

COMMAND Tooling Systems

Main Toolholder Catalog



Command Tooling Systems Terms of Sale



Payment Terms - Payment terms are net 30 days from shipment, for customers of satisfactory credit. No shipments will be made to delinquent accounts.

Prices, Freight Terms, and Order Minimum- All prices are subject to change without notice. All products are shipped FOB Command Tooling Systems Ramsey, MN USA. There is no minimum order quantity on Standard Command parts. Custom or Made to Order parts have a minimum order requirement two parts.

Return Goods

1. To return a product, contact Command's Customer Service Department for a Returned Material Authorization (RMA) number.
2. Credit for returned product is good for use toward purchases only and must be used within **60 days** of issuance, afterwards the credit will be null and void.
3. Be sure to include the RMA number on the return package for prompt processing.
4. Product may be returned for credit only upon prior approval from Command Tooling Systems and is subject to the following conditions:
 - a. Returns must be made within **60 days** from date of factory shipment. All exchanges must be accompanied by an order of equal or greater value. Restocking charge of 15% will apply to returns that do not include orders of equal or greater value.
 - b. Product must be received in like-new saleable condition and of current manufacture.
 - c. Product must be returned complete. All returns are subject to inspection.
 - d. "M" Made to order, modified standard, and custom manufactured products are non- returnable.
 - e. ThermoLock® products that have been heated are non-returnable.
 - f. Return transportation charges must be prepaid.

Exchanging Purchased Parts – The replacement order must be of greater or equal value of the original order to the original customer to avoid the 15% restocking fee. Returned product must be in like-new saleable condition, and of current manufacture. To return product, contact Command's Customer Service Department for a Returned Material Authorization (RMA) number. A new Purchase Order for replacement order must be placed at the same time to avoid the 15% re-stocking fee. Returned product must have the RMA number on the return package for prompt processing.

Cancellation Fees for Custom Manufactured Parts – A cancellation fee applies to custom manufactured orders. The fee is 25% of the order amount or the cost of labor & materials at the time of cancellation, whichever is higher.

Damage Claims & Shipping Shortages - Command Tooling Systems assumes no responsibility for loss or damage in transit. The consignee should present claims for such damage to the carrier. Our terms of sales are FOB Command Tooling Systems, Ramsey, Minnesota USA. **Shipping shortages must be reported to the factory within 5 business days after receipt of material.**

Warranty - Our policy of 100% unconditionally guaranteed materials and workmanship assures your satisfaction. Command Tooling Systems' manufactured products are covered by our 100% satisfaction guarantee. Should they prove to be defective in materials or workmanship, simply contact the Customer Service Department to obtain a RMA number and shipping instructions. Warranty determined by Command Tooling Systems within 60 days of factory shipment.

Command Tooling Systems disclaims any and all warranties, either expressed or implied, arising by law or otherwise, including but not limited to non-infringement and implied warranties of merchantability or fitness for a particular purpose. Command Tooling Systems' liability, if any, is limited to and shall not exceed the amount paid for a defective part. In no event will Command Tooling Systems be liable for any indirect, special or consequential damages, including but not limited to: lost profits or lost revenues, even if Command Tooling Systems has been advised of the possibility of these damages.

Vision:

A premier tooling solutions company for precision machining.

Our Mission:

To advance precision machining productivity by providing the world's finest tools and tooling solutions faster than the competition through superior dealers and distributors supported by highly motivated and well-trained employees.

Command Quality:

The best in product, service, availability, and value. This is our foundation and our path to growth.

Command Tooling Systems Terms Of Sale I

Helpful Information A1 - A12

Toolholder Icon Index A-1
 Toolholder Identification System A-2
 Toolholder Excellence & Collet Care A-3
 Shank Identification A-4
 HSK Information A-5
 Balance Information A-6 - A-8
 Custom Toolholders A-9
 Recommended Torque Values A-10 - A-11
 Coolant Options A-12

Collet Chucks, Accessories & Collets B13 - C-61

Micro Precision® ER Collet Chuck B-13 - B-28
 Front Coolant Seal Disks & Nosepieces B-29 - B-30
 XT Precision® Collet Chucks B-32 - B-42
 XT Precision® Collets B-43 - B-44
 High Precision Chucks C-45 - C-46
 TG100 Comflex® Collet Chucks C-47 - C-48
 TG150 Comflex® Collet Chucks C-49 - C-50
 TG100 Collets C-51
 TG150 Collets: C-52
 Double Angle Extensions & Collets C-53 - C-54
 Blue Chip Coolant Containment System C-55
 End Mill Holders C-56 - C-61

Specialty Holders C-62 - C-74

Milling Chucks C-62
 Blank Bars C-63
 Shell Mill Holders C-64 - C-65
 Tap Holders & Accessories C-66 - C-68
 Boring Head Holders C-69
 Semi-Flush Slitting Saw Holders C-70
 Stub Arbor Holders C-71
 Morse Taper Holders C-72
 Jacobs Taper Holders C-73
 Integral Shank Keyless Chuck C-74

Tooling Accessories D-75 - D-83

True Zero D-75
 Retention Knobs D-76 - D-77
 Setup Holding Fixtures D-78
 Torque Wrenches D-78
 HSK Accessories & Setup Holding Fixtures D-79
 Zero Master Edge Finder D-79
 Taper Check™ D-79
 System II™ Adaptive Drawbar Dynamometer D-80
 Precision Test Bars & Accessories D-81
 Tool Tags D-81
 Collet Racks, Tool Carts, Storage & Shelving D-82 - D-83

INDEX D-84 - D-93

Toolholder Icon Index



TECHNICAL INFORMATION

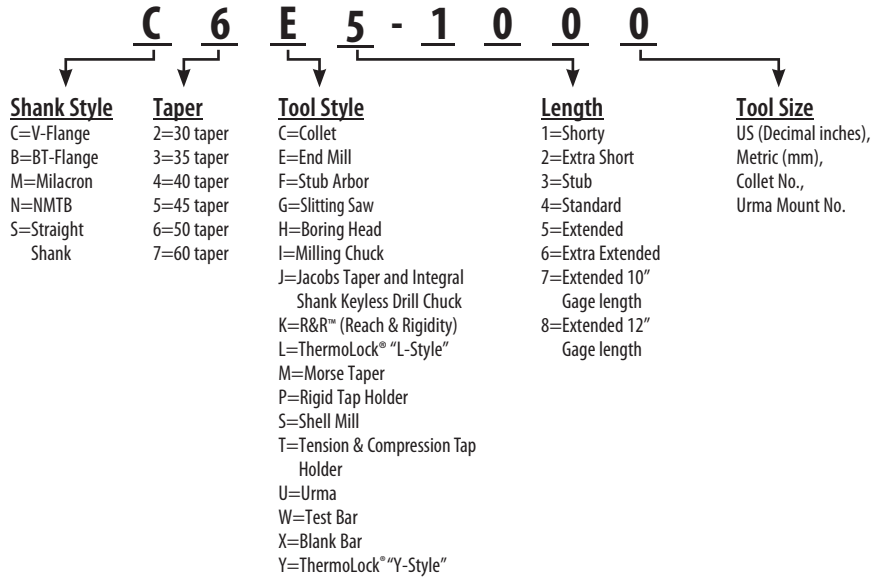
| Toolholder Type | Page No. | BT and V-Flange | HSK | |
|---|-------------------------|-----------------|-----|------------------|
| ER11 Micro Precision® Collet Chucks XT11 XT Precision® Collet Chucks | C-3 C-21 | | | |
| ER16 Micro Precision® Collet Chucks XT16 XT Precision® Collet Chucks | C-4 C-22 | | | |
| ER20 Micro Precision® Collet Chucks XT20 XT Precision® Collet Chucks | C-6 C-24 | | | |
| ER25 Micro Precision® Collet Chucks XT25 XT Precision® Collet Chucks | C-8 C-26 | | | |
| ER32 Micro Precision® Collet Chucks XT32 XT Precision® Collet Chucks | C-10 C-28 | | | |
| ER40 Micro Precision® Collet Chucks XT40 XT Precision® Collet Chucks | C-12 C-30 | | | |
| Shorty ER32 Micro Precision® Collet Chucks | C-2 | | | |
| R&R™ (Reach and Rigidity) Collet Chucks | C-6 & C-10 | | | |
| TG100 Comflex® Collet Chucks TG150 Comflex® Collet Chucks | C-22 C-24 | | | |
| High Precision Collet Chucks | C-20 | | | |
| End Mill Holders | C-32 thru C-37 | | | |
| R&R™ (Reach & Rigidity) End Mill Holders | C-33, C-35 | | | |
| Thermolock® Shrink Fit Holders | SEE SEPARATE CATALOG | | | |
| Milling Chucks | S-1 | | | |
| Blank Bars | S-2 | | | |
| Shell Mill Holders | S-3 & S-4 | | | |
| Tension & Compression Synchronous (Rigid) Tap Holders | S-5 & S-6 | | | |
| Boring Head Holders | S-8 | | | |
| Semi-Flush Slitting Saw and Stub Arbor Holders | S-9 & S-10 | | | |
| Morse Taper Holders | S-11 | | | |
| Jacobs Taper Holders | S-12 | | | |
| Integral Shank Keyless Chucks | S-13 | | | |

Comflex®, Digiset 2™, Digiset 6™, Micro Precision®, R&R™, System II™, ThermoLock®, Blue Chip™, MicroMax™, IntraMax™, VersaMax™, MegaMax™, Quick Tune™, Fine Tune™ Mass Symmetry®, XT Precision® are trademarks of Command Tooling Systems. Shrinker® is a registered trademark of Tooling Innovations, Dana Point, CA. Beta Modul® is a trademark of Urma AG, Rapperswil, Switzerland. ©Copyright 2006

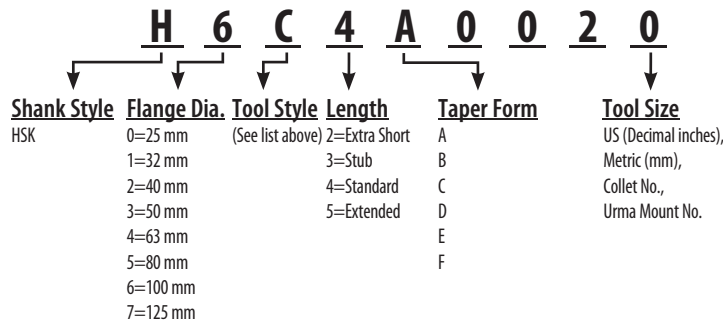
Toolholder Identification System

Tapered & Straight Shank Toolholders

Command Toolholder Part Numbering System



For HSK Toolholders



Note: With HSK, it is the flange diameter that determines toolholder size, NOT the taper size as with BT and V-Flange holders.

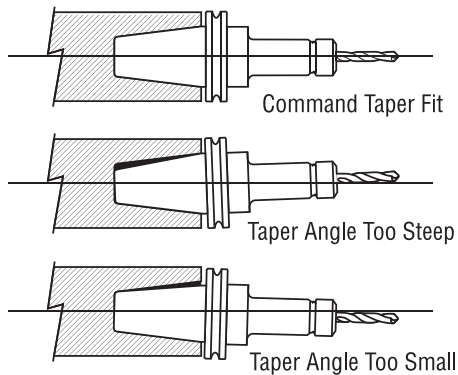
For Optional Black Oxide Complete

- Our standard toolholder part numbers represent two-tone finish toolholders. Black Oxide Complete is available upon request.
- The Black Oxide Complete is not available for Command HSK, ThermoLock®, Milling Chucks, Integral Shank Keyless Chucks or Test Bars.
- For delivery details, contact Command Customer Service.

Command Toolholder Benefits:

- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Concentric to $<.0002$ (.005 mm or 5 microns) — puts tool precisely on spindle centerline.
- Less tool wear and replacement — less scrap.
- Fully ground flange and V-groove — easy on tool changers for less spindle and changer maintenance.
- All tapers and lengths ready to ship — get your tools fast.

Command's AT3 accuracy for shank taper is a minimum of 35% better than the ANSI Standard. This virtually eliminates play when the machine's spindle bore is in good condition and of equal or better accuracy. The toolholder will not wobble. Superior cutting accuracy raises quality of manufactured parts and reduces rejects. Tools cut smoother with less fatigue for longer life and lower tool costs. Command grinds toolholder shanks to an accurate and uniform taper with ultra-precise



computerized equipment. Without uniformity, toolholder and spindle bore tapers will have raised areas or asperities. Cutting pressure and vibration tend to weld these asperities to the surfaces they touch. As the welds break and re-form, both surfaces pit metal from toolholder and spindle bore turns to powder and oxidizes. This is called fretting. Uniform taper, Command toolholder shanks resist fretting. Command toolholders keep their accuracy, last longer, and the machine spindles will last longer, too.

Accuracy from the shank-to-spindle union is carried through to the cutting tip of the tool. Command toolholder concentricity is the proven best in the industry. This positions the tool precisely on a centerline from the spindle. It runs true. The cut is smooth and uniform for best piece-part quality and minimum scrap. Tools last longer to reduce tooling costs and downtime.

Flanges and V-grooves are fully ground for smooth, sure handling in tool changers and reduced vibration at high RPMs. In addition to protecting machines from costly toolholder hang ups, the cutting performance is improved.

Versatile Command toolholders mill, drill, ream, and bore. No need to stock different toolholders for each operation when one Command toolholder does it all. A complete inventory of tapers and lengths is available for immediate shipment to minimize waiting downtime. Straight shank extensions extend reach without requiring costly custom toolholders. Of course, special tapers or lengths are available upon request.

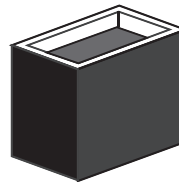
Command Micro Precision® and XT Precision® Collet System Benefits:

Micro Precision® and XT Precision® collets collapse to accept a wide range of tools. Fewer collets are needed to accommodate the entire tool range of a toolholder, reducing collet inventory and collet cost. Selected fractional on-size collets, listed by decimal equivalents, are also available. They provide a quick fit for standard fractional tools and superb rigidity for top cutting performance and tool durability.

NOTE: Tool shanks must engage full length of collet ID bore. Failure to follow this practice may result in tool failure.

Clean Collets Maintain Close Tolerances

Command recommends the use of all three techniques for proper collet cleaning:



Bench-top Ultrasonic Cleaners dislodge fine chips and debris deposited from coolant and manufacturing.

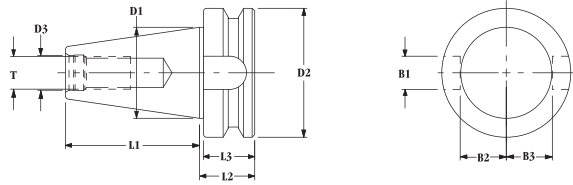


Bottle brush helps to dislodge foreign material from interior collet slots.



Toothbrush or other helps to dislodge foreign material from exterior collet slots.

JIS B 6339 (BT-Flange Style)

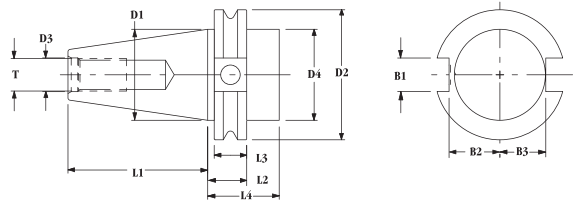


h6 Tool Shank Tolerance

| Shank Size Inch (mm) | Tolerance Inch (mm) |
|-------------------------|------------------------|
| .2362-.3937 (6-10) | -.00035 (-.009) |
| .3937-.7087 (10-18) | -.00043 (-.011) |
| .7087-1.1811 (18-30) | -.00051 (-.013) |
| 1.1811-1.9685 (30-50) | -.00063 (-.016) |

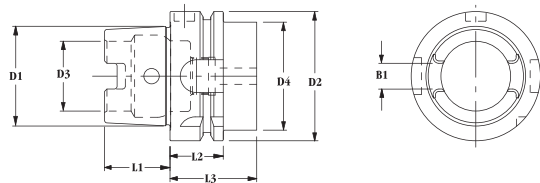
| Taper | D1(mm) | D2(mm) | D3(mm) | T | L1(mm) | L2(mm) | L3(mm) | B1(mm) | B2(mm) | B3(mm) |
|-------|--------|--------|--------|------------|--------|--------|--------|--------|--------|--------|
| 30 | 31.75 | 46.00 | 12.50 | M12 X 1.75 | 48.40 | 22.00 | 20.00 | 16.10 | 16.30 | 16.30 |
| 35 | 38.10 | 53.00 | 12.50 | M12 X 1.75 | 56.40 | 24.00 | 22.00 | 16.10 | 19.60 | 19.60 |
| 40 | 44.45 | 63.00 | 17.00 | M16 X 2 | 65.40 | 27.00 | 25.00 | 16.10 | 22.50 | 22.50 |
| 45 | 57.15 | 85.00 | 21.00 | M20 X 2.5 | 82.80 | 33.00 | 30.00 | 19.30 | 29.10 | 29.10 |
| 50 | 69.85 | 100.00 | 25.00 | M24 X 3 | 101.80 | 38.00 | 35.00 | 25.70 | 35.40 | 35.40 |

ANSI B5.50 (CAT, V-Flange Style)



| Taper | D1 | D2 | D3 | D4 | T | L1 | L2 | L3 | L4 | B1 | B2 | B3 |
|-------|-------|-------|-------|-------|---------|-------|-------|-------|------------|-------|-------|-------|
| 30 | 1.250 | 1.812 | 0.516 | 1.250 | .500-13 | 1.875 | 0.750 | 0.625 | 1.380 Min. | 0.645 | 0.735 | 0.640 |
| 40 | 1.750 | 2.500 | 0.641 | 1.750 | .625-11 | 2.687 | 0.750 | 0.625 | 1.380 Min. | 0.645 | 0.985 | 0.890 |
| 45 | 2.250 | 3.250 | 0.766 | 2.250 | .750-10 | 3.250 | 0.750 | 0.625 | 1.380 Min. | 0.770 | 1.235 | 1.140 |
| 50 | 2.750 | 3.875 | 1.031 | 2.750 | 1.000-8 | 4.000 | 0.750 | 0.625 | 1.380 Min. | 1.020 | 1.485 | 1.390 |
| 60 | 4.250 | 5.500 | 1.281 | 4.250 | 1.250-7 | 6.375 | 0.750 | 0.625 | 1.380 Min. | 1.020 | 2.235 | 2.140 |

ISO 12164-1 HSK FORM A



| Taper | D1(mm) | D2(mm) | D3(mm) | D4(mm) | L1(mm) | L2(mm) | L3(mm) | B1(mm) |
|-------|--------|--------|--------|----------|--------|--------|---------|--------|
| 32 | 24 | 32 | 17 | 26 Max. | 16 | 20 | 35 Min. | 7.05 |
| 40 | 30 | 40 | 21 | 34 Max. | 20 | 20 | 35 Min. | 8.05 |
| 63 | 48 | 63 | 34 | 53 Max. | 32 | 26 | 42 Min. | 12.54 |
| 80 | 60 | 80 | 42 | 68 Max. | 40 | 26 | 42 Min. | 16.04 |
| 100 | 75 | 100 | 53 | 88 Max. | 50 | 29 | 45 Min. | 20.02 |
| 125 | 95 | 125 | 67 | 111 Max. | 63 | 29 | 45 Min. | 25.02 |

HSK

The HSK spindle interface features a hollow taper, which is the connection's mating surface (see drawing below). When the clamping mechanism is actuated, there is intimate contact between the back of the toolholder flange and the face of the spindle. Initially, there is a nominal gap between the spindle face and the flange of the toolholder. The drawbar pulls back the clamping cone, which wedges the gripper fingers into the clamping position. As the fingers lock, they pull the toolholder into the spindle by cam action to effect an interference fit in the spindle and force the flange against the spindle face. This simultaneous fit concept results in excellent radial and axial positioning.

Not only does the drawbar system provide a positive lock between the toolholder and spindle, it does so without preloading the entire spindle as conventional drawbars do. Centrifugal force generated by spindle rotation, usually an enemy of spindle connections, actually increases the gripping strength, increasing the system's rigidity.

At elevated spindle speeds, when spindle growth becomes a factor, the toolholder walls remain in contact with the spindle. This assures continued spindle runout accuracy while the face contact retains the z-axis accuracy.

Note:
Left side of diagram illustrates unclamped position.
Right side shows clamped position.

Standard HSK Forms

Forms A and B

We manufacture to the latest ISO and DIN standard. Form A for general service and Form B, with greater flange support, for heavier work. The increase in flange dimension was gained by making the taper smaller. Thus, Form A and Form B toolholders with the same flange diameter are not interchangeable because their tapers differ.

Forms C and D

These standards are similar to A and B, but are for manual tool change applications.

Forms E and F

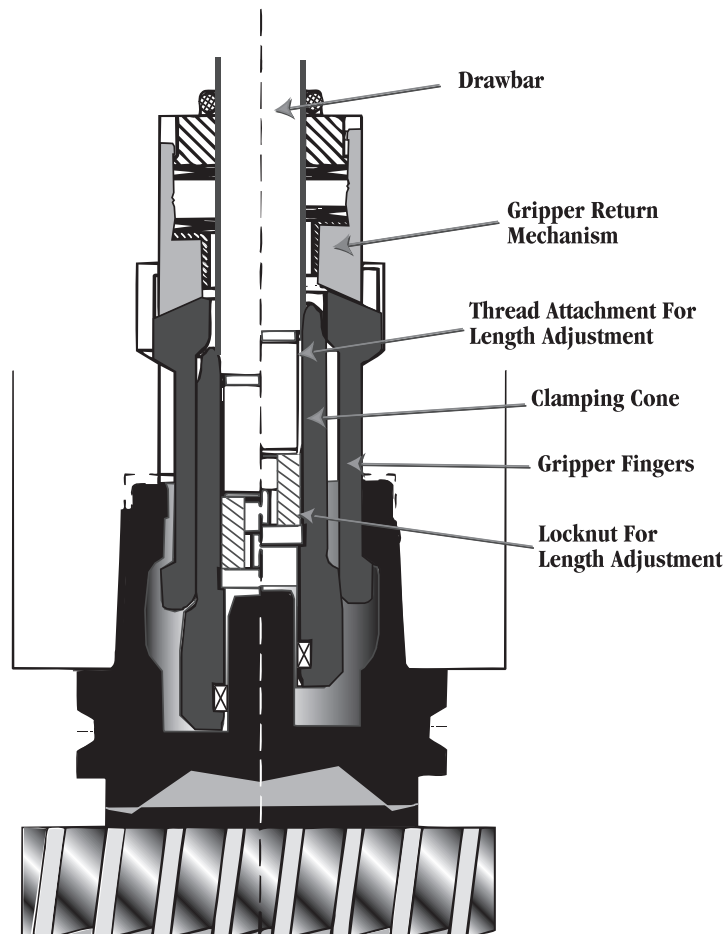
These standards balance toolholders for high speeds by omitting drive key, identification, and indexing features which detract from symmetry of toolholder mass.

Command HSK Toolholders

- Premium Material.
- Command Tooling Systems is on the leading edge of changes in the industrial specifications for HSK.

Unique Features

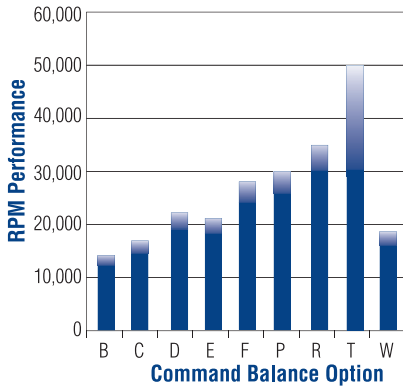
- Harnesses centrifugal force for higher machining speeds. The faster it spins, the tighter it seats.
- High static and dynamic toolholder rigidity holds radial and axial position well at all speeds for improved accuracy, repeatability, and material removal.
- Short, light taper for reduced tool changer travel and faster tool changes.
- Positive locking and centrifugal clamping for enhanced safety.



Courtesy of Ott-Jakkob GmbH and Co.

Customize Your Toolholder with Balance or Nosepiece Options

Command Balance Performance



Guidelines for acceptable balance for machine tools must come from the machinery builder. Command Tooling Systems offers state-of-the-art balancing options with the commitment to serving our customers requirements.

Command Balance Options

| Option | Description | Explanation |
|--------|--|--|
| B | Mass Symmetry® (Command's Standard Balance) | • Unequal drive slot depths, set screws, tapped holes, and other design asymmetries are counterbalanced |
| C | G2.5@15,000 RPM | • Counterbalances toolholder asymmetry |
| D | G2.5@15,000 RPM | • Counterbalances toolholder and retention knob asymmetry |
| E | G2.5@20,000 RPM | • Counterbalances toolholder asymmetry |
| F | G2.5@20,000 RPM | • Counterbalances toolholder and retention knob asymmetry |
| P | Premium Balance | • Includes certificate of balance • Counterbalances toolholder body, retention knob, collet, and pin completely assembled • Includes Fine Balance nosepiece and choice of collet and pin • Parts are balanced individually and assembly is certified to less than 3 g-mm • Available for: Micro Precision® and XT Precision® collet chucks, and ThermoLock® Toolholders only |
| R | Premium Adjustable Balance | • Same as Premium Balance except includes Fine Tune™ nosepiece |
| T | Custom Engineered | • Designed to meet individual requirements—Consult Command Customer Service |
| W | Assemblies | • Balancing of Urma assemblies, shell mill holders, and other built-up assemblies |

To Order Command Balanced Toolholders

Just add the balance option code shown above after the standard part number. Questions? Contact customer service.

For example: C6E5-1000-**C** (**C** indicates G2.5 @ 15,000 RPM balance option)
H6C4A0020-**P** (**P** indicates the Premium balance option)

Notes

- Balancing Equipment, contact Command Customer Service.
- Balancing Rings, contact Command Customer Service.
- Return Policy: Once standard toolholders are modified, they cannot be returned.

Command Nosepiece Options

Nosepiece Options For Command Collet Chucks

Optional nosepieces easily replace the standard nosepiece that come with Command Collet Chucks. Refer to proper collet chuck page to order the correct wrench and optional nosepieces.

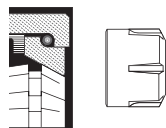
For complete listing of nosepiece options and additional product details, contact Command's Customer Service. A sampling of the nosepiece options are listed below.

Classic Nosepiece



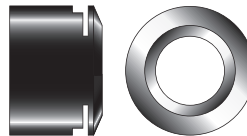
- Used to be Command's standard nosepiece until 2006
- Smaller diameter, in most sizes
- Replaceable clip for most sizes

Ball Bearing Nosepiece



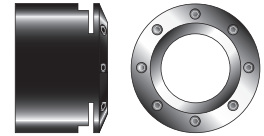
- Increases holding power
- Improves tool concentricity

Fine Balance Nosepiece



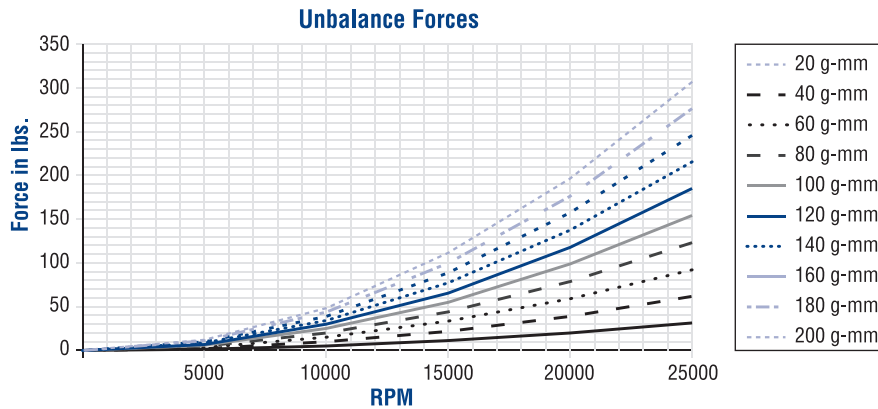
- For use without a balancing machine

Fine Tune™ Nosepiece



- 8 small set screws ringing the nose can be removed or replaced to obtain correction
- Requires a balancing machine

Importance of Toolholder Balance



Understanding Balance

Command Toolholders can be balanced for the speed you need. The perfect balance configuration can be rendered useless by a single variable. The benefits of balance are becoming so critical in high speed machining, we want our customers to understand and select the most appropriate choice for their application.

Slight imbalance at low spindle speeds will not damage your machine tool spindle. However, it is important to remember that as the definition of "low spindle speed" increases, the definition of slight imbalance must decrease accordingly!

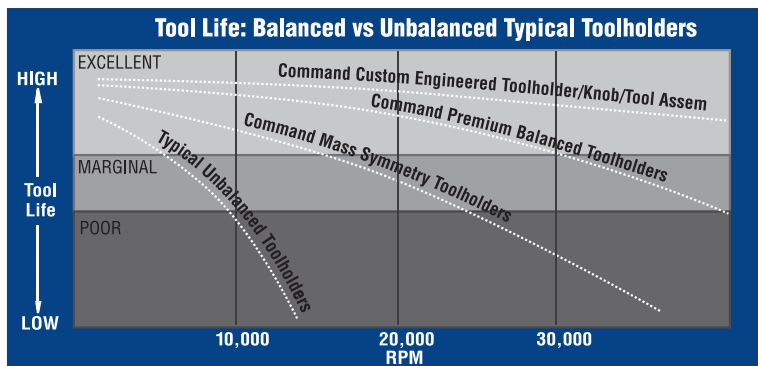
Just take a look at how force increases with imbalance and spindle RPM (see figure above).

Generally as imbalance increases, the amount of force generated increases. When dealing with a toolholder, this means increased tool deflection and less machining accuracy. If forces are high enough, spindle damage can result.

Command Tooling Systems offers toolholders with the balance you need—but that is only the first step! Overall balance is impacted by many variables. To obtain optimal balance performance, other limiting variables must also be controlled. These include:

1. Spindle fit
2. Assembly tolerance of components (i.e., nosepiece, retention knob)
3. Tooling repeatability
4. Eliminating bad or worn out tooling

All the pieces must be in place for optimal high speed machining applications. A balanced system is only as strong as the weakest link. As shown in figure above, there are no hard and fast steps in centrifugal force or balance grades.



Look to Command for Balance Beyond the Rest

- Command uses the latest balancing equipment in-house to provide you with fast service.
- Command is one of the toolholder manufacturers recommended by leading machine tool builders for demanding high-speed applications.
- Command has been balancing toolholders since 1985. We offer you more experience in toolholder balance than anyone. We understand balance and the commitment it takes to provide our customers with properly balanced toolholders.

Balance

- Unbalanced Toolholder
 - Vibrations
 - Harmonics
 - Sympathetic vibrations
 - Wrecks alignment
 - Cuts unevenly
 - Roughens part finish
 - Chips tool edges
 - Raises costs
- Balanced Toolholder
 - Runs smooth
 - Cuts balanced chips
 - High finish on parts
 - Fewer rejects
 - Longer tool life
 - Reduced maintenance
 - Saves material & time
 - Lowers costs

Notes

- Balancing Equipment, contact Command Customer Service.
- Balancing Rings, contact Command Customer Service.
- Return Policy: Once standard toolholders are modified, they cannot be returned.

Command Standard Balance Chart

| Micro Precision® Collet Chucks | | | | | |
|--------------------------------|--------------------------|--------------------------|--------------------------|-----------------------|-----------|
| | G 2.5 @ 15,000 RPM | G 2.5 @ 18,000 RPM | G 2.5 @ 20,000 RPM | G 6.3 @ 24,000 RPM | Not Rated |
| BT 30 | | | | | |
| BT 35 | | | | | |
| BT 40 | | | | | |
| BT 45 | | | | | |
| BT 50 | | | | | |
| V 30 | | | | | |
| V 40 | | | | | |
| V 45 | | | | | |
| V 50 | | | | | |
| HSK40 | | | | | |
| HSK63 | | | | | |
| HSK100 | | | | | |

| XT Precision® Collet Chucks | | | | | |
|-----------------------------|--------------------------|--------------------------|--------------------------|-----------------------|-----------|
| | G 2.5 @ 15,000 RPM | G 2.5 @ 18,000 RPM | G 2.5 @ 20,000 RPM | G 6.3 @ 24,000 RPM | Not Rated |
| BT 30 | | | | | |
| BT 35 | | | | | |
| BT 40 | | | | | |
| BT 45 | | | | | |
| BT 50 | | | | | |
| V 30 | | | | | |
| V 40 | | | | | |
| V 45 | | | | | |
| V 50 | | | | | |
| HSK40 | | | | | |
| HSK63 | | | | | |
| HSK100 | | | | | |

| High Precision® Collet Chucks | | | | | |
|-------------------------------|--------------------------|--------------------------|--------------------------|-----------------------|-----------|
| | G 2.5 @ 15,000 RPM | G 2.5 @ 18,000 RPM | G 2.5 @ 20,000 RPM | G 6.3 @ 24,000 RPM | Not Rated |
| BT 40 | | | | | |
| BT 50 | | | | | |
| V 40 | | | | | |
| V 50 | | | | | |
| HSK63A | | | | | |
| HSK100A | | | | | |

 Standard Level of Balance

Notes

- Return Policy: Once standard toolholders are modified, they cannot be returned.

Command is ready to meet the challenges of custom toolholders with quick turnaround.

Machining requirements often go beyond standard toolholders

- Unusual Part Shapes
- Extra Reach
- High RPM Machining
- Difficult-to-Machine Materials
- Tight Tolerances

Whatever it takes... we'll get you there.



Keep in mind—

- Pricing for custom made toolholders is quantity sensitive.
- If we require cutting tools for balancing, they must arrive at Command within two weeks after receipt of order.
- If special tooling is required to finish your product, it must be in house before we can start manufacturing.
- If a print is sent for approval, it must be returned within two working days to assure prompt order processing of custom toolholders.
- A cancellation charge will apply to cancelled orders for custom manufactured product. This charge will be 25% of order amount or cost of time and materials, whichever is greater.
- When reordering a part, please advise Command of any design changes.

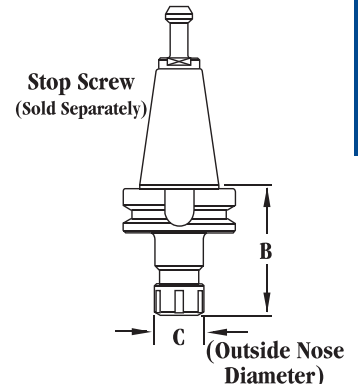
**Contact us for help with design.
Send in a sketch or print for us to quote.**

Call or Fax us for a Quote on Custom Configuration Toolholders:

| | |
|--|--------|
| Quantity | |
| Shank Style (V, BT, HSK, SS) | |
| Taper Size/Shank Diameter | |
| Function of Feature (Shell Mill Holder, End Mill Holder, Collet Chuck, etc) | |
| Gage Length (B) | in/mm |
| Size of Feature (A) | in/mm |
| Form (Applies to HSK only) | |
| Outside Nose Diameter (C) | in/mm |
| Other Requirements: | |
| Nosepiece | |
| Black Oxide | Yes/No |
| Identification Chip Pocket | Yes/No |
| ISO Orientation Notch (Maho Notch) | Yes/No |
| Through-Spindle Coolant | Yes/No |
| Through-Flange Coolant | Yes/No |
| Surround Coolant | Yes/No |
| Shell Mill Coolant | Yes/No |
| Special Components | |
| (Print needed for Command to Manufacture) | |
| Special Material | |
| Machine Make & Model | |
| Maximum RPM | |
| Balance Requirements | |
| Customer-Supplied Cutting Tools Provided | Yes/No |
| Knob Installed | Yes/No |
| Knob Part Number | |
| Customer-Supplied Chips Installed | Yes/No |
| Other | |

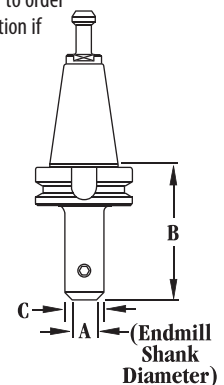
Fax to: 800-555-7694 or 763-576-6911

Collet Chuck

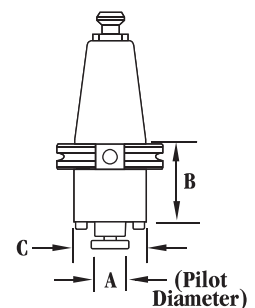


End Mill Holder

Remember to order coolant option if required.



Shell Mill Holder



Recommended Torque Values



**For Accurate Measurement of These Values,
a Torque Wrench is Required.**

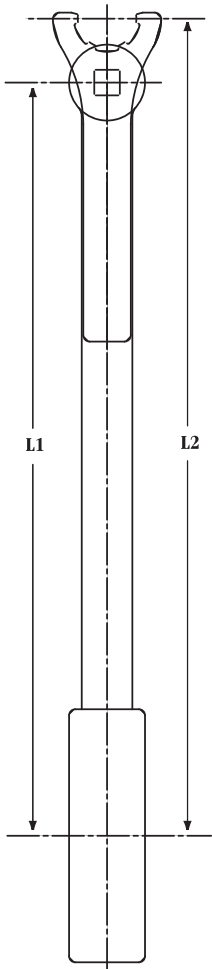
Retention Knob Torque Values

| Taper & Flange | Thread Size | Recommended ANSI Installation Torque Ft-Lbs |
|----------------|-------------|---|
| V 30 | 1/2 - 13 | 8 |
| V 40 | 5/8 - 11 | 30 |
| V 45 | 3/4 - 10 | 50 |
| V 50 | 1 - 8 | 75 |
| BT 30 | M12 - 1.75 | 8 |
| BT 35 | M12 - 1.75 | 12 |
| BT 40 | M16 - 2.0 | 30 |
| BT 45 | M20 - 2.5 | 50 |
| BT 50 | M24 - 3.0 | 75 |

- Avoid cost of damaged toolholders and spindles from incorrectly torqued retention knobs.

End Mill Holder Side Lock Screw Torque Values

| End Mill Size | Thread Size | Max Torque Inch-Lbs |
|---------------|-------------|---------------------|
| 0.125 | 8 - 32 | 18 |
| 0.187 | 10 - 32 | 30 |
| 0.250 | 1/4 - 28 | 60 |
| 0.312 | 5/16 - 24 | 120 |
| 0.375 | 3/8 - 24 | 200 |
| 0.437 | 3/8 - 24 | 200 |
| 0.500 | 7/16 - 20 | 220 |
| 0.562 | 7/16 - 20 | 220 |
| 0.625 | 1/2 - 20 | 500 |
| 0.750 | 5/8 - 18 | 560 |
| 0.875 | 5/8 - 18 | 560 |
| 1.000 | 3/4 - 16 | 1150 |
| 1.250 | 3/4 - 16 | 1150 |
| 1.500 | 3/4 - 16 | 1150 |
| 2.000 | 1 - 14 | 1500 |
| 6 mm | M6 - 1.0 | 60 |
| 8 mm | M8 - 1.25 | 120 |
| 10 mm | M10 - 1.5 | 180 |
| 12 mm | M12 - 1.75 | 250 |
| 14 mm | M12 - 1.75 | 250 |
| 16 mm | M14 - 2.0 | 450 |
| 18 mm | M14 - 2.0 | 450 |
| 20 mm | M16 - 2.0 | 840 |



To calculate the effect of torque wrench extensions:
 Formula for calculating the effect of torque wrench extensions:

$$M2 = M1 \times L2/L1$$

L1 is the center line of the toolholder.
 L2 is the center line of the square hole.
 M1 is the maximum recommended torque.
 M2 is the actual torque applied to the nosepiece.

Notes

- Select proper wrench by retention knob

Collet Chuck Nosepiece Torque Values



- Overtightening of collet chuck nosepieces commonly causes distortion of the collet chuck pocket and uneven compression of collets. This can result in excessive runout in the tool assembly.
- Gross overtightening can result in damage to the collet, tool body, or nosepiece.
- Our wrenches for collet chuck nosepieces come with a square drive to adapt to a torque wrench.
- A torque wrench is required to accurately measure these values.

