WHO WE ARE

BIG KAISER®

PRECISION TOOLING INC.

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.

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 .................. 4-7

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KAISER Modular System

Through high precision modular technology from KAISER Precision Tooling, Switzerland, a wide range of selections are available for rough and finish boring—from micro to large diameter—the variable combination of boring heads and corresponding accessories. 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.

KA/KAB/KAD Connections

**KAISER KA 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.

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

**KAISER KAD Connection**
The well known KAB system can be easily upgraded to cope with the requirements of today’s high performance tools. Designed with the need for complete compatibility of existing KAB tools, and for the highest possible rigidity, key components have been redesigned to include an axial tension screw (drawbolt) for an extremely rigid tool connection, making the tool better suited to meet the demands of modern milling and boring operations.

CKN Connection

The new CKN connection is almost 100% compatible with KAB 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.

For entire Kaiser Boring System, please see catalog—KAISER Precision Modular Tooling System
**Rough Boring Heads**

TWN 315 x KAB1-KAB7
Range: ø787"-8,000"
Insert holders and head feature triple-contact precision ground mating surfaces, greatly increasing the rigidity. For stable boring even in high feed, heavy duty operations. No variable insert height.

SW 319 x KAB1-KAB7 & CKN6-CKN7
Range: ø787"-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!

Series 639-1 Chamfering & Back Boring Insert Holders for Series 319 SW

**Deep Hole Rough Boring Solutions**

Optional Mega Double Power Chuck—Pg. 12

KAB Heavy Metal Bars
Max Bore Depth: 13,000"  

**Rough Boring Heads**

TWN 315 x KAB1-KAB7
Range: ø787"-8,000"
Insert holders and head feature triple-contact precision ground mating surfaces, greatly increasing the rigidity. For stable boring even in high feed, heavy duty operations. No variable insert height.

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Series 639-1 Chamfering & Back Boring Insert Holders for Series 319 SW

**Deep Hole Rough Boring Solutions**

Optional Mega Double Power Chuck—Pg. 12

KAB Heavy Metal Bars
Max Bore Depth: 13,000"

**Indexable Insert & Spade Drills**

Series 336 x KAB6-KAB7
Range: ø750"-2,875"
ø31mm-61mm
Large, helical flutes reinforced at the edges provide highest strength and chip space. 2xD and 3xD for all sizes.

Series 337 x KAB6
Range: ø16mm-30mm
This straight flute design guarantees a short distance for chip evacuation, high radial and torsional rigidity, and very high cutting performance. 3xD and 4xD for all sizes.

Series 340 x KAB6
Range: ø531"-2,500"
High performance spade drills with production levels exceeding uncoated HSS drills by at least 50%.

**Mega ER Grip**

AVAILABIE IN BCV, BBT, HSK, BIG CAPTO & NC LATHE

KAB4-KAB7
Range: ø075"-.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.

**Milling Tools**

45° Face Milling
KAB6

90° Shoulder Milling
KAB6

**Tapping Holders**

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

**Deep Hole Rough Boring Solutions**

Optional Mega Double Power Chuck—Pg. 12

KAB Heavy Metal Bars
Max Bore Depth: 13,000"

**Rough Boring Heads**

TWN 315 x KAB1-KAB7
Range: ø787"-8,000"
Insert holders and head feature triple-contact precision ground mating surfaces, greatly increasing the rigidity. For stable boring even in high feed, heavy duty operations. No variable insert height.

SW 319 x KAB1-KAB7 & CKN6-CKN7
Range: ø787"-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!

