine Spindle!**
Clamping Range: ø.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.

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

**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

**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.

**High Precision Collet**

**New Baby Collet**
Clamping Range: ø.010”-7.87” & ø.5mm-20mm
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.

**Guaranteed Max Runout**

- .00004” .00012”

**All BIG Collets are AA Grade and inspected twice for accuracy**

**Machining Center**

- Clamping Range: ø.018”-.159”
- Super precision air driven spindle technology enables high speed micro machining on existing machining centers.

**RBX5**
Max 50,000 RPM

**RBX7**
Max 80,000 RPM

**RBX12**
Max 120,000 RPM

**Air Power Spindle**

**AVAILABLE IN BCV, BBT & HSK**

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

**Clamping Range: ø.059”-.630”**

**20,000 RPM**

**MAX**

**RBX5**

**RBX7**

**RBX12**

**MAX**

**50,000 RPM**

**80,000 RPM**

**120,000 RPM**

**Machining Center**

- Clamping Range: ø.010”-.787” & ø.5mm-20mm
- 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.

**Guaranteed Max Runout**

- .00004” .00012”

**All BIG Collets are AA Grade and inspected twice for accuracy**

**At Collet Nose**
3μm at end of test bar

**4d**

**Diameter**

- Clamping Range: ø.010”-.787” & ø.5mm-20mm
- 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.

**Guaranteed Max Runout**

- .00004” .00012”

**All BIG Collets are AA Grade and inspected twice for accuracy**

**At Collet Nose**
3μm at end of test bar

**4d**

**Diameter**

**PROFIT MAKER SERIES**

**AVAILABLE IN BCV, BBT & HSK**

**With machining center 20,000 RPM**

**With Air Power Spindle 80,000 RPM**

**Machining Time:**

- 450 min.
- 120 min.

**Map of Japan milled with R .004” ball nose end mill**

**Material:** Prehardened Steel HRC40

**Now available in RBX12 for 120,000 RPM.**

**NEW!**
INDEXABLE CUTTING TOOLS

Fullcut Mill FCM Type

**FCM**  Slot Milling • Shoulder Milling

Cutters Diam.: ø.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

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

- Integral body with dual contact system, Fullcut Mill ø.787”
- 3.5 times greater cutting capability!
- Other manufacturer’s cutter ø.787”

**Ad= .35”**
- Integral body with dual contact system, Fullcut Mill ø.787”
- Excellent surface finish even under difficult cutting conditions.
- Axial depth of cut (in)

**Fullcut Mill FCR Type**

**FCR**  Ramping • Helical Milling • Plunge Milling

**Slot Milling • Shoulder Milling**

Cutters Diam.: ø.625”~1.250”

- Innovative rigid insert enables powerful and stable ramping.

**Cutting Conditions**
- Machine: BBT40 (BIG-PLUS®)
- Cutter: ø.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 1μm 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.

**Surface Mill**

**NEW!**

**45° Approach Face Mill Cutter**

- Cutter Diam.: ø80mm
- 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

**Rz=1.42**

**Rz=9.04**
INDEXABLE CUTTING TOOLS

C-Cutter Mini

- **NEW!**
- **C-Cutter Mini Universal Type**
  - Adjustment from 5° to 85° with a hex key.
  - World’s smallest .197” square insert with four cutting edges.

C-Cutter

- **45º CKB Shank Type**
  - Chamfer Range: ø.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.

- **NEW!**
- **Universal Type**
  - Chamfer Range: ø.217”-1.673”
  - Chamfering angle adjustment from 5° to 85° with a hex key.

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.

Center Boy

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

- **Chamfer Range: ø.035”-.866”
  - 90º & 120º Point Angles**

BF-Cutter

- **Back spot facing for cap bolt holes ø.433”-1.024”.**
- **Cap bolt size M6-M16**
- **Indexable inserts save cost**
- **Coolant through**

- **Chamfer Range: ø.217”-1.673”
  - 90º & 120º Point Angles**

No more regrounding thanks to a replaceable insert.
Sphinx Drills and Micro Milling Tools

With its 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 (≤3mm)

- 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 ø.03mm, ø.01mm increments between sizes
  - Standard diametrical tolerances as low as 0/-0.004mm
  - Utilization of modern coatings designed specifically for micro tools
  - Ultra-fine flute surface finish

- Pilot/Spotting 2-4xd
  - HSS & Carbide: ø.10mm–1.50mm Point: 130°

- Spirec Pilot 2xd
  - Carbide: ø.10mm–1.00mm Point: 130°

- Pilot ø3mm Shank 2xd
  - Carbide: ø.03mm–2.99mm Point: 130°

- Tricut 5xd
  - Carbide: ø.20mm–2.99mm Point: 140°

- Deep Hole 20xd
  - Carbide: ø.20mm–1.50mm Point: 129°

- Deep Hole 40xd, 60xd & 80xd
  - Carbide: ø.40mm–1.50mm Point: 126° NEW!