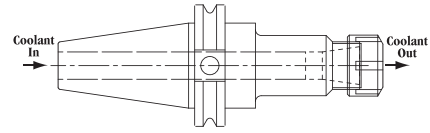
TECHNICAL INFORMATION

| Wrenches for Collet Chuck Nosepieces | | | | | Corresponding Torque Wrench Data | | | | |
|--------------------------------------|--------------------------------------|--------------------------|-----------------------|------------------------------|----------------------------------|-----------------------|----------------|--|--|
| Nosepiece Wrench Part No. | Collet Chuck Description Series/Size | Nosepiece Style | Drive Square (Inches) | Nosepiece Wrench Thread Size | Command Part No. | Drive Square (Inches) | Range (Ft Lbs) | Recommended with Command Torque Wrench M1 (Ft Lbs) | Maximum Theoretical Recommended Torque |
| XCCW-D011 | ER11 | Standard | 3/8 | M13-.75 | XTQW-0045* | 3/8 | 5-45 | 7 | 8 |
| XCCW-T011 | XT11 | Fine Tune | | | XTQW-0045 | 3/8 | 5-45 | 35 | 40 |
| XCCW-D016 | ER16 | Standard | 3/8 | M22-1.5 | XTQW-0080* | 3/8 | 15-80 | 21 | 24 |
| | | | | | XTQW-0150 | 1/2 | 30-150 | 36 | 40 |
| | | | | | XTQW-0045 | 3/8 | 5-45 | 33 | 40 |
| XCCW-FT16 | ER16 | Fine Balance & Fine Tune | 3/8 | M22-1.5 | XTQW-0080* | 3/8 | 15-80 | 34 | 40 |
| | | | | | XTQW-0150 | 1/2 | 30-150 | 35 | 40 |
| | | | | | XTQW-0045 | 3/8 | 5-45 | 34 | 40 |
| XCCW-H016 | ER16 | Hex | 3/8 | M22-1.5 | XTQW-0080* | 3/8 | 15-80 | 35 | 40 |
| | | | | | XTQW-0150 | 1/2 | 30-150 | 36 | 40 |
| | | | | | XTQW-0080* | 3/8 | 15-80 | S=32; BB=53 | S=36; BB=60 |
| XCCW-D020 | ER20 | Standard & Ball Bearing | 3/8 | M25-1.5 | XTQW-0150 | 1/2 | 30-150 | 55 | 60 |
| XCCW-FT20 | ER20 | Fine Balance & Fine Tune | 3/8 | M25-1.5 | XTQW-0080* | 3/8 | 15-80 | 50 | 60 |
| | | | | | XTQW-0150 | 1/2 | 30-150 | 52 | 60 |
| XCCW-H020 | ER20 | Hex | 3/8 | M25-1.5 | XTQW-0080* | 3/8 | 15-80 | 52 | 60 |
| | | | | | XTQW-0150 | 1/2 | 30-150 | 54 | 60 |
| XCCW-D025 | ER25 | Standard & Ball Bearing | 3/8 | M32-1.5 | XTQW-0080* | 3/8 | 15-80 | S=38; BB=60 | S=42; BB=70 |
| | | | | | XTQW-0150 | 1/2 | 30-150 | 63 | 70 |
| XCCW-FT25 | ER25 | Fine Balance & Fine Tune | 3/8 | M32-1.5 | XTQW-0080* | 3/8 | 15-80 | 56 | 70 |
| | | | | | XTQW-0150 | 1/2 | 30-150 | 59 | 70 |
| XCCW-D032 | ER32 | Standard & Ball Bearing | 3/8 | M40-1.5 | XTQW-0080* | 3/8 | 15-80 | S=43; BB=67 | S=48; BB=80 |
| | | | | | XTQW-0150 | 1/2 | 30-150 | 70 | 80 |
| XCCW-FT32 | ER32 | Fine Balance & Fine Tune | 3/8 | M40-1.5 | XTQW-0080* | 3/8 | 15-80 | 61 | 80 |
| | | | | | XTQW-0150 | 1/2 | 30-150 | 66 | 80 |
| XCCW-P032INT | ER32 | Shorty Standard | 3/8 | M40-1.5 | XTQW-0080* | 3/8 | 15-80 | 43 | 48 |
| | | | | | XTQW-0150 | 1/2 | 30-150 | 71 | 80 |
| XCCW-0040 | ER40 | Standard | 1/2 | M50-1.5 | XTQW-0150* | 1/2 | 30-150 | 65 | 72 |
| XCCW-FT40 | ER40 | Fine Balance & Fine Tune | 1/2 | M50-1.5 | XTQW-0150* | 1/2 | 30-150 | 93 | 120 |
| XCCW-T011 | XT11 | Standard | 3/8 | M13-.75 | XTQW-0045* | 3/8 | 5-45 | 7 | 8 |
| | | | | | XTQW-0045 | 3/8 | 5-45 | 35 | 40 |
| XCCW-D016 | XT16 | Standard & Fine Tune | 3/8 | M22-1.5 | XTQW-0080* | 3/8 | 15-80 | 35 | 40 |
| | | | | | XTQW-0150 | 1/2 | 30-150 | 36 | 40 |
| XCCW-D020 | XT20 | Standard & Fine Tune | 3/8 | M25-1.5 | XTQW-0080* | 3/8 | 15-80 | 53 | 60 |
| | | | | | XTQW-0150 | 1/2 | 30-150 | 55 | 60 |
| XCCW-D025 | XT25 | Standard & Fine Tune | 3/8 | M32-1.5 | XTQW-0080* | 3/8 | 15-80 | 60 | 70 |
| | | | | | XTQW-0150 | 1/2 | 30-150 | 63 | 70 |
| XCCW-D032 | XT32 | Standard & Fine Tune | 3/8 | M40-1.5 | XTQW-0080* | 3/8 | 15-80 | 67 | 80 |
| | | | | | XTQW-0150 | 1/2 | 30-150 | 70 | 80 |
| XCCW-0040 | XT40 | Standard & Fine Tune | 1/2 | M50-1.5 | XTQW-0150* | 1/2 | 30-150 | 104 | 120 |
| XCCW-H100 | TG100 | Hex | 3/8 | 1 7/8-12 ACME | XTQW-0080* | 3/8 | 15-80 | 49 | 60 |
| XCCW-1000 | TH100 | Standard | | | XTQW-0150 | 1/2 | 30-150 | 52 | 60 |
| XCCW-FT10 | TG100 | Fine Balance & Fine Tune | 3/8 | 1 7/8-12 ACME | XTQW-0080* | 3/8 | 15-80 | 47 | 60 |
| | | | | | XTQW-0150 | 1/2 | 30-150 | 50 | 60 |
| XCCW-1500 | TG150 | Standard | ---- | 2 5/8-12 ACME | ---- | ---- | ---- | ---- | 100 |

*Indicates recommended torque wrench part no. • S= Standard, BB= Ball Bearing

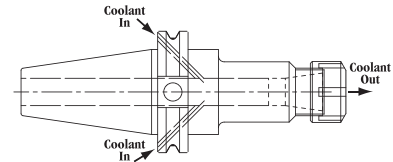
Through-Spindle Coolant

- Standard for all Command Toolholder bodies
- Retention Knobs available coolant-through, see pages T-1 & T-2.
Part no. with -C designates coolant hole, -H designates O-ring included
- Stop Screws available with coolant passage and Urethane seal (Shown on pages by respective toolholders)



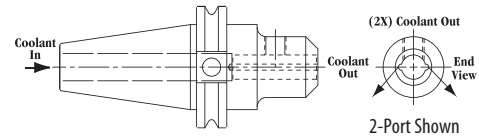
Through-Flange Coolant

- May also be referred to as DIN 69871 Form B Coolant
- Standard on Command Micro Precision, High Precision Collet Chucks and ThermoLock® Toolholders
- Modification available for most other Command Toolholders



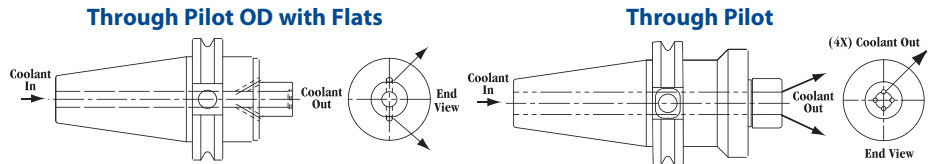
Surround Coolant

- Modification available for end mill holders and ThermoLock®
- Specify 2-Port or 4-Port



Shell Mill Coolant

- Modification available in two variations
- Specify Through Pilot OD with Flats, or Through Pilot



Choose the Correct Coolant Accessories from Command

Retention Knobs

- Available coolant-through.
- Part No. with "-C" designates coolant hole, and "-H" designates O-ring included

Blue Chip™ Coolant Containment System

- Available for Micro Precision® ER & Comflex® TG collets
- Does not affect collet collapse range
- Sealing disk contains coolant to 800 PSI for coolant through tools

External Coolant Collets

- Available for Micro Precision® ER
- Collapse range .005
- Maximum 600 PSI

Rubber Sealed Collets

- Available for Micro Precision® ER & Comflex® TG collets
- Collapse range .005
- Maximum 600 PSI

Steel Sealed Coolant Collets

- Available for Micro Precision® ER
- All metal, no rubber seals
- Collapse range .005
- Maximum 2000 PSI

Front Coolant Seal Disks & Nosepieces

- Available for all standard ER Micro Precision Collets including Tap collets.
- Requires coolant seal nosepiece
- Does not affect collet collapse range
- Maximum 1500 PSI

Notes

- Return Policy: Once standard toolholders are modified, they cannot be returned.

- For additional coolant options, call Command Customer Service.

Command's ER Collet Chucks & Collets

Micro Precision® ER32 Shorty Collet Chuck

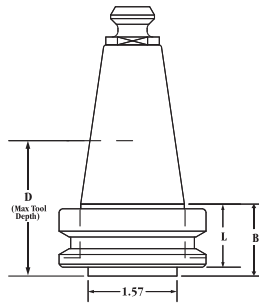
ER32 Shorty Collet Chucks:

- Uses ER32 Collets – made to precise specifications for tool shank sizes .079 - .787" (2.0 mm - 20.0 mm).
- Shortest gage length with recessed nosepiece design. No stop screws, no safe area.
- These toolholders do not meet the safe zone dimensions of ANSI B5.50 1994 and may not work on all tool change mechanisms.
- **IMPORTANT:** Maximum recommended torque is listed on page A-11. Do not overtighten nose assembly.

Command Micro Precision® Collet System Benefits:

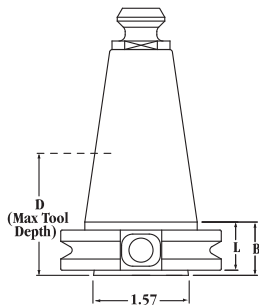
- Flush precision closure nut — grips tool close to cutting edge — accurate, rigid.
- Concentric to .0002" TIR — puts tool precisely on spindle centerline.
- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Wide .040" range collets — reduces collet and toolholder inventories.
- Straight shank extensions in stock — long reach without custom tool costs.
- All tapers and lengths ready to ship — get your tools fast.
- Less tool wear and replacement — less scrap.
- Fully ground flange and V-groove — easy on tool changers for less spindle and changer maintenance.

BT-Flange



| Taper | Part No | B | D | L |
|-------|------------------|------|-----|------|
| BT 40 | B4C1-0032 | 1.06 | 1.9 | 1.06 |

V-Flange

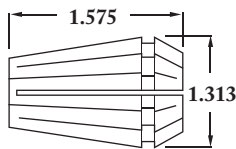


| Taper | Part No | B | D | L |
|-------|------------------|-----|-----|------|
| V 40 | C4C1-0032 | .83 | 1.9 | 0.75 |
| V 50 | C6C1-0032 | .83 | 3.1 | 0.75 |



Replacement Parts & Accessories

ER32 Series Collets



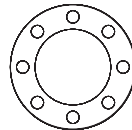
Micro Precision® ER Collets, pages B-25 thru B-28

Replacement Nosepiece Assembly

Side View



End View



Collet Nut

| Part No. | Description |
|---------------------|-------------------|
| XGCN-0032INT | Shorty Collet Nut |

Wrench



Wrench

| Part No. | Description |
|---------------------|--|
| XCCW-P032INT | Shorty Wrench (3/8" Square In handle) |

Notes

- Black oxide complete on toolholders, page A-2.
- High speed balance options, page A-6.
- Coolant options, page A-12.
- Micro Precision® ER collets are compatible with DIN 6499 standard collets.
- Front disk & nosepieces for coolant, pages B-29 & B-30.
- Blue Chip™ Coolant Containment System, page C-55.
- Collet chuck nosepiece torque values & wrenches, page A-11.
- Retention Knobs & Setup Holding Fixtures, pages D-75 & D-76, D-78.

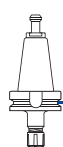
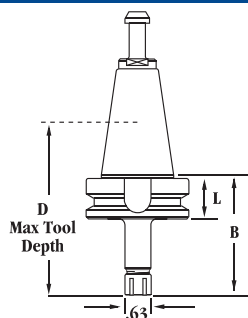
ER11 Toolholders:

- Made to precise specifications for tool shank sizes .020-.275" (.5-7.0 mm).
- Small diameter nose well suited for working in close quarters.
- Increased flexibility for milling, drilling, and reaming.
- **IMPORTANT:** Maximum recommended torque is listed on page A-11. Do not overtighten nose assembly.

Micro Precision® Collet System Benefits:

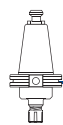
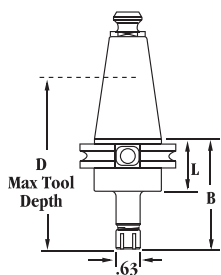
- Flush precision closure nut — grips tool close to cutting edge — accurate, rigid.
- Concentric to .0002" TIR — puts tool precisely on spindle centerline.
- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Straight shank extensions in stock — long reach without custom tool costs.
- Less tool wear and replacement — less scrap.
- Fully ground flange and V-groove — easy on tool changers for less spindle and changer maintenance.

BT-Flange

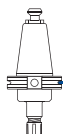


| | | Standard | | | |
|-------|-----------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 30 | B2C4-0011 | 3.00 | 3.5 | 0.87 | |
| BT 35 | B3C4-0011 | 3.00 | 3.9 | 0.87 | |
| BT 40 | B4C4-0011 | 3.00 | 4.1 | 1.06 | |

V-Flange

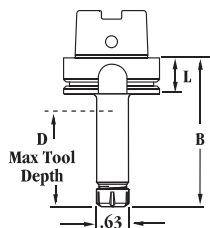


| | | Stub | | | |
|-------|-----------|------|-----|-----|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C3-0011 | 2.00 | 3.5 | N/A | |

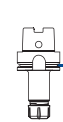


| | | Standard | | | |
|-------|-----------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C4-0011 | 3.00 | 4.5 | 1.38 | |

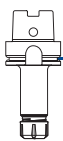
HSK



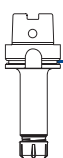
(HSK Form A Illustrated)



| | | Stub | | | |
|--------|-----------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK40A | H2C3A0011 | 2.36 | 1.3 | 0.79 | |
| HSK40E | H2C3E0011 | 2.36 | 1.3 | 0.79 | |
| HSK63A | H4C3A0011 | 2.00 | 1.1 | 1.02 | |
| HSK63F | H4C3F0011 | 2.00 | 1.0 | 1.02 | |



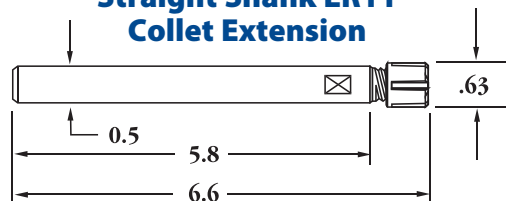
| | | Standard | | | |
|--------|-----------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK40A | H2C4A0011 | 3.94 | 1.6 | 0.79 | |
| HSK40E | H2C4E0011 | 3.94 | 1.6 | 0.79 | |
| HSK63A | H4C4A0011 | 4.00 | 3.1 | 1.02 | |
| HSK63F | H4C4F0011 | 4.00 | 3.0 | 1.02 | |



| | | Extended | | | |
|--------|-----------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK40A | H2C5A0011 | 6.30 | 1.6 | 0.79 | |
| HSK40E | H2C5E0011 | 6.30 | 1.6 | 0.79 | |

Replacement Parts & Accessories

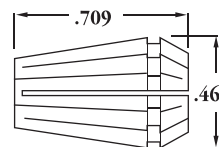
Straight Shank ER11 Collet Extension



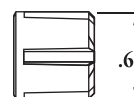
Part No.

ERCE-0011
(Coolant through)

ER11 Series Collets

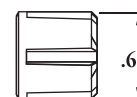


Micro Precision® ER Collets, pages B-25 thru B-28



Standard Part No.

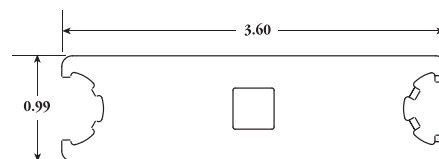
XGSN-0011
(M13 x .75)



Classic Part No.

XCNA-0011
(M13 x .75)

Wrench



Notes

- Black oxide complete on toolholders, page A-2.
- No Stop Screws on ER11 holders.
- High speed balance & nosepiece options, page A-6.
- Coolant options, page A-12.
- Micro Precision® ER collets are compatible with DIN 6499 standard collets.
- Blue Chip™ Coolant Containment System, page C-55.
- Collet chuck nosepiece torque values & wrenches, page A-11.
- Retention Knobs, pages D-75 - D-76.
- HSK Accessories & Setup Holding Fixtures, page D-79.
- HSK coolant hole plugs and coolant tubes sold separately, see page D-79.

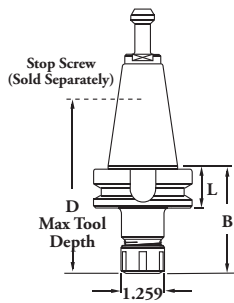
ER16 Toolholders:

- Made to precise specifications for tool shank sizes .020-.393" (.5-10.0 mm).
- Small diameter nose well suited for working in close quarters.
- Increased flexibility for milling, drilling, and reaming.
- **IMPORTANT:** Maximum recommended torque is listed on page A-11. Do not overtighten nose assembly.

Command Micro Precision® Collet System Benefits:

- Flush precision closure nut — grips tool close to cutting edge — accurate, rigid.
- Concentric to .0002" TIR — puts tool precisely on spindle centerline.
- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Wide .040" range collets — reduces collet and toolholder inventories.
- Straight shank extensions in stock — long reach without custom tool costs.
- Less tool wear and replacement — less scrap.
- Fully ground flange and V-groove — easy on tool changers for less spindle and changer maintenance.

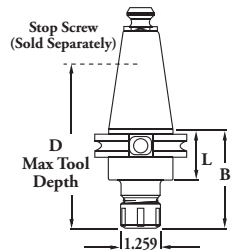
BT-Flange



| | | Stub | | | |
|-------|------------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 30 | B2C3-0016 | 2.00 | 2.0 | 0.87 | |
| | | Standard | | | |
| Taper | Part No. | B | D | L | |
| BT 30 | B2C4-0016 | 2.88 | 3.0 | 0.87 | |
| BT 35 | B3C4-0016 | 2.88 | 3.0 | 0.87 | |
| BT 40 | B4C4-0016 | 2.88 | 3.0 | 1.06 | |
| BT 45 | B5C4-0016 | 3.88 | 3.0 | 1.31 | |
| BT 50 | B6C4-0016 | 4.88 | 3.0 | 1.50 | |

| | | Extended | | | |
|-------|------------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 35 | B3C5-0016 | 4.88 | 3.0 | 0.87 | |
| BT 40 | B4C5-0016 | 4.88 | 3.0 | 1.06 | |

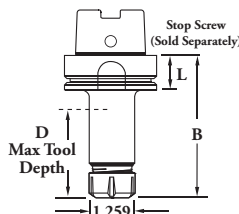
V-Flange



| | | Stub | | | |
|-------|------------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C3-0016 | 2.00 | 2.5 | N/A | |
| | | Standard | | | |
| Taper | Part No. | B | D | L | |
| V 30 | C2C4-0016 | 3.00 | 2.7 | 1.38 | |
| V 40 | C4C4-0016 | 2.88 | 3.0 | 1.38 | |
| V 45 | C5C4-0016 | 3.88 | 3.0 | 1.38 | |
| V 50 | C6C4-0016 | 4.88 | 3.0 | 1.38 | |

| | | Extended | | | |
|-------|------------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C5-0016 | 4.88 | 3.0 | 1.38 | |
| V 50 | C6C5-0016 | 6.88 | 3.0 | 1.38 | |

HSK



(HSK Form A Illustrated)

| | | Stub | | | |
|---------|-------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK40A | H2C3A0016 | 2.36 | 1.1 | 0.79 | |
| HSK40E | H2C3E0016 | 2.36 | 1.1 | 0.79 | |
| HSK63A | H4C3A0016 | 2.50 | 1.3 | 1.02 | |
| HSK63F | *H4C3F0016 | 2.50 | 1.0 | 1.02 | |
| HSK100A | H6C3A0016 | 2.50 | 1.3 | 1.14 | |

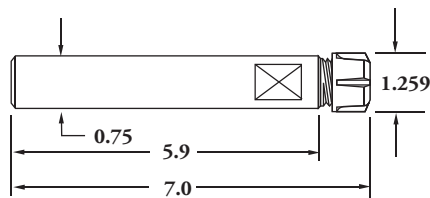
No room for Stop Screws on HSK Stub length holders.

| | | Extended | | | |
|---------|------------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK40A | H2C5A0016 | 6.30 | 3.0 | 0.79 | |
| HSK40E | H2C5E0016 | 6.30 | 3.0 | 0.79 | |
| HSK63A | H4C5A0016 | 6.50 | 3.0 | 1.02 | |
| HSK100A | H6C5A0016 | 6.50 | 3.0 | 1.14 | |

| | | Standard | | | |
|---------|-------------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK40A | H2C4A0016 | 3.94 | 2.3 | 0.79 | |
| HSK40E | H2C4E0016 | 3.94 | 2.3 | 0.79 | |
| HSK63A | H4C4A0016 | 4.50 | 2.0 | 1.02 | |
| HSK63F | *H4C4F0016 | 4.50 | 2.3 | 1.02 | |
| HSK100A | H6C4A0016 | 4.50 | 3.0 | 1.14 | |

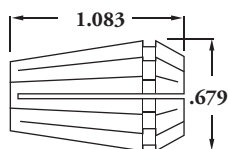
Replacement Parts & Accessories

Straight Shank ER16 Collet Extension



Part No.
ERCE-0016
(Coolant through)

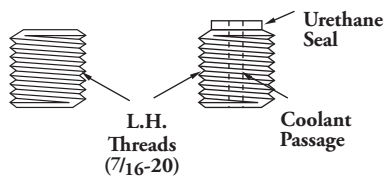
ER16 Series Collets



Micro Precision® ER Collets, pages B-25 thru B-28

Stop Screws

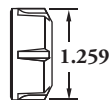
(Sold Separately)



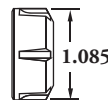
Part No.
XCCS-0720

Part No.
XCCS-0720-C

Replacement Nosepiece Assemblies & Wrenches



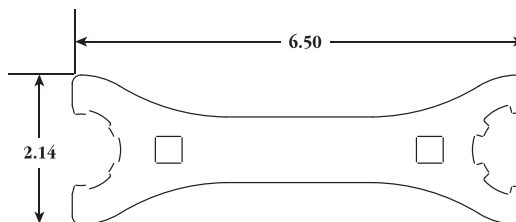
**Standard
Part No.**
XGSN-0016
(M22 x 1.5)



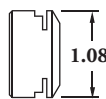
**Classic
Part No.**
XCNA-0016
(M22 x 1.5)



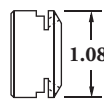
**Classic
Extractor Clips
Part No.**
XCNA-K016
Pack of 10 clips
(Use with XCNA-0016)



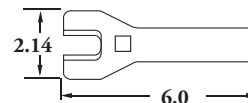
**Double-Ended
Part No.**
XCCW-D016
(3/8" Square in handle)



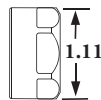
**Fine Balance
Part No.**
XCNA-FB16
(M22 x 1.5)



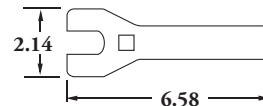
**Fine Tune™
Part No.**
XCNA-FT16
(M22 x 1.5)
Includes balance screws



**Wrench
Part No.**
XCCW-FT16
(3/8" Square in handle)



**Hex
Part No.**
XCNA-H016
(M22 x 1.5)
25 mm Hex



**Hex Wrench
Part No.**
XCCW-H016
(3/8" Square in handle)

COLLET CHUCKS & ACCESSORIES

Notes

- Black oxide complete on toolholders, page A-2.
- No room for Stop Screws on HSK Stub length holders.
- HSK63F for ER16 comes with Fine Balance™ nosepiece.
- High speed balance & nosepiece options, page A-6.
- Coolant options, page A-12.
- Micro Precision® ER collets are compatible with DIN 6499 standard collets.
- Front disk & nosepieces for coolant, pages B-29 & B-30.
- Blue Chip™ Coolant Containment System, page C-55.
- Collet chuck nosepiece torque values & wrenches, page A-11.
- Retention Knobs, pages D-76 - D-77.
- HSK Accessories & Setup Holding Fixtures, page D-79.
- HSK coolant hole plugs and coolant tubes sold separately, see page D-79.

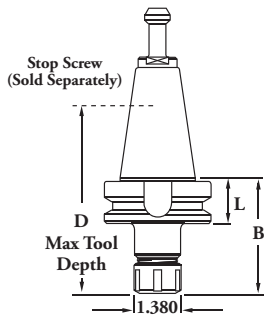
ER20 Toolholders:

- Made to precise specifications for tool shank sizes .040-.511" (1.0-13.0 mm).
- Small diameter nose well suited for working in close quarters.
- Increased flexibility for milling, drilling, and reaming.
- **IMPORTANT:** Maximum recommended torque is listed on page A-11. Do not overtighten nose assembly.

Micro Precision® Collet System Benefits:

- Flush precision closure nut — grips tool close to cutting edge — accurate, rigid.
- Concentric to .0002" TIR — puts tool precisely on spindle centerline.
- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Wide .040" range collets — reduces collet and toolholder inventories.
- Straight shank extensions in stock — long reach without custom tool costs.
- Less tool wear and replacement — less scrap.
- Fully ground flange and V-groove — easy on tool changers for less spindle and changer maintenance.

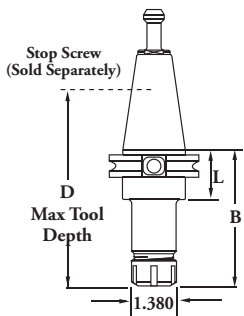
BT-Flange



| | | Stub | | | |
|-------|------------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 30 | B2C3-0020 | 2.00 | 2.0 | 0.87 | |
| BT 40 | B4C3-0020 | 2.20 | 2.4 | 1.06 | |
| | | Standard | | | |
| Taper | Part No. | B | D | L | |
| BT 30 | B2C4-0020 | 3.00 | 2.9 | 0.87 | |
| BT 35 | B3C4-0020 | 3.00 | 3.2 | 0.87 | |
| BT 40 | B4C4-0020 | 4.00 | 3.5 | 1.06 | |
| BT 45 | B5C4-0020 | 4.00 | 3.5 | 1.31 | |
| BT 50 | B6C4-0020 | 4.00 | 3.5 | 1.50 | |

| | | Extended | | | |
|-------|------------------|-------------------------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 35 | B3C5-0020 | 5.00 | 3.5 | 0.87 | |
| BT 40 | B4C5-0020 | 6.00 | 3.5 | 1.06 | |
| | | R&R™ (Reach & Rigidity) | | | |
| Taper | Part No. | B | D | L | |
| BT 40 | B4K5-0020 | 6.00 | 3.5 | 1.06 | |

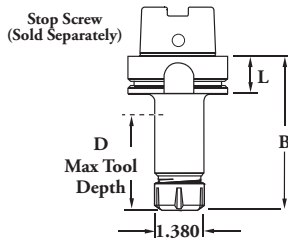
V-Flange



| | | Stub | | | |
|-------|------------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C3-0020 | 2.55 | 2.9 | 1.38 | |
| | | Standard | | | |
| Taper | Part No. | B | D | L | |
| V 30 | C2C4-0020 | 3.00 | 3.0 | N/A | |
| V 40 | C4C4-0020 | 4.00 | 3.5 | 1.38 | |
| V 45 | C5C4-0020 | 4.00 | 3.5 | 1.38 | |
| V 50 | C6C4-0020 | 4.00 | 3.5 | 1.38 | |
| | | Extended | | | |
| Taper | Part No. | B | D | L | |
| V 40 | C4C5-0020 | 6.00 | 3.5 | 1.38 | |
| V 50 | C6C5-0020 | 6.00 | 3.5 | 1.38 | |

| | | Extra Extended | | | |
|-------|------------------|-------------------------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C6-0020 | 8.00 | 3.5 | 1.38 | |
| V 50 | C6C6-0020 | 8.00 | 3.5 | 1.38 | |
| | | R&R™ (Reach & Rigidity) | | | |
| Taper | Part No. | B | D | L | |
| V 40 | C4K5-0020 | 6.00 | 3.5 | 1.38 | |
| V 50 | C6K5-0020 | 6.00 | 3.5 | 1.38 | |
| V 50 | C6K6-0020 | 8.00 | 3.5 | 1.38 | |

HSK



| | | Stub | | | |
|---------|-------------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK40A | H2C3A0020 | 2.36 | 1.1 | 0.79 | |
| HSK40E | H2C3E0020 | 2.36 | 1.1 | 0.79 | |
| HSK63A | H4C3A0020 | 2.75 | 1.4 | 1.02 | |
| HSK63F | *H4C3F0020 | 2.75 | 1.5 | 1.02 | |
| HSK100A | H6C3A0020 | 3.00 | 1.4 | 1.14 | |
| | | Standard | | | |
| Taper | Part No. | B | D | L | |
| HSK40A | H2C4A0020 | 3.94 | 2.1 | 0.79 | |
| HSK40E | H2C4E0020 | 3.94 | 2.1 | 0.79 | |
| HSK63A | H4C4A0020 | 4.75 | 2.4 | 1.02 | |
| HSK63F | *H4C4F0020 | 4.75 | 2.4 | 1.02 | |
| HSK100A | H6C4A0020 | 5.00 | 2.4 | 1.14 | |

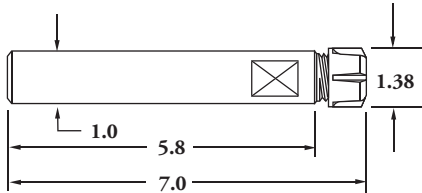
| | | Extended | | | |
|---------|-------------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK40A | H2C5A0020 | 6.30 | 3.5 | 0.79 | |
| HSK40E | H2C5E0020 | 6.30 | 3.5 | 0.79 | |
| HSK63A | H4C5A0020 | 6.75 | 3.5 | 1.02 | |
| HSK63F | *H4C5F0020 | 6.75 | 4.4 | 1.02 | |
| HSK100A | H6C5A0020 | 7.00 | 3.5 | 1.14 | |

No room for Stop Screws on HSK Stub length holders.

*Fine balance nosepiece standard. Use XCCW-FT20 wrench

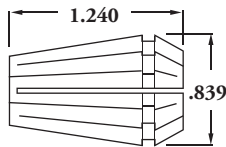
Replacement Parts & Accessories

Straight Shank ER20 Collet Extension



Part No.
ERCE-0020
(Coolant through)

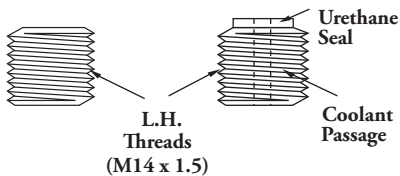
ER20 Series Collet



Micro Precision® ER Collets, pages B-25 thru B-28

Stop Screws

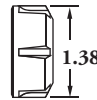
(Sold Separately)



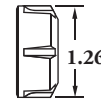
Part No.
XCCS-1415

Part No.
XCCS-1415-C

Replacement Nosepiece Assemblies & Wrenches



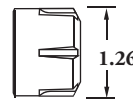
**Standard
Part No.**
XGSN-0020
(M25 x 1.5)



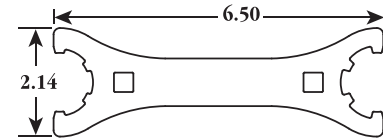
**Classic
Part No.**
XCNA-0020
(M25 x 1.5)



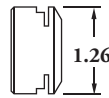
**Classic Extractor
Clips
Part No.**
XCNA-K020
Pack of 10 clips
(Use with XCNA-0020)



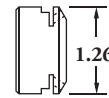
**Ball Bearing
Part No.**
XCNA-BB20
(M25 x 1.5)



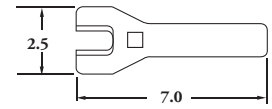
**Double-Ended
Part No.**
XCCW-D020
(3/8" Square in handle)



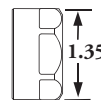
**Fine Balance
Part No.**
XCNA-FB20
(M25 x 1.5)



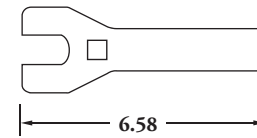
**Fine Tune™
Part No.**
XCNA-FT20
(M25 x 1.5)
(Includes balance screws)



**Wrench
Part No.**
XCCW-FT20
(3/8" Square in handle)



**Hex
Part No.**
XCNA-H020
(M25 x 1.5)
(30 mm Hex)



**Hex Wrench
Part No.**
XCCW-H020
(3/8" Square in handle)

COLLET CHUCKS & ACCESSORIES

Notes

- Black oxide complete on toolholders, page A-2.
- No room for Stop Screws on HSK Stub length holders.
- HSK63F for ER16 comes with Fine Balance™ nosepiece.
- High speed balance & nosepiece options, page A-6.
- Coolant options, page A-12.
- Micro Precision® ER collets are compatible with DIN 6499 standard collets.
- Front disk & nosepieces for coolant, pages B-29 & B-30.
- Blue Chip™ Coolant Containment System, page C-55.
- Collet chuck nosepiece torque values & wrenches, page A-11.
- Retention Knobs, pages D-76 - D-77.
- HSK Accessories & Setup Holding Fixtures, page D-79.
- HSK coolant hole plugs and coolant tubes sold separately, see page D-79.

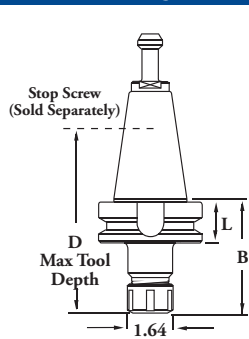
ER25 Toolholders:

- Made to precise specifications for tool shank sizes .040-.629" (1.0-16.0 mm)
- Increased flexibility for milling, drilling, and reaming.
- **IMPORTANT:** Maximum recommended torque is listed on page A-11. Do not overtighten nose assembly.

Micro Precision® Collet System Benefits:

- Flush precision closure nut — grips tool close to cutting edge — accurate, rigid.
- Concentric to .0002" TIR — puts tool precisely on spindle centerline.
- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Wide .040" range collets — reduces collet and toolholder inventories.
- Straight shank extensions in stock — long reach without custom tool costs.
- Less tool wear and replacement — less scrap.
- Fully ground flange and V-groove — easy on tool changers for less spindle and changer maintenance.

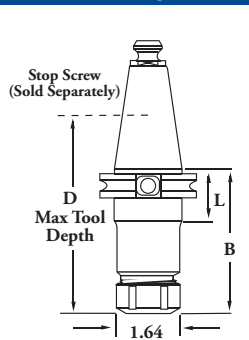
BT-Flange



| | | Stub | | | | |
|-------|------------------|----------|-----|------|--|--|
| Taper | Part No. | B | D | L | | |
| BT 40 | B4C3-0025 | 2.50 | 2.7 | 1.06 | | |
| | | Standard | | | | |
| Taper | Part No. | B | D | L | | |
| BT 40 | B4C4-0025 | 4.00 | 3.5 | 1.06 | | |

| | | Extended | | | | |
|-------|------------------|----------|-----|------|--|--|
| Taper | Part No. | B | D | L | | |
| BT 40 | B4C5-0025 | 6.00 | 3.5 | 1.06 | | |

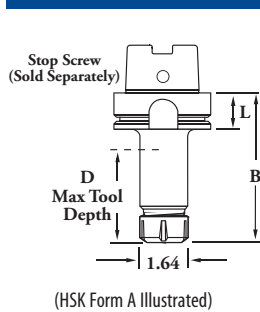
V-Flange



| | | Stub | | | | |
|-------|------------------|----------|-----|------|--|--|
| Taper | Part No. | B | D | L | | |
| V 40 | C4C3-0025 | 2.50 | 3.0 | 1.08 | | |
| | | Standard | | | | |
| Taper | Part No. | B | D | L | | |
| V 40 | C4C4-0025 | 4.00 | 3.5 | 1.38 | | |
| V 50 | C6C4-0025 | 4.00 | 3.5 | 1.38 | | |

| | | Extended | | | | |
|-------|------------------|----------|-----|------|--|--|
| Taper | Part No. | B | D | L | | |
| V 40 | C4C5-0025 | 6.00 | 3.5 | 1.38 | | |

HSK



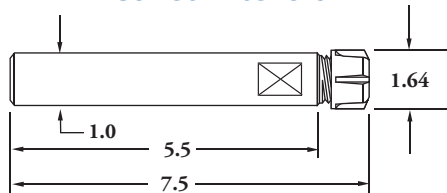
| | | Stub | | | | |
|---------|------------------|----------|-----|------|--|--|
| Taper | Part No. | B | D | L | | |
| HSK63A | H4C3A0025 | 3.00 | 1.7 | 1.02 | | |
| HSK100A | H6C3A0025 | 3.25 | 1.7 | 1.14 | | |
| | | Standard | | | | |
| Taper | Part No. | B | D | L | | |
| HSK63A | H4C4A0025 | 5.00 | 2.8 | 1.02 | | |
| HSK100A | H6C4A0025 | 5.25 | 2.6 | 1.14 | | |

| | | Extended | | | | |
|---------|------------------|----------|-----|------|--|--|
| Taper | Part No. | B | D | L | | |
| HSK63A | H4C5A0025 | 7.00 | 3.5 | 1.02 | | |
| HSK100A | H6C5A0025 | 7.25 | 3.5 | 1.14 | | |

No room for Stop Screws on HSK Stub length holders.

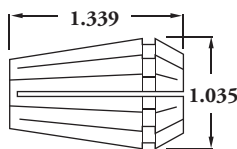
Replacement Parts & Accessories

Straight Shank ER25 Collet Extension



Part No.
ERCE-0025
(Coolant through)

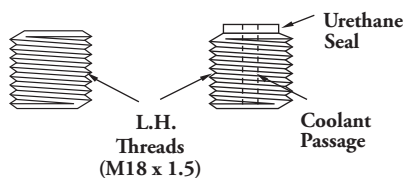
ER25 Series Collets



Micro Precision® ER Collets, pages B-25 thru B-28

Stop Screws

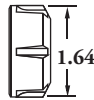
(Sold Separately)



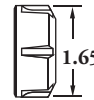
Part No.
XCCS-1815

Part No.
XCCS-1815-C

Replacement Nosepiece Assemblies & Wrenches



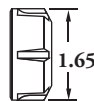
**Standard
Part No.**
XGSN-0025
(M32 x 1.5)



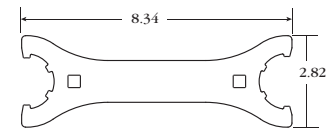
**Classic
Part No.**
XCNA-0025
(M32 x 1.5)



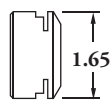
**Classic Extractor Clips
Part No.**
XCNA-K025
Pack of 10 clips
(Use with XCNA-0025)



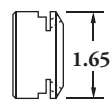
**Ball Bearing
Part No.**
XCNA-BB25
(M32 x 1.5)



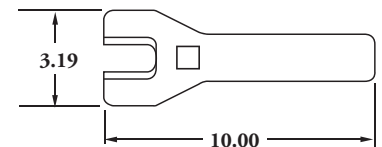
**Double-Ended
Part No.**
XCCW-D025
(3/8" Square In-Handle)



**Fine Balance
Part No.**
XCNA-FB25
(M32 x 1.5)



**Fine Tune™
Part No.**
XCNA-FT25 (M32 x 1.5)
(Includes balance screws)



**Wrench
Part No.**
XCCW-FT25
(3/8" Square in handle)

Notes

- Black oxide complete on toolholders, page A-2.
- No room for Stop Screws on HSK Stub length holders.
- HSK63F for ER16 comes with Fine Balance™ nosepiece.
- High speed balance & nosepiece options, page A-6.
- Coolant options, page A-12.
- Micro Precision® ER collets are compatible with DIN 6499 standard collets.
- Front disk & nosepieces for coolant, pages B-29 & B-30.
- Blue Chip™ Coolant Containment System, page C-55.
- Collet chuck nosepiece torque values & wrenches, page A-11.
- Retention Knobs, pages D-76 - D-77.
- HSK Accessories & Setup Holding Fixtures, page D-79.
- HSK coolant hole plugs and coolant tubes sold separately, see page D-79.

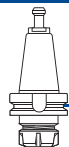
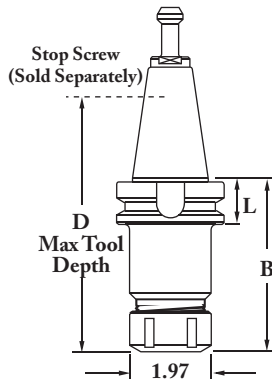
ER32 Toolholders:

- Made to precise specifications for tool shank sizes .079-.787" (2.0-20.0 mm).
- Increased flexibility for milling, drilling, and reaming.
- IMPORTANT:** Maximum recommended torque is listed on page A-11. Do not overtighten nose assembly.

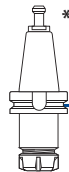
Micro Precision® Collet System Benefits:

- Flush precision closure nut — grips tool close to cutting edge — accurate, rigid.
- Concentric to .0002" TIR — puts tool precisely on spindle centerline.
- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Wide .040" range collets — reduces collet and toolholder inventories.
- Straight shank extensions in stock — long reach without custom tool costs.
- Less tool wear and replacement — less scrap.
- Fully ground flange and V-groove — easy on tool changers for less spindle and changer maintenance.