Series 639-1 Chamfering & Back Boring Insert Holders for Series 319 SW

**Deep Hole Rough Boring Solutions**

Optional Mega Double Power Chuck—Pg. 12

KAB Heavy Metal Bars
Max Bore Depth: 13,000"

**Milling Tools**

45° Face Milling
KAB6

90° Shoulder Milling
KAB6

**Tapping Holders**

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

**Deep Hole Rough Boring Solutions**

Optional Mega Double Power Chuck—Pg. 12

KAB Heavy Metal Bars
Max Bore Depth: 13,000"

**Milling Tools**

45° Face Milling
KAB6

90° Shoulder Milling
KAB6

**Tapping Holders**

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

**Deep Hole Rough Boring Solutions**

Optional Mega Double Power Chuck—Pg. 12

KAB Heavy Metal Bars
Max Bore Depth: 13,000"
**Series 112 High Precision Finish Boring Heads**

- **EWN 04-7 x KA1**
  Range: ø.016”-.276” & ø.4mm-7mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)
  Also available in ø10mm straight shank type

- **EWN 04-22 x KA4/ER25**
  Range: ø.079”-.866” & ø2mm-22mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)

- **EWN 2-32 x KA5/ER22**
  Range: ø.079”-1.260” & ø2mm-32mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)
  Auto-balance type

- **EWN 2-50 x KA6**
  Range: ø.079”-1.969” & ø2mm-50mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.005mm (ø.001mm Vernier)

- **EWN 2-50 XL x KA6**
  Range: ø.079”-2.126” & ø3.150”-6.000”
  ø2mm-54mm & ø80mm-152mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.005mm (ø.001mm Vernier)

- **EWN 04-15 x KA3**
  Range: ø.016”-.590” & ø.4mm-15mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)

- **EWN 2-32 x KA5/ER22**
  Range: ø.079”-1.260” & ø2mm-32mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)

**Series 309 Ultra Precision Finish Boring Heads**

- **EWN 04-15 x KA3**
  Range: ø.016”-.590” & ø.4mm-15mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)

**Deep Hole Finish Boring Solutions**

- **KAB Carbide Bars**
  KAB1-KAB3
  Max Bore Depth: ø12.990”

**Series 310 High Precision Finish Boring Heads**

- **EW x M6 & M10 Threaded Micro Head**
  Range: ø.590”–8.000” & ø15mm-22mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)
  For use with ø14mm or ø5/8” carbide bar.

- **EWN x KAB1-KAB7**
  Range: ø.787”-8.000” & ø20mm-203mm
  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.

- **EWN x KA1**
  Range: ø.016”-.276” & ø.4mm-7mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)
  Also available in ø10mm straight shank type

- **EWN 04-15 x KA3**
  Range: ø.016”-.590” & ø.4mm-15mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)

**Series 309 Ultra Precision Finish Boring Heads**

- **EWN 04-15 x KA3**
  Range: ø.016”-.590” & ø.4mm-15mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)

**Deep Hole Finish Boring Solutions**

- **Available in CV40, BT40, HSK-A63 & C6**

**Series 309 Ultra Precision Finish Boring Heads**

- **EWN 2-32 x KA5/ER22**
  Range: ø.079”-1.260” & ø2mm-32mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)

**Series 310 High Precision Finish Boring Heads**

- **EWN x KAB1-KAB7**
  Range: ø.787”-8.000” & ø20mm-203mm
  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.

- **EWN x KA1**
  Range: ø.016”-.276” & ø.4mm-7mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)
  Also available in ø10mm straight shank type

- **EWN 04-15 x KA3**
  Range: ø.016”-.590” & ø.4mm-15mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)

**Deep Hole Finish Boring Solutions**

- **Available in CV40/50, BBT40 & HSK-A63**

**Series 309 Ultra Precision Finish Boring Heads**

- **EWN x KA1**
  Range: ø.016”-.276” & ø.4mm-7mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)
  Also available in ø10mm straight shank type

- **EWN 04-15 x KA3**
  Range: ø.016”-.590” & ø.4mm-15mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)

- **EWN 2-32 x KA5/ER22**
  Range: ø.079”-1.260” & ø2mm-32mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)

**Series 310 High Precision Finish Boring Heads**

- **EWN x KAB1-KAB7**
  Range: ø.787”-8.000” & ø20mm-203mm
  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.