- High Performance Phoenix 6xd
  - Carbide: ø.50mm–2.40mm Point: 140°

- Spirec 6xd
  - HSS & Carbide: ø.05mm–3.175mm Point: 118°

- Spirec Pilot 6xd
  - Carbide: ø.20mm–1.50mm Point: 118°

- ø3mm Shank 6xd &12xd
  - Carbide: ø.03mm–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°/90° 2xd
  - Carbide: ø.30mm–6.00mm Point: 140°/90°

- Phoenix 3xd & 12xd
  - Carbide: ø1.00mm–12.70mm Point: 140°, coolant-through >2.50mm

- Phoenix TC2 3xd, 6xd, 9xd, 12xd, 16xd, 20xd & 30xd
  - Carbide: ø1.00mm–10.00mm Point: 140°, coolant-through >2.50mm

- Phoenix 6xd
  - Carbide: ø1.00mm–12.70mm Point: 140°, coolant-through

- Quadro 15 Plus 6xd
  - Carbide: ø4.00mm–20.00mm Point: 140°, coolant-through

- Quadro Plus 6xd & 12xd
  - Carbide: ø3.00mm–20.00mm Point: 140°, coolant-through
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

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

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.
- ø.20-14.00mm
- 5-10xd standard flute lengths
- Three margins
- H7-H9 achievable hole tolerance
- Coated tools available upon request
Speroni Tool Presetters

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

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 ø16”-48”, many spindle taper types and multiple control options depending on your needs.

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 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
MEASURING INSTRUMENTS

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 .0004" repeatability.

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.

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.

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

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.

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

Static Dial Gauge

3D Master Red
- Compact design
- Applicable for all work materials
- Carbide tip stylus

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

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

Measure at High Rotation Speeds up to 1,300 SFM
- No potential of damage to delicate tools
- Measurement range: ±.004" ~ ±.200" (ø.1 ~ ø50mm)
- 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 [ø.375”]

Accu Mini Mini

Type SU/F

Type MU/F

Dyna Test

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

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.

Precision Standards of BIG Daishowa Test Arbors

|                  | Runout | Roundness | Cylindricity | Roughness | Taper Contact | Diameter Tol. |
|------------------|--------|-----------|--------------|-----------|---------------|===============|
| Included:        | Dyna Test | Aluminum Storage Case | | | | |

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

Only One Display for All Taper Sizes

Included:
Dyna Force, Plastic Storage Case, Display & Cable

Belleville Springs

Collet

Taper
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)

How To Use
- Set Switch [Zero Adjustment Function]
  Used To Calibrate The Unit
- Power Switch (Auto On/Off Function)
  Power Is Automatically Turned Off 30 Minutes After Turned On
- Mode Display
- Leveling Complete LED (Blue)
- Buzzer
- Battery Alarm
  “BAT” Indication Blinks When Battery Is Low

Traditional method where 2 levelers are used
Easy leveling with simultaneous 2-axis detection

Included:
Level Master, Aluminum Storage Case, Alkaline Batteries [AAA x 4 pcs.], Manual, Guarantee Certificate & Inspection Sheet
Unilock Zero-Point Workholding

Our Most Popular Chuck Size

For Smaller Applications

Special Application Chucks

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.

Manual Options

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.

ESM 138 Turbo
3x higher retention force and sealed back cover.

ERGO 138
Low profile version with air connections at bottom or side.

EFM 138
For flange mounting into columns and fixtures.

ASM 120
Reduced diameter for small work or tight spaces, and a manual actuation option.

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

AFM 105/65
Excellent choice for 5-axis work cells where clearance is needed to access all sides of a part.

AFM 146
For multiple chuck applications on multi-axis machine tables where a low stack height is important.

ASM 138
Versatile features in a mid-sized diameter to fit most applications.

ISM 160
A single chuck solution for the face of 4th and 5th axis rotary tables.

EDM 100/150
Made from stainless steel and has an integrated mounting pattern for wire EDM and waterjet tables.

ISM 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.

AFM 146
NEW!
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 90º 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.

**QC 400**
Equipped with 4 ESM 138 chucks fed with a single air connection from the side. Can be operated as a duo or quad.

**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.
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.

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 Univeice Synchro
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 Uniclamp
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 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 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.

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.

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 Reductions & Shims
NEW!
5-Axis Reductions are used to reduce from ø80mm to ø50mm 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.

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

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 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 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**
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.

**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 dampened.

**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 ASSEMBLY/DISASSEMBLY DEVICES

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.

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

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.

ST Lock
Ideal fixture for the set-up of cylindrical shank tool holders. Clamps ø20, 25 & 32mm shanks by replacing the sleeve.

Digital Torque Wrench
For accurate tightening of collet chuck nuts to recommended values.

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

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.

NEW!

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

Standard

Vario

Spin

NEW!
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.

**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.