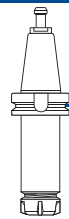
BT-Flange



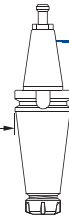
| | | Stub | | |
|-------|------------|------|-----|------|
| Taper | Part No. | B | D | L |
| BT 30 | *B2C3-0032 | 2.15 | 2.1 | 0.87 |
| BT 40 | B4C3-0032 | 2.40 | 2.7 | 1.06 |



| | | Standard | | |
|-------|-----------|----------|-----|------|
| Taper | Part No. | B | D | L |
| BT 30 | B2C4-0032 | 3.00 | 2.5 | 0.87 |
| BT 35 | B3C4-0032 | 3.00 | 2.8 | 0.87 |
| BT 40 | B4C4-0032 | 4.00 | 4.0 | 1.06 |
| BT 45 | B5C4-0032 | 4.00 | 4.0 | 1.31 |
| BT 50 | B6C4-0032 | 4.00 | 2.6 | 1.50 |

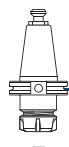
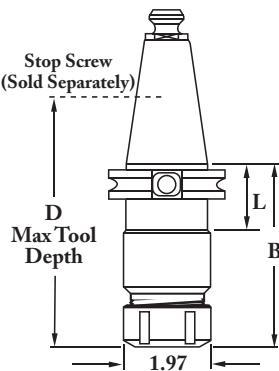


| | | Extended | | |
|-------|-----------|----------|-----|------|
| Taper | Part No. | B | D | L |
| BT 35 | B3C5-0032 | 5.00 | 4.0 | 0.87 |
| BT 40 | B4C5-0032 | 6.00 | 4.0 | 1.06 |

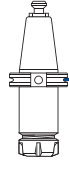


| | | R&R™ (Reach & Rigidity) | | |
|-------|-----------|-------------------------|-----|------|
| Taper | Part No. | B | D | L |
| BT 40 | B4K5-0032 | 6.00 | 4.0 | 1.06 |

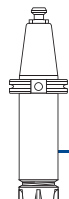
V-Flange



| | | Stub | | |
|-------|-----------|------|-----|------|
| Taper | Part No. | B | D | L |
| V 40 | C4C3-0032 | 2.70 | 3.3 | 1.38 |



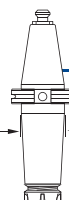
| | | Standard | | |
|-------|-----------|----------|-----|------|
| Taper | Part No. | B | D | L |
| V 30 | C2C4-0032 | 3.00 | 2.5 | 1.44 |
| V 40 | C4C4-0032 | 4.00 | 4.0 | 1.44 |
| V 45 | C5C4-0032 | 4.00 | 4.0 | 1.38 |
| V 50 | C6C4-0032 | 4.00 | 4.0 | 1.38 |



| | | Extended | | |
|-------|-----------|----------|-----|------|
| Taper | Part No. | B | D | L |
| V 40 | C4C5-0032 | 6.00 | 4.0 | 1.38 |
| V 50 | C6C5-0032 | 6.00 | 4.0 | 1.38 |

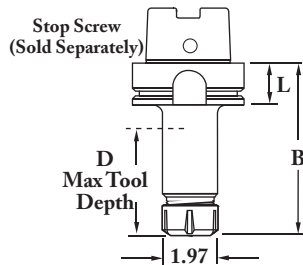


| | | Extra Extended | | |
|-------|-----------|----------------|-----|------|
| Taper | Part No. | B | D | L |
| V 40 | C4C6-0032 | 8.00 | 4.0 | 1.38 |
| V 50 | C6C6-0032 | 8.00 | 4.0 | 1.38 |

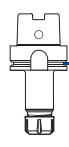


| | | R&R™ (Reach & Rigidity) | | |
|-------|-----------|-------------------------|-----|------|
| Taper | Part No. | B | D | L |
| V 50 | C6K5-0032 | 6.00 | 4.0 | 1.38 |
| V 50 | C6K6-0032 | 8.00 | 4.0 | 1.38 |

HSK

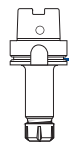


(HSK Form A Illustrated)

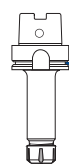


| | | Stub | | |
|---------|------------|------|-----|------|
| Taper | Part No. | B | D | L |
| HSK63A | H4C3A0032 | 3.25 | 1.8 | 1.02 |
| HSK63F | *H4C3F0032 | 3.25 | 1.9 | 1.02 |
| HSK100A | H6C3A0032 | 3.38 | 1.8 | 1.14 |

No room for Stop Screws on HSK Stub length holders.



| | | Standard | | |
|---------|------------|----------|-----|------|
| Taper | Part No. | B | D | L |
| HSK63A | H4C4A0032 | 5.25 | 2.8 | 1.02 |
| HSK63F | *H4C4F0032 | 5.25 | 3.0 | 1.02 |
| HSK100A | H6C4A0032 | 5.38 | 2.9 | 1.14 |

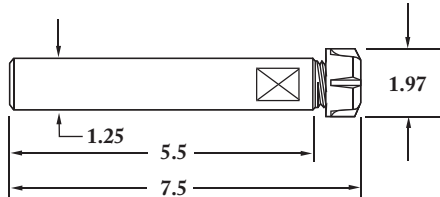


| | | Extended | | |
|---------|-----------|----------|-----|------|
| Taper | Part No. | B | D | L |
| HSK63A | H4C5A0032 | 7.25 | 4.0 | 1.02 |
| HSK100A | H6C5A0032 | 7.38 | 4.0 | 1.14 |

*Fine balance nosepiece standard. Use XCCW-FT32 wrench

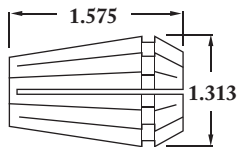
Replacement Parts & Accessories

Straight Shank ER32 Collet Extension



Part No.
ERCE-0032
(Coolant through)

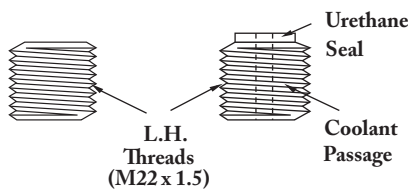
ER32 Series Collets



Micro Precision® ER Collets, pages B-25 thru B-28

Stop Screws

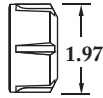
(Sold Separately)



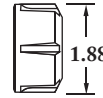
Part No.
XCCS-2215

Part No.
XCCS-2215-C

Replacement Nosepiece Assemblies & Wrenches



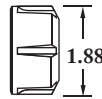
**Standard
Part No.**
XGSN-0032
(M40 x 1.5)



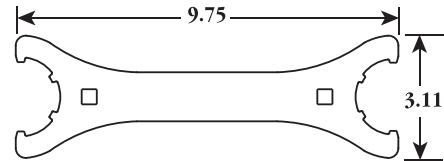
**Classic
Part No.**
XCNA-0032
(M40 x 1.5)



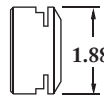
**Classic Extractor Clips
Part No.**
XCNA-K032
Pack of 10 clips
(Use with XCNA-0032)



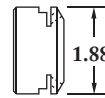
**Ball Bearing
Part No.**
XCNA-BB32
(M40 x 1.5)



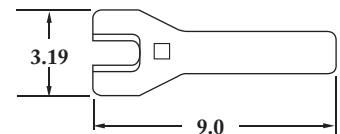
**Double-Ended
Part No.**
XCCW-D032
(3/8" Square in handle)



**Fine Balance
Collet Nut Part No.**
XCNA-FB32
(M40 x 1.5)



**Fine Tune™
Collet Nut Part No.**
XCNA-FT32
(M40 x 1.5)
(Includes balance screws)



**Wrench
Part No.**
XCCW-FT32
(3/8" Square in handle)

R&R™ (Reach & Rigidity) Collet Chucks Available!

Notes

- Black oxide complete on toolholders, page A-2.
- No room for Stop Screws on HSK Stub length holders.
- HSK63F for ER16 comes with Fine Balance™ nosepiece.
- High speed balance & nosepiece options, page A-6.
- Coolant options, page A-12.
- Micro Precision® ER collets are compatible with DIN 6499 standard collets.
- Front disk & nosepieces for coolant, pages B-29 & B-30.
- Blue Chip™ Coolant Containment System, page C-55.
- Collet chuck nosepiece torque values & wrenches, page A-11.
- Retention Knobs, pages D-76 - D-77.
- HSK Accessories & Setup Holding Fixtures, page D-79.
- HSK coolant hole plugs and coolant tubes sold separately, see page D-79.

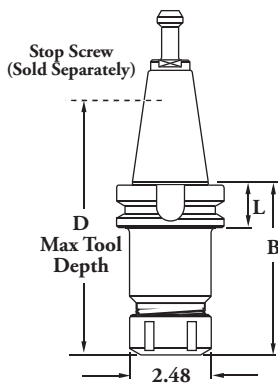
ER40 Toolholders:

- Made to precise specifications for tool shank sizes .086-1.023" (3.0-26.0 mm).
- Increased flexibility for milling, drilling, and reaming.
- **IMPORTANT:** Maximum recommended torque is listed on page A-11. Do not overtighten nose assembly.

Micro Precision® Collet System Benefits:

- Flush precision closure nut — grips tool close to cutting edge — accurate, rigid.
- Concentric to .0002" TIR — puts tool precisely on spindle centerline.
- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Wide .040" range collets — reduces collet and toolholder inventories.
- Straight shank extensions in stock — long reach without custom tool costs.
- Less tool wear and replacement — less scrap.
- Fully ground flange and V-groove — easy on tool changers for less spindle and changer maintenance.

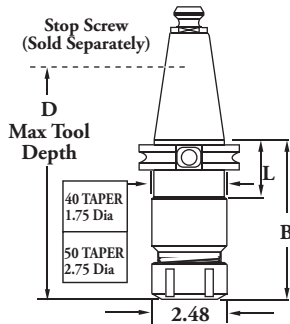
BT-Flange



| Stub | | | | | |
|----------|------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 40 | B4C3-0040 | 2.75 | 2.0 | 1.06 | |
| Standard | | | | | |
| Taper | Part No. | B | D | L | |
| BT 40 | B4C4-0040 | 4.00 | 2.6 | 1.06 | |
| BT 50 | B6C4-0040 | 4.00 | 4.0 | 1.50 | |

| Extended | | | | | |
|----------|------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 40 | B4C5-0040 | 6.00 | 5.0 | 1.06 | |

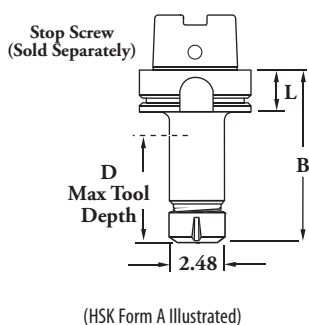
V-Flange



| Stub | | | | |
|----------|------------------|------|-----|------|
| Taper | Part No. | B | D | L |
| V 40 | C4C3-0040 | 3.00 | 2.2 | 1.44 |
| Standard | | | | |
| Taper | Part No. | B | D | L |
| V 40 | C4C4-0040 | 4.00 | 3.2 | 1.44 |
| V 50 | C6C4-0040 | 4.00 | 4.0 | 1.38 |

| Extended | | | | |
|----------|------------------|------|-----|------|
| Taper | Part No. | B | D | L |
| V 40 | C4C5-0040 | 6.00 | 5.0 | 1.44 |
| V 50 | C6C5-0025 | 6.00 | 5.0 | 1.38 |
| V 50 | C6C5-0040 | 6.00 | 5.0 | 1.38 |

HSK

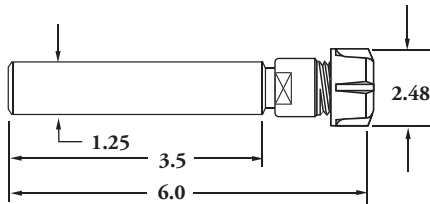


| Stub | | | | |
|----------|------------------|------|------|------|
| Taper | Part No. | B | D | L |
| HSK63A | H4C3A0040 | 3.15 | 1.75 | 1.02 |
| Standard | | | | |
| Taper | Part No. | B | D | L |
| HSK63A | H4C4A0040 | 4.72 | 2.5 | 1.02 |
| HSK100A | H6C4A0040 | 4.72 | 2.6 | 1.14 |

No room for Stop Screws on HSK Stub length holders.

Replacement Parts & Accessories

Straight Shank ER40 Collet Extension

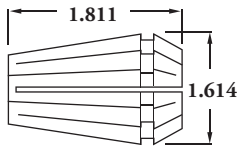


Part No.

ERCE-0040

(Coolant through)

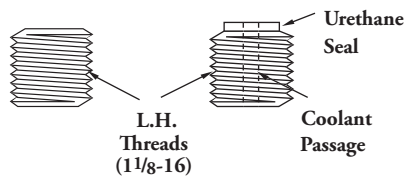
ER40 Series Collet



Micro Precision® ER Collets, pages B-25 thru B-28

Stop Screws

(Sold Separately)



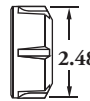
Part No.

XCCS-1816

Part No.

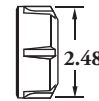
XCCS-1816-C

Replacement Nosepiece Assemblies & Wrenches



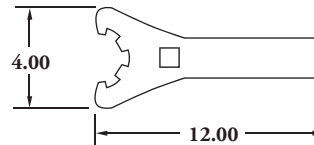
**Standard
Collet Nut Part No.**

XGSN-0040
(M50 x 1.5)



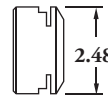
**Classic
Collet Nut Part No.**

XCNA-0040
(M50 x 1.5)



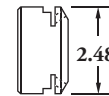
Wrench Part No.

XCCW-0040
(1/2" Square in handle)



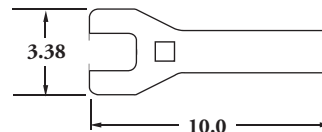
**Fine Balance Style
Collet Nut Part No.**

XCNA-FB40
(M50 x 1.5)



**Fine Tune™ Style
Collet Nut Part No.**

XCNA-FT40
(M50 x 1.5) (Includes balance
screws)



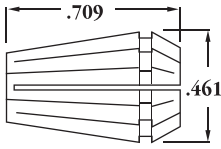
Wrench Part No.

XCCW-FT40
(1/2" Square in handle)

Notes

- Black oxide complete on toolholders, page A-2.
- No room for Stop Screws on HSK Stub length holders.
- HSK63F for ER16 comes with Fine Balance™ nosepiece.
- High speed balance & nosepiece options, page A-6.
- Coolant options, page A-12.
- Micro Precision® ER collets are compatible with DIN 6499 standard collets.
- Front disk & nosepieces for coolant, pages B-29 & B-30.
- Blue Chip™ Coolant Containment System, page C-55.
- Collet chuck nosepiece torque values & wrenches, page A-11.
- Retention Knobs, pages D-76 - D-77.
- HSK Accessories & Setup Holding Fixtures, page D-79.
- HSK coolant hole plugs and coolant tubes sold separately, see page D-79.

ER11



ER11 Series Metric Collets

| Part No. | Range (inch) | Range (mm) |
|-----------|--------------|------------|
| ER11-0100 | .020 - .039 | 0.5 - 1.0 |
| ER11-0150 | .040 - .059 | 1.0 - 1.5 |
| ER11-0200 | .060 - .078 | 1.5 - 2.0 |
| ER11-0250 | .079 - .098 | 2.0 - 2.5 |
| ER11-0300 | .099 - .118 | 2.5 - 3.0 |
| ER11-0350 | .119 - .137 | 3.0 - 3.5 |
| ER11-0400 | .138 - .157 | 3.5 - 4.0 |
| ER11-0450 | .158 - .177 | 4.0 - 4.5 |
| ER11-0500 | .178 - .196 | 4.5 - 5.0 |
| ER11-0550 | .197 - .216 | 5.0 - 5.5 |
| ER11-0600 | .217 - .236 | 5.5 - 6.0 |
| ER11-0650 | .237 - .255 | 6.0 - 6.5 |
| ER11-0700 | .256 - .275 | 6.5 - 7.0 |
| ER11-13ST | SET | SET |

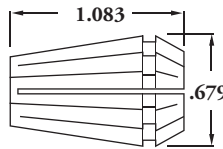
ER11 Series Fractional Collets

| Part No. | Range (inch) |
|-----------|--------------|
| ER11-F125 | .106 - .125 |
| ER11-F187 | .168 - .187 |
| ER11-F250 | .231 - .250 |
| ER11-03ST | SET |

Notes

- * Collets not included in the Collet Sets
- Tool shanks must engage full length of collet ID bore. Failure to follow this practice may result in tool failure.
- For best results, use collet closest to the cutter shank size.
- Micro Precision® ER collets are compatible with DIN 6499 standard collets.
- Sealed & external coolant Micro Precision® ER collets, pages B-29 & B-30.
- Blue Chip™ Coolant Containment System, page C-55.
- Check tap shank & square size before ordering Tap Collets.

ER16



ER16 Series Metric Collets

| Part No. | Range (inch) | Range (mm) |
|------------|--------------|------------|
| ER16-0100 | .020 - .039 | 0.5 - 1.0 |
| ER16-0150* | .039 - .059 | 1.0 - 1.5 |
| ER16-0200 | .040 - .078 | 1.0 - 2.0 |
| ER16-0250* | .078 - .098 | 2.0 - 2.5 |
| ER16-0300 | .079 - .118 | 2.0 - 3.0 |
| ER16-0400 | .119 - .157 | 3.0 - 4.0 |
| ER16-0500 | .158 - .196 | 4.0 - 5.0 |
| ER16-0600 | .197 - .236 | 5.0 - 6.0 |
| ER16-0700 | .237 - .275 | 6.0 - 7.0 |
| ER16-0800 | .276 - .315 | 7.0 - 8.0 |
| ER16-0900 | .315 - .354 | 8.0 - 9.0 |
| ER16-1000 | .355 - .393 | 9.0 - 10.0 |
| ER16-10ST | SET | SET |

ER16 Series Fractional Collets

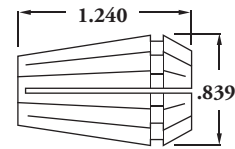
| Part No. | Range (inch) |
|-----------|--------------|
| ER16-F062 | .043 - .062 |
| ER16-F093 | .054 - .093 |
| ER16-F125 | .086 - .125 |
| ER16-F156 | .117 - .156 |
| ER16-F187 | .148 - .187 |
| ER16-F218 | .179 - .218 |
| ER16-F250 | .211 - .250 |
| ER16-F281 | .242 - .281 |
| ER16-F312 | .273 - .312 |
| ER16-F343 | .304 - .343 |
| ER16-F375 | .336 - .375 |
| ER16-11ST | SET |

ER16 Series Tap Collets

(rigid with square drive)

| Part No. | Tap Size | Shank Dia. | Square |
|-----------|----------|------------|--------|
| ER16-T006 | No. 0-6 | 0.141 | 0.110 |
| ER16-T008 | No. 8 | 0.168 | 0.131 |
| ER16-T010 | No. 10 | 0.194 | 0.152 |
| ER16-T012 | No. 12 | 0.220 | 0.165 |
| ER16-T250 | 1/4" | 0.255 | 0.191 |

ER20



ER20 Series Metric Collets

| Part No. | Range (inch) | Range (mm) |
|------------|--------------|-------------|
| ER20-0150* | .039 - .059 | 1.0 - 1.5 |
| ER20-0200 | .040 - .078 | 1.0 - 2.0 |
| ER20-0250* | .078 - .098 | 2.0 - 2.5 |
| ER20-0300 | .079 - .118 | 2.0 - 3.0 |
| ER20-0400 | .119 - .157 | 3.0 - 4.0 |
| ER20-0500 | .158 - .196 | 4.0 - 5.0 |
| ER20-0600 | .197 - .236 | 5.0 - 6.0 |
| ER20-0700 | .237 - .275 | 6.0 - 7.0 |
| ER20-0800 | .276 - .315 | 7.0 - 8.0 |
| ER20-0900 | .315 - .354 | 8.0 - 9.0 |
| ER20-1000 | .355 - .393 | 9.0 - 10.0 |
| ER20-1100 | .394 - .433 | 10.0 - 11.0 |
| ER20-1200 | .434 - .472 | 11.0 - 12.0 |
| ER20-1300 | .473 - .511 | 12.0 - 13.0 |
| ER20-12ST | SET | SET |

ER20 Series Fractional Collets

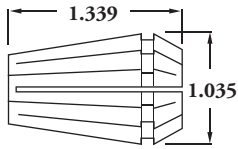
| Part No. | Range (inch) |
|-----------|--------------|
| ER20-F062 | .043 - .062 |
| ER20-F093 | .054 - .093 |
| ER20-F125 | .086 - .125 |
| ER20-F156 | .117 - .156 |
| ER20-F187 | .148 - .187 |
| ER20-F218 | .179 - .218 |
| ER20-F250 | .211 - .250 |
| ER20-F281 | .242 - .281 |
| ER20-F312 | .273 - .312 |
| ER20-F343 | .303 - .343 |
| ER20-F375 | .336 - .375 |
| ER20-F406 | .367 - .406 |
| ER20-F437 | .398 - .437 |
| ER20-F468 | .429 - .468 |
| ER20-F500 | .461 - .500 |
| ER20-15ST | SET |

ER20 Series Tap Collets

(rigid with square drive)

| Part No. | Tap Size | Shank Dia. | Square |
|-----------|----------|------------|--------|
| ER20-T008 | No. 8 | 0.168 | 0.131 |
| ER20-T010 | No. 10 | 0.194 | 0.152 |
| ER20-T012 | No. 12 | 0.220 | 0.165 |
| ER20-T250 | 1/4" | 0.255 | 0.191 |
| ER20-T312 | 5/16" | 0.318 | 0.238 |
| ER20-T375 | 3/8" | 0.381 | 0.286 |
| ER20-T437 | 7/16" | 0.323 | 0.242 |
| ER20-T500 | 1/2" | 0.367 | 0.275 |

ER25



ER25 Series Metric Collets

| Part No. | Range (inch) | Range(mm) |
|------------|--------------|-------------|
| ER25-0150* | .019 - .059 | 0.5 - 1.5 |
| ER25-0200 | .040 - .078 | 1.0 - 2.0 |
| ER25-0250* | .059 - .098 | 1.5 - 2.5 |
| ER25-0300 | .079 - .118 | 2.0 - 3.0 |
| ER25-0400 | .119 - .157 | 3.0 - 4.0 |
| ER25-0500 | .158 - .196 | 4.0 - 5.0 |
| ER25-0600 | .197 - .236 | 5.0 - 6.0 |
| ER25-0700 | .237 - .275 | 6.0 - 7.0 |
| ER25-0800 | .276 - .315 | 7.0 - 8.0 |
| ER25-0900 | .315 - .354 | 8.0 - 9.0 |
| ER25-1000 | .355 - .393 | 9.0 - 10.0 |
| ER25-1100 | .394 - .433 | 10.0 - 11.0 |
| ER25-1200 | .434 - .472 | 11.0 - 12.0 |
| ER25-1300 | .473 - .511 | 12.0 - 13.0 |
| ER25-1400 | .512 - .551 | 13.0 - 14.0 |
| ER25-1500 | .552 - .590 | 14.0 - 15.0 |
| ER25-1600 | .591 - .629 | 15.0 - 16.0 |
| ER25-15ST | SET | SET |

ER25 Series Fractional Collets

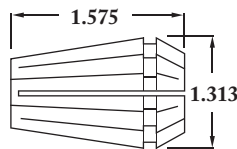
| Part No. | Range (inch) |
|-----------|--------------|
| ER25-F125 | .086 - .125 |
| ER25-F187 | .148 - .187 |
| ER25-F250 | .211 - .250 |
| ER25-F312 | .273 - .312 |
| ER25-F375 | .336 - .375 |
| ER25-F437 | .398 - .437 |
| ER25-F500 | .461 - .500 |
| ER25-F562 | .523 - .562 |
| ER25-F625 | .586 - .625 |
| ER25-09ST | SET |

ER25 Series Tap Collets

(rigid with square drive)

| Part No. | Tap Size | Shank Dia. | Square |
|-----------|------------------|------------|--------|
| ER25-P062 | 1/16", 1/8" Pipe | 0.313 | 0.234 |
| ER25-P125 | 1/8" Pipe | 0.437 | 0.328 |
| ER25-T008 | No. 8 | 0.168 | 0.131 |
| ER25-T010 | No. 10 | 0.194 | 0.152 |
| ER25-T012 | No. 12 | 0.220 | 0.165 |
| ER25-T250 | 1/4" | 0.255 | 0.191 |
| ER25-T312 | 5/16" | 0.318 | 0.238 |
| ER25-T375 | 3/8" | 0.381 | 0.286 |
| ER25-T437 | 7/16" | 0.323 | 0.242 |
| ER25-T500 | 1/2" | 0.367 | 0.275 |
| ER25-T562 | 9/16" | 0.429 | 0.322 |
| ER25-T625 | 5/8" | 0.480 | 0.360 |

ER32



ER32 Series Metric Collets

| Part No. | Range (inch) | Range(mm) |
|-----------|--------------|-------------|
| ER32-0300 | .079 - .118 | 2.0 - 3.0 |
| ER32-0400 | .119 - .157 | 3.0 - 4.0 |
| ER32-0500 | .158 - .196 | 4.0 - 5.0 |
| ER32-0600 | .197 - .236 | 5.0 - 6.0 |
| ER32-0700 | .237 - .275 | 6.0 - 7.0 |
| ER32-0800 | .276 - .315 | 7.0 - 8.0 |
| ER32-0900 | .315 - .354 | 8.0 - 9.0 |
| ER32-1000 | .355 - .393 | 9.0 - 10.0 |
| ER32-1100 | .394 - .433 | 10.0 - 11.0 |
| ER32-1200 | .434 - .472 | 11.0 - 12.0 |
| ER32-1300 | .473 - .511 | 12.0 - 13.0 |
| ER32-1400 | .512 - .551 | 13.0 - 14.0 |
| ER32-1500 | .552 - .590 | 14.0 - 15.0 |
| ER32-1600 | .591 - .629 | 15.0 - 16.0 |
| ER32-1700 | .630 - .669 | 16.0 - 17.0 |
| ER32-1800 | .670 - .708 | 17.0 - 18.0 |
| ER32-1900 | .709 - .748 | 18.0 - 19.0 |
| ER32-2000 | .748 - .787 | 19.0 - 20.0 |
| ER32-18ST | SET | SET |

ER32 Series Fractional Collets

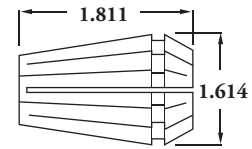
| Part No. | Range | Part No. | Range |
|-----------|-----------|-----------|-----------|
| ER32-F125 | .086-.125 | ER32-F500 | .461-.500 |
| ER32-F187 | .148-.187 | ER32-F562 | .523-.562 |
| ER32-F250 | .211-.250 | ER32-F625 | .586-.625 |
| ER32-F281 | .242-.281 | | |
| ER32-F312 | .273-.312 | ER32-F687 | .648-.687 |
| ER32-F375 | .336-.375 | ER32-F750 | .711-.750 |
| ER32-F437 | .398-.437 | ER32-11ST | SET |

ER32 Series Tap Collets

(rigid with square drive)

| Part No. | Tap Size | Shank Dia. | Square |
|-----------|------------------|------------|--------|
| ER32-P062 | 1/16", 1/8" Pipe | 0.313 | 0.234 |
| ER32-P125 | 1/8" Pipe | 0.437 | 0.328 |
| ER32-P250 | 1/4" Pipe | 0.562 | 0.421 |
| ER32-T008 | No. 8 | 0.168 | 0.131 |
| ER32-T010 | No. 10 | 0.194 | 0.152 |
| ER32-T012 | No. 12 | 0.220 | 0.165 |
| ER32-T250 | 1/4" | 0.255 | 0.191 |
| ER32-T312 | 5/16" | 0.318 | 0.238 |
| ER32-T375 | 3/8" | 0.381 | 0.286 |
| ER32-T437 | 7/16" | 0.323 | 0.242 |
| ER32-T500 | 1/2" | 0.367 | 0.275 |
| ER32-T562 | 9/16" | 0.429 | 0.322 |
| ER32-T625 | 5/8" | 0.480 | 0.360 |
| ER32-T687 | 11/16" | 0.542 | 0.406 |
| ER32-T750 | 3/4" | 0.590 | 0.442 |
| ER32-T812 | 13/16" | 0.652 | 0.489 |

ER40



ER40 Series Metric Collets

| Part No. | Range (inch) | Range(mm) |
|-----------|--------------|-------------|
| ER40-0400 | .119 - .157 | 3.0 - 4.0 |
| ER40-0500 | .158 - .196 | 4.0 - 5.0 |
| ER40-0600 | .197 - .236 | 5.0 - 6.0 |
| ER40-0700 | .237 - .275 | 6.0 - 7.0 |
| ER40-0800 | .276 - .315 | 7.0 - 8.0 |
| ER40-0900 | .315 - .354 | 8.0 - 9.0 |
| ER40-1000 | .355 - .393 | 9.0 - 10.0 |
| ER40-1100 | .394 - .433 | 10.0 - 11.0 |
| ER40-1200 | .434 - .472 | 11.0 - 12.0 |
| ER40-1300 | .473 - .511 | 12.0 - 13.0 |
| ER40-1400 | .512 - .551 | 13.0 - 14.0 |
| ER40-1500 | .552 - .590 | 14.0 - 15.0 |
| ER40-1600 | .591 - .629 | 15.0 - 16.0 |
| ER40-1700 | .630 - .669 | 16.0 - 17.0 |
| ER40-1800 | .670 - .708 | 17.0 - 18.0 |
| ER40-1900 | .709 - .748 | 18.0 - 19.0 |
| ER40-2000 | .748 - .787 | 19.0 - 20.0 |
| ER40-2100 | .788 - .826 | 20.0 - 21.0 |
| ER40-2200 | .827 - .866 | 21.0 - 22.0 |
| ER40-2300 | .867 - .905 | 22.0 - 23.0 |
| ER40-2400 | .906 - .944 | 23.0 - 24.0 |
| ER40-2500 | .945 - .984 | 24.0 - 25.0 |
| ER40-2600 | .985 - 1.023 | 25.0 - 26.0 |
| ER40-23ST | SET | SET |

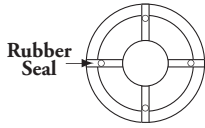
ER40 Series Fractional Collets

| Part No. | Range | Part No. | Range |
|-----------|-------------|-----------|-------------|
| ER40-F125 | .086 - .125 | ER40-F625 | .586 - .625 |
| ER40-F187 | .148 - .187 | ER40-F687 | .648 - .687 |
| ER40-F250 | .211 - .250 | ER40-F750 | .711 - .750 |
| ER40-F312 | .273 - .312 | ER40-F812 | .774 - .812 |
| ER40-F375 | .336 - .375 | ER40-F875 | .836 - .875 |
| ER40-F437 | .398 - .437 | ER40-F937 | .899 - .937 |
| ER40-F500 | .461 - .500 | ER40-F100 | .961 - 1.00 |
| ER40-F562 | .523 - .562 | ER40-15ST | SET |

ER40 Series Tap Collets (rigid with square drive)

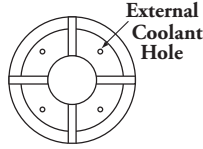
| Part No. | Tap Size | Shank Dia. | Square |
|-----------|----------|------------|--------|
| ER40-T250 | 1/4" | 0.255 | 0.191 |
| ER40-T312 | 5/16" | 0.318 | 0.238 |
| ER40-T375 | 3/8" | 0.381 | 0.286 |
| ER40-T437 | 7/16" | 0.323 | 0.242 |
| ER40-T500 | 1/2" | 0.367 | 0.275 |
| ER40-T562 | 9/16" | 0.429 | 0.322 |
| ER40-T625 | 5/8" | 0.480 | 0.360 |
| ER40-T687 | 11/16" | 0.542 | 0.406 |
| ER40-T750 | 3/4" | 0.590 | 0.442 |
| ER40-T812 | 13/16" | 0.652 | 0.489 |
| ER40-T875 | 7/8" | 0.697 | 0.523 |
| ER40-T937 | 15/16" | 0.760 | 0.570 |
| ER40-T100 | 1" | 0.800 | 0.600 |

ER Collets: Sealed & External Coolant Metric & Fractional



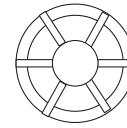
RUBBER SEALED COOLANT COLLET

Collapse: 0.005
Pressure: Maximum 600 psi



EXTERNAL COOLANT COLLETS

Collapse: 0.005
Pressure: Maximum 600 psi



STEEL SEALED COOLANT COLLETS

Collapse: 0.005
Pressure: Maximum 2000 psi

ER16 Metric Coolant Collets

| Collets Rubber Sealed | External Coolant | Steel Sealed Coolant | Size (mm) |
|-----------------------|------------------|----------------------|-----------|
| ER16-0300S | ER16-0300EC | ER16-0300SS | 3.0 |
| ER16-0400S | ER16-0400EC | ER16-0400SS | 4.0 |
| ER16-0500S | ER16-0500EC | ER16-0500SS | 5.0 |
| ER16-0600S | ER16-0600EC | ER16-0600SS | 6.0 |
| ER16-0700S | ER16-0700EC | ER16-0700SS | 7.0 |
| ER16-0800S | ER16-0800EC | ER16-0800SS | 8.0 |
| ER16-0900S | ER16-0900EC | ER16-0900SS | 9.0 |
| ER16-1000S | ER16-1000EC | ER16-1000SS | 10.0 |
| ER16-08STS | ER16-08STEC | - | SET |

ER20 Metric Coolant Collets

| Rubber Sealed Collets | External Coolant | Steel Sealed Coolant | Size (mm) |
|-----------------------|------------------|----------------------|-----------|
| ER20-0300S | ER20-0300EC | - | 3.0 |
| ER20-0400S | ER20-0400EC | - | 4.0 |
| ER20-0500S | ER20-0500EC | - | 5.0 |
| ER20-0600S | ER20-0600EC | ER20-0600SS | 6.0 |
| ER20-0700S | ER20-0700EC | - | 7.0 |
| ER20-0800S | ER20-0800EC | - | 8.0 |
| ER20-0900S | ER20-0900EC | - | 9.0 |
| ER20-1000S | ER20-1000EC | - | 10.0 |
| ER20-1100S | ER20-1100EC | - | 11.0 |
| ER20-1200S | ER20-1200EC | - | 12.0 |
| ER20-1300S | ER20-1300EC | - | 13.0 |
| ER20-11STS | ER20-11STEC | - | SET |

ER25 Metric Coolant Collets

| Rubber Sealed Collets | External Coolant | Steel Sealed Coolant | Size (mm) |
|-----------------------|------------------|----------------------|-----------|
| ER25-0300S | ER25-0300EC | ER25-0300SS | 3.0 |
| ER25-0400S | ER25-0400EC | ER25-0400SS | 4.0 |
| ER25-0500S | ER25-0500EC | ER25-0500SS | 5.0 |
| ER25-0600S | ER25-0600EC | ER25-0600SS | 6.0 |
| ER25-0700S | ER25-0700EC | ER25-0700SS | 7.0 |
| ER25-0800S | ER25-0800EC | ER25-0800SS | 8.0 |
| ER25-0900S | ER25-0900EC | ER25-0900SS | 9.0 |
| ER25-1000S | ER25-1000EC | ER25-1000SS | 10.0 |
| ER25-1100S | ER25-1100EC | ER25-1100SS | 11.0 |
| ER25-1200S | ER25-1200EC | ER25-1200SS | 12.0 |
| ER25-1300S | ER25-1300EC | ER25-1300SS | 13.0 |
| ER25-1400S | ER25-1400EC | ER25-1400SS | 14.0 |
| ER25-1500S | ER25-1500EC | ER25-1500SS | 15.0 |
| ER25-1600S | ER25-1600EC | ER25-1600SS | 16.0 |
| ER25-14STS | ER25-14STEC | ER25-14STSS | SET |

ER16 Fractional Coolant Collets

| Rubber Sealed Collets | External Coolant | Steel Sealed Coolant | Size (in) |
|-----------------------|------------------|----------------------|-----------|
| ER16-F125S | ER16-F125EC | ER16-F125SS | 0.125 |
| ER16-F156S | ER16-F156EC | ER16-F156SS | 0.156 |
| ER16-F187S | ER16-F187EC | ER16-F187SS | 0.187 |
| ER16-F218S | ER16-F218EC | ER16-F218SS | 0.218 |
| ER16-F250S | ER16-F250EC | ER16-F250SS | 0.250 |
| ER16-F281S | ER16-F281EC | ER16-F281SS | 0.281 |
| ER16-F312S | ER16-F312EC | ER16-F312SS | 0.312 |
| ER16-F343S | ER16-F343EC | ER16-F343SS | 0.343 |
| ER16-F375S | ER16-F375EC | ER16-F375SS | 0.375 |
| ER16-09STS | ER16-9FSTEC | ER16-09STSS | SET |

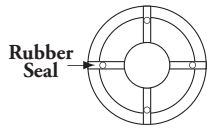
ER20 Fractional Coolant Collets

| Rubber Sealed Collets | External Coolant | Steel Sealed Coolant | Size (in) |
|-----------------------|------------------|----------------------|-----------|
| ER20-F125S | ER20-F125EC | - | 0.125 |
| ER20-F156S | ER20-F156EC | ER20-F156SS | 0.156 |
| ER20-F187S | ER20-F187EC | ER20-F187SS | 0.187 |
| ER20-F218S | ER20-F218EC | ER20-F218SS | 0.218 |
| ER20-F250S | ER20-F250EC | ER20-F250SS | 0.250 |
| ER20-F281S | ER20-F281EC | ER20-F281SS | 0.281 |
| ER20-F312S | ER20-F312EC | ER20-F312SS | 0.312 |
| ER20-F343S | ER20-F343EC | ER20-F343SS | 0.343 |
| ER20-F375S | ER20-F375EC | ER20-F375SS | 0.375 |
| ER20-F406S | ER20-F406EC | ER20-F406SS | 0.406 |
| ER20-F437S | ER20-F437EC | ER20-F437SS | 0.437 |
| ER20-F468S | ER20-F468EC | ER20-F468SS | 0.468 |
| ER20-F500S | ER20-F500EC | ER20-F500SS | 0.500 |
| ER20-13STS | ER20-13STEC | ER20-12STSS | SET |

ER25 Fractional Coolant Collet

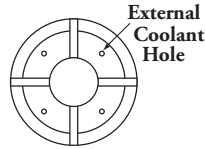
| Rubber Sealed Collets | External Coolant | Steel Sealed Coolant | Size (in) |
|-----------------------|------------------|----------------------|-----------|
| ER25-F125S | ER25-F125EC | - | 0.125 |
| ER25-F187S | ER25-F187EC | - | 0.187 |
| ER25-F250S | ER25-F250EC | ER25-F250SS | 0.250 |
| ER25-F312S | ER25-F312EC | ER25-F312SS | 0.312 |
| ER25-F375S | ER25-F375EC | ER25-F375SS | 0.375 |
| ER25-F437S | ER25-F437EC | ER25-F437SS | 0.437 |
| ER25-F500S | ER25-F500EC | ER25-F500SS | 0.500 |
| ER25-F562S | ER25-F562EC | ER25-F562SS | 0.562 |
| ER25-F625S | ER25-F625EC | ER25-F625SS | 0.625 |
| ER25-09STS | ER25-09STEC | ER25-07STSS | SET |

ER Collets: Sealed & External Coolant Metric & Fractional



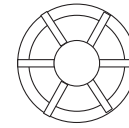
RUBBER SEALED COOLANT COLLET

Collapse: 0.005
Pressure: Maximum 600 psi



EXTERNAL COOLANT COLLETS

Collapse: 0.005
Pressure: Maximum 600 psi



STEEL SEALED COOLANT COLLETS

Collapse: 0.005
Pressure: Maximum 2000 psi

ER32 Metric Coolant Collets

| Rubber Sealed Collets | External Coolant | Steel Sealed Coolant | Size (mm) |
|-----------------------|------------------|----------------------|-----------|
| ER32-0400S | ER32-0400EC | ER32-0400SS | 4.0 |
| ER32-0500S | ER32-0500EC | ER32-0500SS | 5.0 |
| ER32-0600S | ER32-0600EC | ER32-0600SS | 6.0 |
| ER32-0700S | ER32-0700EC | ER32-0700SS | 7.0 |
| ER32-0800S | ER32-0800EC | ER32-0800SS | 8.0 |
| ER32-0900S | ER32-0900EC | ER32-0900SS | 9.0 |
| ER32-1000S | ER32-1000EC | ER32-1000SS | 10.0 |
| ER32-1100S | ER32-1100EC | ER32-1100SS | 11.0 |
| ER32-1200S | ER32-1200EC | ER32-1200SS | 12.0 |
| ER32-1300S | ER32-1300EC | ER32-1300SS | 13.0 |
| ER32-1400S | ER32-1400EC | ER32-1400SS | 14.0 |
| ER32-1500S | ER32-1500EC | ER32-1500SS | 15.0 |
| ER32-1600S | ER32-1600EC | ER32-1600SS | 16.0 |
| ER32-1700S | ER32-1700EC | - | 17.0 |
| ER32-1800S | ER32-1800EC | ER32-1800SS | 18.0 |
| ER32-1900S | ER32-1900EC | - | 19.0 |
| ER32-2000S | ER32-2000EC | ER32-2000SS | 20.0 |
| - | - | ER32-08STSS | SET |
| - | - | ER32-13STSS | SET |
| ER32-17STS | ER32-17STEC | - | SET |

ER40 Metric Coolant Collets

| Rubber Sealed Collets | External Coolant | Steel Sealed Coolant | Size (mm) |
|-----------------------|------------------|----------------------|-----------|
| ER40-0400S | ER40-0400EC | - | 4.0 |
| ER40-0500S | ER40-0500EC | - | 5.0 |
| ER40-0600S | ER40-0600EC | - | 6.0 |
| ER40-0700S | ER40-0700EC | - | 7.0 |
| ER40-0800S | ER40-0800EC | - | 8.0 |
| ER40-0900S | ER40-0900EC | - | 9.0 |
| ER40-1000S | ER40-1000EC | - | 10.0 |
| ER40-1100S | ER40-1100EC | - | 11.0 |
| ER40-1200S | ER40-1200EC | - | 12.0 |
| ER40-1300S | ER40-1300EC | - | 13.0 |
| ER40-1400S | ER40-1400EC | - | 14.0 |
| ER40-1500S | ER40-1500EC | - | 15.0 |
| ER40-1600S | ER40-1600EC | - | 16.0 |
| ER40-1700S | ER40-1700EC | - | 17.0 |
| ER40-1800S | ER40-1800EC | - | 18.0 |
| ER40-1900S | ER40-1900EC | - | 19.0 |
| ER40-2000S | ER40-2000EC | - | 20.0 |
| ER40-2100S | ER40-2100EC | - | 21.0 |
| ER40-2200S | ER40-2200EC | - | 22.0 |
| ER40-2300S | ER40-2300EC | - | 23.0 |
| ER40-2400S | ER40-2400EC | - | 24.0 |
| ER40-2500S | ER40-2500EC | ER40-2500SS | 25.0 |
| ER40-2600S | ER40-2600EC | - | 26.0 |
| ER40-23STS | ER40-23STEC | - | SET |

ER32 Fractional Coolant Collets

| Rubber Sealed Collets | External Coolant | Steel Sealed Coolant | Size (in) |
|-----------------------|------------------|----------------------|-----------|
| ER32-F125S | ER32-F125EC | - | 0.125 |
| ER32-F187S | ER32-F187EC | - | 0.187 |
| ER32-F250S | ER32-F250EC | ER32-F250SS | 0.250 |
| ER32-F281S | - | ER32-F281SS | 0.281 |
| ER32-F312S | ER32-F312EC | ER32-F312SS | 0.312 |
| ER32-F375S | ER32-F375EC | ER32-F375SS | 0.375 |
| ER32-F437S | ER32-F437EC | ER32-F437SS | 0.437 |
| ER32-F500S | ER32-F500EC | ER32-F500SS | 0.500 |
| ER32-F562S | ER32-F562EC | ER32-F562SS | 0.562 |
| ER32-F625S | ER32-F625EC | ER32-F625SS | 0.625 |
| ER31-F656S | - | ER32-F656SS | 0.656 |
| ER32-F687S | ER32-F687EC | ER32-F687SS | 0.687 |
| ER32-F750S | ER32-F750EC | ER32-F750SS | 0.750 |
| ER32-11STS | ER32-11STEC | ER32-09STSS | SET |

ER40 Fractional Coolant Collets

| Rubber Sealed Collets | External Coolant | Steel Sealed Coolant | Size (in) |
|-----------------------|------------------|----------------------|-----------|
| ER40-F125S | ER40-F125EC | - | 0.125 |
| ER40-F187S | ER40-F187EC | - | 0.187 |
| ER40-F250S | ER40-F250EC | - | 0.250 |
| ER40-F312S | ER40-F312EC | - | 0.312 |
| ER40-F343S | - | - | 0.343 |
| ER40-F375S | ER40-F375EC | ER40-F375SS | 0.375 |
| ER40-F437S | ER40-F437EC | ER40-F437SS | 0.437 |
| ER40-F500S | ER40-F500EC | ER40-F500SS | 0.500 |
| ER40-F562S | ER40-F562EC | ER40-F562SS | 0.562 |
| ER40-F625S | ER40-F625EC | ER40-F625SS | 0.625 |
| ER40-F687S | ER40-F687EC | ER40-F687SS | 0.687 |
| ER40-F750S | ER40-F750EC | ER40-F750SS | 0.750 |
| ER40-F812S | ER40-F812EC | - | 0.812 |
| ER40-F875S | ER40-F875EC | ER40-F875SS | 0.875 |
| ER40-F937S | ER40-F937EC | - | 0.937 |
| ER40-F100S | ER40-F100EC | ER40-F100SS | 1.000 |
| ER40-15STS | ER40-15STEC | ER40-09STSS | SET |

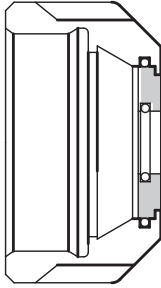
COLLET CHUCKS & ACCESSORIES

Front Coolant Seal Disks & Nosepieces

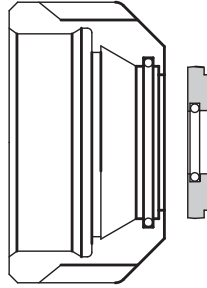
Front Coolant Seals & Nosepieces

- Available for all standard ER Micro Precision® Collets including Tap Collets.