- **EWN x KA1**
  Range: ø.016”-.276” & ø.4mm-7mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)
  Also available in ø10mm straight shank type

- **EWN 04-15 x KA3**
  Range: ø.016”-.590” & ø.4mm-15mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)

**Deep Hole Finish Boring Solutions**

- **Available in CV40, BT40, HSK-A63 & C6**

**Series 309 Ultra Precision Finish Boring Heads**

- **EWN x KAB1-KAB7**
  Range: ø.787”-8.000” & ø20mm-203mm
  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.

- **EWN x KA1**
  Range: ø.016”-.276” & ø.4mm-7mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)
  Also available in ø10mm straight shank type

- **EWN 04-15 x KA3**
  Range: ø.016”-.590” & ø.4mm-15mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)

**Deep Hole Finish Boring Solutions**

- **Available in CV40/50, BBT40 & HSK-A63**

**Series 309 Ultra Precision Finish Boring Heads**

- **EWN x KAB1-KAB7**
  Range: ø.787”-8.000” & ø20mm-203mm
  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.

- **EWN x KA1**
  Range: ø.016”-.276” & ø.4mm-7mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)
  Also available in ø10mm straight shank type

- **EWN 04-15 x KA3**
  Range: ø.016”-.590” & ø.4mm-15mm
  1 Div=ø.0005” (ø.0001” Vernier) ø.01mm (ø.002mm Vernier)
Series 317 & 318 Large Diameter Boring Systems

**Series 317 x KAB7**
Range: ø5.91”-46.46”
Tapers: ISO50, HSK-A100/125 & C8

The 317 steel boring system is designed for heavy roughing and high precision finishing of large diameter bores, as well as O.D. turning operations. The compact rugged configuration makes it ideally suited for use on production machines such as boring mills and machining centers with larger spindle taper sizes.

**Series 318 x KAB6 & CKN6**
Range: ø7.87”-13.39”
Tapers: ISO40, HSK-A63 & C5/6

New high-speed, light-weight aluminum system for rough and finish boring, as well as O.D. turning and grooving applications. New “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 KAB7 & CKN7**
Range: ø7.87”-24.41” (extendable up to ø118”)
Tapers: ISO50, HSK-A100/125 & C8

Larger Tapers Extendable Up To ø118”!

O.D. Turning Systems

**Series 112 Small Diameter System**
Turning Range: ø.039”-1.260” & ø1mm-32mm

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

**Series 317 Large Diameter System**
EWN Finishing
Turning Range: ø.827”-40.197” & ø21mm-1021mm

TWN Roughing
Turning Range: ø1.181”-40.197” & ø30mm-1021mm

Turning adapter for use with EWN53 or TWN53 x KAB5 heads.

**Series 310/315 Intermediate Diameter System**

**EWN Finishing**
Turning Range: ø.630”-4.724” & ø16mm-120mm

**TWN Roughing**
Turning Range: ø0.984”-4.724” & ø25mm-120mm

KAB5 & KAB6 modular adapters accepting KAB3-KAB5 EWN & TWN heads.

**Series 318 Light Weight Large Diameter System**
EWN Finishing
Turning Range: ø1.929”-18.740” & ø49mm-476mm

Turning adapter for use with EWN53 x KAB5 heads.
**DUAL CONTACT TOOL HOLDERS OVERVIEW**