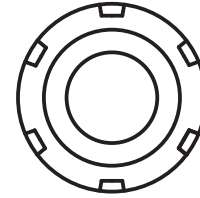
- Requires coolant seal nosepiece (listed below).
- Does not affect collet collapse range.
- **NOTE:** Maximum 1500 psi



Side View:
Assembled Nosepiece with Front Disk Seal
(Sold Separately)



Side View:
Nosepiece & Front Disk Seal



Front View:
Front Disk Seal

| Part No. | Description | Diameter (D) | Part No. | Description | Diameter (D) |
|-----------|-------------------------------|--------------|-----------|-------------------------------|--------------|
| XGCN-C016 | ER16 Coolant Collet Nosepiece | 1.25 | XGCN-C025 | ER25 Coolant Collet Nosepiece | 1.63 |
| XGCN-C020 | ER20 Coolant Collet Nosepiece | 1.38 | | | |

ER16 Seal Disks

| Part No. | Size (mm) |
|------------|-----------|
| CSD16-0350 | 3.5 |
| CSD16-0400 | 4.0 |
| CSD16-0450 | 4.5 |
| CSD16-0500 | 5.0 |
| CSD16-0550 | 5.5 |
| CSD16-0600 | 6.0 |
| CSD16-0650 | 6.5 |
| CSD16-0700 | 7.0 |
| CSD16-0750 | 7.5 |
| CSD16-0800 | 8.0 |
| CSD16-0850 | 8.5 |
| CSD16-0900 | 9.0 |
| CSD16-0950 | 9.5 |
| CSD16-1000 | 10.0 |

ER20 Seal Disks

| Part No. | Size (mm) |
|------------|-----------|
| CSD20-0350 | 3.5 |
| CSD20-0400 | 4.0 |
| CSD20-0450 | 4.5 |
| CSD20-0500 | 5.0 |
| CSD20-0550 | 5.5 |
| CSD20-0600 | 6.0 |
| CSD20-0650 | 6.5 |
| CSD20-0700 | 7.0 |
| CSD20-0750 | 7.5 |
| CSD20-0800 | 8.0 |
| CSD20-0850 | 8.5 |
| CSD20-0900 | 9.0 |
| CSD20-0950 | 9.5 |
| CSD20-1000 | 10.0 |
| CSD20-1050 | 10.5 |
| CSD20-1100 | 11.0 |
| CSD20-1150 | 11.5 |
| CSD20-1200 | 12.0 |
| CSD20-1250 | 12.5 |
| CSD20-1300 | 13.0 |

ER25 Seal Disks

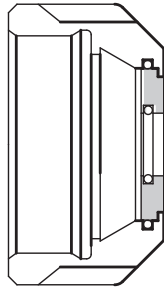
| Part No. | Size (mm) |
|------------|-----------|
| CSD25-0350 | 3.5 |
| CSD25-0400 | 4.0 |
| CSD25-0450 | 4.5 |
| CSD25-0500 | 5.0 |
| CSD25-0550 | 5.5 |
| CSD25-0600 | 6.0 |
| CSD25-0650 | 6.5 |
| CSD25-0700 | 7.0 |
| CSD25-0750 | 7.5 |
| CSD25-0800 | 8.0 |
| CSD25-0850 | 8.5 |
| CSD25-0900 | 9.0 |
| CSD25-0950 | 9.5 |
| CSD25-1000 | 10.0 |
| CSD25-1050 | 10.5 |
| CSD25-1100 | 11.0 |
| CSD25-1150 | 11.5 |
| CSD25-1200 | 12.0 |

ER25 Seal Disks

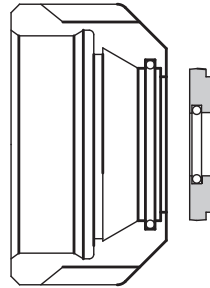
| Part No. | Size (mm) |
|------------|-----------|
| CSD25-1250 | 12.5 |
| CSD25-1300 | 13.0 |
| CSD25-1350 | 13.5 |
| CSD25-1400 | 14.0 |
| CSD25-1450 | 14.5 |
| CSD25-1500 | 15.0 |
| CSD25-1550 | 15.5 |
| CSD25-1600 | 16.0 |



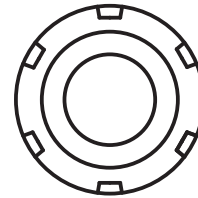
Front Coolant Seal Disks & Nosepieces



Side View:
Assembled Nosepiece with
Front Disk Seal



Side View:
Nosepiece & Front
Disk Seal



Front View:
Front Disk Seal

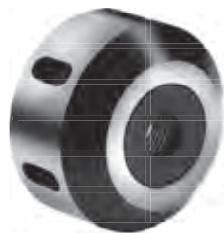
| Part No. | Description | Diameter (D) | Part No. | Description | Diameter (D) |
|-----------|-------------------------------|--------------|-----------|-------------------------------|--------------|
| XGCN-C032 | ER32 Coolant Collet Nosepiece | 1.93 | XGCN-C040 | ER40 Coolant Collet Nosepiece | 2.48 |

ER32 Seal Disks

| Part No. | Size (mm) |
|------------|-----------|
| CSD32-0350 | 3.5 |
| CSD32-0400 | 4.0 |
| CSD32-0450 | 4.5 |
| CSD32-0500 | 5.0 |
| CSD32-0550 | 5.5 |
| CSD32-0600 | 6.0 |
| CSD32-0650 | 6.5 |
| CSD32-0700 | 7.0 |
| CSD32-0750 | 7.5 |
| CSD32-0800 | 8.0 |
| CSD32-0850 | 8.5 |
| CSD32-0900 | 9.0 |
| CSD32-0950 | 9.5 |
| CSD32-1000 | 10.0 |
| CSD32-1050 | 10.5 |
| CSD32-1100 | 11.0 |
| CSD32-1150 | 11.5 |
| CSD32-1200 | 12.0 |
| CSD32-1250 | 12.5 |
| CSD32-1300 | 13.0 |
| CSD32-1350 | 13.5 |
| CSD32-1400 | 14.0 |
| CSD32-1450 | 14.5 |

ER32 Seal Disks

| Part No. | Size (mm) |
|------------|-----------|
| CSD32-1500 | 15.0 |
| CSD32-1550 | 15.5 |
| CSD32-1600 | 16.0 |
| CSD32-1650 | 16.5 |
| CSD32-1700 | 17.0 |
| CSD32-1750 | 17.5 |
| CSD32-1800 | 18.0 |
| CSD32-1850 | 18.5 |
| CSD32-1900 | 19.0 |
| CSD32-1950 | 19.5 |
| CSD32-2000 | 20.0 |
| CSD32-2050 | 20.5 |
| CSD32-2100 | 21.0 |



ER40 Seal Disks

| Part No. | Size (mm) |
|------------|-----------|
| CSD40-0350 | 3.5 |
| CSD40-0400 | 4.0 |
| CSD40-0450 | 4.5 |
| CSD40-0500 | 5.0 |
| CSD40-0550 | 5.5 |
| CSD40-0600 | 6.0 |
| CSD40-0650 | 6.5 |
| CSD40-0700 | 7.0 |
| CSD40-0750 | 7.5 |
| CSD40-0800 | 8.0 |
| CSD40-0850 | 8.5 |
| CSD40-0900 | 9.0 |
| CSD40-0950 | 9.5 |
| CSD40-1000 | 10.0 |
| CSD40-1050 | 10.5 |
| CSD40-1100 | 11.0 |
| CSD40-1150 | 11.5 |
| CSD40-1200 | 12.0 |
| CSD40-1250 | 12.5 |
| CSD40-1300 | 13.0 |
| CSD40-1350 | 13.5 |
| CSD40-1400 | 14.0 |
| CSD40-1450 | 14.5 |

ER40 Seal Disks

| Part No. | Size (mm) |
|------------|-----------|
| CSD40-1500 | 15.0 |
| CSD40-1550 | 15.5 |
| CSD40-1600 | 16.0 |
| CSD40-1650 | 16.5 |
| CSD40-1700 | 17.0 |
| CSD40-1750 | 17.5 |
| CSD40-1800 | 18.0 |
| CSD40-1850 | 18.5 |
| CSD40-1900 | 19.0 |
| CSD40-1950 | 19.5 |
| CSD40-2000 | 20.0 |
| CSD40-2050 | 20.5 |
| CSD40-2100 | 21.0 |
| CSD40-2150 | 21.5 |
| CSD40-2200 | 22.0 |
| CSD40-2250 | 22.5 |
| CSD40-2300 | 23.0 |
| CSD40-2350 | 23.5 |
| CSD40-2400 | 24.0 |
| CSD40-2450 | 24.5 |
| CSD40-2500 | 25.0 |
| CSD40-2550 | 25.5 |
| CSD40-2600 | 26.0 |



CNC Toolholding Systems

XT Precision® Collet System

Latest High Performance Collet Technology

Tired of Excessive Runout?

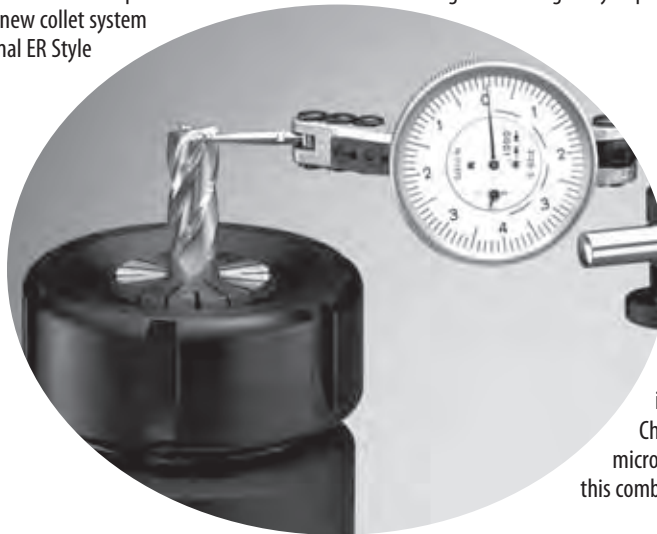
XT Precision®, the latest high performance collet system from Command Tooling Systems, features outstanding accuracy and gripping pressure at any speed. The extreme accuracy and gripping pressure ensures precise tool centering and rigidity — tools last longer and cut more accurately. This balanced chip-cutting feature increases metal removal up to 200%. You can double toolholder accuracy with this new collet system while using existing inventory of traditional ER Style Collet Chucks.

XT Precision® Accuracy

Significant improvements in TIR will result with the XT Precision® Collet System. Design ensures precise tool centering, rigidity, and tools last longer and cut more accurately at any speed. Ideal for long run repeatability on CNC milling, drilling, and reaming operations.

XT Precision® Grip

Equipped with XT Precision® Collets, the toolholder easily takes the thrust of drilling and reaming as well as milling. Single angle collet chuck design efficiently transfers torque on the compression nose piece into gripping force on the tool. Improved gripping pressure throughout the entire collapse range results in greatly improved tool life.



XT Precision® Performance Guaranteed

Optimal performance of the XT Precision® Collet System results when XT Precision® Collets are used in conjunction with XT Precision® Collet Chucks. Runout of <.0002 (.005 mm or 5 microns) at the collet face is guaranteed with this combination of new XT Precision® Products.

Full Range of XT Precision® Products Available BT-Flange, V-Flange, and HSK

Notes

- Black oxide complete on toolholders, page A-2.
- High speed balance options, page A-6.
- Through-spindle coolant standard. Other coolant options, page A-12.
- XT Precision® collets: metric & fractional, pages B-43 & B-44.
- Blue Chip™ Coolant Containment System, page C-55.
- Collet chuck nosepiece torque values & wrenches, page A-11.
- Retention Knobs, pages D-76 & D-77.
- HSK Accessories & Setup Holding Fixtures, page D-79.
- HSK coolant hole plugs and coolant tubes sold separately, see page D-79.

XT Precision® XT11 Collet Chucks & Accessories



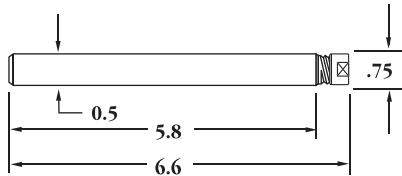
XT11 Toolholders

- Made to precise specifications for tool shank sizes .020-.275" (.50-7.00 mm).
- Small diameter nose, well suited for working in close quarters.
- Increased flexibility for milling, drilling, and reaming.

- **IMPORTANT:** Maximum recommended torque is listed on page A-11. Do not overtighten nose assembly.
- **NOTE:** No room for stop screws on XT11 holders.

REPLACEMENT PARTS & ACCESSORIES

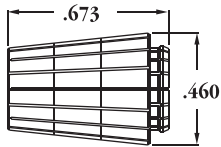
Straight Shank XT11 Collet Extension



Part No.

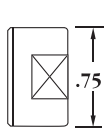
ERCE-0011-ZX
(Coolant through)

XT11 Collets



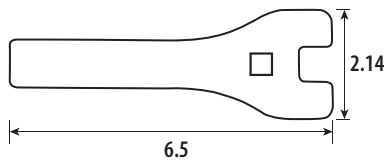
XT Precision® collets: metric & fractional, pages B-43 & B-44.

Replacement Nosepiece Assembly & Wrench



Standard Style Part No.

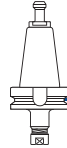
XCNA-T011
(17 mm across flats)
(M13 x .75)



Part No.

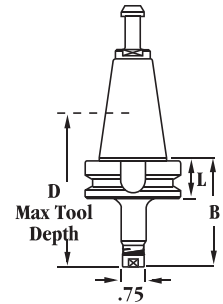
XCCW-T011
(3/8" Square in handle)

BT-Flange

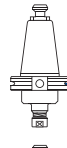


Standard

| Taper | Part No. | B | D | L |
|-------|---------------------|------|-----|------|
| BT 30 | B2C4-0011-ZX | 2.97 | 3.4 | 0.87 |
| BT 35 | B3C4-0011-ZX | 2.97 | 3.8 | 0.87 |
| BT 40 | B4C4-0011-ZX | 2.97 | 4.0 | 1.06 |



V-Flange



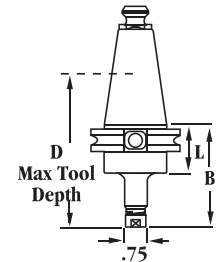
Stub

| Taper | Part No. | B | D | L |
|-------|---------------------|------|-----|-----|
| V 40 | C4C3-0011-ZX | 1.97 | 3.3 | N/A |

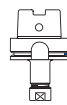
Standard



| Taper | Part No. | B | D | L |
|-------|---------------------|------|-----|------|
| V 40 | C4C4-0011-ZX | 2.97 | 4.2 | 1.38 |



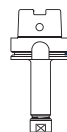
HSK



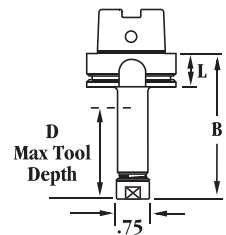
Stub

| Taper | Part No. | B | D | L |
|--------|---------------------|------|-----|------|
| HSK40A | H2C3A0011-ZX | 2.33 | 1.2 | 0.79 |
| HSK40E | H2C3E0011-ZX | 2.33 | 1.2 | 0.79 |
| HSK63A | H4C3A0011-ZX | 1.97 | 0.9 | 1.02 |
| HSK63F | H4C3F0011-ZX | 1.97 | 1.0 | 1.02 |

Standard

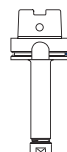


| Taper | Part No. | B | D | L |
|--------|---------------------|------|-----|------|
| HSK40A | H2C4A0011-ZX | 3.91 | 1.5 | 0.79 |
| HSK63A | H4C4A0011-ZX | 3.97 | 2.9 | 1.02 |
| HSK63F | H4C4F0011-ZX | 3.97 | 3.0 | 1.02 |



(HSK Form A Illustrated)

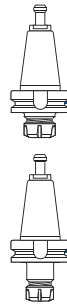
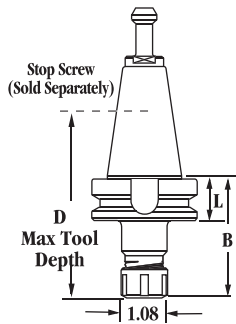
Extended



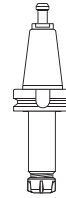
| Taper | Part No. | B | D | L |
|--------|---------------------|------|-----|------|
| HSK40A | H2C5A0011-ZX | 6.27 | 1.5 | 0.79 |

COLLET CHUCKS & ACCESSORIES

BT-Flange

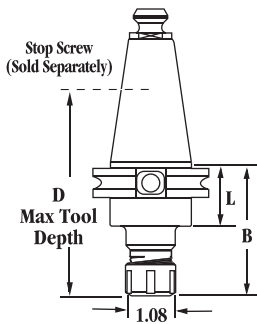


| Stub | | | | | |
|----------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 30 | B2C3-0016-ZX | 1.86 | 1.9 | 0.87 | |
| Standard | | | | | |
| Taper | Part No. | B | D | L | |
| BT 30 | B2C4-0016-ZX | 2.74 | 2.9 | 0.87 | |
| BT 35 | B3C4-0016-ZX | 2.74 | 2.9 | 0.87 | |
| BT 40 | B4C4-0016-ZX | 2.74 | 2.9 | 1.06 | |
| BT 45 | B5C4-0016-ZX | 3.74 | 2.9 | 1.31 | |
| BT 50 | B6C4-0016-ZX | 4.74 | 2.9 | 1.50 | |

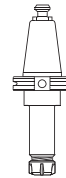


| Extended | | | | | |
|----------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 35 | B3C5-0016-ZX | 4.74 | 2.9 | 0.87 | |
| BT 40 | B4C5-0016-ZX | 4.74 | 2.9 | 1.06 | |

V-Flange

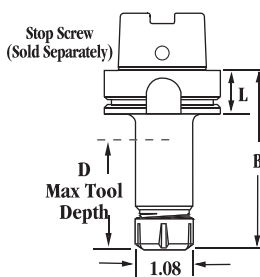


| Stub | | | | | |
|----------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C3-0016-ZX | 1.97 | 2.3 | N/A | |
| Standard | | | | | |
| Taper | Part No. | B | D | L | |
| V 30 | C2C4-0016-ZX | 2.86 | 2.6 | 1.38 | |
| V 40 | C4C4-0016-ZX | 2.74 | 2.9 | 1.38 | |
| V 45 | C5C4-0016-ZX | 3.74 | 2.9 | 1.38 | |
| V 50 | C6C4-0016-ZX | 4.74 | 2.9 | 1.38 | |



| Extended | | | | | |
|----------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C5-0016-ZX | 4.74 | 2.9 | 1.38 | |
| V 50 | C6C5-0016-ZX | 6.74 | 2.9 | 1.38 | |

HSK



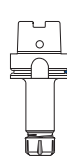
| Stub | | | | | |
|---------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK40A | H2C3A0016-ZX | 2.33 | 1.0 | 0.79 | |
| HSK40E | H2C3E0016-ZX | 2.36 | 1.0 | 0.79 | |
| HSK63A | H4C3A0016-ZX | 2.36 | 1.1 | 1.02 | |
| HSK63F | H4C3F0016-ZX | 2.36 | 1.1 | 1.02 | |
| HSK100A | H6C3A0016-ZX | 2.36 | 0.8 | 1.14 | |

No room for stop screws on HSK stub length holders



| Extended | | | | | |
|----------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK40A | H2C5A0016-ZX | 6.27 | 2.9 | 0.79 | |
| HSK40E | H2C5E0016-ZX | 6.27 | 2.9 | 0.79 | |
| HSK63A | H4C5A0016-ZX | 6.36 | 2.9 | 1.02 | |
| HSK100A | H6C5A0016-ZX | 4.36 | 2.8 | 1.14 | |

(HSK Form A Illustrated)



| Standard | | | | | |
|----------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK40A | H2C4A0016-ZX | 3.91 | 2.2 | 0.79 | |
| HSK40E | H2C4E0016-ZX | 3.91 | 2.2 | 0.79 | |
| HSK63A | H4C4A0016-ZX | 4.36 | 1.9 | 1.02 | |
| HSK63F | H4C4F0016-ZX | 4.36 | 2.1 | 1.02 | |
| HSK100A | H6C4A0016-ZX | 4.36 | 2.8 | 1.14 | |

XT Precision® XT16 Replacement Parts & Accessories



XT16 Toolholders

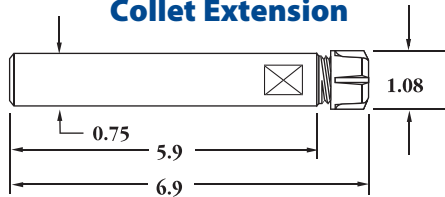
- Made to precise specifications for tool shank sizes .0295-.3937" (0.75-10.00 mm).
- Small diameter nose, well suited for working in close quarters.
- Increased flexibility for milling, drilling, and reaming.
- **IMPORTANT:** Maximum recommended torque is listed on page A-11. Do not overtighten nose assembly.

XT Precision® Collet System Benefits:

- Performance guaranteed with a combination of XT Precision® Collets & Chucks; Assembled concentricity of <.0002 (.005 mm or 5 microns) at the collet face.
- Improved gripping pressure throughout the entire collet collapse range with XT Precision® Collets.
- Less tool wear and replacement — less scrap.
- Precision closure nosepiece — generates accurate, rigid grip on tool.
- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Fully ground flange and V-groove — easy on tool changers for less spindle and changer maintenance.

Replacement Parts & Accessories

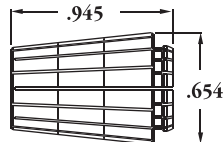
Straight Shank XT16 Collet Extension



Part No.

ERCE-0016-ZX
(Coolant through)

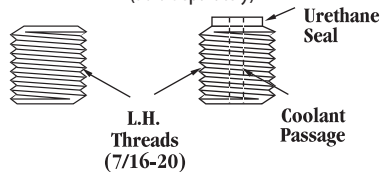
XT16 Series Collets



XT Precision® collets: metric & fractional,
pages B-43 & B-44.

Stop Screws

(Sold Separately)



Part No.

XCCS-0720

Double-Ended Part No.

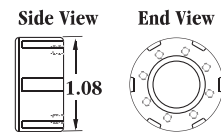
XCCW-D016
(3/8" Square in handle)

Replacement Nosepiece Assemblies & Wrench



Standard Balance Part No.

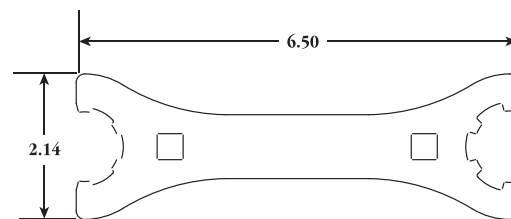
XCNA-T016
(M22 x 1.5)



Fine Tune™ Part No.

XCNA-TT16
(M22 x 1.5)
(Includes balance screws)

Wrench



Double-Ended Part No.

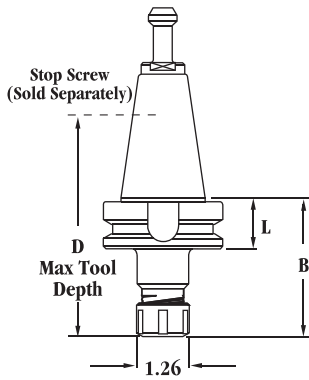
XCCW-D016
(3/8" Square in handle)

COLLET CHUCKS & ACCESSORIES

Notes

- Black oxide complete on toolholders, page A-2.
- High speed balance options, page A-6.
- Through-spindle coolant standard. Other coolant options, page A-12.
- XT Precision® collets: metric & fractional, pages B-43 & B-44.
- Blue Chip™ Coolant Containment System, page C-55.
- Collet chuck nosepiece torque values & wrenches, page A-11.
- Retention Knobs, pages D-76 & D-77.
- HSK Accessories & Setup Holding Fixtures, page D-79.
- HSK coolant hole plugs and coolant tubes sold separately, see page D-79.

BT-Flange



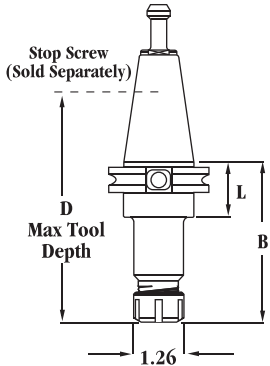
| | | Stub | | | |
|-------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 30 | B2C3-0020-ZX | 1.85 | 1.8 | 0.87 | |
| BT 40 | B4C3-0020-ZX | 2.05 | 2.3 | 1.06 | |

| | | Standard | | | |
|-------|--------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 30 | B2C4-0020-ZX | 2.85 | 2.7 | 0.87 | |
| BT 35 | B3C4-0020-ZX | 2.85 | 3.1 | 0.87 | |
| BT 40 | B4C4-0020-ZX | 3.85 | 3.3 | 1.06 | |
| BT 45 | B5C4-0020-ZX | 3.85 | 3.3 | 1.31 | |
| BT 50 | B6C4-0020-ZX | 3.85 | 3.3 | 1.50 | |

| | | Extended | | | |
|-------|--------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 35 | B3C5-0020-ZX | 4.85 | 3.3 | 0.87 | |
| BT 40 | B4C5-0020-ZX | 5.85 | 3.3 | 1.06 | |

| | | R&R™ (Reach & Rigidity) | | | |
|-------|--------------|-------------------------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 40 | B4K5-0020-ZX | 5.85 | 3.3 | 1.06 | |

V-Flange



| | | Stub | | | |
|-------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C3-0020-ZX | 2.40 | 2.7 | 1.38 | |

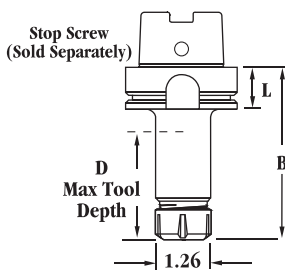
| | | Standard | | | |
|-------|--------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 30 | C2C4-0020-ZX | 2.85 | 2.8 | N/A | |
| V 40 | C4C4-0020-ZX | 3.85 | 3.3 | 1.38 | |
| V 45 | C5C4-0020-ZX | 3.85 | 3.3 | 1.38 | |
| V 50 | C6C4-0020-ZX | 3.85 | 3.3 | 1.38 | |

| | | Extended | | | |
|-------|--------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C5-0020-ZX | 5.85 | 3.3 | 1.38 | |
| V 50 | C6C5-0020-ZX | 5.85 | 3.3 | 1.38 | |

| | | Extra Extended | | | |
|-------|--------------|----------------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C6-0020-ZX | 7.85 | 3.3 | 1.38 | |
| V 50 | C6C6-0020-ZX | 7.85 | 3.3 | 1.38 | |

| | | R&R™ (Reach & Rigidity) | | | |
|-------|--------------|-------------------------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4K5-0020-ZX | 5.85 | 3.3 | 1.38 | |
| V 50 | C6K5-0020-ZX | 5.85 | 3.3 | 1.38 | |
| V 50 | C6K6-0020-ZX | 7.85 | 3.3 | 1.38 | |

HSK



(HSK Form A Illustrated)

| | | Stub | | | |
|---------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK40A | H2C3A0020-ZX | 2.33 | 1.1 | 0.79 | |
| HSK40E | H2C3E0020-ZX | 2.33 | 1.1 | 0.79 | |
| HSK63A | H4C3A0020-ZX | 2.60 | 1.2 | 1.02 | |
| HSK63F | H4C3F0020-ZX | 2.60 | 1.3 | 1.02 | |
| HSK100A | H6C3A0020-ZX | 2.85 | 1.2 | 1.14 | |

| | | Standard | | | |
|---------|--------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK40A | H2C4A0020-ZX | 3.91 | 2.0 | 0.79 | |
| HSK40E | H2C4E0020-ZX | 3.91 | 2.0 | 0.79 | |
| HSK63A | H4C4A0020-ZX | 4.60 | 2.3 | 1.02 | |
| HSK63F | H4C4F0020-ZX | 4.60 | 2.3 | 1.02 | |
| HSK100A | H6C4A0020-ZX | 4.85 | 2.2 | 1.14 | |

| | | Extended | | | |
|---------|--------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK40A | H2C5A0020-ZX | 6.27 | 3.4 | 0.79 | |
| HSK40E | H2C5E0020-ZX | 6.27 | 3.4 | 0.79 | |
| HSK63A | H4C5A0020-ZX | 6.60 | 3.3 | 1.02 | |
| HSK63F | H4C5F0020-ZX | 6.60 | 4.3 | 1.02 | |
| HSK100A | H6C5A0020-ZX | 6.85 | 3.3 | 1.14 | |

No room for stop screws on HSK stub length holders.

XT Precision® XT20 Replacement Parts & Accessories



XT20 Toolholders

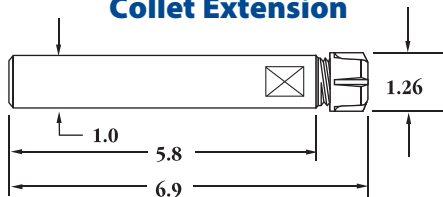
- Made to precise specifications for tool shank sizes .0689-.5118" (1.75-13.00 mm).
- Small diameter nose well suited for working in close quarters.
- Increased flexibility for milling, drilling, and reaming.
- **IMPORTANT:** Maximum recommended torque is listed on page A-11. Do not overtighten nose assembly.

XT Precision® Collet System Benefits:

- Performance guaranteed with a combination of XT Precision® Collets and Chucks; Assembled concentricity of <.0002 (.005mm or 5 microns) at the collet face.
- Improved gripping pressure throughout the entire collet collapse range with XT Precision® Collets.
- Less tool wear and replacement — less scrap.
- Precision closure nosepiece — generates accurate, rigid grip on tool.
- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Fully ground flange and V-groove — easy on tool changers for less spindle and changer maintenance.

Replacement Parts & Accessories

Straight Shank XT20 Collet Extension

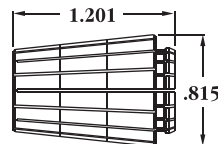


Part No.

ERCE-0020-ZX
(Coolant through)

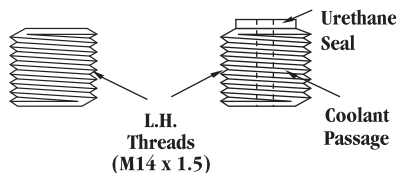
XT20 Series Collet

XT Precision® collets: metric & fractional, pages B-43 & B-44.



Stop Screws

(Sold Separately)



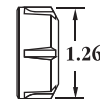
Part No.

XCCS-1415

Part No.

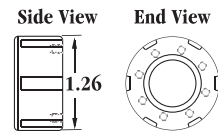
XCCS-1415-C

Replacement Nosepiece Assemblies & Wrench



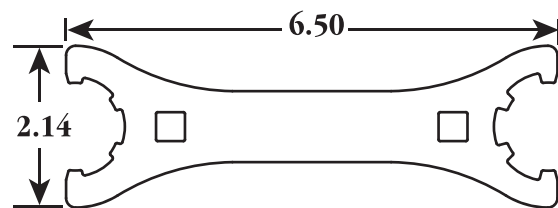
Standard Balance
Part No.

XCNA-T020
(M25 x 1.5)



Fine Tune™
Part No.

XCNA-TT20
(M25 x 1.5)
(Includes balance screws)



Part No.

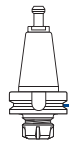
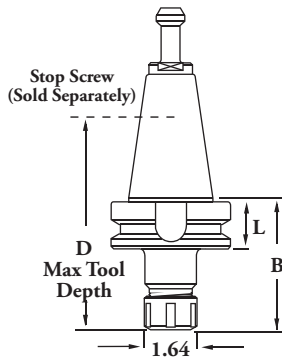
XCCW-D020
(3/8" Square in handle)

COLLET CHUCKS & ACCESSORIES

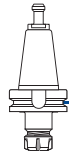
Notes

- Black oxide complete on toolholders, page A-2.
- High speed balance options, page A-6.
- Through-spindle coolant standard. Other coolant options, page A-12.
- XT Precision® collets: metric & fractional, pages B-43 & B-44.
- Blue Chip™ Coolant Containment System, page C-55.
- Collet chuck nosepiece torque values & wrenches, page A-11.
- Retention Knobs, pages D-76 & D-77.
- HSK Accessories & Setup Holding Fixtures, page D-79.
- HSK coolant hole plugs and coolant tubes sold separately, see page D-79.

BT-Flange



| Stub | | | | | |
|-------|---------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 40 | B4C3-0025-ZX | 2.32 | 2.6 | 1.06 | |

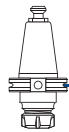
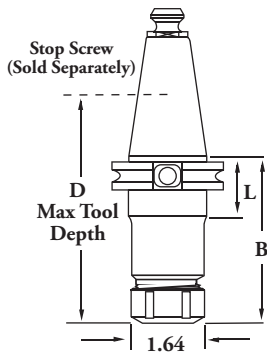


| Standard | | | | | |
|----------|---------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 40 | B4C4-0025-ZX | 3.82 | 3.3 | 1.06 | |

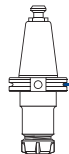


| Extended | | | | | |
|----------|---------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 40 | B4C5-0025-ZX | 5.82 | 3.3 | 1.06 | |

V-Flange



| Stub | | | | | |
|-------|---------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C3-0025-ZX | 2.32 | 2.8 | 1.08 | |

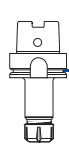
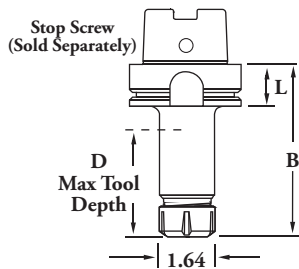


| Standard | | | | | |
|----------|---------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C4-0025-ZX | 3.82 | 3.3 | 1.38 | |
| V 50 | C6C4-0025-ZX | 3.82 | 3.3 | 1.38 | |



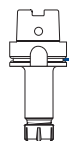
| Extended | | | | | |
|----------|---------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C5-0025-ZX | 5.82 | 3.3 | 1.38 | |
| V 50 | C6C5-0025-ZX | 5.82 | 3.3 | 1.38 | |

HSK



| Stub | | | | | |
|---------|---------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK63A | H4C3A0025-ZX | 2.82 | 1.5 | 1.02 | |
| HSK100A | H6C3A0025-ZX | 3.07 | 1.5 | 1.14 | |

No room for stop screws on HSK stub length holders.



| Standard | | | | | |
|----------|---------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK63A | H4C4A0025-ZX | 4.82 | 2.6 | 1.02 | |
| HSK100A | H6C4A0025-ZX | 5.07 | 2.4 | 1.14 | |



| Extended | | | | | |
|----------|---------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK63A | H4C5A0025-ZX | 6.82 | 3.3 | 1.02 | |
| HSK100A | H6C5A0025-ZX | 7.07 | 3.3 | 1.14 | |

XT25 Toolholders

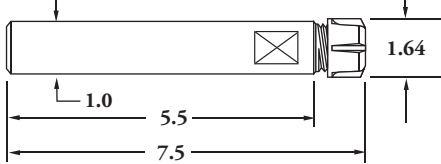
- Made to precise specifications for tool shank sizes .0984-.6299" (2.50-16.00 mm).
- Increased flexibility for milling, drilling, and reaming.
- **IMPORTANT:** Maximum recommended torque is listed on page A-11. Do not overtighten nose assembly.

XT Precision® Collet System Benefits:

- Performance guaranteed with a combination of XT Precision® Collets and Chucks; Assembled concentricity of <.0002 (.005 mm or 5 microns) at the collet face.
- Improved gripping pressure throughout the entire collet collapse range with XT Precision® Collets.
- Less tool wear and replacement — less scrap.
- Precision closure nosepiece — generates accurate, rigid grip on tool.
- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Fully ground flange and V-groove — easy on tool changers for less spindle and changer maintenance.

Replacement Parts & Accessories

Straight Shank XT25 Collet Extension

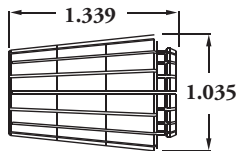


Part No.

ERCE-0025-ZX
(Coolant through)

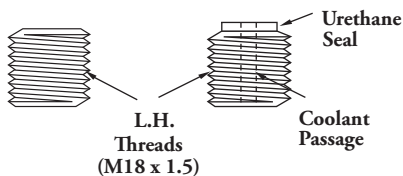
XT25 Series Collets

XT Precision® collets: metric & fractional, pages B-43 & B-44.



Stop Screws

(Sold Separately)



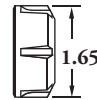
Part No.

XCCS-1815

Part No.

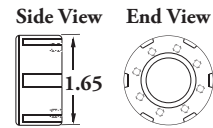
XCCS-1815-C

Replacement Nosepiece Assemblies & Wrench



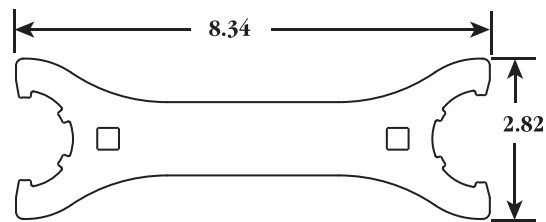
**Standard Balance
Part No.**

XCNA-T025
(M32 x 1.5)



**Fine Tune™
Part No.**

XCNA-TT25
(M32 x 1.5)
(Includes balance screws)



Wrench

**Double Ended
Part No.**

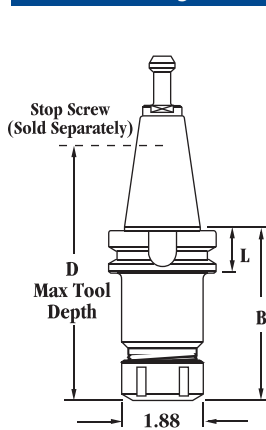
XCCW-D025
(3/8" Square in handle)

Notes

- Black oxide complete on toolholders, page A-2.
- High speed balance options, page A-6.
- Through-spindle coolant standard. Other coolant options, page A-12.
- XT Precision® collets: metric & fractional, pages B-43 & B-44.
- Blue Chip™ Coolant Containment System, page C-55.
- Collet chuck nosepiece torque values & wrenches, page A-11.
- Retention Knobs, pages D-76 & D-77.
- HSK Accessories & Setup Holding Fixtures, page D-79.
- HSK coolant hole plugs and coolant tubes sold separately, see page D-79.

XT Precision® XT32 Collet Chucks

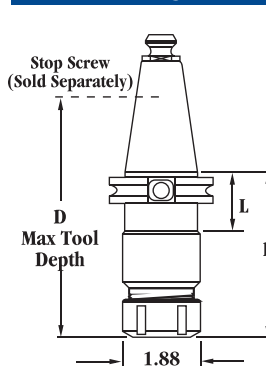
BT-Flange



| Stub | | | | | |
|----------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 30 | B2C3-0032-ZX | 2.05 | 2.0 | 0.87 | |
| BT 40 | B4C3-0032-ZX | 2.30 | 2.6 | 1.06 | |
| Standard | | | | | |
| Taper | Part No. | B | D | L | |
| BT 30 | B2C4-0032-ZX | 2.90 | 2.4 | .87 | |
| BT 35 | B3C4-0032-ZX | 2.90 | 2.7 | .87 | |
| BT 40 | B4C4-0032-ZX | 3.90 | 3.9 | 1.06 | |
| BT 45 | B5C4-0032-ZX | 3.90 | 3.9 | 1.31 | |
| BT 50 | B6C4-0032-ZX | 3.90 | 3.9 | 1.50 | |

| Extended | | | | | |
|-------------------------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 35 | B3C5-0032-ZX | 4.90 | 3.9 | 0.87 | |
| BT 40 | B4C5-0032-ZX | 5.90 | 3.9 | 1.06 | |
| R&R™ (Reach & Rigidity) | | | | | |
| Taper | Part No. | B | D | L | |
| BT 40 | B4K5-0032-ZX | 5.90 | 3.9 | 1.06 | |

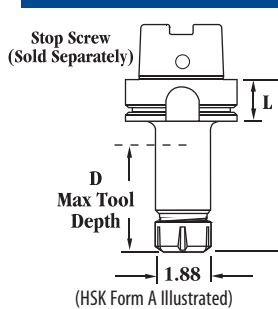
V-Flange



| Stub | | | | | |
|----------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C3-0032-ZX | 2.60 | 3.2 | 1.38 | |
| Standard | | | | | |
| Taper | Part No. | B | D | L | |
| V 30 | C2C4-0032-ZX | 2.90 | 2.4 | 1.44 | |
| V 40 | C4C4-0032-ZX | 3.90 | 3.9 | 1.44 | |
| V 45 | C5C4-0032-ZX | 3.90 | 3.9 | 1.38 | |
| V 50 | C6C4-0032-ZX | 3.90 | 3.9 | 1.38 | |
| Extended | | | | | |
| Taper | Part No. | B | D | L | |
| V 40 | C4C5-0032-ZX | 5.90 | 3.9 | 1.38 | |
| V 50 | C6C5-0032-ZX | 5.90 | 3.9 | 1.38 | |

| Extra Extended | | | | | |
|-------------------------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C6-0032-ZX | 7.97 | 3.8 | 1.38 | |
| V 50 | C6C6-0032-ZX | 7.90 | 3.9 | 1.38 | |
| R&R™ (Reach & Rigidity) | | | | | |
| Taper | Part No. | B | D | L | |
| V 50 | C6K5-0032-ZX | 5.90 | 3.9 | 1.38 | |
| V 50 | C6K6-0032-ZX | 7.90 | 3.9 | 1.38 | |

HSK



| Stub | | | | | |
|---|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK63A | H4C3A0032-ZX | 3.15 | 1.7 | 1.02 | |
| HSK63F | H4C3F0032-ZX | 3.15 | 1.8 | 1.02 | |
| HSK100A | H6C3A0032-ZX | 3.28 | 1.7 | 1.14 | |
| No room for stop screws on HSK stub length holders. | | | | | |
| Standard | | | | | |
| Taper | Part No. | B | D | L | |
| HSK63A | H4C4A0032-ZX | 5.15 | 2.7 | 1.02 | |
| HSK63F | H4C4F0032-ZX | 5.15 | 3.0 | 1.02 | |
| HSK100A | H6C4A0032-ZX | 5.28 | 2.8 | 1.14 | |

| Extended | | | | | |
|----------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK63A | H4C5A0032-ZX | 7.15 | 3.9 | 1.02 | |
| HSK100A | H6C5A0032-ZX | 7.28 | 3.9 | 1.14 | |

XT32 Toolholders

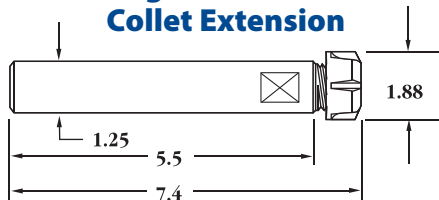
- Made to precise specifications for tool shank sizes .0984-.7874" (2.50-20.00 mm).
- Increased flexibility for milling, drilling, and reaming.
- **IMPORTANT:** Maximum recommended torque is listed on page A-11. Do not overtighten nose assembly.

XT Precision® Collet System Benefits:

- Performance guaranteed with a combination of XT Precision® Collets and Chucks; Assembled concentricity of <.0002 (.005mm or 5 microns) at the collet face.
- Improved gripping pressure throughout the entire collet collapse range with XT Precision® Collets.
- Less tool wear and replacement — less scrap.
- Precision closure nosepiece — generates accurate, rigid grip on tool.
- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Fully ground flange and V-groove — easy on tool changers for less spindle and changer maintenance.

Replacement Parts & Accessories

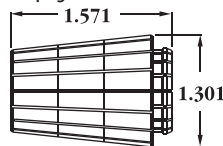
Straight Shank XT32 Collet Extension



Part No.
ERCE-0032-ZK
(Coolant through)

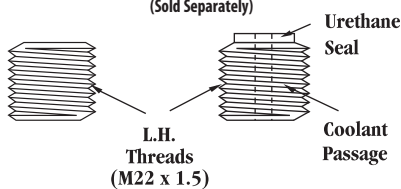
XT32 Series Collet

XT Precision® collets: metric & fractional, pages B-43 & B-44.



Stop Screws

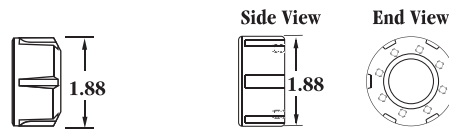
(Sold Separately)



Part No.
XCCS-2215

Part No.
XCCS-2215-C

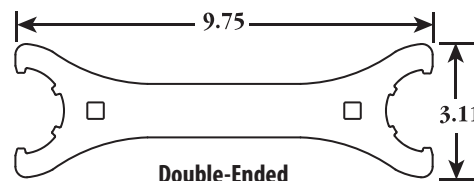
Replacement Nosepiece Assemblies & Wrench



Standard Balance
Part No.
XCNA-T032
(M40 x 1.5)

Fine Tune™
Part No.
XCNA-TT32
(M40 x 1.5)
(Includes balance screws)

Wrench



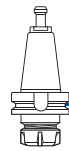
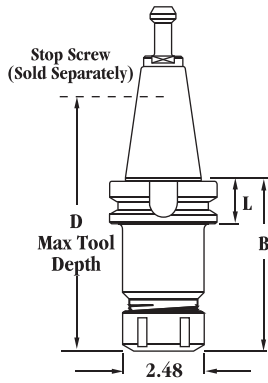
Double-Ended
Part No.
XCCW-D032
(3/8" Square in handle)

R&R™ (Reach & Rigidity) Collet Chucks Available!

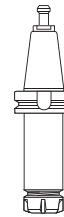
Notes

- Black oxide complete on toolholders, page A-2.
- High speed balance options, page A-6.
- Through-spindle coolant standard. Other coolant options, page A-12.
- XT Precision® collets: metric & fractional, pages B-43 & B-44.
- Blue Chip™ Coolant Containment System, page C-55.
- Collet chuck nosepiece torque values & wrenches, page A-11.
- Retention Knobs, pages D-76 & D-77.
- HSK Accessories & Setup Holding Fixtures, page D-79.
- HSK coolant hole plugs and coolant tubes sold separately, see page D-79.

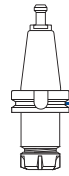
BT-Flange



| Stub | | | | | |
|-------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 40 | B4C3-0040-ZX | 2.63 | 1.4 | 1.06 | |

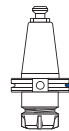
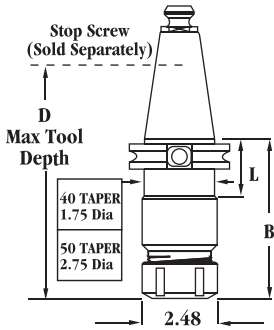


| Extended | | | | | |
|----------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 40 | B4C5-0040-ZX | 5.88 | 4.9 | 1.06 | |

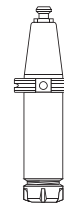


| Standard | | | | | |
|----------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 40 | B4C4-0040-ZX | 3.88 | 2.5 | 1.06 | |
| BT 50 | B6C4-0040-ZX | 3.88 | 3.9 | 1.50 | |

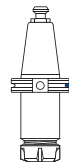
V-Flange



| Stub | | | | | |
|-------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C3-0040-ZX | 2.88 | 2.1 | 1.44 | |

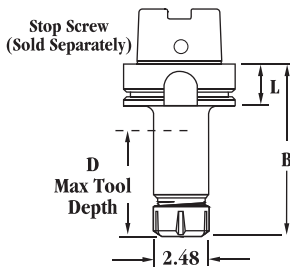


| Extended | | | | | |
|----------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C5-0040-ZX | 5.88 | 4.9 | 1.44 | |
| V 50 | C6C5-0040-ZX | 5.88 | 4.9 | 1.38 | |



| Standard | | | | | |
|----------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C4-0040-ZX | 3.88 | 3.1 | 1.44 | |
| V 50 | C6C4-0040-ZX | 3.88 | 3.9 | 1.38 | |

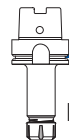
HSK



(HSK Form A Illustrated)



| Stub | | | | | |
|---|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK63A | H4C3A0040-ZX | 3.03 | 1.6 | 1.02 | |
| No room for stop screws on HSK stub length holders. | | | | | |



| Standard | | | | | |
|----------|--------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK63A | H4C4A0040-ZX | 4.60 | 2.4 | 1.02 | |
| HSK100A | H6C4A0040-ZX | 4.60 | 2.5 | 1.14 | |

XT40 Toolholders

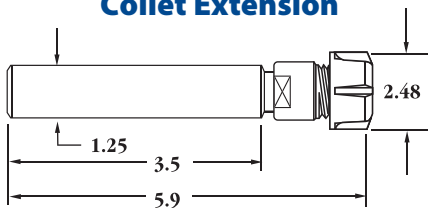
- Made to precise specifications for tool shank sizes .1181-1.0236" (3.00-26.00 mm).
- Increased flexibility for milling, drilling, and reaming.
- **IMPORTANT:** Maximum recommended torque is listed on page A-11. Do not overtighten nose assembly.

XT Precision® Collet System Benefits:

- Performance guaranteed with a combination of XT Precision® Collets and Chucks; Assembled concentricity of <.0002 (.005 mm or 5 microns) at the collet face.
- Improved gripping pressure throughout the entire collet collapse range with XT Precision® Collets.
- Less tool wear and replacement — less scrap.
- Precision closure nosepiece — generates accurate, rigid grip on tool.
- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Fully ground flange and V-groove — easy on tool changers for less spindle and changer maintenance.

Replacement Parts & Accessories

Straight Shank XT40 Collet Extension

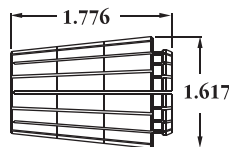


Part No.

ERCE-0040-ZX
(Coolant through)

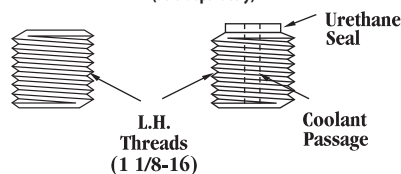
XT40 Series Collet

XT Precision® collets: metric & fractional, pages B-43 & B-44.



Stop Screws

(Sold Separately)



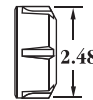
Part No.

XCCS-1816

Part No.

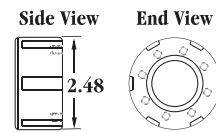
XCCS-1816-C

Replacement Nosepiece Assemblies & Wrench



Standard Balance
Part No.

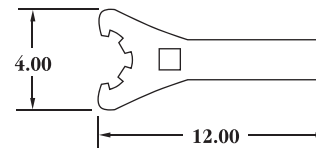
XCNA-T040
(M50 x 1.5)



Fine Tune™
Part No.

XCNA-TT40
(M50 x 1.5)
(Includes balance screws)

Wrench



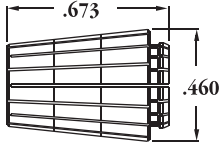
Part No.

XCCW-0040
(1/2" Square in handle)

Notes

- Black oxide complete on toolholders, page A-2.
- High speed balance options, page A-6.
- Through-spindle coolant standard. Other coolant options, page A-12.
- XT Precision® collets: metric & fractional, pages B-43 & B-44.
- Blue Chip™ Coolant Containment System, page C-55.
- Collet chuck nosepiece torque values & wrenches, page A-11.
- Retention Knobs, pages D-76 & D-77.
- HSK Accessories & Setup Holding Fixtures, page D-79.
- HSK coolant hole plugs and coolant tubes sold separately, see page D-79.

XT11



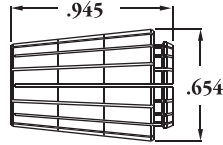
XT11 Series Metric Collets

| Part No. | Range-inch | Range-mm |
|-----------|-------------|-------------|
| XT11-0060 | .020 - .024 | .500 - .600 |
| XT11-0070 | .024 - .028 | .600 - .700 |
| XT11-0080 | .028 - .031 | .700 - .800 |
| XT11-0090 | .031 - .035 | .800 - .900 |
| XT11-0100 | .035 - .039 | .900 - 1.00 |
| XT11-0125 | .039 - .049 | 1.00 - 1.25 |
| XT11-0150 | .049 - .059 | 1.25 - 1.50 |
| XT11-0175 | .059 - .069 | 1.50 - 1.75 |
| XT11-0200 | .069 - .079 | 1.75 - 2.00 |
| XT11-0225 | .079 - .089 | 2.00 - 2.25 |
| XT11-0250 | .089 - .098 | 2.25 - 2.50 |
| XT11-0300 | .098 - .118 | 2.50 - 3.00 |
| XT11-0350 | .118 - .138 | 3.00 - 3.50 |
| XT11-0400 | .138 - .157 | 3.50 - 4.00 |
| XT11-0450 | .157 - .177 | 4.00 - 4.50 |
| XT11-0500 | .177 - .197 | 4.50 - 5.00 |
| XT11-0550 | .197 - .217 | 5.00 - 5.50 |
| XT11-0600 | .217 - .236 | 5.50 - 6.00 |
| XT11-0650 | .236 - .256 | 6.00 - 6.50 |
| XT11-0700 | .256 - .276 | 6.50 - 7.00 |
| XT11-20ST | SET | SET |

XT20 Series Fractional Collets

| Part No. | Range-inch |
|-----------|-------------|
| XT11-F125 | .106 - .125 |
| XT11-F187 | .168 - .187 |
| XT11-F250 | .231 - .250 |
| XT11-03ST | SET |

XT16



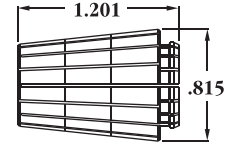
XT16 Series Metric Collets

| Part No. | Range-inch | Range-mm |
|-----------|---------------|--------------|
| XT16-0100 | .0295 - .0394 | 0.75 - 1.00 |
| XT16-0125 | .0394 - .0492 | 1.00 - 1.25 |
| XT16-0150 | .0492 - .0591 | 1.25 - 1.50 |
| XT16-0175 | .0591 - .0689 | 1.50 - 1.75 |
| XT16-0200 | .0689 - .0787 | 1.75 - 2.00 |
| XT16-0225 | .0787 - .0886 | 2.00 - 2.25 |
| XT16-0250 | .0886 - .0984 | 2.25 - 2.50 |
| XT16-0300 | .0984 - .1181 | 2.50 - 3.00 |
| XT16-0350 | .1181 - .1378 | 3.00 - 3.50 |
| XT16-0400 | .1378 - .1575 | 3.50 - 4.00 |
| XT16-0500 | .1575 - .1969 | 4.00 - 5.00 |
| XT16-0600 | .1969 - .2362 | 5.00 - 6.00 |
| XT16-0700 | .2362 - .2756 | 6.00 - 7.00 |
| XT16-0800 | .2756 - .3150 | 7.00 - 8.00 |
| XT16-0900 | .3150 - .3543 | 8.00 - 9.00 |
| XT16-1000 | .3543 - .3937 | 9.00 - 10.00 |
| XT16-16ST | SET | SET |

XT16 Series Fractional Collets

| Part No. | Range-inch |
|-----------|-------------|
| XT16-F062 | .043 - .062 |
| XT16-F093 | .054 - .093 |
| XT16-F125 | .086 - .125 |
| XT16-F156 | .117 - .156 |
| XT16-F187 | .148 - .187 |
| XT16-F218 | .179 - .218 |
| XT16-F250 | .211 - .250 |
| XT16-F281 | .242 - .281 |
| XT16-F312 | .273 - .312 |
| XT16-F343 | .304 - .343 |
| XT16-F375 | .336 - .375 |
| XT16-11ST | SET |

XT20



XT20 Series Metric Collets

| Part No. | Range-inch | Range-mm |
|-----------|---------------|---------------|
| XT20-0200 | .0689 - .0787 | 1.75 - 2.00 |
| XT20-0225 | .0787 - .0886 | 2.00 - 2.25 |
| XT20-0250 | .0886 - .0984 | 2.25 - 2.50 |
| XT20-0300 | .0984 - .1181 | 2.50 - 3.00 |
| XT20-0350 | .1181 - .1378 | 3.00 - 3.50 |
| XT20-0400 | .1378 - .1575 | 3.50 - 4.00 |
| XT20-0500 | .1575 - .1969 | 4.00 - 5.00 |
| XT20-0600 | .1969 - .2362 | 5.00 - 6.00 |
| XT20-0700 | .2362 - .2756 | 6.00 - 7.00 |
| XT20-0800 | .2756 - .3150 | 7.00 - 8.00 |
| XT20-0900 | .3150 - .3543 | 8.00 - 9.00 |
| XT20-1000 | .3543 - .3937 | 9.00 - 10.00 |
| XT20-1100 | .3937 - .4331 | 10.00 - 11.00 |
| XT20-1200 | .4331 - .4724 | 11.00 - 12.00 |
| XT20-1300 | .4724 - .5118 | 12.00 - 13.00 |
| XT20-15ST | SET | SET |

XT20 Series Fractional Collets

| Part No. | Range-inch |
|-----------|-------------|
| XT20-F093 | .054 - .093 |
| XT20-F125 | .086 - .125 |
| XT20-F156 | .117 - .156 |
| XT20-F187 | .148 - .187 |
| XT20-F218 | .179 - .218 |
| XT20-F250 | .211 - .250 |
| XT20-F281 | .242 - .281 |
| XT20-F312 | .273 - .312 |
| XT20-F343 | .303 - .343 |
| XT20-F375 | .336 - .375 |
| XT20-F406 | .367 - .406 |
| XT20-F437 | .398 - .437 |
| XT20-F468 | .429 - .468 |
| XT20-F500 | .461 - .500 |
| XT20-14ST | SET |

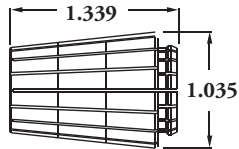
Notes

- Tool shanks must engage full length of collet ID bore. Failure to follow this practice will result in tool failure.
- For best results, use collet closest to the cutter shank size.
- Dimensions given in inches & millimeter.
- Blue Chip™ Coolant Containment System, page C-55.

XT Precision® Collets: Metric & Fractional



XT25



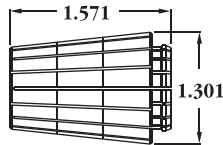
XT25 Series Metric Collets

| Part No. | Range-inch | Range-mm |
|-----------|---------------|---------------|
| XT25-0300 | .0984 - .1181 | 2.50 - 3.00 |
| XT25-0350 | .1181 - .1378 | 3.00 - 3.50 |
| XT25-0400 | .1378 - .1575 | 3.50 - 4.00 |
| XT25-0500 | .1575 - .1969 | 4.00 - 5.00 |
| XT25-0600 | .1969 - .2362 | 5.00 - 6.00 |
| XT25-0700 | .2362 - .2756 | 6.00 - 7.00 |
| XT25-0800 | .2756 - .3150 | 7.00 - 8.00 |
| XT25-0900 | .3150 - .3543 | 8.00 - 9.00 |
| XT25-1000 | .3543 - .3937 | 9.00 - 10.00 |
| XT25-1100 | .3937 - .4331 | 10.00 - 11.00 |
| XT25-1200 | .4331 - .4724 | 11.00 - 12.00 |
| XT25-1300 | .4724 - .5118 | 12.00 - 13.00 |
| XT25-1400 | .5118 - .5512 | 13.00 - 14.00 |
| XT25-1500 | .5512 - .5906 | 14.00 - 15.00 |
| XT25-1600 | .5906 - .6299 | 15.00 - 16.00 |
| XT25-15ST | SET | SET |

XT25 Series Fractional Collets

| Part No. | Range-inch |
|-----------|-------------|
| XT25-F125 | .086 - .125 |
| XT25-F187 | .148 - .187 |
| XT25-F250 | .211 - .250 |
| XT25-F312 | .273 - .312 |
| XT25-F375 | .336 - .375 |
| XT25-F437 | .398 - .437 |
| XT25-F500 | .461 - .500 |
| XT25-F562 | .523 - .562 |
| XT25-F625 | .586 - .625 |
| XT25-09ST | SET |

XT32



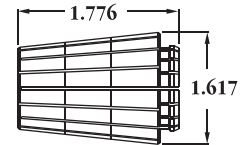
XT32 Series Metric Collets

| Part No. | Range-inch | Range-mm |
|-----------|---------------|---------------|
| XT32-0300 | .0984 - .1181 | 2.50 - 3.00 |
| XT32-0350 | .1181 - .1378 | 3.00 - 3.50 |
| XT32-0400 | .1378 - .1575 | 3.50 - 4.00 |
| XT32-0500 | .1575 - .1969 | 4.00 - 5.00 |
| XT32-0600 | .1969 - .2362 | 5.00 - 6.00 |
| XT32-0700 | .2362 - .2756 | 6.00 - 7.00 |
| XT32-0800 | .2756 - .3150 | 7.00 - 8.00 |
| XT32-0900 | .3150 - .3543 | 8.00 - 9.00 |
| XT32-1000 | .3543 - .3937 | 9.00 - 10.00 |
| XT32-1100 | .3937 - .4331 | 10.00 - 11.00 |
| XT32-1200 | .4331 - .4724 | 11.00 - 12.00 |
| XT32-1300 | .4724 - .5118 | 12.00 - 13.00 |
| XT32-1400 | .5118 - .5512 | 13.00 - 14.00 |
| XT32-1500 | .5512 - .5906 | 14.00 - 15.00 |
| XT32-1600 | .5906 - .6299 | 15.00 - 16.00 |
| XT32-1700 | .6299 - .6693 | 16.00 - 17.00 |
| XT32-1800 | .6693 - .7087 | 17.00 - 18.00 |
| XT32-1900 | .7087 - .7480 | 18.00 - 19.00 |
| XT32-2000 | .7480 - .7874 | 19.00 - 20.00 |
| XT32-19ST | SET | SET |

XT32 Series Fractional Collets

| Part No. | Range-inch |
|-----------|-------------|
| XT32-F125 | .086 - .125 |
| XT32-F187 | .148 - .187 |
| XT32-F250 | .211 - .250 |
| XT32-F312 | .273 - .312 |
| XT32-F375 | .336 - .375 |
| XT32-F437 | .398 - .437 |
| XT32-F500 | .461 - .500 |
| XT32-F562 | .523 - .562 |
| XT32-F625 | .586 - .625 |
| XT32-F687 | .648 - .687 |
| XT32-F750 | .711 - .750 |
| XT32-11ST | SET |

XT40



XT40 Series Metric Collets

| Part No. | Range-inch | Range-mm |
|-----------|----------------|---------------|
| XT40-0400 | .1181 - .1575 | 3.00 - 4.00 |
| XT40-0500 | .1575 - .1969 | 4.00 - 5.00 |
| XT40-0600 | .1969 - .2362 | 5.00 - 6.00 |
| XT40-0700 | .2362 - .2756 | 6.00 - 7.00 |
| XT40-0800 | .2756 - .3150 | 7.00 - 8.00 |
| XT40-0900 | .3150 - .3543 | 8.00 - 9.00 |
| XT40-1000 | .3543 - .3937 | 9.00 - 10.00 |
| XT40-1100 | .3937 - .4331 | 10.00 - 11.00 |
| XT40-1200 | .4331 - .4724 | 11.00 - 12.00 |
| XT40-1300 | .4724 - .5118 | 12.00 - 13.00 |
| XT40-1400 | .5118 - .5512 | 13.00 - 14.00 |
| XT40-1500 | .5512 - .5906 | 14.00 - 15.00 |
| XT40-1600 | .5906 - .6299 | 15.00 - 16.00 |
| XT40-1700 | .6299 - .6693 | 16.00 - 17.00 |
| XT40-1800 | .6693 - .7087 | 17.00 - 18.00 |
| XT40-1900 | .7087 - .7480 | 18.00 - 19.00 |
| XT40-2000 | .7480 - .7874 | 19.00 - 20.00 |
| XT40-2100 | .7874 - .8268 | 20.00 - 21.00 |
| XT40-2200 | .8268 - .8661 | 21.00 - 22.00 |
| XT40-2300 | .8661 - .9055 | 22.00 - 23.00 |
| XT40-2400 | .9055 - .9449 | 23.00 - 24.00 |
| XT40-2500 | .9449 - .9843 | 24.00 - 25.00 |
| XT40-2600 | .9843 - 1.0236 | 25.00 - 26.00 |
| XT40-23ST | SET | SET |

XT40 Series Fractional Collets

| Part No. | Range-inch | Part No. | Range-inch |
|-----------|-------------|-----------|-------------|
| XT40-F125 | .086 - .125 | XT40-F625 | .586 - .625 |
| XT40-F187 | .148 - .187 | XT40-F687 | .648 - .687 |
| XT40-F250 | .211 - .250 | XT40-F750 | .711 - .750 |
| XT40-F312 | .273 - .312 | XT40-F812 | .774 - .812 |
| XT40-F375 | .336 - .375 | XT40-F875 | .836 - .875 |
| XT40-F437 | .398 - .437 | XT40-F937 | .899 - .937 |
| XT40-F500 | .461 - .500 | XT40-F100 | .961 - 1.00 |
| XT40-F562 | .523 - .562 | XT40-15ST | SET |

COLLET CHUCKS & ACCESSORIES

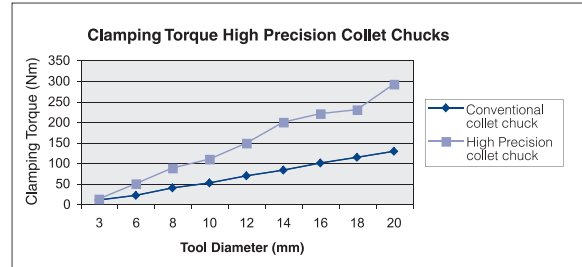
Quality, Innovation and Accuracy

Rigid!

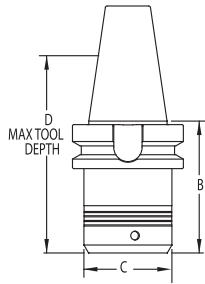
Command's High Precision Collet Chucks are designed and built to advanced specifications and minimize bending and compression loads. The extra reinforcement of the chuck body to the diameter of the clamping nut results in unequalled stability with maximum compactness.

Precise!

The ground trapezoidal thread reduces friction and together with the extra long, double length guide, ensures absolute centering of the clamping nut on the chuck, thus achieving optimum distribution of load and minimal imbalance. This results in extremely high concentricity and repeatability.

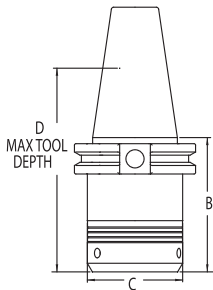


BT-Flange



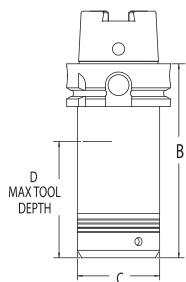
| Taper | Part No. | B | C | D |
|-------|------------------|------|------|------|
| BT 40 | B4C3-HP16 | 2.75 | 1.18 | 4.25 |
| BT 40 | B4C3-HP32 | 2.75 | 1.97 | 4.25 |
| BT 50 | B6C3-HP32 | 3.94 | 1.97 | 5.90 |

V-Flange



| Taper | Part No. | B | C | D |
|-------|------------------|------|------|------|
| V 40 | C4C3-HP16 | 2.50 | 1.18 | 4.00 |
| V 40 | C4C3-HP32 | 3.00 | 1.97 | 4.50 |
| V 50 | C6C3-HP16 | 3.50 | 1.18 | 4.00 |
| V 50 | C6C3-HP32 | 3.50 | 1.97 | 4.00 |

HSK

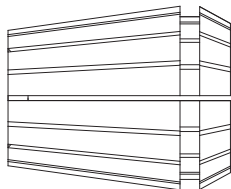


| Taper | Part No. | B | C | D |
|---------|------------------|------|------|------|
| HSK63A | H4C3AHP16 | 3.94 | 1.18 | 3.00 |
| HSK63A | H4C3AHP32 | 3.94 | 1.97 | 3.00 |
| HSK100A | H6C3AHP32 | 3.94 | 1.97 | 3.00 |

Notes

- Tool shanks must engage full length of collet ID bore. Failure to follow this practice may result in tool failure.
- Recommended for use with single end, round shank carbide tools (no flats), with h6 tolerances, page A-4.
- High Accuracy Collet Chucks available only with shiny shank; no black oxide.
- High speed balance options, page A-6.
- Coolant-through with flange coolant option (plugs included).
- HSK Accessories & Setup Holding Fixtures, page D-79.

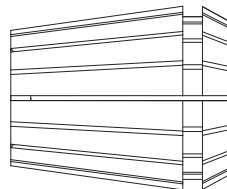
Runout Accuracy -3μ



ER16 High Precision Collets

NOTE: One seal disc is included with each collet

| Part No. | Size | Replacement Seal Disc |
|-------------|--------|-----------------------|
| ER16-0100HP | 1mm | — |
| ER16-0200HP | 2mm | CSER16-0200HP |
| ER16-0300HP | 3mm | CSER16-0300HP |
| ER16-0400HP | 4mm | CSER16-0400HP |
| ER16-0500HP | 5mm | CSER16-0500HP |
| ER16-0600HP | 6mm | CSER16-0600HP |
| ER16-0700HP | 7mm | CSER16-0700HP |
| ER16-0800HP | 8mm | CSER16-0800HP |
| ER16-0900HP | 9mm | CSER16-0900HP |
| ER16-1000HP | 10mm | CSER16-1000HP |
| ER16-F125HP | 0.125" | CSER16-F125HP |
| ER16-F187HP | 0.187" | CSER16-F187HP |
| ER16-F250HP | 0.250" | CSER16-F250HP |
| ER16-F312HP | 0.312" | CSER16-F312HP |
| ER16-F375HP | 0.375" | CSER16-F375HP |



ER32 High Precision Collets

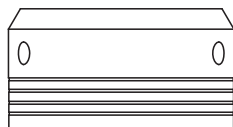
NOTE: One seal disc is included with each collet

| Part No. | Size | Replacement Seal Disc | Part No. | Size | Replacement Seal Disc |
|-------------|------|-----------------------|-------------|--------|-----------------------|
| ER32-0300HP | 3mm | CSER32-0300HP | ER32-1700HP | 17mm | CSER32-1700HP |
| ER32-0400HP | 4mm | CSER32-0400HP | ER32-1800HP | 18mm | CSER32-1800HP |
| ER32-0500HP | 5mm | CSER32-0500HP | ER32-1900HP | 19mm | CSER32-1900HP |
| ER32-0600HP | 6mm | CSER32-0600HP | ER32-2000HP | 20mm | CSER32-2000HP |
| ER32-0700HP | 7mm | CSER32-0700HP | ER32-F125HP | 0.125" | CSER32-F125HP |
| ER32-0800HP | 8mm | CSER32-0800HP | ER32-F187HP | 0.187" | CSER32-F187HP |
| ER32-0900HP | 9mm | CSER32-0900HP | ER32-F250HP | 0.250" | CSER32-F250HP |
| ER32-1000HP | 10mm | CSER32-1000HP | ER32-F312HP | 0.312" | CSER32-F312HP |
| ER32-1100HP | 11mm | CSER32-1100HP | ER32-F375HP | 0.375" | CSER32-F375HP |
| ER32-1200HP | 12mm | CSER32-1200HP | ER32-F437HP | 0.437" | CSER32-F437HP |
| ER32-1300HP | 13mm | CSER32-1300HP | ER32-F500HP | 0.500" | CSER32-F500HP |
| ER32-1400HP | 14mm | CSER32-1400HP | ER32-F562HP | 0.562" | CSER32-F562HP |
| ER32-1500HP | 15mm | CSER32-1500HP | ER32-F625HP | 0.625" | CSER32-F625HP |
| ER32-1600HP | 16mm | CSER32-1600HP | ER32-F750HP | 0.750" | CSER32-F750HP |

COLLET CHUCKS & ACCESSORIES

Replacement Parts & Accessories

ER16 High Precision Nosepiece & Wrench

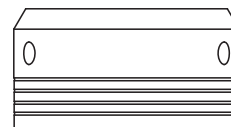


| Part No. | Description |
|-----------|---|
| XFCN-0016 | ER16 High Precision Nosepiece for Seals |



| Part No. | Description |
|-----------|----------------------------|
| XCCW-HP16 | ER16 High Precision Wrench |

ER32 High Precision Nosepiece & Wrench



| Part No. | Description |
|-----------|---|
| XFCN-0032 | ER32 High Precision Nosepiece for Seals |



| Part No. | Description |
|-----------|----------------------------|
| XCCW-HP32 | ER32 High Precision Wrench |

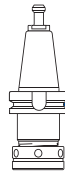
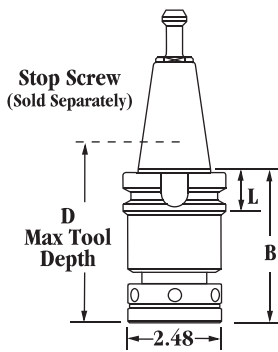
TG100 Complex® Collet Chucks:

- The key reason for the Complex® Collet Systems accuracy and gripping power is a unique flush nut design. It incorporates a rotating ball assembly producing a “radial float.” This, in effect, forces the collet to self-center for maximum grip, highest precision, and minimum tool wear..
- Collets range from .078”-1.000”.
- Flexibility to mill, drill, and ream.
- **IMPORTANT:** Maximum recommended torque is 60 Ft.-Lbs. Do not overtighten nose assembly.

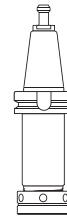
Complex® Collet Chuck Benefits:

- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Less tool wear and replacement — less scrap.
- Fully ground flange and V-groove — easy on the tool changers for less spindle and changer maintenance.

BT-Flange

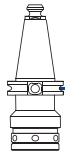
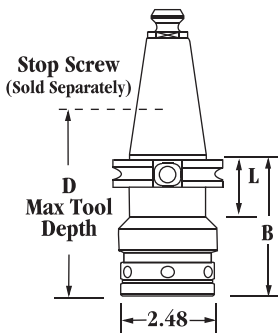


| | | Standard | | | |
|-------|------------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 30 | B2C4-1000 | 4.00 | 2.6 | .87 | |
| BT 35 | B3C4-1000 | 3.50 | 2.8 | .87 | |
| BT 40 | B4C4-1000 | 3.50 | 2.8 | 1.06 | |
| BT 45 | B5C4-1000 | 3.50 | 4.1 | 1.31 | |
| BT 50 | B6C4-1000 | 3.50 | 3.5 | 1.50 | |

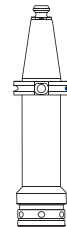


| | | Extended | | | |
|-------|------------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 35 | B3C5-1000 | 5.47 | 4.6 | .87 | |
| BT 40 | B4C5-1000 | 5.50 | 5.0 | 1.06 | |
| BT 45 | B5C5-1000 | 6.00 | 5.0 | 1.31 | |
| BT 50 | B6C5-1000 | 6.00 | 5.0 | 1.50 | |

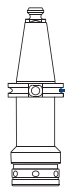
V-Flange



| | | Stub | | | |
|-------|------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C3-1000 | 2.75 | 3.1 | N/A | |
| V 50 | C6C3-1000 | 2.75 | 3.7 | 1.38 | |



| | | Extended | | | |
|-------|------------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C5-1000 | 4.25 | 3.9 | 2.25 | |
| V 45 | C5C5-1000 | 5.75 | 5.0 | N/A | |
| V 50 | C6C5-1000 | 5.25 | 5.0 | 1.38 | |



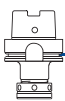
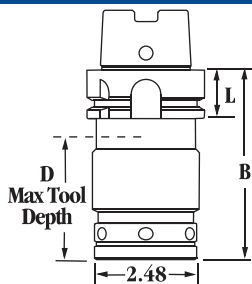
| | | Standard | | | |
|-------|------------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 30 | C2C4-1000 | 4.34 | 2.6 | 1.44 | |
| V 40 | C4C4-1000 | 3.25 | 2.9 | 1.44 | |
| V 45 | C5C4-1000 | 3.75 | 4.3 | N/A | |
| V 50 | C6C4-1000 | 3.25 | 4.2 | 1.38 | |



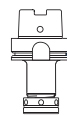
| | | Extra Extended | | | |
|-------|------------------|----------------|-----|-------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C6-1000 | 6.25 | 5.0 | 4.250 | |
| V 45 | C5C6-1000 | 7.75 | 5.0 | N/A | |
| V 50 | C6C6-1000 | 7.25 | 5.0 | 1.38 | |

TG75 Collet Chucks Available (Part No. C4C4-0750) Consult Command Customer Service.

HSK



| | | Stub | | | |
|---------|------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK63A | H4C3A1000 | 4.00 | 2.6 | 1.02 | |
| HSK100A | H6C3A1000 | 4.25 | 2.6 | 1.14 | |



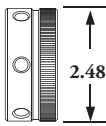
| | | Standard | | | |
|---------|------------------|----------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK63A | H4C4A1000 | 6.00 | 3.6 | 1.02 | |
| HSK100A | H6C4A1000 | 6.25 | 3.0 | 1.14 | |

No room for Stop Screws on HSK Stub length holders.

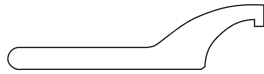
HSK Form A Illustrated

Replacement Parts

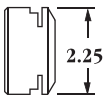
Replacement Nosepiece Assemblies and Wrenches



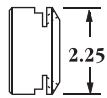
Standard Style
Part No.
XCNA-1000
(1 7/8 x 12 Acme)



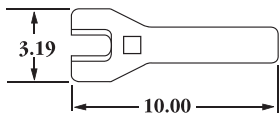
Standard Wrench
Part No.
XCCW-1000



Fine Balance Style
Part No.
XCNA-FB10
(1 7/8-12 Acme)



Fine Tune™ Style
Part No.
XCNA-FT10
(1 7/8-12 Acme)
(Includes balance screws)

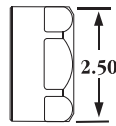


Part No.
XCCW-FT10
(3/8" Square in handle)

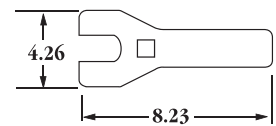
Complex®



Non-Pull



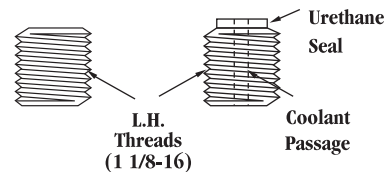
Hex Style
Part No.
XCNA-H100
(1 7/8 x 12 Acme)
(2.25 inch Hex)



Part No.
XCCW-H100
(3/8" Square in handle)

Stop Screws

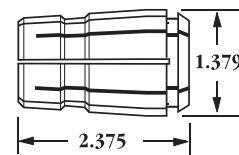
(Sold Separately)



Part No.
XCCS-1816
Add -C at end of part number to specify stop screw with coolant passage.

TG100 Complex® Collets

Complex® TG standard, non-pull, and sealed collets, page C-51.



TG100 sizes range from 5/64" through 1".
Collet size (ID) is the last four digits of our part number. The ID will collapse 1/64".
Wide range collets—reduce collet and toolholder inventories.

Notes

- Black oxide complete on toolholders, page A-2.
- No room for Stop Screws on HSK Stub length holders.
- High speed balance options, page A-6.
- Through-spindle coolant standard. Other coolant options, page A-12.
- Complex® TG collets are interchangeable with Erickson-type collets.
- Complex® TG standard, non-pull, and sealed collets, page C-51.
- Blue Chip™ Coolant Containment System, page C-55.
- Collet chuck nosepiece torque values & wrenches, page A-11.
- Retention Knobs, pages D-76 & D-77.
- HSK Accessories & Setup Holding Fixtures, page D-79.
- HSK coolant hole plugs and coolant tubes sold separately, see page D-79.

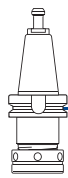
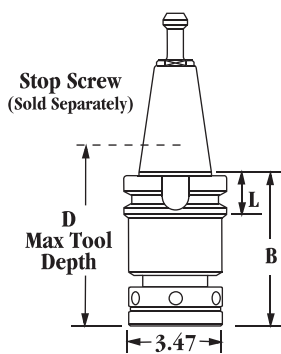
TG150 Complex® Collet Chucks:

- The key reason for the Complex® Collet Systems accuracy and gripping power is a unique flush nut design. It incorporates a rotating ball assembly producing a "radial float." This, in effect, forces the collet to self-center for maximum grip, highest precision, and minimum tool wear.
- Collets range from .484"-1.500"
- Flexibility to mill, drill, and ream.
- **IMPORTANT:** Maximum recommended torque is 100 Ft.-Lbs. Do not overtighten nose assembly

Complex® Collet Chuck Benefits:

- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Less tool wear and replacement — less scrap.
- Fully ground flange and V-groove — easy on the tool changers for less spindle and changer maintenance.
- All tapers and lengths ready to ship — get your tools fast!