**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.

**BIG-PLUS® is offered by many of the world’s leading machine tool builders:**

ACCUWAY, ADVANCED MACHINE, ALEX-TECH, AMS, ANCA, KONDO OKIEN, AREIS, ASA TECH, AWETA, BERO, SPAWAN TECHNICK, BOST, BROTHER, CHEVALIER, CHUO-SHIKI, CITIGAR, CROSS HÜLLER EX-CELL-O, D.C. TECHNOLOGY, DAH-LAI, DAHUI SEIKI, DAI, DMC, DMG MORI SEIKI AD, DMG MORI SEIKI CO., LTD., DOOSAN, DYNOMAX, EGURU, ENSHU, PANAC, FEMCO, FIRST, FISHER, FOREST-LINE, FPT, FRANZ KESSLER, FUJI SEIKI, GIDDONS & LEWIS, GI, SPINDLE TECHNOLOGY, HARDINGE, HMK, HOMMA, HOPKOS, HOWA, IHT, HWACHEON, IBAT, IBARAI INNODATEK, IKIGAI, INOKI KOISO, KIKAI, JOHNDOF, JTI, JUNGWOO M.S., KASBI, KASHIFUJI, KAWAI, KENTEN, KONAMI, KOBAYASHI, KOMET, KOKO, KPTC, KURIAKI, LAZATTI, MAGINOX, MANDOLINO, MANDOLINO TECHNOLOGY, MANGIA, MAKINO, MAKINO SEIKI, MCKINSEY, MCTRONICTECH, MITSUBISHI, MITSUBISHI KOGYO, MITSUI SEIKI, MOTORIKO, N.S.S, NACHI, NAOKI, NAKAMURA, NED, NICOLAS CORREA, NIUGATAC, NIPPON BEARING, NISHIJIMA, NISSIN-MFG, KOMURA, NORTLAND TOOL, NOK, O.M., OBSKASE, OKHORI, OIK, OKIKA, ONAKI, PAMA, PIETRO CARNAGHI, PMR, QUASER, REIKO, ROKU, ROYAL, SAIO, SEPPICO, SETCO, SHAN RONG, SHIDA, SHI, SK, SK, SM, SMC, SMC, SODICK, SOLARAJ, SPINTEC, SPS, STARRAGHECKERT, STUDER, SUPINNO, SUNWOO, SUPERIOR SPINDLE SERVICE, TAJMAC-ZPS, TAKAMAZ KIKAI Kougou, TAKASAWA, TANABE, THETA, TONGTAI, TOS VARIOSDORF, TOSHIBA, TOYO SEIKI, TSUDA, TSUGAMI, TSG, TAI, USUNOMIYA, YDA, YAMAGASA KIKEN, YAMASHINA, YASUDA, YASUNAGA, YCM, YU HUNG, ZAYER

As of November 2013

**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.

**Polygonal tapered dual contact system (1:20 taper)**

**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.
**New Baby Collet**
Clamping Range: ø.010"-.787"  ø.5mm-20mm
For use with New Baby Chuck, Mega New Baby Chuck, Angle Heads, Hi-Jet Holder & High Spindle.

**New Baby Collet for End Mill**
Clamping Range: ø.125"-.750"  ø3mm-20mm
For use with New Baby Chuck & Mega New Baby Chuck when end milling.

**Mega Micro Collet**
Clamping Range: ø.018"-.317"  ø.5mm-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.

**ER 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.

**PJC Reduction Collet**
Clamping Range: ø.125"-1.000"  ø3mm-25mm
For coolant to cutting tool periphery in Hydraulic & Milling Chucks.

**PSC Reduction Collet**
Clamping Range: ø.125"-1.000"  ø3mm-25mm
For coolant through tools in Hydraulic & Milling Chucks.

**Straight Collet**
Clamping Range: ø.250"-1.000"  ø6mm-25mm
Reduction sleeve for smaller diameter cutters in Milling Chucks.

**Nuts**
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.

**Sealed Nuts**
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**
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.

**Collets, Nuts & Wrenches**
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.

Guaranteed Max Runout

1μm AT COLLET NOSE
3μm at end of test bar
All BIG Collets are AA Grade and inspected twice for accuracy

Mega New Baby Chuck

Clamping Range: ø.010”-.787”
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.

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”-.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

1μm AT COLLET NOSE
3μm at end of test bar
All BIG Collets are AA Grade and inspected twice for accuracy
Mega ER Grip

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 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.

Difference in Clamping Strength

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.

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.

Difference in Runout 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!

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.

Difference in Runout Accuracy

Mega E 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.

Guaranteed Max Runout
All BIG Collets are AA Grade and inspected twice for accuracy
Mega Double Power Chuck

Clamping Range: ø.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.