BT-Flange

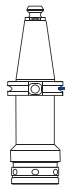
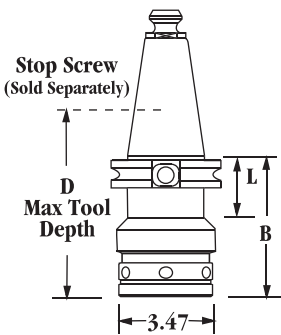


| Standard | | | | | |
|----------|------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 40 | B4C4-1500 | 4.78 | 3.7 | 1.06 | |
| BT 45 | B5C4-1500 | 4.00 | 4.4 | 1.31 | |
| BT 50 | B6C4-1500 | 3.50 | 4.5 | 1.50 | |

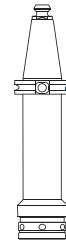


| Extended | | | | | |
|----------|------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| BT 45 | B5C5-1500 | 6.00 | 5.0 | 1.31 | |
| BT 50 | B6C5-1500 | 6.00 | 5.0 | 1.50 | |

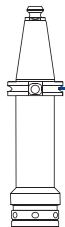
V-Flange



| Standard | | | | | |
|----------|------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 40 | C4C4-1500 | 4.88 | 3.8 | 1.44 | |
| V 45 | C5C4-1500 | 4.00 | 4.4 | 1.44 | |
| V 50 | C6C4-1500 | 3.50 | 4.8 | N/A | |

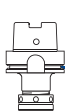
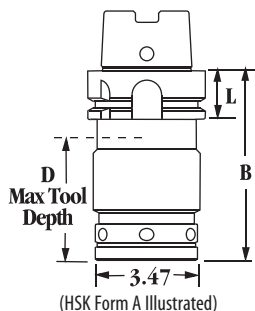


| Extra Extended | | | | | |
|----------------|------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 45 | C5C6-1500 | 8.00 | 5.0 | 1.44 | |
| V 50 | C6C6-1500 | 7.50 | 5.0 | N/A | |

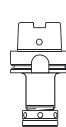


| Extended | | | | | |
|----------|------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| V 45 | C5C5-1500 | 6.00 | 5.0 | 1.44 | |
| V 50 | C6C5-1500 | 5.50 | 5.0 | N/A | |

HSK



| Stub | | | | | |
|---------|------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK63A | H4C3A1500 | 5.13 | 3.2 | 1.02 | |
| HSK100A | H6C3A1500 | 4.88 | 3.2 | 1.14 | |



| Standard | | | | | |
|----------|------------------|------|-----|------|--|
| Taper | Part No. | B | D | L | |
| HSK100A | H6C4A1500 | 6.88 | 4.0 | 1.14 | |

No room for Stop Screws on HSK Stub length holders.

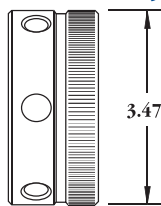
Comflex®

Non-Pull



Replacement Parts

Replacement Nosepiece Assembly



Part No.

XCNA-1500
(2 5/8 x 12)

Wrench

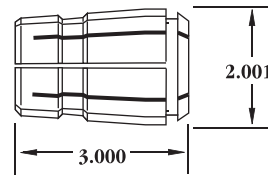


Part No.

XCCW-1500

TG150 Comflex® Collets

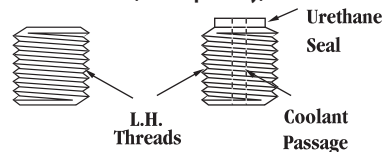
Comflex® TG standard, non-pull, and sealed collets, page C-52.



- TG150 sizes range from 1/2" through 1-1/2".
- Collet size (ID) is the last four digits of our part number. The ID will collapse 1/64".
- Wide range collets—reduce collet and toolholder inventories.

Stop Screws

(Sold Separately)



| Taper | Standard Length Part No. | Ext. and Extra Ext. Part No. | Thread |
|-------|--------------------------|------------------------------|------------|
| 40 | XCCS-2212 | | 1 3/8 x 12 |
| 45 | XCCS-2212 | | 1 3/8 x 12 |
| 45 | | XCCS-2612 | 1 5/8 x 12 |
| 50 | XCCS-2612 | XCCS-2612 | 1 5/8 x 12 |

Add **-C** at end of part number to specify stop screw with coolant passage.

Notes

- Black oxide complete on toolholders, page A-2.
- No room for Stop Screws on HSK Stub length holders.
- High speed balance options, page A-6.
- Through-spindle coolant standard. Other coolant options, page A-12.
- Comflex® TG collets are interchangeable with Erickson-type collets.
- Comflex® TG standard, non-pull, and sealed collets, page C-52.

- Blue Chip™ Coolant Containment System, page C-55.
- Collet chuck nosepiece torque values & wrenches, page A-11.
- Retention Knobs, pages D-76 & D-77 .
- HSK Accessories & Setup Holding Fixtures, page D-79.
- HSK coolant hole plugs and coolant tubes sold separately, see page D-79.

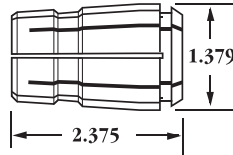
TG100 Collets: Standard & Sealed Fractional

Comflex®

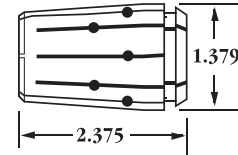


Non-Pull

TG100



TG100



Comflex® Fractional Collets

| Part No. | Size | Part No. | Size |
|-----------|---------------|-----------|---------------|
| TG10-0093 | 0.078 - 0.093 | TG10-0562 | 0.547 - 0.562 |
| TG10-0109 | 0.094 - 0.109 | TG10-0578 | 0.563 - 0.578 |
| TG10-0125 | 0.109 - 0.125 | TG10-0593 | 0.578 - 0.593 |
| TG10-0140 | 0.125 - 0.140 | TG10-0609 | 0.594 - 0.609 |
| TG10-0156 | 0.141 - 0.156 | TG10-0625 | 0.609 - 0.625 |
| TG10-0171 | 0.156 - 0.171 | TG10-0640 | 0.625 - 0.640 |
| TG10-0187 | 0.172 - 0.187 | TG10-0656 | 0.641 - 0.656 |
| TG10-0203 | 0.188 - 0.203 | TG10-0671 | 0.656 - 0.671 |
| TG10-0218 | 0.203 - 0.218 | TG10-0687 | 0.672 - 0.687 |
| TG10-0234 | 0.219 - 0.234 | TG10-0703 | 0.688 - 0.703 |
| TG10-0250 | 0.234 - 0.250 | TG10-0718 | 0.703 - 0.718 |
| TG10-0265 | 0.250 - 0.265 | TG10-0734 | 0.719 - 0.734 |
| TG10-0281 | 0.266 - 0.281 | TG10-0750 | 0.734 - 0.750 |
| TG10-0296 | 0.281 - 0.296 | TG10-0765 | 0.750 - 0.765 |
| TG10-0312 | 0.297 - 0.312 | TG10-0781 | 0.766 - 0.781 |
| TG10-0328 | 0.313 - 0.328 | TG10-0796 | 0.781 - 0.796 |
| TG10-0343 | 0.328 - 0.343 | TG10-0812 | 0.797 - 0.812 |
| TG10-0359 | 0.344 - 0.359 | TG10-0828 | 0.813 - 0.828 |
| TG10-0375 | 0.359 - 0.375 | TG10-0843 | 0.828 - 0.843 |
| TG10-0390 | 0.375 - 0.390 | TG10-0859 | 0.844 - 0.859 |
| TG10-0406 | 0.391 - 0.406 | TG10-0875 | 0.859 - 0.875 |
| TG10-0421 | 0.406 - 0.421 | TG10-0890 | 0.875 - 0.890 |
| TG10-0437 | 0.422 - 0.437 | TG10-0906 | 0.891 - 0.906 |
| TG10-0453 | 0.438 - 0.453 | TG10-0921 | 0.906 - 0.921 |
| TG10-0468 | 0.453 - 0.468 | TG10-0937 | 0.922 - 0.937 |
| TG10-0484 | 0.469 - 0.484 | TG10-0953 | 0.938 - 0.953 |
| TG10-0500 | 0.484 - 0.500 | TG10-0968 | 0.953 - 0.968 |
| TG10-0515 | 0.500 - 0.515 | TG10-0984 | 0.969 - 0.984 |
| TG10-0531 | 0.516 - 0.531 | TG10-1000 | 0.984 - 1.000 |
| TG10-0546 | 0.531 - 0.546 | | |

Sealed Comflex® Fractional Collets

| Part No. | Size | Part No. | Size |
|------------|-------|------------|-------|
| TG10-0093S | 0.093 | TG10-0609S | 0.609 |
| TG10-0109S | 0.109 | TG10-0625S | 0.625 |
| TG10-0125S | 0.125 | TG10-0640S | 0.640 |
| TG10-0140S | 0.140 | TG10-0656S | 0.656 |
| TG10-0156S | 0.156 | TG10-0671S | 0.671 |
| TG10-0171S | 0.171 | TG10-0687S | 0.687 |
| TG10-0187S | 0.187 | TG10-0703S | 0.703 |
| TG10-0203S | 0.203 | TG10-0718S | 0.718 |
| TG10-0218S | 0.218 | TG10-0734S | 0.734 |
| TG10-0234S | 0.234 | TG10-0750S | 0.750 |
| TG10-0250S | 0.250 | TG10-0765S | 0.765 |
| TG10-0265S | 0.265 | TG10-0781S | 0.781 |
| TG10-0281S | 0.281 | TG10-0796S | 0.796 |
| TG10-0296S | 0.296 | TG10-0812S | 0.812 |
| TG10-0312S | 0.312 | TG10-0828S | 0.828 |
| TG10-0328S | 0.328 | TG10-0843S | 0.843 |
| TG10-0343S | 0.343 | TG10-0859S | 0.859 |
| TG10-0359S | 0.359 | TG10-0875S | 0.875 |
| TG10-0375S | 0.375 | TG10-0890S | 0.890 |
| TG10-0390S | 0.390 | TG10-0906S | 0.906 |
| TG10-0406S | 0.406 | TG10-0921S | 0.921 |
| TG10-0421S | 0.421 | TG10-0937S | 0.937 |
| TG10-0437S | 0.437 | TG10-0953S | 0.953 |
| TG10-0453S | 0.453 | TG10-0968S | 0.968 |
| TG10-0468S | 0.468 | TG10-0984S | 0.984 |
| TG10-0484S | 0.484 | TG10-1000S | 1.000 |
| TG10-0500S | 0.500 | | |
| TG10-0515S | 0.515 | | |
| TG10-0531S | 0.531 | | |
| TG10-0546S | 0.546 | | |
| TG10-0562S | 0.56 | | |
| TG10-0578S | 0.578 | | |
| TG10-0593S | 0.593 | | |

Sealed Collets Sets

| | |
|------------|-----------|
| TG10-21STS | SET of 21 |
| TG10-30STS | SET of 30 |
| TG10-41STS | SET of 41 |
| TG10-59STS | SET of 59 |

TG100 Collets

- The TG100 sizes range from 3/32" through 1"
- Collet size (ID) is the last four digits of our part number. The ID will collapse 1/64".
- Wide range collets — reduce collet and toolholder inventories.

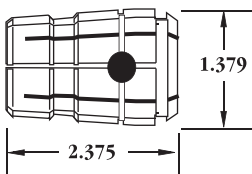
TG100 Comflex® Collet Sets

| Part No. | No. of Collets | Range |
|-----------|----------------|------------------------|
| TG10-21ST | 21 | 3/8 to 1 (1/32 incr.) |
| TG10-30ST | 30 | 3/32 to 1 (1/32 incr.) |
| TG10-41ST | 41 | 3/8 to 1 (1/64 incr.) |
| TG10-59ST | 59 | 3/32 to 1 (1/64 incr.) |

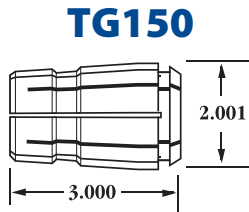
TG100 Non-Pull End Mill

| Part No. | Size |
|-------------|-------|
| TG10-0375NP | .375 |
| TG10-0500NP | .500 |
| TG10-0625NP | .625 |
| TG10-0750NP | .750 |
| TG10-0875NP | .875 |
| TG10-1000NP | 1.000 |

Designed for tools with Weldon flats.

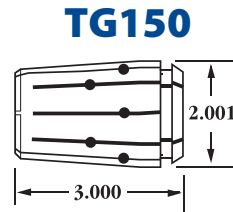


TG150 Collets: Standard & Sealed Fractional



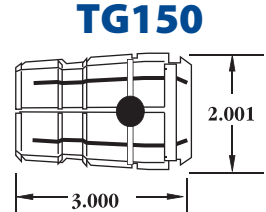
Complex® Fractional Collets

| Part No. | Size | Part No. | Size |
|-----------|---------------|-----------|---------------|
| TG15-0500 | 0.484 - 0.500 | TG15-1015 | 1.000 - 1.015 |
| TG15-0515 | 0.500 - 0.515 | TG15-1031 | 1.016 - 1.031 |
| TG15-0531 | 0.516 - 0.531 | TG15-1046 | 1.031 - 1.046 |
| TG15-0546 | 0.531 - 0.546 | TG15-1062 | 1.047 - 1.062 |
| TG15-0562 | 0.547 - 0.562 | TG15-1078 | 1.063 - 1.078 |
| TG15-0578 | 0.563 - 0.578 | TG15-1093 | 1.078 - 1.093 |
| TG15-0593 | 0.578 - 0.593 | TG15-1109 | 1.094 - 1.109 |
| TG15-0609 | 0.594 - 0.609 | TG15-1125 | 1.109 - 1.125 |
| TG15-0625 | 0.609 - 0.625 | TG15-1140 | 1.125 - 1.140 |
| TG15-0640 | 0.625 - 0.640 | TG15-1156 | 1.141 - 1.156 |
| TG15-0656 | 0.641 - 0.656 | TG15-1171 | 1.156 - 1.171 |
| TG15-0671 | 0.656 - 0.671 | TG15-1187 | 1.172 - 1.187 |
| TG15-0687 | 0.672 - 0.687 | TG15-1203 | 1.188 - 1.203 |
| TG15-0703 | 0.688 - 0.703 | TG15-1218 | 1.203 - 1.218 |
| TG15-0718 | 0.703 - 0.718 | TG15-1234 | 1.219 - 1.234 |
| TG15-0734 | 0.719 - 0.734 | TG15-1250 | 1.234 - 1.250 |
| TG15-0750 | 0.734 - 0.750 | TG15-1265 | 1.250 - 1.265 |
| TG15-0765 | 0.750 - 0.765 | TG15-1281 | 1.266 - 1.281 |
| TG15-0781 | 0.766 - 0.781 | TG15-1296 | 1.281 - 1.296 |
| TG15-0796 | 0.781 - 0.796 | TG15-1312 | 1.297 - 1.312 |
| TG15-0812 | 0.797 - 0.812 | TG15-1328 | 1.313 - 1.328 |
| TG15-0828 | 0.813 - 0.828 | TG15-1343 | 1.328 - 1.343 |
| TG15-0843 | 0.828 - 0.843 | TG15-1359 | 1.344 - 1.359 |
| TG15-0859 | 0.844 - 0.859 | TG15-1375 | 1.359 - 1.375 |
| TG15-0875 | 0.859 - 0.875 | TG15-1390 | 1.375 - 1.390 |
| TG15-0890 | 0.875 - 0.890 | TG15-1406 | 1.391 - 1.406 |
| TG15-0906 | 0.891 - 0.906 | TG15-1421 | 1.406 - 1.421 |
| TG15-0921 | 0.906 - 0.921 | TG15-1437 | 1.422 - 1.437 |
| TG15-0937 | 0.922 - 0.937 | TG15-1453 | 1.438 - 1.453 |
| TG15-0953 | 0.938 - 0.953 | TG15-1468 | 1.453 - 1.468 |
| TG15-0968 | 0.953 - 0.968 | TG15-1484 | 1.469 - 1.484 |
| TG15-0984 | 0.969 - 0.984 | TG15-1500 | 1.484 - 1.500 |
| TG15-1000 | 0.984 - 1.000 | | |



Sealed Complex® Fractional Collets

| Part No. | Size | Part No. | Size |
|------------|-------|------------|-------|
| TG15-0500S | 0.500 | TG15-1062S | 1.062 |
| TG15-0515S | 0.515 | TG15-1078S | 1.078 |
| TG15-0531S | 0.531 | TG15-1093S | 1.093 |
| TG15-0546S | 0.546 | TG15-1109S | 1.109 |
| TG15-0562S | 0.562 | TG15-1125S | 1.125 |
| TG15-0578S | 0.578 | TG15-1140S | 1.140 |
| TG15-0593S | 0.593 | TG15-1156S | 1.156 |
| TG15-0609S | 0.609 | TG15-1171S | 1.171 |
| TG15-0625S | 0.625 | TG15-1187S | 1.187 |
| TG15-0640S | 0.640 | TG15-1203S | 1.203 |
| TG15-0656S | 0.656 | TG15-1218S | 1.218 |
| TG15-0671S | 0.671 | TG15-1234S | 1.234 |
| TG15-0687S | 0.687 | TG15-1250S | 1.250 |
| TG15-0703S | 0.703 | TG15-1265S | 1.265 |
| TG15-0718S | 0.718 | TG15-1281S | 1.281 |
| TG15-0734S | 0.734 | TG15-1296S | 1.296 |
| TG15-0750S | 0.750 | TG15-1312S | 1.312 |
| TG15-0765S | 0.765 | TG15-1328S | 1.328 |
| TG15-0781S | 0.781 | TG15-1343S | 1.343 |
| TG15-0796S | 0.796 | TG15-1359S | 1.359 |
| TG15-0812S | 0.812 | TG15-1375S | 1.375 |
| TG15-0828S | 0.828 | TG15-1390S | 1.390 |
| TG15-0843S | 0.843 | TG15-1406S | 1.406 |
| TG15-0859S | 0.859 | TG15-1421S | 1.421 |
| TG15-0875S | 0.875 | TG15-1437S | 1.437 |
| TG15-0890S | 0.890 | TG15-1453S | 1.453 |
| TG15-0906S | 0.906 | TG15-1468S | 1.468 |
| TG15-0921S | 0.921 | TG15-1484S | 1.484 |
| TG15-0937S | 0.937 | TG15-1500S | 1.500 |
| TG15-0953S | 0.953 | | |
| TG15-0968S | 0.968 | | |
| TG15-0984S | 0.984 | | |
| TG15-1000S | 1.000 | | |
| TG15-1015S | 1.015 | | |
| TG15-1031S | 1.031 | | |
| TG15-1046S | 1.046 | | |



Non-Pull End Mill Designed for tools with Weldon flats.

| Part No. | Size |
|-------------|-------|
| TG15-0500NP | 0.500 |
| TG15-0625NP | 0.625 |
| TG15-0750NP | 0.750 |
| TG15-0875NP | 0.875 |
| TG15-1000NP | 1.000 |
| TG15-1250NP | 1.250 |
| TG15-1500NP | 1.500 |

TG150 Collets

- The TG150 sizes range from 1/2" through 1-1/2".
- Collet size (ID) is the last four digits of our part number. The ID will collapse 1/64".
- Wide range collets—reduce collet and toolholder inventories.

Sealed Collets Sets

| | |
|------------|-----------|
| TG15-33STS | SET of 33 |
| TG15-65STS | SET of 65 |

TG150 Complex® Collet Sets

| Part No. | No. of Collets | Range |
|-----------|----------------|---------------------------|
| TG15-33ST | 33 | 1/2 to 1 1/2 (1/32 incr.) |
| TG15-65ST | 65 | 1/2 to 1 1/2 (1/64 incr.) |

Notes

- Tool shanks must engage full length of collet ID bore. Failure to follow this practice will result in tool failure.
- For best results, use collet closest to the cutter shank size.
- Dimensions given in inches.
- Complex® TG collets are interchangeable with Erickson-type collets.
- Blue Chip™ Coolant Containment System, page C-55.

DA30 & DA20 Double Angle Extensions & Collets

Double Angle Collet Extensions

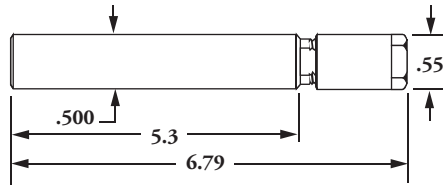
- Four different series to fit all needs.
- Different low profile nose diameters to solve clearance problems.
- Collets collapse 1/64".
- The last four digits of our collet part number are the ID size.

- Double Angle extensions are coolant through.
- Stop screw included.
- **IMPORTANT:** Maximum recommended torque is 25 Ft.-Lbs. Do not overtighten nose assembly.



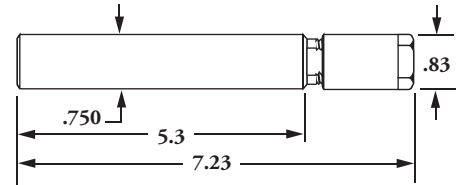
COLLET CHUCKS & ACCESSORIES

DA30



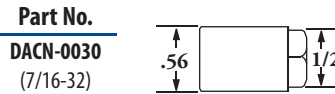
Part No.
DACE-0030
(Coolant Through)

DA20



Part No.
DACE-0020
(Coolant Through)

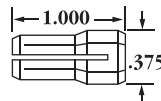
Replacement Nosepiece



Replacement Nosepiece

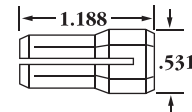


DA30 Double Angle Collet



| Part No. | Range |
|-----------|---------------|
| DA30-0046 | 0.031 - 0.046 |
| DA30-0062 | 0.047 - 0.062 |
| DA30-0078 | 0.063 - 0.078 |
| DA30-0093 | 0.078 - 0.093 |
| DA30-0109 | 0.094 - 0.109 |
| DA30-0125 | 0.109 - 0.125 |
| DA30-0140 | 0.125 - 0.140 |
| DA30-0156 | 0.141 - 0.156 |
| DA30-0171 | 0.156 - 0.171 |
| DA30-0187 | 0.172 - 0.187 |
| DA30-0203 | 0.188 - 0.203 |
| DA30-0218 | 0.203 - 0.218 |
| DA30-0234 | 0.219 - 0.234 |
| DA30-0250 | 0.234 - 0.250 |
| DA30-0300 | 0.250 - 0.300 |
| DA30-0350 | 0.300 - 0.350 |
| DA30-0400 | 0.350 - 0.400 |
| DA30-14ST | SET |

DA20 Double Angle Collet

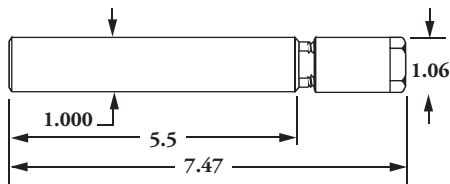


| Part No. | Range |
|-----------|---------------|
| DA20-0062 | 0.047 - 0.062 |
| DA20-0078 | 0.063 - 0.078 |
| DA20-0093 | 0.078 - 0.093 |
| DA20-0109 | 0.094 - 0.109 |
| DA20-0125 | 0.109 - 0.125 |
| DA20-0140 | 0.125 - 0.140 |
| DA20-0156 | 0.141 - 0.156 |
| DA20-0171 | 0.156 - 0.171 |
| DA20-0187 | 0.172 - 0.187 |
| DA20-0203 | 0.188 - 0.203 |
| DA20-0218 | 0.203 - 0.218 |
| DA20-0234 | 0.219 - 0.234 |
| DA20-0250 | 0.234 - 0.250 |
| DA20-0265 | 0.250 - 0.265 |
| DA20-0281 | 0.266 - 0.281 |
| DA20-0296 | 0.281 - 0.296 |
| DA20-0312 | 0.297 - 0.312 |
| DA20-0328 | 0.313 - 0.328 |
| DA20-0343 | 0.328 - 0.343 |
| DA20-0359 | 0.344 - 0.359 |
| DA20-0375 | 0.359 - 0.375 |
| DA20-21ST | SET |

DA10 & DA18 Double Angle Extensions & Collets

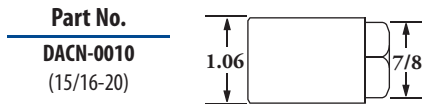


DA10

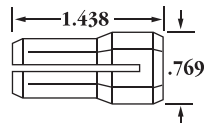


Part No.
DACE-0010
(Coolant Through)

Replacement Nosepiece

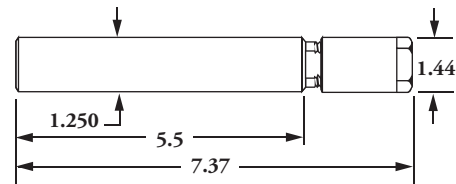


DA10 Double Angle Collet



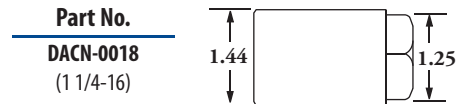
| Part No. | Range | Part No. | Range |
|-----------|---------------|-----------|---------------|
| DA10-0125 | 0.109 - 0.125 | DA10-0359 | 0.344 - 0.359 |
| DA10-0140 | 0.125 - 0.140 | DA10-0375 | 0.359 - 0.375 |
| DA10-0156 | 0.141 - 0.156 | DA10-0390 | 0.375 - 0.390 |
| DA10-0171 | 0.156 - 0.171 | DA10-0406 | 0.391 - 0.406 |
| DA10-0187 | 0.172 - 0.187 | DA10-0421 | 0.406 - 0.421 |
| DA10-0203 | 0.188 - 0.203 | DA10-0437 | 0.422 - 0.437 |
| DA10-0218 | 0.203 - 0.218 | DA10-0453 | 0.438 - 0.453 |
| DA10-0234 | 0.219 - 0.234 | DA10-0468 | 0.453 - 0.468 |
| DA10-0250 | 0.234 - 0.250 | DA10-0484 | 0.469 - 0.484 |
| DA10-0265 | 0.250 - 0.265 | DA10-0500 | 0.484 - 0.500 |
| DA10-0281 | 0.266 - 0.281 | DA10-0515 | 0.500 - 0.515 |
| DA10-0296 | 0.281 - 0.296 | DA10-0531 | 0.516 - 0.531 |
| DA10-0312 | 0.297 - 0.312 | DA10-0546 | 0.531 - 0.546 |
| DA10-0328 | 0.313 - 0.328 | DA10-0562 | 0.547 - 0.562 |
| DA10-0343 | 0.328 - 0.343 | DA10-29ST | SET |

DA18

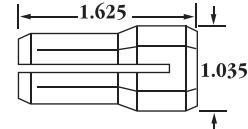


Part No.
DACE-0018
(Coolant Through)

Replacement Nosepiece



DA18 Double Angle Collet



| Part No. | Range | Part No. | Range |
|-----------|---------------|-----------|---------------|
| DA18-0187 | 0.172 - 0.187 | DA18-0515 | 0.500 - 0.515 |
| DA18-0250 | 0.234 - 0.250 | DA18-0531 | 0.516 - 0.531 |
| DA18-0265 | 0.250 - 0.265 | DA18-0546 | 0.531 - 0.546 |
| DA18-0281 | 0.266 - 0.281 | DA18-0562 | 0.547 - 0.562 |
| DA18-0296 | 0.281 - 0.296 | DA18-0578 | 0.563 - 0.578 |
| DA18-0312 | 0.297 - 0.312 | DA18-0593 | 0.578 - 0.593 |
| DA18-0328 | 0.313 - 0.328 | DA18-0609 | 0.594 - 0.609 |
| DA18-0343 | 0.328 - 0.343 | DA18-0625 | 0.609 - 0.625 |
| DA18-0359 | 0.344 - 0.359 | DA18-0640 | 0.625 - 0.640 |
| DA18-0375 | 0.359 - 0.375 | DA18-0656 | 0.641 - 0.656 |
| DA18-0390 | 0.375 - 0.390 | DA18-0671 | 0.656 - 0.671 |
| DA18-0406 | 0.391 - 0.406 | DA18-0687 | 0.672 - 0.687 |
| DA18-0421 | 0.406 - 0.421 | DA18-0703 | 0.688 - 0.703 |
| DA18-0437 | 0.422 - 0.437 | DA18-0718 | 0.703 - 0.718 |
| DA18-0453 | 0.438 - 0.453 | DA18-0734 | 0.719 - 0.734 |
| DA18-0468 | 0.453 - 0.468 | DA18-0750 | 0.734 - 0.750 |
| DA18-0484 | 0.469 - 0.484 | DA18-33ST | SET |
| DA18-0500 | 0.484 - 0.500 | | |

COLLET CHUCKS & ACCESSORIES

Notes

- Tool shanks must engage full length of collet ID bore. Failure to follow this practice will result in tool failure.
- Double Angle (DA) collets are interchangeable with Erickson-type collets.

Blue Chip Coolant Containment System

Disk System fits Micro Precision® Command Holders regardless of age

Blue Chip™ Coolant Containment System consists of one disk with an inner and an outer seal. The disk assembly works in most Command Micro Precision® standard size collet chucks, regardless of age, new and used.

Contains and Directs Coolant to 800 PSI

Run tools at optimum speeds with maximum coolant flow and pressure. Direct coolant flow to the tip, where it's needed.

No loss of Toolholder Rigidity - Collet stays flush with Nosepiece

Blue Chip™ System won't compromise existing toolholder rigidity. Collet stays flush with nosepiece — gage length won't be increased using this system.

Uses Standard Collet Holder, Nosepiece, and Collets

Fast Setup

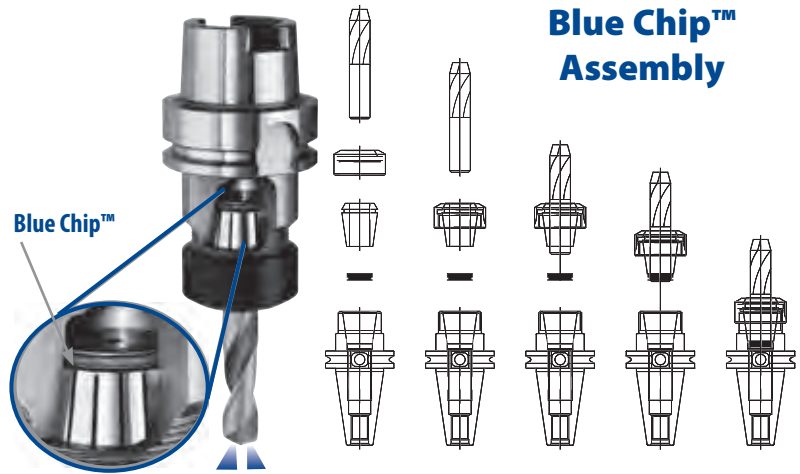
Identify toolholder collet size and cutting tool shank diameter. Then simply snap the collet into the nosepiece, push the tool through the collet, and engage the disk. Then assemble as normal and you're ready to go.

Interchangeable and Reusable Disks

Match correct size Blue Chip™ disks with any Command collet holder assembly as applications change. System uses standard seals for easy replacement.

Seals Coolant Tools from .12" (3.0 mm) through 1.02" (26 mm)

Seals will compress to hold a .020" (.5 mm) size range on the cutting tool shank. Each disk holds from its design size to minus .020".



COLLET CHUCKS & ACCESSORIES

| Blue Chip™ Part No. ER16 | Blue Chip™ Part No. ER20 | Blue Chip™ Part No. ER25 | Blue Chip™ Part No. ER32 | Blue Chip™ Part No. ER40 | Size Range (Inches) | Size Range (mm) |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------|-----------------|
| XD16-0350* | XD20-0350 | XD25-0350 | XD32-0350 | XD40-0350 | 0.118 – 0.138 | 3.0 – 3.5 |
| XD16-0400* | XD20-0400 | XD25-0400 | XD32-0400 | XD40-0400 | 0.138 – 0.157 | 3.5 – 4.0 |
| XD16-0450* | XD20-0450 | XD25-0450 | XD32-0450 | XD40-0450 | 0.157 – 0.177 | 4.0 – 4.5 |
| XD16-0500* | XD20-0500 | XD25-0500 | XD32-0500 | XD40-0500 | 0.177 – 0.197 | 4.5 – 5.0 |
| XD16-0550* | XD20-0550 | XD25-0550 | XD32-0550 | XD40-0550 | 0.197 – 0.217 | 5.0 – 5.5 |
| XD16-0600* | XD20-0600 | XD25-0600 | XD32-0600 | XD40-0600 | 0.217 – 0.236 | 5.5 – 6.0 |
| XD16-0650* | XD20-0650 | XD25-0650 | XD32-0650 | XD40-0650 | 0.236 – 0.256 | 6.0 – 6.5 |
| XD16-0700* | XD20-0700 | XD25-0700 | XD32-0700 | XD40-0700 | 0.256 – 0.276 | 6.5 – 7.0 |
| XD16-0750* | XD20-0750 | XD25-0750 | XD32-0750 | XD40-0750 | 0.276 – 0.295 | 7.0 – 7.5 |
| XD16-0800* | XD20-0800 | XD25-0800 | XD32-0800 | XD40-0800 | 0.295 – 0.315 | 7.5 – 8.0 |
| | XD20-0850* | XD25-0850 | XD32-0850 | XD40-0850 | 0.315 – 0.335 | 8.0 – 8.5 |
| | XD20-0900* | XD25-0900 | XD32-0900 | XD40-0900 | 0.335 – 0.354 | 8.5 – 9.0 |
| | XD20-0950* | XD25-0950 | XD32-0950 | XD40-0950 | 0.354 – 0.374 | 9.0 – 9.5 |
| | XD20-1000* | XD25-1000 | XD32-1000 | XD40-1000 | 0.374 – 0.394 | 9.5 – 10.0 |
| | | XD25-1050 | XD32-1050 | XD40-1050 | 0.394 – 0.413 | 10.0 – 10.5 |
| | | XD25-1100 | XD32-1100 | XD40-1100 | 0.413 – 0.433 | 10.5 – 11.0 |
| | | XD25-1150 | XD32-1150 | XD40-1150 | 0.433 – 0.453 | 11.0 – 11.5 |
| | | XD25-1200 | XD32-1200 | XD40-1200 | 0.453 – 0.472 | 11.5 – 12.0 |
| | | XD25-1250* | XD32-1250 | XD40-1250 | 0.472 – 0.492 | 12.0 – 12.5 |
| | | XD25-1300* | XD32-1300 | XD40-1300 | 0.492 – 0.512 | 12.5 – 13.0 |
| | | XD25-1350* | XD32-1350 | XD40-1350 | 0.512 – 0.531 | 13.0 – 13.5 |
| | | XD25-1400* | XD32-1400 | XD40-1400 | 0.531 – 0.551 | 13.5 – 14.0 |
| | | XD25-1450* | XD32-1450 | XD40-1450 | 0.551 – 0.571 | 14.0 – 14.5 |
| | | | XD32-1500 | XD40-1500 | 0.571 – 0.591 | 14.5 – 15.0 |
| | | | XD32-1550 | XD40-1550 | 0.591 – 0.610 | 15.0 – 15.5 |
| | | | XD32-1600 | XD40-1600 | 0.610 – 0.630 | 15.5 – 16.0 |
| | | | XD32-1650 | XD40-1650 | 0.630 – 0.650 | 16.0 – 16.5 |
| | | | XD32-1700 | XD40-1700 | 0.650 – 0.669 | 16.5 – 17.0 |
| | | | XD32-1750* | XD40-1750 | 0.669 – 0.689 | 17.0 – 17.5 |
| | | | XD32-1800* | XD40-1800 | 0.689 – 0.709 | 17.5 – 18.0 |
| | | | XD32-1850* | XD40-1850 | 0.709 – 0.728 | 18.0 – 18.5 |
| | | | XD32-1900* | XD40-1900 | 0.728 – 0.748 | 18.5 – 19.0 |
| | | | XD32-1950* | XD40-1950 | 0.748 – 0.768 | 19.0 – 19.5 |
| | | | XD32-2000* | XD40-2000 | 0.768 – 0.787 | 19.5 – 20.0 |
| | | | | XD40-2050 | 0.787 – 0.807 | 20.0 – 20.5 |
| | | | | XD40-2100 | 0.807 – 0.827 | 20.5 – 21.0 |
| | | | | XD40-2150 | 0.827 – 0.846 | 21.0 – 21.5 |
| | | | | XD40-2200 | 0.846 – 0.866 | 21.5 – 22.0 |
| | | | | XD40-2250 | 0.866 – 0.886 | 22.0 – 22.5 |
| | | | | XD40-2300 | 0.886 – 0.906 | 22.5 – 23.0 |
| | | | | XD40-2350 | 0.906 – 0.925 | 23.0 – 23.5 |
| | | | | XD40-2400 | 0.925 – 0.945 | 23.5 – 24.0 |
| | | | | XD40-2450* | 0.945 – 0.965 | 24.0 – 24.5 |
| | | | | XD40-2500* | 0.965 – 0.984 | 24.5 – 25.0 |
| | | | | XD40-2550* | 0.984 – 1.004 | 25.0 – 25.5 |
| | | | | XD40-2600* | 1.004 – 1.024 | 25.5 – 26.0 |

| Blue Chip™ Part No. TG100 | Size Range (Inches) | Blue Chip™ Part No. TG100 | Size Range (Inches) |
|---------------------------|---------------------|---------------------------|---------------------|
| XD10-0250 | 0.234 – 0.250 | XD10-0671 | 0.656 – 0.671 |
| XD10-0312 | 0.297 – 0.312 | XD10-0687 | 0.672 – 0.687 |
| XD10-0359 | 0.344 – 0.359 | XD10-0703 | 0.688 – 0.703 |
| XD10-0375 | 0.359 – 0.375 | XD10-0718 | 0.703 – 0.718 |
| XD10-0390 | 0.375 – 0.390 | XD10-0734 | 0.719 – 0.734 |
| XD10-0406 | 0.391 – 0.406 | XD10-0750 | 0.734 – 0.750 |
| XD10-0421 | 0.406 – 0.421 | XD10-0765 | 0.750 – 0.765 |
| XD10-0437 | 0.422 – 0.437 | XD10-0781 | 0.765 – 0.781 |
| XD10-0453 | 0.438 – 0.453 | XD10-0796 | 0.781 – 0.796 |
| XD10-0468 | 0.453 – 0.468 | XD10-0812 | 0.796 – 0.812 |
| XD10-0484 | 0.469 – 0.484 | XD10-0828 | 0.812 – 0.828 |
| XD10-0500 | 0.484 – 0.500 | XD10-0843 | 0.828 – 0.843 |
| XD10-0515 | 0.500 – 0.515 | XD10-0859 | 0.843 – 0.859 |
| XD10-0531 | 0.515 – 0.531 | XD10-0875 | 0.859 – 0.875 |
| XD10-0546 | 0.531 – 0.546 | XD10-0890 | 0.875 – 0.890 |
| XD10-0562 | 0.547 – 0.562 | XD10-0906 | 0.890 – 0.906 |
| XD10-0578 | 0.563 – 0.578 | XD10-0921 | 0.906 – 0.921 |
| XD10-0593 | 0.578 – 0.593 | XD10-0937 | 0.921 – 0.937 |
| XD10-0609 | 0.594 – 0.609 | XD10-0953 | 0.937 – 0.953 |
| XD10-0625 | 0.609 – 0.625 | XD10-0968 | 0.953 – 0.968 |
| XD10-0640 | 0.625 – 0.640 | XD10-0984 | 0.968 – 0.984 |
| XD10-0656 | 0.641 – 0.656 | XD10-1000 | 0.984 – 1.000 |

Notes

- Micro Precision® ER Collets, pages B-13 thru B-24.
- Comflex® TG100's Collets, pages C-47 & C-48.
- Sealed collets for Micro Precision® ER, pages B-27 & B-28.
- For best results, use collet closest to the cutter shank size.

Note: Blue Chip™ parts for Micro Precision® ER Collets also fit XT Precision® & Shorty (ER32) Collets except where indicated by *.

Blue Chip™ is not for High Precision Collet Chucks.

End Mill Holders: BT-Flange

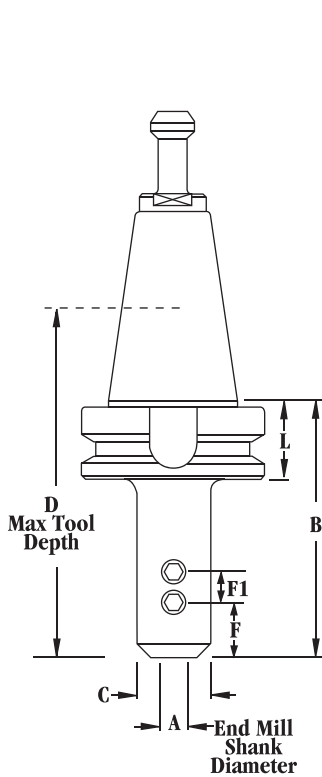


End Mill Holders:

- Holders through 1.000" accept double end cutters except as noted — save on tool costs.
- Fine thread screws match Weldon flats — lock tight, stay tight.
- **NOTE:** "A" diameter of 1" or less accepts single or double end mills — Stub holders accept single end mills only. "A" diameter of 1" and larger has 2 side lock screws except Stub which has 1 side lock screw. Side lock screw(s) [included] in line with drive slot for easy orientation.

Command End Mill Holder Benefits:

- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Less tool wear and replacement — less scrap.
- Fully ground flange and V-groove — easy on the tool changers for less spindle and changer maintenance.
- All tapers and lengths ready to ship — get your tools fast!



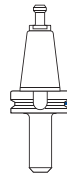
| | | Stub | | | | | | |
|-------|-----------|----------|------|------|-----|------|------|------|
| Taper | Part No. | A | B | C | D | F | F1 | L |
| BT 40 | B4E3-0500 | 0.500 | 1.25 | 1.25 | 2.6 | 0.88 | — | 1.06 |
| BT 40 | B4E3-0625 | 0.625 | 1.38 | 1.50 | 2.4 | 0.94 | — | 1.06 |
| BT 40 | B4E3-0750 | 0.750 | 1.44 | 1.75 | 2.5 | 1.00 | — | 1.06 |
| BT 40 | B4E3-1000 | 1.000 | 2.50 | 2.00 | 2.5 | 1.13 | — | 1.06 |
| BT 40 | B4E3-1250 | 1.250 | 2.50 | 2.49 | 2.4 | 1.13 | — | 1.06 |
| | | Standard | | | | | | |
| Taper | Part No. | A | B | C | D | F | F1 | L |
| BT 30 | B2E4-0125 | 0.125 | 2.50 | 0.69 | 3.4 | .28 | — | 0.87 |
| BT 30 | B2E4-0187 | 0.187 | 2.50 | 0.69 | 3.4 | .41 | — | 0.87 |
| BT 30 | B2E4-0250 | 0.250 | 2.50 | 0.78 | 3.4 | .53 | — | 0.87 |
| BT 30 | B2E4-0312 | 0.312 | 2.50 | 0.88 | 3.4 | .66 | — | 0.87 |
| BT 30 | B2E4-0375 | 0.375 | 2.50 | 1.00 | 3.4 | .75 | — | 0.87 |
| BT 30 | B2E4-0437 | 0.437 | 2.50 | 1.13 | 2.0 | .81 | — | 0.87 |
| BT 30 | B2E4-0500 | 0.500 | 2.50 | 1.25 | 3.1 | .88 | — | 0.87 |
| BT 30 | B2E4-0562 | 0.562 | 2.50 | 1.38 | 3.0 | .91 | — | 0.87 |
| BT 30 | B2E4-0625 | 0.625 | 2.75 | 1.50 | 3.6 | .94 | — | 0.87 |
| BT 30 | B2E4-0750 | 0.750 | 3.00 | 1.75 | 3.6 | 1.00 | — | 0.87 |
| BT 35 | B3E4-0187 | 0.187 | 2.50 | 0.69 | 3.6 | 0.41 | — | 0.87 |
| BT 35 | B3E4-0250 | 0.250 | 2.50 | 0.78 | 3.6 | 0.53 | — | 0.87 |
| BT 35 | B3E4-0375 | 0.375 | 2.50 | 1.00 | 3.6 | 0.75 | — | 0.87 |
| BT 35 | B3E4-0500 | 0.500 | 2.50 | 1.25 | 3.0 | 0.88 | — | 0.87 |
| BT 35 | B3E4-0625 | 0.625 | 2.50 | 1.50 | 3.6 | 0.94 | — | 0.87 |
| BT 35 | B3E4-0750 | 0.750 | 2.50 | 1.75 | 3.9 | 1.00 | — | 0.87 |
| BT 35 | B3E4-0875 | 0.875 | 3.50 | 1.88 | 4.2 | 1.00 | — | 0.87 |
| BT 35 | B3E4-1000 | 1.000 | 3.50 | 2.00 | 4.4 | 1.13 | 1.00 | 0.87 |
| BT 35 | B3E4-1250 | 1.250 | 4.00 | 2.50 | 3.8 | 1.13 | 1.00 | 0.87 |
| BT 40 | B4E4-0125 | 0.125 | 2.50 | 0.69 | 3.8 | 0.28 | — | 1.06 |
| BT 40 | B4E4-0187 | 0.187 | 2.50 | 0.69 | 3.8 | 0.41 | — | 1.06 |
| BT 40 | B4E4-0250 | 0.250 | 2.50 | 0.78 | 3.8 | 0.53 | — | 1.06 |
| BT 40 | B4E4-0312 | 0.312 | 2.50 | 0.88 | 3.8 | 0.66 | — | 1.06 |
| BT 40 | B4E4-0375 | 0.375 | 2.50 | 1.00 | 3.8 | 0.75 | — | 1.06 |
| BT 40 | B4E4-0437 | 0.437 | 2.50 | 1.13 | 3.8 | 0.81 | — | 1.06 |
| BT 40 | B4E4-0500 | 0.500 | 2.50 | 1.25 | 3.8 | 0.88 | — | 1.06 |
| BT 40 | B4E4-0562 | 0.562 | 2.50 | 1.38 | 3.0 | 0.91 | — | 1.06 |
| BT 40 | B4E4-0625 | 0.625 | 2.50 | 1.50 | 3.6 | 0.94 | — | 1.06 |
| BT 40 | B4E4-0750 | 0.750 | 2.50 | 1.75 | 3.9 | 1.00 | — | 1.06 |
| BT 40 | B4E4-0875 | 0.875 | 3.50 | 1.88 | 4.2 | 1.00 | — | 1.06 |
| BT 40 | B4E4-1000 | 1.000 | 3.75 | 2.00 | 4.4 | 1.13 | 1.00 | 1.06 |

continued on next page

END MILL HOLDERS

| Notes | |
|--|--|
| - Black oxide complete is available upon request for standard toolholders, page A-2. | - Retention Knobs & Setup Holding Fixtures, pages D-76 & D-77, D-78. |
| - High speed balance & nosepiece options, page A-6. | - Replacement side lock screws, page C-61. |
| - Through-spindle coolant standard. Other coolant options, page A-12. | |
| - Side lock screw torque values, page A-10. | |

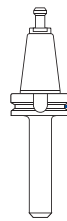
End Mill Holders: BT-Flange



Standard (Continued)

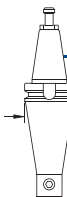
| Taper | Part No. | A | B | C | D | F | F1 | L |
|-------|-----------|-------|------|------|------|------|------|------|
| BT 40 | B4E4-1250 | 1.250 | 3.75 | 2.50 | 4.0 | 1.13 | 1.00 | 1.06 |
| BT 40 | B4E4-1500 | 1.500 | 4.25 | 2.50 | 2.56 | 1.13 | 1.00 | 1.06 |
| BT 45 | B5E4-0375 | 0.375 | 3.00 | 1.00 | 3.2 | 0.75 | — | 1.31 |
| BT 45 | B5E4-0500 | 0.500 | 3.00 | 1.25 | 3.2 | 0.88 | — | 1.31 |
| BT 45 | B5E4-0625 | 0.625 | 3.00 | 1.50 | 3.2 | 0.94 | — | 1.31 |
| BT 45 | B5E4-0750 | 0.750 | 3.00 | 1.75 | 3.9 | 1.00 | — | 1.31 |
| BT 45 | B5E4-0875 | 0.875 | 4.00 | 1.88 | 4.2 | 1.00 | — | 1.31 |
| BT 45 | B5E4-1000 | 1.000 | 4.00 | 2.00 | 4.4 | 1.13 | 1.00 | 1.31 |
| BT 45 | B5E4-1250 | 1.250 | 4.00 | 2.50 | 4.0 | 1.13 | 1.00 | 1.31 |
| BT 45 | B5E4-1500 | 1.500 | 4.00 | 2.50 | 4.0 | 1.13 | 1.00 | 1.31 |
| BT 50 | B6E4-0375 | 0.375 | 3.00 | 1.00 | 3.7 | 0.75 | — | 1.50 |
| BT 50 | B6E4-0500 | 0.500 | 3.00 | 1.25 | 3.7 | 0.88 | — | 1.50 |
| BT 50 | B6E4-0625 | 0.625 | 3.00 | 1.50 | 3.7 | 0.94 | — | 1.50 |
| BT 50 | B6E4-0750 | 0.750 | 3.00 | 1.75 | 3.7 | 1.00 | — | 1.50 |
| BT 50 | B6E4-0875 | 0.875 | 4.00 | 1.88 | 4.2 | 1.00 | — | 1.50 |
| BT 50 | B6E4-1000 | 1.000 | 4.25 | 2.00 | 4.4 | 1.13 | 1.00 | 1.50 |
| BT 50 | B6E4-1250 | 1.250 | 4.25 | 2.50 | 4.0 | 1.13 | 1.00 | 1.50 |
| BT 50 | B6E4-1500 | 1.500 | 4.25 | 2.50 | 4.0 | 1.13 | 1.00 | 1.50 |
| BT 50 | B6E4-2000 | 2.000 | 5.00 | 3.75 | 5.0 | 1.41 | 1.50 | 1.50 |

Extended



| Taper | Part No. | A | B | C | D | F | F1 | L |
|-------|-----------|-------|------|------|-----|------|------|------|
| BT 40 | B4E5-0125 | 0.125 | 4.00 | 0.69 | 5.3 | 0.38 | — | 1.06 |
| BT 40 | B4E5-0187 | 0.187 | 4.00 | 0.69 | 5.3 | 0.56 | — | 1.06 |
| BT 40 | B4E5-0250 | 0.250 | 4.00 | 0.78 | 5.3 | 0.63 | — | 1.06 |
| BT 40 | B4E5-0312 | 0.312 | 4.00 | 0.88 | 5.3 | 0.69 | — | 1.06 |
| BT 40 | B4E5-0375 | 0.375 | 4.00 | 1.00 | 3.9 | 0.75 | — | 1.06 |
| BT 40 | B4E5-0500 | 0.500 | 4.00 | 1.25 | 3.9 | 0.88 | — | 1.06 |
| BT 40 | B4E5-0625 | 0.625 | 4.00 | 1.50 | 3.6 | 0.94 | — | 1.06 |
| BT 40 | B4E5-0750 | 0.750 | 4.00 | 1.75 | 3.9 | 1.00 | — | 1.06 |
| BT 40 | B4E5-0875 | 0.875 | 5.00 | 1.88 | 4.2 | 1.00 | — | 1.06 |
| BT 40 | B4E5-1000 | 1.000 | 5.00 | 2.00 | 4.4 | 1.13 | 1.00 | 1.06 |
| BT 40 | B4E5-1250 | 1.250 | 5.00 | 2.50 | 4.0 | 1.13 | 1.00 | 1.06 |
| BT 45 | B5E5-0375 | 0.375 | 5.00 | 1.00 | 5.2 | 0.75 | — | 1.31 |
| BT 45 | B5E5-0500 | 0.500 | 5.00 | 1.25 | 5.2 | 0.88 | — | 1.31 |
| BT 45 | B5E5-0625 | 0.625 | 5.00 | 1.50 | 5.2 | 0.94 | — | 1.31 |
| BT 45 | B5E5-0750 | 0.750 | 5.00 | 1.75 | 5.2 | 1.00 | — | 1.31 |
| BT 45 | B5E5-0875 | 0.875 | 6.00 | 1.88 | 4.2 | 1.00 | — | 1.31 |
| BT 45 | B5E5-1000 | 1.000 | 6.00 | 2.00 | 4.4 | 1.13 | 1.00 | 1.31 |
| BT 45 | B5E5-1250 | 1.250 | 6.00 | 2.50 | 4.0 | 1.13 | 1.00 | 1.31 |
| BT 45 | B5E5-1500 | 1.500 | 6.00 | 2.50 | 4.0 | 1.13 | 1.00 | 1.31 |
| BT 50 | B6E5-0375 | 0.375 | 6.00 | 1.00 | 6.7 | 0.75 | — | 1.50 |
| BT 50 | B6E5-0500 | 0.500 | 6.00 | 1.25 | 6.7 | 0.88 | — | 1.50 |
| BT 50 | B6E5-0625 | 0.625 | 6.00 | 1.50 | 6.7 | 0.94 | — | 1.50 |
| BT 50 | B6E5-0750 | 0.750 | 6.00 | 1.75 | 6.7 | 1.00 | — | 1.50 |
| BT 50 | B6E5-0875 | 0.875 | 6.00 | 1.88 | 4.2 | 1.00 | — | 1.50 |
| BT 50 | B6E5-1000 | 1.000 | 6.00 | 2.00 | 4.4 | 1.13 | 1.00 | 1.50 |
| BT 50 | B6E5-1250 | 1.250 | 6.00 | 2.50 | 4.0 | 1.13 | 1.00 | 1.50 |
| BT 50 | B6E5-1500 | 1.500 | 6.00 | 2.50 | 4.0 | 1.13 | 1.00 | 1.50 |
| BT 50 | B6E5-2000 | 2.000 | 6.00 | 3.75 | 5.0 | 1.41 | 1.50 | 1.50 |

R&R™ (Reach & Rigidity)

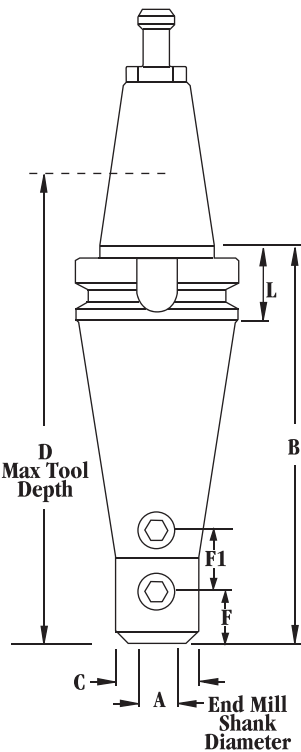


| Taper | Part No. | A | B | C | D | F | F1 | L |
|-------|-----------|------|------|------|-----|------|----|------|
| BT 40 | B4K5-0375 | .375 | 6.00 | 1.00 | 7.3 | .75 | — | 1.06 |
| BT 40 | B4K5-0500 | .500 | 6.00 | 1.25 | 7.3 | .88 | — | 1.06 |
| BT 40 | B4K5-0625 | .625 | 6.00 | 1.50 | 3.6 | .94 | — | 1.06 |
| BT 40 | B4K5-0750 | .750 | 6.00 | 1.75 | 3.9 | 1.00 | — | 1.06 |

R&R™ (Reach & Rigidity) End Mill Holder shown

R&R™ (Reach & Rigidity)

- Extra strong shank steadies long tools so they cut smoother, faster and last longer — indispensable for high feed rates.
- End Mill Holders have fine thread screws that match Weldon flats — lock tight, stay tight.
- Holders accept double end cutters to save tool costs.
- Ideal for long reaches in horizontal machine.



| | |
|----------|----------|
| 40 Taper | 1.75 Dia |
| 50 Taper | 2.75 Dia |

End Mill Holders: V-Flange

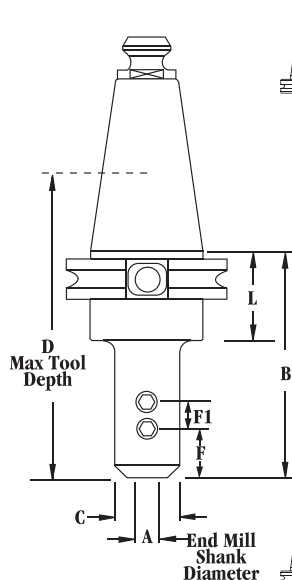


End Mill Holders:

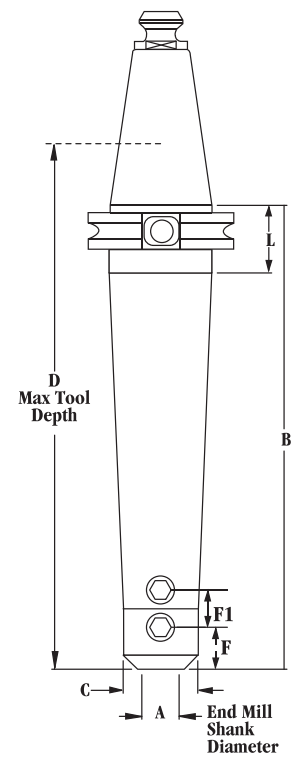
- Holders through 1.000" accept double end cutters except as noted — save on tool costs.
- Fine thread screws match Weldon flats — lock tight, stay tight.
- **NOTE:** "A" diameter of 1" or less accepts single or double end mills — Stub holders accept single end mills only. "A" diameter of 1" or larger has 2 side lock screws except Stub which has 1 side lockscrew & no safe area. Side lock screw(s) [included] in line with drive slot for easy line-ups.

End Mill Holder Benefits:

- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Less tool wear and replacement — less scrap.
- Fully ground flange and V-groove — easy on tool changers for less spindle and changer maintenance.
- All tapers and lengths ready to ship — get your tools fast!



| Taper | Part No. | A | B | C | D | F | F1 | L |
|-------|------------|-------|------|------|------|------|-----|------|
| V 40 | C4E3-0125 | 0.125 | 1.75 | .69 | 3.3 | 0.28 | --- | 1.38 |
| V 40 | C4E3-0250 | 0.250 | 1.75 | 0.69 | 3.3 | 0.38 | --- | 1.38 |
| V 40 | C4E3-0375 | 0.375 | 1.75 | 1.00 | 3.3 | 0.75 | --- | 1.38 |
| V 40 | C4E3-0500 | 0.500 | 1.75 | 1.25 | 3.3 | 0.88 | --- | 1.38 |
| V 40 | C4E3-0625 | 0.625 | 1.75 | 1.50 | 2.3 | 0.94 | --- | 1.38 |
| V 40 | C4E3-0750 | 0.750 | 1.75 | 1.75 | 2.5 | 1.00 | --- | 1.38 |
| V 40 | C4E3-1000 | 1.000 | 1.75 | 1.75 | 2.5 | 1.13 | --- | 1.38 |
| V 40 | C4E3-1250* | 1.250 | 2.00 | 2.25 | 2.3 | 1.13 | --- | 0.75 |
| V 50 | C6E3-0375 | 0.375 | 1.38 | 2.75 | 3.6 | 0.75 | --- | 1.38 |
| V 50 | C6E3-0500 | 0.500 | 1.38 | 2.75 | 3.6 | 0.88 | --- | 1.38 |
| V 50 | C6E3-0625 | 0.625 | 1.38 | 2.75 | 3.6 | 0.94 | --- | 1.38 |
| V 50 | C6E3-0750 | 0.750 | 1.63 | 2.75 | 3.8 | 1.00 | --- | 1.38 |
| V 50 | C6E3-0875 | 0.875 | 1.63 | 2.75 | 3.8 | 1.00 | --- | 1.38 |
| V 50 | C6E3-1000 | 1.000 | 1.63 | 2.75 | 3.8 | 1.13 | --- | 1.38 |
| V 50 | C6E3-1250 | 1.250 | 2.00 | 2.75 | 4.00 | 1.13 | --- | 1.38 |
| V 50 | C6E3-1500 | 1.500 | 2.25 | 2.75 | 4.00 | 1.13 | --- | 1.38 |



| Taper | Part No. | A | B | C | D | F | F1 | L |
|-------|-----------|-------|------|------|------|------|------|------|
| V 40 | C4E4-0125 | 0.125 | 2.50 | 0.69 | 4.0 | 0.28 | -- | 1.38 |
| V 40 | C4E4-0187 | 0.187 | 2.50 | 0.69 | 4.0 | 0.41 | --- | 1.38 |
| V 40 | C4E4-0250 | 0.250 | 2.50 | 0.78 | 4.0 | 0.53 | --- | 1.38 |
| V 40 | C4E4-0312 | 0.312 | 2.50 | 0.88 | 4.0 | 0.66 | --- | 1.38 |
| V 40 | C4E4-0375 | 0.375 | 2.50 | 1.00 | 4.0 | 0.75 | --- | 1.38 |
| V 40 | C4E4-0437 | 0.437 | 2.50 | 1.13 | 4.0 | 0.81 | --- | 1.38 |
| V 40 | C4E4-0500 | 0.500 | 2.63 | 1.25 | 4.0 | 0.88 | --- | 1.38 |
| V 40 | C4E4-0562 | 0.562 | 2.63 | 1.38 | 3.0 | 0.91 | --- | 1.38 |
| V 40 | C4E4-0625 | 0.625 | 3.75 | 1.50 | 3.6 | 0.94 | --- | 1.38 |
| V 40 | C4E4-0750 | 0.750 | 3.75 | 1.75 | 3.9 | 1.00 | --- | 1.38 |
| V 40 | C4E4-0875 | 0.875 | 4.00 | 1.88 | 4.2 | 1.00 | --- | 1.38 |
| V 40 | C4E4-1000 | 1.000 | 4.00 | 2.00 | 4.4 | 1.13 | 1.00 | 1.38 |
| V 40 | C4E4-1250 | 1.250 | 4.25 | 2.50 | 4.0 | 1.13 | 1.00 | 1.38 |
| V 40 | C4E4-1500 | 1.500 | 4.63 | 2.50 | 2.56 | 1.13 | 1.00 | 1.38 |
| V 45 | C5E4-0375 | 0.375 | 2.50 | 1.00 | 4.2 | 0.75 | --- | 1.38 |
| V 45 | C5E4-0500 | 0.500 | 2.63 | 1.25 | 4.3 | 0.88 | --- | 1.38 |
| V 45 | C5E4-0625 | 0.625 | 3.75 | 1.50 | 5.2 | 0.94 | --- | 1.38 |
| V 45 | C5E4-0750 | 0.750 | 3.75 | 1.75 | 3.9 | 1.00 | --- | 1.38 |
| V 45 | C5E4-0875 | 0.875 | 3.75 | 1.88 | 4.1 | 1.00 | --- | 1.38 |
| V 45 | C5E4-1000 | 1.000 | 4.00 | 2.00 | 4.3 | 1.13 | 1.00 | 1.38 |
| V 45 | C5E4-1250 | 1.250 | 4.00 | 2.50 | 4.0 | 1.13 | 1.00 | 1.38 |
| V 45 | C5E4-1500 | 1.500 | 4.00 | 2.50 | 4.0 | 1.13 | 1.00 | 1.38 |
| V 45 | C5E4-2000 | 2.000 | 5.25 | 3.75 | 3.5 | 1.41 | 1.50 | 1.38 |
| V 50 | C6E4-0125 | 0.125 | 2.50 | 0.69 | 4.7 | 0.28 | --- | 1.38 |
| V 50 | C6E4-0187 | 0.187 | 2.50 | 0.69 | 4.7 | 0.41 | --- | 1.38 |
| V 50 | C6E4-0250 | 0.250 | 2.50 | 0.78 | 4.7 | 0.53 | --- | 1.38 |
| V 50 | C6E4-0312 | 0.312 | 2.50 | 0.88 | 4.7 | 0.66 | --- | 1.38 |
| V 50 | C6E4-0375 | 0.375 | 2.50 | 1.00 | 4.7 | 0.75 | --- | 1.38 |
| V 50 | C6E4-0437 | 0.437 | 2.63 | 1.13 | 4.8 | 0.81 | --- | 1.38 |
| V 50 | C6E4-0500 | 0.500 | 2.63 | 1.25 | 4.8 | 0.88 | --- | 1.38 |
| V 50 | C6E4-0562 | 0.562 | 2.63 | 1.38 | 4.8 | 0.91 | --- | 1.38 |
| V 50 | C6E4-0625 | 0.625 | 3.75 | 1.50 | 6.0 | 0.94 | --- | 1.38 |

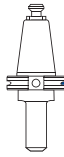
R&R™ (Reach & Rigidity)

End Mill Holder shown

See page C-59 for R&R Toolholders

END MILL HOLDERS

End Mill Holders: V-Flange



| Taper | Part No. | A | B | C | D | F | F1 | L |
|-------|------------------|-------|------|------|-----|------|------|------|
| V 50 | C6E4-0750 | 0.750 | 3.75 | 1.75 | 6.0 | 1.00 | --- | 1.38 |
| V 50 | C6E4-0875 | 0.875 | 3.75 | 1.88 | 4.1 | 1.00 | -- | 1.38 |
| V 50 | C6E4-1000 | 1.000 | 4.00 | 2.00 | 4.3 | 1.13 | 1.00 | 1.38 |
| V 50 | C6E4-1250 | 1.250 | 4.00 | 2.50 | 4.0 | 1.13 | 1.00 | 1.38 |
| V 50 | C6E4-1500 | 1.500 | 4.00 | 2.50 | 4.0 | 1.13 | 1.00 | 1.38 |
| V 50 | C6E4-2000 | 2.000 | 5.63 | 3.75 | 5.0 | 1.41 | 1.50 | 1.38 |

Metric

| Taper | Part No. | A | B | C | D | F | F1 | L |
|-------|------------------|------|------|------|-----|------|-----|------|
| V 40 | C4E4-M006 | 6mm | 2.50 | 0.97 | 4.0 | 0.50 | --- | 1.38 |
| V 40 | C4E4-M008 | 8mm | 2.50 | 1.09 | 4.0 | 0.66 | --- | 1.38 |
| V 40 | C4E4-M010 | 10mm | 2.63 | 1.37 | 4.1 | 0.78 | --- | 1.38 |
| V 40 | C4E4-M012 | 12mm | 2.63 | 1.64 | 4.1 | 0.88 | --- | 1.38 |
| V 40 | C4E4-M014 | 14mm | 3.75 | 1.81 | 5.3 | 0.88 | --- | 1.38 |
| V 40 | C4E4-M016 | 16mm | 3.75 | 1.88 | 2.2 | 0.94 | --- | 1.38 |
| V 40 | C4E4-M018 | 18mm | 3.75 | 1.96 | 2.3 | 0.94 | --- | 1.38 |
| V 40 | C4E4-M020 | 20mm | 3.75 | 2.04 | 2.4 | 0.97 | --- | 1.38 |
| V 50 | C6E4-M006 | 6mm | 2.50 | 0.97 | 4.7 | 0.50 | --- | 1.38 |
| V 50 | C6E4-M008 | 8mm | 2.50 | 1.09 | 4.7 | 0.66 | --- | 1.38 |
| V 50 | C6E4-M010 | 10mm | 2.63 | 1.37 | 4.8 | 0.78 | --- | 1.38 |
| V 50 | C6E4-M012 | 12mm | 2.63 | 1.64 | 4.8 | 0.88 | --- | 1.38 |
| V 50 | C6E4-M014 | 14mm | 3.75 | 1.81 | 6.0 | 0.88 | --- | 1.38 |
| V 50 | C6E4-M016 | 16mm | 3.75 | 1.88 | 6.0 | 0.94 | --- | 1.38 |
| V 50 | C6E4-M018 | 18mm | 3.75 | 1.96 | 6.0 | 0.94 | --- | 1.38 |
| V 50 | C6E4-M020 | 20mm | 3.75 | 2.04 | 6.0 | 0.97 | --- | 1.38 |

Extended

| Taper | Part No. | A | B | C | D | F | F1 | L |
|-------|------------------|-------|------|------|-----|------|------|------|
| V 40 | C4E5-0125 | 0.125 | 4.50 | 0.69 | 6.0 | 0.28 | --- | 1.38 |
| V 40 | C4E5-0187 | 0.187 | 4.50 | 0.69 | 6.0 | 0.40 | --- | 1.38 |
| V 40 | C4E5-0250 | 0.250 | 4.50 | 0.78 | 6.0 | 0.53 | --- | 1.38 |
| V 40 | C4E5-0375 | 0.375 | 4.50 | 1.00 | 6.0 | 0.75 | --- | 1.38 |
| V 40 | C4E5-0500 | 0.500 | 4.63 | 1.25 | 6.1 | 0.88 | --- | 1.38 |
| V 40 | C4E5-0625 | 0.625 | 5.75 | 1.50 | 3.5 | 0.94 | --- | 1.38 |
| V 40 | C4E5-0750 | 0.750 | 5.75 | 1.75 | 3.9 | 1.00 | --- | 1.38 |
| V 40 | C4E5-0875 | 0.875 | 6.00 | 1.88 | 4.1 | 1.00 | --- | 1.38 |
| V 40 | C4E5-1000 | 1.000 | 6.00 | 2.00 | 4.3 | 1.13 | 1.00 | 1.38 |
| V 40 | C4E5-1250 | 1.250 | 6.25 | 2.50 | 4.0 | 1.13 | 1.00 | 1.38 |
| V 40 | C4E5-1500 | 1.500 | 6.63 | 2.50 | 4.0 | 1.13 | 1.00 | 1.38 |
| V 45 | C5E5-0375 | 0.375 | 4.50 | 1.00 | 6.2 | 0.75 | --- | 1.38 |
| V 45 | C5E5-0500 | 0.500 | 4.63 | 1.25 | 6.3 | 0.88 | --- | 1.38 |
| V 45 | C5E5-0625 | 0.625 | 5.75 | 1.50 | 7.5 | 0.94 | --- | 1.38 |
| V 45 | C5E5-0750 | 0.750 | 5.75 | 1.75 | 3.9 | 1.00 | --- | 1.38 |
| V 45 | C5E5-0875 | 0.875 | 5.75 | 1.88 | 4.1 | 1.00 | --- | 1.38 |
| V 45 | C5E5-1000 | 1.000 | 6.00 | 2.00 | 4.3 | 1.13 | 1.00 | 1.38 |
| V 45 | C5E5-1250 | 1.250 | 6.00 | 2.50 | 4.0 | 1.13 | 1.00 | 1.38 |
| V 45 | C5E5-1500 | 1.500 | 6.00 | 2.50 | 4.0 | 1.13 | 1.00 | 1.38 |
| V 45 | C5E5-2000 | 2.000 | 7.25 | 3.75 | 5.0 | 1.41 | 1.50 | 1.38 |
| V 50 | C6E5-0375 | 0.375 | 4.50 | 1.00 | 6.7 | 0.75 | --- | 1.38 |
| V 50 | C6E5-0500 | 0.500 | 4.63 | 1.25 | 6.8 | 0.88 | --- | 1.38 |
| V 50 | C6E5-0625 | 0.625 | 5.75 | 1.50 | 8.0 | 0.94 | --- | 1.38 |
| V 50 | C6E5-0750 | 0.750 | 5.75 | 1.75 | 8.0 | 1.00 | --- | 1.38 |
| V 50 | C6E5-0875 | 0.875 | 5.75 | 1.88 | 4.1 | 1.00 | --- | 1.38 |
| V 50 | C6E5-1000 | 1.000 | 6.00 | 2.00 | 4.3 | 1.13 | 1.00 | 1.38 |
| V 50 | C6E5-1250 | 1.250 | 6.00 | 2.50 | 4.0 | 1.13 | 1.00 | 1.38 |
| V 50 | C6E5-1500 | 1.500 | 6.00 | 2.50 | 4.0 | 1.13 | 1.00 | 1.38 |
| V 50 | C6E5-2000 | 2.000 | 7.63 | 3.75 | 5.0 | 1.41 | 1.50 | 1.38 |



Extra Extended

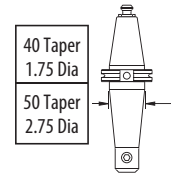
| Taper | Part No. | A | B | C | D | F | F1 | L |
|-------|------------------|-------|------|------|------|------|------|------|
| V 40 | C4E6-0500 | 0.500 | 6.63 | 1.25 | 8.1 | 0.88 | --- | 1.38 |
| V 40 | C4E6-0625 | 0.625 | 7.75 | 1.50 | 3.5 | 0.94 | --- | 1.38 |
| V 40 | C4E6-1000 | 1.000 | 8.00 | 2.00 | 4.3 | 1.13 | 1.00 | 1.38 |
| V 45 | C5E6-0375 | 0.375 | 6.50 | 1.00 | 8.2 | 0.75 | --- | 1.38 |
| V 45 | C5E6-0500 | 0.500 | 6.63 | 1.25 | 8.3 | 0.88 | --- | 1.38 |
| V 45 | C5E6-0625 | 0.625 | 7.75 | 1.50 | 9.5 | 0.94 | --- | 1.38 |
| V 45 | C5E6-0750 | 0.750 | 7.75 | 1.75 | 3.9 | 1.00 | --- | 1.38 |
| V 45 | C5E6-0875 | 0.875 | 7.75 | 1.88 | 4.1 | 1.00 | --- | 1.38 |
| V 45 | C5E6-1000 | 1.000 | 8.00 | 2.00 | 4.3 | 1.13 | 1.00 | 1.38 |
| V 45 | C5E6-1250 | 1.250 | 8.00 | 2.50 | 4.0 | 1.13 | 1.00 | 1.38 |
| V 45 | C5E6-1500 | 1.500 | 8.00 | 2.50 | 4.0 | 1.13 | 1.00 | 1.3 |
| V 45 | C5E6-2000 | 2.000 | 9.25 | 3.75 | 5.0 | 1.41 | 1.50 | 1.3 |
| V 50 | C6E6-0375 | 0.375 | 6.50 | 1.00 | 8.7 | 0.75 | --- | 1.38 |
| V 50 | C6E6-0500 | 0.500 | 6.63 | 1.25 | 8.8 | 0.88 | --- | 1.38 |
| V 50 | C6E6-0625 | 0.625 | 7.75 | 1.50 | 10.0 | 0.94 | --- | 1.3 |
| V 50 | C6E6-0750 | 0.750 | 7.75 | 1.75 | 10.0 | 1.00 | --- | 1.38 |
| V 50 | C6E6-0875 | 0.875 | 7.75 | 1.88 | 4.1 | 1.00 | --- | 1.38 |
| V 50 | C6E6-1000 | 1.000 | 8.00 | 2.00 | 4.3 | 1.13 | 1.00 | 1.38 |
| V 50 | C6E6-1250 | 1.250 | 8.00 | 2.50 | 4.0 | 1.1 | 1.00 | 1.38 |
| V 50 | C6E6-1500 | 1.500 | 8.00 | 2.50 | 4.0 | 1.13 | 1.00 | 1.38 |
| V 50 | C6E6-2000 | 2.000 | 9.63 | 3.75 | 5.0 | 1.41 | 1.50 | 1.44 |

R&R™ (Reach & Rigidity)

Extra strong shank steadies long tools so they cut smoother, faster, and last longer — indispensable for high feed rates.

End Mill Holders have fine thread screws that match Weldon flats — lock tight, stay tight.

Holders accept double end cutters to save tool costs. Ideal for long reaches in horizontal machines.



R&R™ (Reach & Rigidity)

| Taper | Part No. | A | B | C | D | F | F1 | L |
|-------|------------------|-------|-------|------|------|------|------|------|
| V 40 | C4K5-0375 | 0.375 | 6.00 | 1.00 | 7.5 | 0.75 | --- | 1.38 |
| V 40 | C4K5-0500 | 0.500 | 6.00 | 1.25 | 7.5 | 0.88 | --- | 1.38 |
| V 50 | C6K5-0312 | 0.312 | 6.00 | 1.00 | 8.2 | 0.75 | --- | 1.38 |
| V 50 | C6K5-0375 | 0.375 | 6.00 | 1.00 | 8.2 | 0.75 | --- | 1.38 |
| V 50 | C6K6-0375 | 0.375 | 8.00 | 1.00 | 10.2 | 0.75 | --- | 1.38 |
| V 50 | C6K7-0375 | 0.375 | 10.00 | 1.00 | 12.2 | 0.75 | --- | 1.38 |
| V 50 | C6K8-0375 | 0.375 | 12.00 | 1.00 | 14.2 | 0.75 | --- | 1.38 |
| V 50 | C6K5-0500 | 0.500 | 6.00 | 1.25 | 8.2 | 0.88 | --- | 1.38 |
| V 50 | C6K6-0500 | 0.500 | 8.00 | 1.25 | 10.2 | 0.88 | --- | 1.38 |
| V 50 | C6K7-0500 | 0.500 | 10.00 | 1.25 | 12.2 | 0.88 | --- | 1.38 |
| V 50 | C6K8-0500 | 0.500 | 12.00 | 1.25 | 14.2 | 0.88 | --- | 1.38 |
| V 50 | C6K5-0625 | 0.625 | 6.00 | 1.50 | 8.2 | 0.94 | --- | 1.38 |
| V 50 | C6K6-0625 | 0.625 | 8.00 | 1.50 | 10.2 | 0.94 | --- | 1.38 |
| V 50 | C6K7-0625 | 0.625 | 10.00 | 1.50 | 12.2 | 0.94 | --- | 1.38 |
| V 50 | C6K8-0625 | 0.625 | 12.00 | 1.50 | 3.5 | 0.94 | --- | 1.38 |
| V 50 | C6K5-0750 | 0.750 | 6.00 | 1.75 | 8.2 | 1.00 | --- | 1.38 |
| V 50 | C6K6-0750 | 0.750 | 8.00 | 1.75 | 10.2 | 1.00 | --- | 1.38 |
| V 50 | C6K7-0750 | 0.750 | 10.00 | 1.75 | 12.2 | 1.00 | --- | 1.38 |
| V 50 | C6K8-0750 | 0.750 | 12.00 | 1.75 | 3.9 | 1.00 | --- | 1.38 |
| V 50 | C6K5-1000 | 1.000 | 6.00 | 2.00 | 4.3 | 1.13 | 1.00 | 1.38 |
| V 50 | C6K6-1000 | 1.000 | 8.00 | 2.00 | 4.3 | 1.13 | 1.00 | 1.38 |
| V 50 | C6K7-1000 | 1.000 | 10.00 | 2.00 | 4.3 | 1.13 | 1.00 | 1.38 |
| V 50 | C6K8-1000 | 1.000 | 12.00 | 2.00 | 4.3 | 1.13 | 1.00 | 1.38 |

Notes

*C4E3-1250 does not meet the safe zone dimensions of ANSI B5.50 1994 and may not work on all tool change mechanisms.

- Black oxide complete on toolholders, add "A" to end of part no. (i.e., B2C3-0016A).

- High speed balance & nosepiece options, page A-6.

- Through-spindle coolant standard. Other coolant options, page A-12.

- Side lock screw torque values, page A-10.

- Retention Knobs & Setup Holding Fixtures, pages D-76 & D-77, D-78.

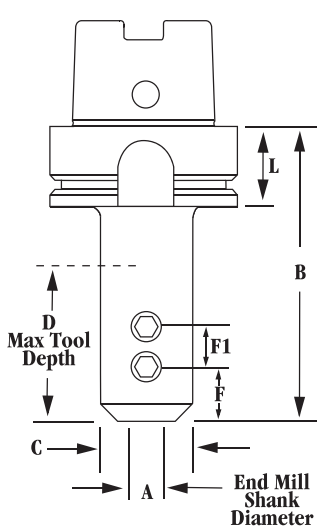
- Replacement side lock screws, page C-61.

End Mill Holders: HSK

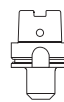


Command HSK End Mill Holders:

- HSK holders accept single end mills only.
- Fine thread screws match Weldon flats — lock tight, stay tight.
- **NOTE:** “A” diameter of 1” and larger has 2 side lock screws included in line with drive slot for easy line-ups.



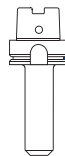
HSK Form A Illustrated



| Taper | Part No. | Stub | | | | | | | F1 | L |
|---------|-----------|-------|------|------|-----|------|------|------|----|---|
| | | A | B | C | D | F | F1 | | | |
| HSK63A | H4E3A0250 | 0.250 | 2.13 | 0.78 | 1.2 | 0.53 | --- | 1.02 | | |
| HSK63A | H4E3A0312 | 0.312 | 2.25 | 0.88 | 1.3 | 0.65 | --- | 1.02 | | |
| HSK63A | H4E3A0375 | 0.375 | 2.88 | 1.00 | 1.7 | 0.75 | --- | 1.02 | | |
| HSK63A | H4E3A0500 | 0.500 | 3.13 | 1.25 | 2.0 | 0.88 | --- | 1.02 | | |
| HSK63A | H4E3A0625 | 0.625 | 3.38 | 1.50 | 2.1 | 0.94 | --- | 1.02 | | |
| HSK63A | H4E3A0750 | 0.750 | 3.50 | 1.75 | 2.2 | 1.00 | --- | 1.02 | | |
| HSK63A | H4E3A0875 | 0.875 | 3.50 | 1.88 | 2.2 | 1.00 | --- | 1.02 | | |
| HSK63A | H4E3A1000 | 1.000 | 4.00 | 2.00 | 2.7 | 1.13 | 1.00 | 1.02 | | |
| HSK63A | H4E3A1250 | 1.250 | 4.50 | 2.50 | 3.1 | 1.13 | 1.00 | 1.02 | | |
| HSK63A | H4E3A1500 | 1.500 | 5.13 | 2.50 | 3.1 | 1.13 | 1.00 | 1.02 | | |
| HSK100A | H6E3A0250 | 0.250 | 2.38 | 0.78 | 1.2 | 0.53 | --- | 1.14 | | |
| HSK100A | H6E3A0312 | 0.312 | 2.50 | 0.88 | 1.3 | 0.66 | --- | 1.14 | | |
| HSK100A | H6E3A0375 | 0.375 | 2.63 | 1.00 | 1.5 | 0.75 | --- | 1.14 | | |
| HSK100A | H6E3A0500 | 0.500 | 3.50 | 1.25 | 2.1 | 0.88 | --- | 1.14 | | |
| HSK100A | H6E3A0625 | 0.625 | 3.50 | 1.50 | 2.1 | 0.94 | --- | 1.14 | | |
| HSK100A | H6E3A0750 | 0.750 | 3.75 | 1.75 | 2.3 | 1.00 | --- | 1.14 | | |
| HSK100A | H6E3A0875 | 0.875 | 3.75 | 1.88 | 2.2 | 1.00 | --- | 1.14 | | |
| HSK100A | H6E3A1000 | 1.000 | 4.38 | 2.00 | 2.9 | 1.13 | 1.00 | 1.14 | | |
| HSK100A | H6E3A1250 | 1.250 | 4.75 | 2.50 | 3.2 | 1.13 | 1.00 | 1.14 | | |
| HSK100A | H6E3A1500 | 1.500 | 4.75 | 2.50 | 3.1 | 1.13 | 1.00 | 1.14 | | |
| HSK100A | H6E3A2000 | 2.000 | 5.75 | 3.75 | 4.0 | 1.41 | 1.50 | 1.14 | | |



| Taper | Part No. | Standard | | | | | | |
|---------|-----------|----------|------|------|-----|------|------|------|
| | | A | B | C | D | F | F1 | L |
| HSK63A | H4E4A0250 | 0.250 | 4.13 | 0.78 | 3.2 | 0.53 | --- | 1.02 |
| HSK63A | H4E4A0312 | 0.312 | 4.25 | 0.88 | 1.5 | 0.65 | --- | 1.02 |
| HSK63A | H4E4A0375 | 0.375 | 4.88 | 1.00 | 1.5 | 0.75 | --- | 1.02 |
| HSK63A | H4E4A0500 | 0.500 | 5.13 | 1.25 | 3.0 | 0.88 | --- | 1.02 |
| HSK63A | H4E4A0625 | 0.625 | 5.38 | 1.50 | 3.5 | 0.94 | --- | 1.02 |
| HSK63A | H4E4A0750 | 0.750 | 5.50 | 1.75 | 3.9 | 1.00 | --- | 1.02 |
| HSK63A | H4E4A0875 | 0.875 | 5.50 | 1.88 | 4.1 | 1.00 | --- | 1.02 |
| HSK63A | H4E4A1000 | 1.000 | 6.00 | 2.00 | 4.3 | 1.13 | 1.00 | 1.02 |
| HSK63A | H4E4A1250 | 1.250 | 6.50 | 2.50 | 4.0 | 1.13 | 1.00 | 1.02 |
| HSK63A | H4E4A1500 | 1.500 | 7.13 | 2.50 | 4.0 | 1.13 | 1.00 | 1.02 |
| HSK100A | H6E4A0250 | 0.250 | 4.38 | 0.78 | 3.2 | 0.53 | --- | 1.14 |
| HSK100A | H6E4A0312 | 0.312 | 4.50 | 0.88 | 3.3 | 0.66 | --- | 1.14 |
| HSK100A | H6E4A0375 | 0.375 | 4.63 | 1.00 | 3.5 | 0.75 | --- | 1.14 |
| HSK100A | H6E4A0500 | 0.500 | 5.50 | 1.25 | 3.0 | 0.88 | --- | 1.14 |
| HSK100A | H6E4A0625 | 0.625 | 5.50 | 1.50 | 3.5 | 0.94 | --- | 1.14 |
| HSK100A | H6E4A0750 | 0.750 | 5.75 | 1.75 | 3.9 | 1.00 | --- | 1.14 |
| HSK100A | H6E4A0875 | 0.875 | 5.75 | 1.88 | 4.1 | 1.00 | --- | 1.14 |
| HSK100A | H6E4A1000 | 1.000 | 6.38 | 2.00 | 4.3 | 1.13 | 1.00 | 1.14 |
| HSK100A | H6E4A1250 | 1.250 | 6.75 | 2.50 | 4.0 | 1.13 | 1.00 | 1.14 |
| HSK100A | H6E4A1500 | 1.500 | 6.75 | 2.50 | 4.0 | 1.13 | 1.00 | 1.14 |

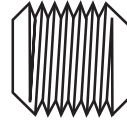


| Taper | Part No. | Extended | | | | | | |
|---------|-----------|----------|------|------|-----|------|-----|------|
| | | A | B | C | D | F | F1 | L |
| HSK63A | H4E5A0250 | 0.250 | 6.13 | 0.78 | 6.5 | 0.53 | --- | 1.02 |
| HSK63A | H4E5A0312 | 0.312 | 6.25 | 0.88 | 1.5 | 0.65 | --- | 1.02 |
| HSK63A | H4E5A0375 | 0.375 | 6.88 | 1.00 | 1.5 | 0.75 | --- | 1.02 |
| HSK63A | H4E5A0500 | 0.500 | 7.13 | 1.25 | 3.0 | 0.88 | --- | 1.02 |
| HSK63A | H4E5A0625 | 0.625 | 7.38 | 1.50 | 3.5 | 0.94 | --- | 1.02 |
| HSK63A | H4E5A0750 | 0.750 | 7.50 | 1.75 | 3.9 | 1.00 | --- | 1.02 |
| HSK63A | H4E5A0875 | 0.875 | 7.50 | 1.88 | 4.1 | 1.00 | --- | 1.02 |
| HSK100A | H6E5A0250 | 0.250 | 6.38 | 0.78 | 5.2 | 0.53 | --- | 1.14 |
| HSK100A | H6E5A0312 | 0.312 | 6.50 | 0.88 | 5.3 | 0.66 | --- | 1.14 |
| HSK100A | H6E5A0375 | 0.375 | 6.63 | 1.00 | 5.5 | 0.75 | --- | 1.14 |
| HSK100A | H6E5A0500 | 0.500 | 7.50 | 1.25 | 3.0 | 0.88 | --- | 1.14 |
| HSK100A | H6E5A0625 | 0.625 | 7.50 | 1.50 | 3.5 | 0.94 | --- | 1.14 |
| HSK100A | H6E5A0750 | 0.750 | 7.75 | 1.75 | 3.9 | 1.00 | --- | 1.14 |
| HSK100A | H6E5A0875 | 0.875 | 7.75 | 1.88 | 4.1 | 1.00 | --- | 1.14 |

Notes

- High speed balance & nosepiece options, page A-6.
- Side lock screw torque values, page A-10.
- Through-spindle coolant standard. Other coolant options, page A-12.
- Retention Knobs, pages D-76 & D-77.
- Replacement side lock screws, page C-61.
- HSK coolant hole plugs and coolant tubes sold separately, see page D-79.
- HSK Accessories & Setup Holding Fixtures, page D-79.