### 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.

<table>
<thead>
<tr>
<th>Contact</th>
<th>Released</th>
<th>Tightened</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Stiffness (N/m)</td>
<td>1.4</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**BBT40-MEGA20D-75**

**Big-Plus**

- Other manufacturer’s 40 taper milling chuck

### High Rigidity

**Cutting Conditions**

- Cutter: Coated Carbide Endmill ø32mm, 4-flutes
- Work Material: A36 Steel
- Cutting Speed: 925 SFM
- Spindle Speed: 2,800 RPM
- Feed Rate: 44 IPM

**BBT50-MEGA32D-105**

Radial d=..551”

Power 20Hp

**Other manufacturer**

- (L=90) Radial d=..374”
- Power 12Hp

### Secure Coolant Supply

Designed to delivered the most effective coolant supply.

PJC and PSC collets available for more directed coolant delivery – see Pg. 9.

**Jet Through Type DS**

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

New Hi-Power Milling Chuck

Clamping Range: ø.750”-1.500”

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.

See PJC & PSC collets on Pg. 9 for coolant delivery options.

### Powerful Clamping for Heavy Cutting

**Conventional milling chucks**

- Thin wall
- Single roller
- Uneven elastic deformation

- Decreased runout accuracy and insufficient gripping force.

**Big-Plus HMC**

- Thick wall
- Tandem roller unit
- Even elastic deformation

- Stable runout accuracy and high gripping force.

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

(The narrow slit maintains an escape route for any oil film.)
**Hydraulic Chuck**

**Clamping Range:** ø.250”-1.250” (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.

*Easy Clamping & Unclamping*

The cutting tool can be clamped or unclamped easily and securely with just 1 wrench and 1 screw.

*Excellent Clamping Repeatability*

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

**Runout Measured at 4xD**

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

**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)!

**Hydraulic Chuck Super Slim**

NEW!

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

**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.

*COOLANT THROUGH*

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

**Coolant Through Center Capability**

**Spiral Tap**

AU1/4 - 20  N=1,000 RPM

-180
-160
-135
-110
-90
-68
-45
-22
0
22

Time (sec)

0.0 0.2 0.4 0.6 0.8 1.0 1.2 1.4

Thrust Load (lbs)

4X7.3

APPROX. -13.2lbs

**MGT 3**

NEW!

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

**MGT 36**

NEW!


**Also available in straight shank & NC Lathe type**
**Smart Damper**

- **BCV50** (KAB4-KAB6) (SM1.000)
- **BBT50** (KAB4-KAB6)
- **HSK-A100** (KAB4-KAB6)

Built-in damping mechanism for long projection operations. Shell mill arbor type also available.

**Finish Boring of Ductile Nodular Cast Iron**

<table>
<thead>
<tr>
<th>Tool Holder</th>
<th>Cutting Speed (SFM)</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitor</td>
<td>80 166 325 500</td>
<td></td>
</tr>
<tr>
<td>SMART DAMPER</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Superior surface finish and better tool life due to the increased cutting speed.
- Outperforms competitor’s holder by 6X higher productivity.

**Cutting Conditions**

- Machine: HMC (BBT50) BIG-PLUS®
- Boring Dia: ø2.677" 
- Depth of Hole: 16" (L/D=6:1)
- Insert nose Radius: R .016"
- Feed Rate: .008" IPR
- Depth of Cut: .012"/a

**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 a built-in 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"
  - 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
- **KAISER KAB & CKN**
  - For tapers, sizes, etc., see Pg. 4.
Revolutionary! The very first modular tooling system for turning applications. 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.

### 45° Tilt Style Type 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.

### 90° Right Angle Style Type F

**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.

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

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

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

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

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.

- **Sealing Section**
- **Bearing Section**

**Non-Contact Seal Design Eliminates Wear Damage**

- Cutting particles in coolant, high speed operation and high pressure cause wear damage.
- Ideal mechanical sealing construction enables use under high speed and high pressure cutting conditions, preventing the main body from wear damage.

**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.

**A Large Range Available for Your Required Applications**

- **AG90 Series NBS Type** ø.010"-.787"
- **AG90 Series Build-Up Type**
  - Multiple quick change adapters available.
- **AG90 Series HMC Type** ø.250"-1.250"
- **AGU Series Universal Type**
  - Adjustable from 0° to 90° in 1° increments, ø.098"-.787".
- **AGU30 Type**
  - Spindle adjustable from 0° to 30°, ø.098"-.787".

**4 Types of Hi-Jet Holders**

- **New Baby Chuck**
- **TG Collet Chuck**
- **Side Lock**
- **KAB Shank**
Air Power Spindle

**RBX5**
- Max RPM: 50,000
- Available in BCV, BBT & HSK

**RBX7**
- Max RPM: 80,000

**RBX12**
- Max RPM: 120,000

**No Need To Rotate Machine Spindle!**
Clamping Range: ø.018”-1.59”
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.

**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 and Superior Surface Finish**

- Material: Prehardened Steel HRC40

- Drastic time reduction! Improved surface finish!

- Machining Time: 450 min.
  - With machining center 20,000 RPM

- Machining Time: 120 min.
  - With Air Power Spindle 80,000 RPM

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

**High Spindle**

- Clamping Range: ø.059”-.630”
- Multiples existing machining center spindle speed 4, 5 or 6 times.
- Higher speed machining increases productivity with greater accuracy and superior finishes.

**High Precision Collet**

- **New Baby Collet**
  - 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**

**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.
INDEXABLE CUTTING TOOLS

**Fullcut Mill FCM Type**

**FCM**
Slot milling • Shoulder milling

Square Shoulder & Slot Milling Cutter
Exclusive design for radial feed combines edge sharpness with rigidity such that it has no equal.

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

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

**Fullcut Mill FCR Type**

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

Cutter Dia.: ø.625"-1.250"
Innovative rigid insert enables powerful and stable ramping.

**Cutting Conditions**
- Machine: BBT40 (BIG-PLUS®)
- 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.

**Exclusive PL Presetter**
Shortens the setup time further (up to 15 sec./insert) while avoiding chipping of the cutting edge.
C-Cutter Mini

World’s smallest .197” square insert with four cutting edges.

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.

Cutter

45° KAB 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.

Center Boy

Chamfering Range: ø.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.

R-Cutter

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.

BF-Cutter

Back spot facing for cap bolt holes.

- Cap bolt size M6-M16
- For ø.433”-1.024”
- Indexable inserts save cost
- Coolant through

No more regrinding thanks to a replaceable insert.
Sphinx Drills and Micro End Mills

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. For reliable and worry-free operations in common and exotic materials.

Micro Drills

- **Spotting, 2xd**
  - HSS & Carbide: ø.10mm–1.50mm
  - Point: 130°

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

- **Pilot, 3mm Shank, 2xd**
  - Carbide: ø.03mm–2.00mm
  - Point: 130°

- **Spirec, 5-8xd**
  - HSS: ø.05mm–3.175mm
  - Point: 118°

- **Spirec, 6xd**
  - Carbide: ø.05mm–2.00mm
  - Point: 118°

- **Spirec-Plus, Positive Tolerance, 6xd**
  - Carbide: ø.20mm–1.50mm
  - Point: 118°

- **3mm Shank, 6xd**
  - Carbide: ø.03mm–3.00mm
  - Point: 130°

- **3mm Shank, 12xd**
  - Carbide: ø.20mm–3.00mm
  - Point: 130°

- **Micro Tricut Drill Reamer, 5xd**
  - Carbide: ø.20mm–2.99mm
  - Point: 140°

High Performance Drills

- **Phoenix, 6xd**
  - Carbide: ø.50mm–2.40mm
  - Point: 140°

- **Phoenix, 6xd & 12xd**
  - Carbide: ø.10mm–2.70mm
  - Point: 140°, coolant-through

- **Fastcut, 3xd**
  - Carbide: ø.30mm–20.00mm
  - Point: 140°

- **Power-Phoenix, 16xd**
  - Carbide: ø.10mm–12.70mm
  - Point: 140°, coolant-through

- **Power-Phoenix, 20xd, 25xd & 30xd**
  - Carbide: ø.30mm–10.00mm
  - Point: 137°, coolant-through

- **Quadro Plus, 6xd & 12xd**
  - Carbide: ø.30mm–20.00mm
  - Point: 140°, coolant-through

- **Quadro 15 Plus, 6xd**
  - Carbide: ø.40mm–20.00mm
  - Point: 140°, coolant-through

Twist Drills

- **Spotting**
  - Carbide: ø.02mm–20.00mm
  - Point: 90°, 120° & 140°

- **Spotting/Chamfering**
  - Carbide: ø.10mm–12.00mm
  - Point: 142° w/ 90° chamfer

- **Spicut, 10xd**
  - Carbide: ø.07mm–14.00mm
  - Point: 130°

- **Posicut, 5xd**
  - Carbide: ø.30mm–20.00mm
  - Point: 118°

- **Spirec, 10xd**
  - Carbide: ø.03mm–6.00mm
  - Point: 118°

Drill Reamers

- **Tricut, 5xd & 10xd**
  - Carbide: ø.10mm–14.00mm
  - Point: 140°

- **Asycut, 5xd**
  - Carbide: ø.20mm–14.00mm
  - Point: 118°

Micro End Mills

- **Carbide: ø.30mm–2.50mm**
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 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. A CNC version is now available.

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 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 Presetter

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

Diaset Tool Presetter

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

Speroni 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.

SimpleVision Control Software
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 Control Software
Can be used by CNC machine operators as well as by skilled tool room personnel.
- Unlimited tool database
- Tool association to specific tool jobs
- More tool data information storage
- Password management for multiple users
- Allows for integration of outside interfaces

EDGE PRO Control Software
Fully featured software used for simple measurements to the most advanced measuring tasks.
- Component management for tracking stock amounts and tool assembly
- Advanced scanning of tool profile for comparisons to technical specs
- More advanced measuring tasks allowing guided measuring programs
Unilock Zero-Point Workholding

Our Most Popular Chuck

- Versatile features in a mid-sized diameter to fit most 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.
  - Optional timing notch.

- ESM 138
  - Lightweight base plate for easy mounting to tables.
  - Optional timing notch available.

- EFM 138
  - Designed to process two single pallets with multiple indexes or one double pallet.

- DCM 200
  - Keyways on bottom for quick positioning on work table.
  - Optional timing notch in face of chucks.

- DLM 200
  - Keyways on bottom for quick positioning on work table.
  - Optional timing notch.

For Smaller Applications

- ASM 90
  - Reduced diameter for small work or tight spaces.
  - Turbo option for increasing the holding power.

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

- MLM 150
  - Lightweight base plate for easy mounting to tables.
  - Optional timing notch available.

- MCM 150
  - Execute multiple 90° indexes. Air supplied from side of base plate.

- QC 400
  - 4 ESM 138 chucks fed with a single air connection from the side.

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

- MSM 170
  - Large diameter, heavy-duty, with many mounting options, including a kit to adapt to rotary indexers.

- HSM 196
  - For lathes or mills where the center of rotation provides a through hole to bury the workpiece.

Starter Kits

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

Larger & More Robust Chucks

- ESM 176 Turbo
  - Large diameter, with turbo feature for more clamping force and rigidity.

- MSM 170
  - Large diameter, heavy-duty, with many mounting options, including a kit to adapt to rotary indexers.

- HSM 196
  - For lathes or mills where the center of rotation provides a through hole to bury the workpiece.

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.

Mono & Duo Table Chucks

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

Knobs

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

Pallets

- Mono, Duo & Quad Pallets
  - Pallets are blank and allow the customer to install any type of mounting hardware to them.
### Automation Chucks

**ESA 110**
- Pallet confirmations and contact pad cleaning.

**NSA 125**
- Pallet confirmations, contact pad cleaning and integrated pallet lifter.

**ESA 185**
- Pallet confirmations and contact pad cleaning with high retention forces available – 3,300 lbs or 8,800 lbs with turbo.

### 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.

**Dovetail Grip**
- Universally adjustable clamping system. Workpiece size is only limited by the length of the thread that pulls the jaws together.

**5-Axis Riser Chucks**
- Available on base plates or as stacking modules. Base chucks can also have clamping knobs attached for use in other Unilock chucks.

### 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 and are corrosion resistant.

**SG 100**
- Steel encased mineral cast available with either Unilock chucks or a grid pattern.

### 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 170**
- This chuck supports a passage for delivering compressed air to the top side of the fixture plate.

### 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.

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

### 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.

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.
Tooling Cleaners

**Ω. Taper Cleaner**
Maintain the accuracy of high precision collet chucks by cleaning the internal collet taper.

**Ω. Tooling Cleaner**
For the cleaning of both mating surfaces of BIG-PLUS® tool holders, which require absolute cleanliness for optimum performance. Oil and particles on both the taper and flange of 7/24 taper shanks are easily removed.

**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.

**Ω. 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.

**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.
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.

**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.

*The BM Gold, Micro and Mini 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.

Level Master

High precision device for the leveling of machine tool tables. Simultaneous 2-axis detection uses optical level sensor technology with 10 micron per meter precision (.01mm/m).

**Mode Display**

- Leveling Complete LED (Blue)
- Buzzer
- Power Switch (Auto On/Off Function)
- Battery Alarm
- Set Switch (Zero Adjustment Function)

**Battery Alarm**
"BAT" Indication Blinks When Battery Is Low

**Power Switch**
Used To Calibrate The Unit

**Power**
Power Is Automatically Turned Off 30 Minutes After Turned On

**LED & BUZZER INDICATION**

Easy leveling with simultaneous 2-axis detection

**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**
Dial Indicator Stands

For the maintenance of a machine tool spindle. Measures the misalignment between the ATC arm and the machine tool spindle or magazine pot center. The dial indicator aids in quick adjustment.

**AL Shank**
In machine tool spindle

**AL Flange**
In ATC arm

**AL Plug**
Dial indicator stylus

Dyna Test

Precision test bar for static runout accuracy. This precision arbor is produced under a strict quality control process. Regular inspection with this test bar helps to identify potential spindle problems.

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

Dyna Force

Measuring equipment for retention force of machine tool spindles.

Big-Plus® Cleaner

Blowing air cleans the Big-Plus® machine spindle face of all debris.

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 possibility.

Precision Standards of Big Daishowa Test Arbors

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Runout</td>
<td>≤0.002mm (.00008&quot;)</td>
</tr>
<tr>
<td>Roundness</td>
<td>≤0.001mm (.00004&quot;)</td>
</tr>
<tr>
<td>Cylindricity</td>
<td>≤0.003mm (.00012&quot;)</td>
</tr>
<tr>
<td>Roughness (Ra)</td>
<td>≤0.1 μm (.000004&quot;)</td>
</tr>
<tr>
<td>Taper Contact</td>
<td>AT1</td>
</tr>
<tr>
<td>Diameter Tol.</td>
<td>≤0.005mm (.0002&quot;)</td>
</tr>
</tbody>
</table>

**Type SU/F**

**Type MU/F**

**Type Accu Mini Mini**

Positioning precision and exact measurements in the μm range. 360° freedom of positioning controlled by one progressive clamping star grip. Features a magnetic base that mounts to any conductive surface.
MODERN FACILITIES FOR HIGH QUALITY PRODUCTION

BIG Kaiser–Hoffman Estates, IL
BIG Daishowa–Awaji Factory No. 1, Japan
BIG Daishowa–Awaji Factory No. 2, Japan
BIG Daishowa–Awaji Factory No. 3, Japan
BIG Daishowa–Awaji Factory No. 4, Japan
BIG Daishowa–Awaji Factory No. 5, Japan
BIG Daishowa–Mega Technical Center, Japan
BIG Daishowa–Osaka Headquarters, Japan
KAISER Precision Tooling Ltd., Switzerland
Speroni–Spessa, Italy
Innotool–Altach, Austria
Sphinx–Derendingen, Switzerland