Replacement Parts



Replacement Side Lock Screws

| End Mill Dia. Size | Part No. | Inch Thread Size | Length | Torque Inch-Lbs | End Mill Dia. Size | Part No. | Metric Thread Size | Length | Torque Inch-Lbs |
|--------------------|-----------|------------------|--------|-----------------|--------------------|-----------|--------------------|--------|-----------------|
| 0.125 | XEML-0232 | 8-32 | .25 | 18 | 6 mm | XEML-0610 | M6-1.0 | 10 | 60 |
| 0.187 | XEML-0332 | 10-32 | .25 | 30 | 8 mm | XEML-0813 | M8-1.25 | 10 | 120 |
| 0.250 | XEML-0428 | 1/4-28 | .25 | 60 | 10 mm | XEML-1015 | M10-1.5 | 12 | 180 |
| 0.312 | XEML-0524 | 5/16-24 | .25 | 120 | 12 mm | XEML-1218 | M12-1.75 | 16 | 250 |
| 0.375 | XEML-0624 | 3/8-24 | .30 | 200 | 14 mm | XEML-1218 | M12-1.75 | 16 | 250 |
| 0.437 | XEML-0624 | 3/8-24 | .30 | 200 | 16 mm | XEML-1420 | M14-2.0 | 16 | 450 |
| 0.500 | XEML-0720 | 7/16-20 | .36 | 220 | 18 mm | XEML-1420 | M14-2.0 | 16 | 450 |
| 0.562 | XEML-0720 | 7/16-20 | .36 | 220 | 20 mm | XEML-1620 | M16-2.0 | 16 | 840 |
| 0.625 | XEML-0820 | 1/2-20 | .42 | 500 | | | | | |
| 0.750 | XEML-1018 | 5/8-18 | .49 | 560 | | | | | |
| 0.875 | XEML-1018 | 5/8-18 | .49 | 560 | | | | | |
| 1.000 | XEML-1216 | 3/4-16 | .45 | 1150 | | | | | |
| 1.250 | XEML-1216 | 3/4-16 | .45 | 1150 | | | | | |
| 1.500 | XEML-1216 | 3/4-16 | .45 | 1150 | | | | | |
| 2.000 | XEML-1614 | 1-14 | .88 | 1500 | | | | | |

Powerful, Accurate Grip for Heavy Cuts and Fine Finish

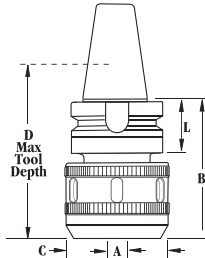


Features & Benefits:

- Extreme Gripping Power Eliminates Tool Slippage—Best tool grip of all collet chucks for heavy roughing performance.
- Excellent Accuracy— Results from the combination of concentricity and gripping power.
- Outstanding Concentricity— TIR of .0004" at 4" from nosepiece is predictable and repeatable.

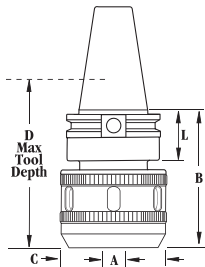
- Reduces Chatter— Nose geometry provides high stiffness for smooth, accurate finish cutting.
- Increased tool life—with balanced cutting forces and even chip load.
- Nosepiece design evenly distributes clamping force for maximum gripping pressures on the cutting tool.
- Shank Taper Tolerances of AT3 or better.
- Through-spindle coolant.

BT-Flange



| Taper | Part No. | A | B | C | D Tool Depth Range | L | Gripping Torque (Ft-Lbs) | Maximum Tightening Torque (Ft-Lbs) |
|-------|------------------|-------|------|---------------|-----------------------|------|--------------------------------|--|
| BT 40 | B414-0750 | .750 | 3.54 | 2.126 (54 mm) | 2.0-2.4" (53-63 mm) | 1.06 | 500 | 42 |
| BT 40 | B414-1250 | 1.250 | 3.54 | 2.835 (72 mm) | 2.6-3.0" (67-77 mm) | 1.06 | 2500 | 54 |

V-Flange

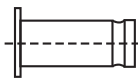


| Taper | Part No. | A | B | C | D Tool Depth Range | L | Gripping Torque (Ft-Lbs) | Maximum Tightening Torque (Ft-Lbs) |
|-------|-------------------|-------|------|---------------|-----------------------|------|--------------------------------|--|
| V 40 | C414-0750 | .750 | 3.54 | 2.126 (54 mm) | 2.0-2.4" (53-63 mm) | 1.38 | 500 | 42 |
| V 40 | C414-1250* | 1.250 | 3.54 | 2.835 (72 mm) | 2.6-3.0" (67-77 mm) | 1.38 | 2500 | 54 |
| V 50 | C614-0750 | .750 | 4.13 | 2.126 (54 mm) | 2.0-2.4" (53-63 mm) | 1.38 | 500 | 42 |
| V 50 | C614-1250 | 1.250 | 4.13 | 2.835 (72 mm) | 2.6-3.0" (67-77 mm) | 1.38 | 2500 | 54 |

Replacement Parts

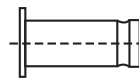
Milling Chuck Straight Collets For 0.750" Milling Chucks

| Part No. | Collet ID |
|------------------|-----------|
| SC34-0375 | 0.375 |
| SC34-0437 | 0.437 |
| SC34-0500 | 0.500 |
| SC34-0625 | 0.625 |



Milling Chuck Straight Collets For 1.250" Milling Chucks

| Part No. | Collet ID |
|------------------|-----------|
| SC12-0375 | 0.375 |
| SC12-0437 | 0.437 |
| SC12-0500 | 0.500 |
| SC12-0625 | 0.625 |
| SC12-0750 | 0.750 |
| SC12-0875 | 0.875 |
| SC12-1000 | 1.000 |

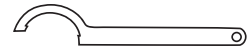


Stop Screws (Coolant Through)

| Part No. | Thread |
|--------------------|--|
| XIBS-1815-C | For 0.750" Milling Chucks M18 x 1.5 |
| XIBS-2815-C | For 1.250" Milling Chucks M28 x 1.5 |

Wrenches

| Part No. | |
|------------------|---------------------------|
| XSCW-0750 | For 0.750" Milling Chucks |
| XSCW-1250 | For 1.250" Milling Chucks |



Notes

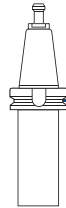
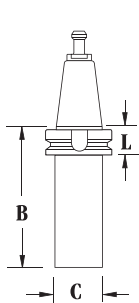
- * C414-1250 does not meet the safe zone dimensions of ANSI B5.50 1994 and may not work on all tool change mechanisms.
- Milling chucks available only with shiny shank; no black oxide.
- Through-spindle coolant standard. Other coolant options, page A-12.
- Retention Knobs & Setup Holding Fixtures, pages D-76 & D-77, D-78.
- Milling chucks can accept round shanks (no flats) cutting tools with h6 tolerances, see page A-4.

- Ideal for applications utilizing carbide tooling.
- Over-collapse will cause unreparable damage to the milling chuck.
- Never over-tighten the milling chuck nosepiece. Hand tighten nosepiece with wrench. Follow maximum recommended nosepiece tightening torques listed.
- Never tighten nosepiece without the proper collet and tool installed.
- Verify indexable cutter body shank size before use.

Blank Bars:

- Shank taper and flange on BT/V-Flange and HSK100A are case hardened and precision ground.
Nose is unhardened 8620 alloy steel machinable for making custom and emergency holders.
- Precision internal center eases alignment.
- HSK40, HSK63 and Beta Modul® are thru hardened (4340 material).

BT-Flange

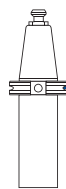
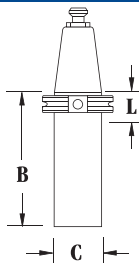


| | | Stub | | | |
|-------|------------------|------|-------|------|--|
| Taper | Part No. | B | C | L | |
| BT 30 | B2X3-0002 | 6.00 | 1.750 | 0.85 | |
| BT 35 | B3X3-0003 | 6.00 | 2.375 | 0.87 | |
| BT 40 | B4X3-0004 | 6.00 | 2.500 | 1.06 | |
| BT 45 | B5X3-0005 | 6.00 | 3.250 | 1.31 | |
| BT 50 | B6X3-0006 | 6.00 | 3.875 | 1.50 | |



| | | Standard | | | |
|-------|------------------|----------|-------|------|--|
| Taper | Part No. | B | C | L | |
| BT 35 | B3X4-0003 | 11 | 2.375 | 0.87 | |
| BT 40 | B4X4-0004 | 11 | 2.500 | 1.06 | |
| BT 45 | B5X4-0005 | 11 | 3.250 | 1.31 | |
| BT 50 | B6X4-0006 | 11 | 3.875 | 1.50 | |

V-Flange

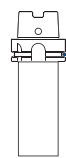
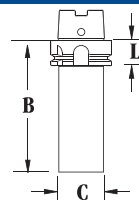


| | | Stub | | | |
|-------|------------------|------|-------|------|--|
| Taper | Part No. | B | C | L | |
| V 40 | C4X3-0004 | 6.00 | 2.500 | 1.44 | |
| V 45 | C5X3-0005 | 6.00 | 3.250 | 1.44 | |
| V 50 | C6X3-0006 | 6.00 | 3.875 | 1.44 | |



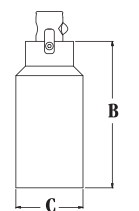
| | | Standard | | | |
|-------|------------------|----------|-------|------|--|
| Taper | Part No. | B | C | L | |
| V 40 | C4X4-0004 | 11 | 2.500 | 1.44 | |
| V 45 | C5X4-0005 | 11 | 3.250 | 1.44 | |
| V 50 | C6X4-0006 | 11 | 3.875 | 1.44 | |

HSK



| | | Stub | | | |
|---------|------------------|------|-------|------|--|
| Taper | Part No. | B | C | L | |
| HSK40A | H2X3A0002 | 6.00 | 1.750 | 1.41 | |
| HSK63A | H4X3A0004 | 6.00 | 2.500 | 1.66 | |
| HSK100A | H6X3A0006 | 6.00 | 3.875 | 1.78 | |

BETA MODUL®



| Beta | Part No. | B | C |
|------|------------------|-------|------|
| 25 | U1X3B0001 | 2.75 | 1.13 |
| 32 | U2X3B0002 | 3.25 | 1.38 |
| 40 | U3X3B0003 | 4.00 | 1.63 |
| 50 | U4X3B0004 | 6.00 | 2.75 |
| 63 | U5X4B0005 | 10.00 | 3.25 |
| 80 | U6X4B0006 | 7.00 | 3.25 |
| 100 | U7X4B0007 | 8.00 | 4.00 |

Notes

- Black oxide complete on toolholders, page A-2.

- Retention Knobs, pages D-76 & D-77 .

- HSK Accessories & Setup Holding Fixtures, page D-79.

Shell Mill Holders



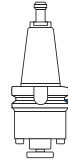
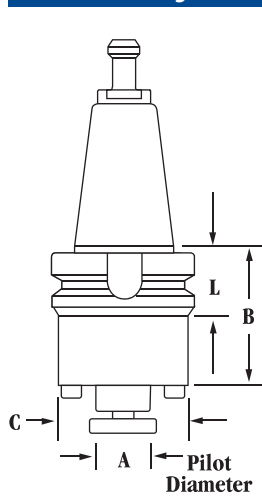
Shell Mill Holders:

- Pilot diameter is sized for precision fit with cutter.
- Face perpendicular to centerline within .0002".
- Removable/replaceable drive keys are standard.
- Fine thread locking screw is included.
- NOTE: Drive keys are in line with drive slot.

Command Shell Mill Holder Benefits:

- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Less tool wear and replacement — less scrap.
- Fully ground flange and V-groove — easy on the tool changers for less spindle and changer maintenance..
- All tapers and lengths ready to ship — get your tools fast!

BT-Flange

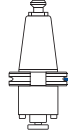
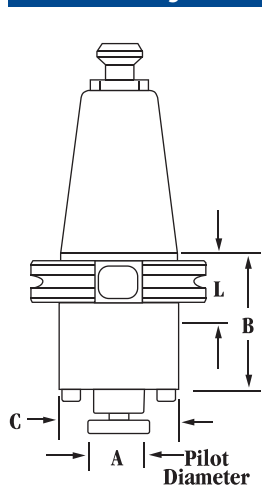


| | | Standard | | | |
|-------|-----------|----------|------|------|------|
| Taper | Part No. | A | B | C | L |
| BT 30 | B2S4-0750 | 0.750 | 1.75 | 1.69 | 0.87 |
| BT 30 | B2S4-1000 | 1.000 | 2.00 | 2.19 | 0.87 |
| BT 35 | B3S4-0750 | 0.750 | 1.18 | 1.69 | 0.87 |
| BT 35 | B3S4-1000 | 1.000 | 1.26 | 2.19 | 0.87 |
| BT 35 | B3S4-1250 | 1.250 | 2.36 | 2.75 | 0.87 |
| BT 40 | B4S4-0750 | 0.750 | 1.77 | 1.69 | 1.06 |
| BT 40 | B4S4-1000 | 1.000 | 1.77 | 2.19 | 1.06 |
| BT 40 | B4S4-1250 | 1.250 | 1.81 | 2.75 | 1.06 |
| BT 40 | B4S4-1500 | 1.500 | 2.36 | 3.81 | 1.06 |
| BT 45 | B5S4-0750 | 0.750 | 1.77 | 1.69 | 1.31 |
| BT 45 | B5S4-1000 | 1.000 | 1.77 | 2.19 | 1.31 |
| BT 45 | B5S4-1250 | 1.250 | 1.77 | 2.75 | 1.31 |
| BT 45 | B5S4-1500 | 1.500 | 2.36 | 3.81 | 1.31 |
| BT 45 | B5S4-2000 | 2.000 | 2.76 | 4.88 | 1.31 |
| BT 50 | B6S4-1000 | 1.000 | 1.75 | 2.19 | 1.50 |
| BT 50 | B6S4-1250 | 1.250 | 1.75 | 2.75 | 1.50 |
| BT 50 | B6S4-1500 | 1.500 | 1.75 | 3.81 | 1.50 |
| BT 50 | B6S4-2000 | 2.000 | 3.00 | 4.88 | 1.50 |

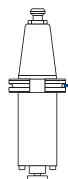


| | | Extended | | | |
|-------|-----------|----------|------|------|------|
| Taper | Part No. | A | B | C | L |
| BT 35 | B3S5-0750 | 0.750 | 4.72 | 1.69 | 0.87 |
| BT 35 | B3S5-1000 | 1.000 | 4.72 | 2.19 | 0.87 |
| BT 40 | B4S5-0750 | 0.750 | 4.13 | 1.69 | 1.06 |
| BT 40 | B4S5-1000 | 1.000 | 4.13 | 2.19 | 1.06 |
| BT 40 | B4S5-1250 | 1.250 | 4.13 | 2.75 | 1.06 |
| BT 40 | B4S5-1500 | 1.500 | 4.72 | 3.81 | 1.06 |
| BT 45 | B5S5-0750 | 0.750 | 4.13 | 1.69 | 1.31 |
| BT 45 | B5S5-1000 | 1.000 | 4.13 | 2.19 | 1.31 |
| BT 45 | B5S5-1250 | 1.250 | 4.13 | 2.75 | 1.31 |
| BT 45 | B5S5-1500 | 1.500 | 4.13 | 3.81 | 1.31 |
| BT 45 | B5S5-2000 | 2.000 | 4.72 | 4.88 | 1.31 |
| BT 50 | B6S5-1000 | 1.000 | 4.00 | 2.19 | 1.50 |
| BT 50 | B6S5-1250 | 1.250 | 4.00 | 2.75 | 1.50 |
| BT 50 | B6S5-1500 | 1.500 | 4.00 | 3.81 | 1.50 |
| BT 50 | B6S5-2000 | 2.000 | 4.00 | 4.88 | 1.50 |

V-Flange

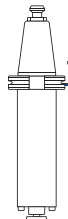


| | | Standard | | | |
|-------|-----------|----------|------|------|------|
| Taper | Part No. | A | B | C | L |
| V 40 | C4S4-0500 | 0.500 | 1.50 | 1.44 | 1.38 |
| V 40 | C4S4-0750 | 0.750 | 1.50 | 1.69 | 1.38 |
| V 40 | C4S4-1000 | 1.000 | 2.06 | 2.19 | 1.44 |
| V 40 | C4S4-1250 | 1.250 | 2.63 | 2.75 | 1.44 |
| V 40 | C4S4-1500 | 1.500 | 3.00 | 3.81 | 1.44 |
| V 45 | C5S4-0500 | 0.500 | 1.50 | 1.44 | 1.38 |
| V 45 | C5S4-0750 | 0.750 | 1.50 | 1.69 | 1.38 |
| V 45 | C5S4-1000 | 1.000 | 2.00 | 2.19 | 1.38 |
| V 45 | C5S4-1250 | 1.250 | 2.38 | 2.75 | 1.44 |
| V 45 | C5S4-1500 | 1.500 | 2.75 | 3.81 | 1.44 |
| V 45 | C5S4-2000 | 2.000 | 3.31 | 4.88 | 1.44 |
| V 50 | C6S4-0500 | 0.500 | 1.50 | 1.44 | 1.38 |
| V 50 | C6S4-0750 | 0.750 | 1.50 | 1.69 | 1.38 |
| V 50 | C6S4-1000 | 1.000 | 2.00 | 2.19 | 1.38 |
| V 50 | C6S4-1250 | 1.250 | 1.50 | 2.75 | N/A |
| V 50 | C6S4-1500 | 1.500 | 2.50 | 3.81 | 1.44 |
| V 50 | C6S4-2000 | 2.000 | 3.00 | 4.88 | 1.44 |
| V 50 | C6S4-2500 | 2.500 | 2.40 | 4.88 | 1.44 |



| | | Extended | | | |
|-------|-----------|----------|------|------|------|
| Taper | Part No. | A | B | C | L |
| V 40 | C4S5-0500 | 0.500 | 3.50 | 1.44 | 1.38 |
| V 40 | C4S5-0750 | 0.750 | 3.50 | 1.69 | 1.38 |
| V 40 | C4S5-1000 | 1.000 | 4.00 | 2.19 | 1.44 |
| V 40 | C4S5-1250 | 1.250 | 4.00 | 2.75 | 1.44 |
| V 40 | C4S5-1500 | 1.500 | 4.00 | 3.81 | 1.44 |

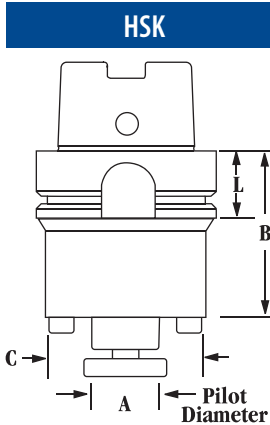
continued in next column



| | | Extended (continued) | | | |
|-------|-----------|----------------------|------|------|------|
| Taper | Part No. | A | B | C | L |
| V 45 | C5S5-0500 | 0.500 | 3.50 | 1.44 | 1.38 |
| V 45 | C5S5-0750 | 0.750 | 3.50 | 1.69 | 1.38 |
| V 45 | C5S5-1000 | 1.000 | 4.00 | 2.19 | 1.38 |
| V 45 | C5S5-1250 | 1.250 | 4.00 | 2.75 | 1.44 |
| V 45 | C5S5-1500 | 1.500 | 4.00 | 3.81 | 1.44 |
| V 45 | C5S5-2000 | 2.000 | 4.00 | 4.88 | 1.44 |
| V 50 | C6S5-0500 | 0.500 | 3.50 | 1.44 | 1.38 |
| V 50 | C6S5-0750 | 0.750 | 3.50 | 1.69 | 1.38 |
| V 50 | C6S5-1000 | 1.000 | 4.00 | 2.19 | 1.38 |
| V 50 | C6S5-1250 | 1.250 | 3.50 | 2.75 | N/A |
| V 50 | C6S5-1500 | 1.500 | 4.00 | 3.81 | 1.44 |
| V 50 | C6S5-2000 | 2.000 | 4.00 | 4.88 | 1.44 |
| V 50 | C6S5-2500 | 2.500 | 4.00 | 4.88 | 1.44 |

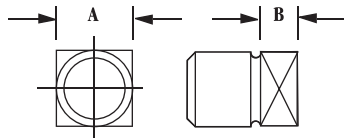
| | | Extra Extended | | | |
|-------|-----------|----------------|------|------|------|
| Taper | Part No. | A | B | C | L |
| V 45 | C5S6-0500 | 0.500 | 5.50 | 1.44 | 1.38 |
| V 45 | C5S6-0750 | 0.750 | 5.50 | 1.69 | 1.38 |
| V 45 | C5S6-1000 | 1.000 | 6.00 | 2.19 | 1.38 |
| V 45 | C5S6-1250 | 1.250 | 6.00 | 2.75 | 1.44 |
| V 45 | C5S6-1500 | 1.500 | 6.00 | 3.81 | 1.44 |
| V 45 | C5S6-2000 | 2.000 | 6.00 | 4.88 | 1.44 |
| V 50 | C6S6-0500 | 0.500 | 5.50 | 1.44 | 1.38 |
| V 50 | C6S6-0750 | 0.750 | 5.50 | 1.69 | 1.38 |
| V 50 | C6S6-1000 | 1.000 | 6.00 | 2.19 | 1.38 |
| V 50 | C6S6-1250 | 1.250 | 5.50 | 2.75 | N/A |
| V 50 | C6S6-1500 | 1.500 | 6.00 | 3.81 | 1.44 |
| V 50 | C6S6-2000 | 2.000 | 6.00 | 4.88 | 1.44 |

Note: Shell Mill Not Included



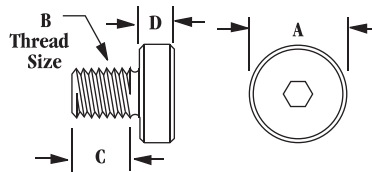
| Taper | Part No. | Stub | | | |
|---------|-----------|-------|------|------|------|
| | | A | B | C | L |
| HSK63A | H4S3A0750 | 0.750 | 1.75 | 1.69 | 1.02 |
| HSK63F | H4S3F0750 | 0.750 | 1.75 | 1.69 | 1.02 |
| HSK63F | H4S3F1000 | 1.000 | 1.88 | 2.06 | 1.02 |
| HSK63A | H4S3A1000 | 1.000 | 1.88 | 2.06 | 1.02 |
| HSK63A | H4S3A1250 | 1.250 | 2.50 | 2.75 | 1.02 |
| HSK63A | H4S3A1500 | 1.500 | 2.75 | 3.81 | 1.02 |
| HSK100A | H6S3A0750 | 0.750 | 1.88 | 1.69 | 1.14 |
| HSK100A | H6S3A1000 | 1.000 | 2.00 | 2.19 | 1.14 |
| HSK100A | H6S3A1250 | 1.250 | 2.25 | 2.75 | 1.14 |
| HSK100A | H6S3A1500 | 1.500 | 2.50 | 3.81 | 1.14 |
| HSK100A | H6S3A2000 | 2.000 | 3.50 | 4.88 | 1.14 |

Replacement Parts



Replacement Drive Keys

| Part No. | A | B |
|-----------|-------|-------|
| XSDK-0500 | 0.250 | 0.125 |
| XSDK-0750 | 0.313 | 0.156 |
| XSDK-1000 | 0.375 | 0.187 |
| XSDK-1250 | 0.500 | 0.250 |
| XSDK-1500 | 0.625 | 0.312 |
| XSDK-2000 | 0.750 | 0.375 |
| XSDK-2500 | 1.000 | 0.500 |



Replacement Lock Screws
Lock screws are solid, not coolant through

| Part No. | A | B | C | D |
|-----------|-------|----------|------|------|
| XSAS-0500 | 0.625 | 0.250-28 | 0.50 | 0.34 |
| XSAS-0750 | 0.875 | 0.375-24 | 0.63 | 0.37 |
| XSAS-1000 | 1.188 | 0.500-20 | 0.81 | 0.37 |
| XSAS-1250 | 1.500 | 0.625-18 | 0.94 | 0.50 |
| XSAS-1500 | 1.875 | 0.750-16 | 1.13 | 0.50 |
| XSAS-2000 | 2.480 | 1.000-14 | 1.31 | 0.50 |
| XSAS-2500 | 3.125 | 1.000-14 | 1.50 | 0.50 |

Notes

- Black oxide complete on toolholders, page A-2.
- Requires "Assemblies" balance option, see page A-6.
- Coolant option details for Shell Mill Holders, page A-12.
- 2" and 2.5" Shell Mill Holders also have (4) 5/8"-11 threaded holes on a 4" bolt circle.
- Retention Knobs, pages D-76 & D-77 .
- HSK coolant hole plugs and coolant tubes sold separately, see page D-79.
- HSK Accessories & Setup Holding Fixtures, page D-79.

Tension & Compression Tap Holders & Accessories



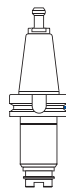
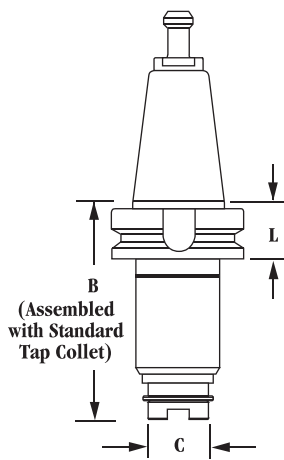
Tension & Compression Tap Holders:

- Tension & Compression style has axial float for precise thread pitch.
- Uses popular Bilz style quick change collet system.
- Holders travel in tension .75"/compression .37".



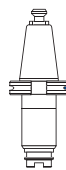
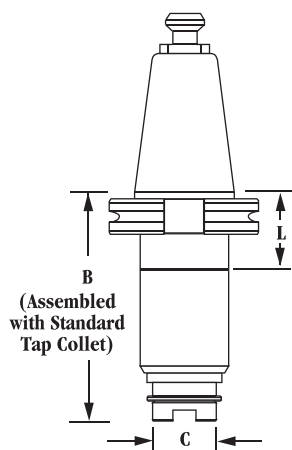
Note: Tap Collets sold separately

BT-Flange



| Taper | Part No. | Standard | | | |
|-------|------------------|----------|------|------|------|
| | | Collet # | B | C | L |
| BT 30 | B2T4-0001 | #1 | 4.95 | 1.75 | 0.87 |
| BT 35 | B3T4-0001 | #1 | 4.68 | 1.75 | 0.87 |
| BT 35 | B3T4-0002 | #2 | 6.72 | 2.25 | 0.87 |
| BT 40 | B4T4-0001 | #1 | 4.53 | 1.75 | 1.06 |
| BT 40 | B4T4-0002 | #2 | 6.72 | 2.25 | 1.06 |
| BT 45 | B5T4-0001 | #1 | 4.53 | 1.75 | 1.31 |
| BT 45 | B5T4-0002 | #2 | 6.72 | 2.25 | 1.31 |
| BT 45 | B5T4-0003 | #3 | 8.33 | 3.25 | 1.31 |
| BT 50 | B6T4-0001 | #1 | 4.64 | 1.75 | 1.50 |
| BT 50 | B6T4-0002 | #2 | 6.72 | 2.25 | 1.50 |
| BT 50 | B6T4-0003 | #3 | 8.33 | 3.25 | 1.50 |

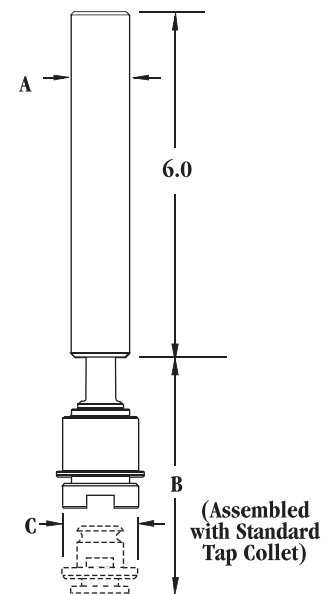
V-Flange



| Taper | Part No. | Standard | | | |
|-------|------------------|----------|------|------|------|
| | | Collet # | B | C | L |
| V 40 | C4T4-0001 | #1 | 4.56 | 1.75 | 1.38 |
| V 40 | C4T4-0002 | #2 | 6.47 | 2.25 | 1.38 |
| V 45 | C5T4-0001 | #1 | 4.56 | 1.75 | 1.38 |
| V 45 | C5T4-0002 | #2 | 5.82 | 2.25 | 1.38 |
| V 45 | C5T4-0003 | #3 | 8.33 | 3.25 | 1.38 |
| V 50 | C6T4-0001 | #1 | 4.56 | 1.75 | 1.38 |
| V 50 | C6T4-0002 | #2 | 5.82 | 2.25 | 1.38 |
| V 50 | C6T4-0003 | #3 | 8.33 | 3.25 | 1.38 |

ACCESSORIES

Straight Shank



| Part No. | Collet # | A | B | C |
|------------------|----------|------|------|------|
| XSTH-0001 | #1 | 1.00 | 2.50 | 1.50 |
| XSTH-0002 | #2 | 1.25 | 3.25 | 1.88 |

Notes

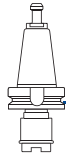
- Black oxide complete is available upon request for standard toolholders, page A-2.
- "B" dimension is the assembled length including standard tap collet.
- Quick-Change Tap Collets, page C-68.
- Retention Knobs, pages D-76 & D-77 .
- HSK Coolant hole plugs included, coolant tubes optional, page D-79.
- HSK Accessories & Setup Holding Fixtures, page D-79.

Synchronous (Rigid) Tap Holders & Accessories

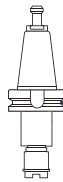
Synchronous (Rigid) Tap Holders:

- Rigid synchronous system for newer machine controls (machines with 32 bit microprocessors).
- Extended lengths available for horizontal machining centers.
- Uses popular Bilz style quick change collet system.

BT-Flange

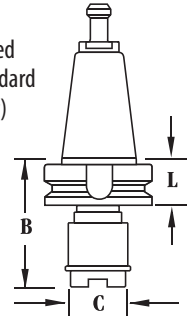


| Standard | | | | | | |
|----------|-----------|----------|------|------|------|--|
| Taper | Part No. | Collet # | B | C | L | |
| BT 30 | B2P2-0001 | #1 | 3.07 | 1.50 | .87 | |
| BT 35 | B3P2-0001 | #1 | 3.12 | 1.50 | .87 | |
| BT 35 | B3P2-0002 | #2 | 3.82 | 1.88 | .87 | |
| BT 40 | B4P2-0001 | #1 | 3.31 | 1.50 | 1.06 | |
| BT 40 | B4P2-0002 | #2 | 4.01 | 1.88 | 1.06 | |
| BT 45 | B5P2-0001 | #1 | 3.56 | 1.50 | 1.31 | |
| BT 45 | B5P2-0002 | #2 | 4.26 | 1.88 | 1.31 | |
| BT 50 | B6P2-0001 | #1 | 3.75 | 1.50 | 1.50 | |
| BT 50 | B6P2-0002 | #2 | 4.45 | 1.88 | 1.50 | |

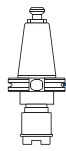


| Extended | | | | | | |
|----------|-----------|----------|------|------|------|--|
| Taper | Part No. | Collet # | B | C | L | |
| BT 40 | B4P5-0001 | #1 | 5.87 | 1.50 | 1.06 | |
| BT 40 | B4P5-0002 | #2 | 6.57 | 1.88 | 1.06 | |
| BT 45 | B5P5-0001 | #1 | 6.87 | 1.50 | 1.31 | |
| BT 45 | B5P5-0002 | #2 | 7.57 | 1.88 | 1.31 | |
| BT 45 | B5P5-0003 | #3 | 8.33 | 3.25 | 1.31 | |
| BT 50 | B6P5-0001 | #1 | 7.87 | 1.50 | 1.50 | |
| BT 50 | B6P5-0002 | #2 | 8.57 | 1.88 | 1.50 | |
| BT 50 | B6P5-0003 | #3 | 8.33 | 3.25 | 1.50 | |

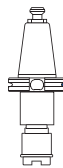
(Assembled with Standard Tap Collet)



V-Flange

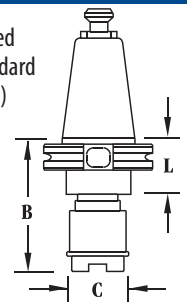


| Standard | | | | | | |
|----------|-----------|----------|------|------|------|--|
| Taper | Part No. | Collet # | B | C | L | |
| V 40 | C4P2-0001 | #1 | 3.58 | 1.50 | 1.38 | |
| V 40 | C4P2-0002 | #2 | 4.22 | 1.88 | 1.38 | |
| V 45 | C5P2-0001 | #1 | 3.58 | 1.50 | 1.38 | |
| V 45 | C5P2-0002 | #2 | 4.22 | 1.88 | 1.38 | |
| V 50 | C6P2-0001 | #1 | 3.58 | 1.50 | 1.38 | |
| V 50 | C6P2-0002 | #2 | 4.22 | 1.88 | 1.38 | |



| Extended | | | | | | |
|----------|-----------|----------|------|------|------|--|
| Taper | Part No. | Collet # | B | C | L | |
| V 40 | C4P5-0001 | #1 | 5.58 | 1.50 | 1.38 | |
| V 40 | C4P5-0002 | #2 | 6.22 | 1.88 | 1.38 | |
| V 45 | C5P5-0001 | #1 | 5.58 | 1.50 | 1.38 | |
| V 45 | C5P5-0002 | #2 | 6.22 | 1.88 | 1.38 | |
| V 45 | C5P5-0003 | #3 | 8.33 | 3.25 | 1.38 | |
| V 50 | C6P5-0001 | #1 | 5.58 | 1.50 | 1.38 | |
| V 50 | C6P5-0002 | #2 | 6.22 | 1.88 | 1.38 | |
| V 50 | C6P5-0003 | #3 | 8.33 | 3.25 | 1.38 | |

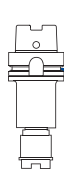
(Assembled with Standard Tap Collet)



HSK

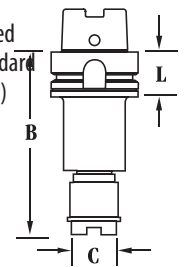


Note: Tap Collets sold separately.



| Standard | | | | | | |
|----------|-----------|----------|------|------|------|--|
| Taper | Part No. | Collet # | B | C | L | |
| HSK63A | H4P2A0001 | #1 | 5.33 | 1.50 | 1.02 | |
| HSK63A | H4P2A0002 | #2 | 6.08 | 1.88 | 1.02 | |
| HSK100A | H6P2A0001 | #1 | 5.58 | 1.50 | 1.14 | |
| HSK100A | H6P2A0002 | #2 | 6.33 | 1.88 | 1.14 | |

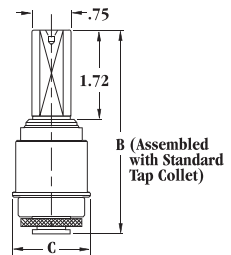
(Assembled with Standard Tap Collet)



Straight Shank



| Straight Shank | | | | |
|----------------|----------|------|------|--|
| Part No. | Collet # | B | C | |
| XRTH-A100 | #1 | 3.92 | 1.50 | |
| XRTH-A200 | #2 | 4.70 | 1.88 | |



Notes

- Black oxide complete is available upon request for standard toolholders, page A-2.
- "B" dimension is the assembled length including standard tap collet.
- Quick-Change Tap Collets, page C-68.
- Retention Knobs, pages D-76 & D-77 .
- HSK Coolant hole plugs included, coolant tubes optional, page D-79.
- HSK Accessories & Setup Holding Fixtures, page D-79.

Quick Change Tap Collets

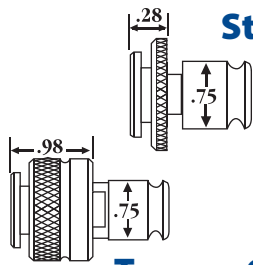


Quick Change Tap Collets:

- Bilz style quick change collet system allows tap and tap size to be changed without tools in seconds.
- For use with Command Tension & Compression Tap Holders (see page C-56) and Synchronous (Rigid) Tap Holders (see page C-57).

- Precision ground components provide smooth action.
- Metric tap collets manufactured to DIN 371 and 376.

Collet # 1



Standard

Torque Control

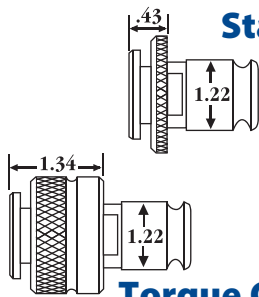
* Add -T at end of Part No. to specify Torque Control Collet.

| Part No. | Inches (In) | | |
|-----------|-------------|--------|-------------------|
| | Shank Dia. | Square | Tap Size |
| XTC1-0006 | 0.141 | 0.110 | No. 0-6 |
| XTC1-0008 | 0.168 | 0.131 | No. 8 |
| XTC1-0010 | 0.194 | 0.152 | No. 10 |
| XTC1-0012 | 0.220 | 0.165 | No. 12 |
| XTC1-0250 | 0.255 | 0.191 | 1/4 |
| XTC1-0312 | 0.318 | 0.238 | 5/16 |
| XTC1-0375 | 0.381 | 0.286 | 3/8 |
| XTC1-0437 | 0.323 | 0.242 | 7/16 |
| XTC1-0500 | 0.367 | 0.275 | 1/2 |
| XTC1-0562 | 0.429 | 0.322 | 9/16 |
| XTC1-P062 | 0.313 | 0.234 | 1/16 Pipe |
| XTC1-P125 | 0.437 | 0.328 | 1/8 Pipe |
| XTC1-12ST | | | Set of 12 Collets |

| Part No. | Metric (mm) | | |
|-----------|-------------|--------|------------|
| | Shank Dia. | Square | Tap Size |
| XTC1-M035 | 3.5 | 2.7 | M3 |
| XTC1-M045 | 4.5 | 3.4 | M4 |
| XTC1-M060 | 6.0 | 4.9 | M5, M6, M8 |
| XTC1-M080 | 8.0 | 6.2 | M8 |
| XTC1-M100 | 10.0 | 8.0 | M10 |
| XTC1-M070 | 7.0 | 5.5 | M10 |
| XTC1-M090 | 9.0 | 7.0 | M12 |
| XTC1-M110 | 11.0 | 9.0 | M14 |

* Add -T at end of Part No. to specify Torque Control Collet.

Collet # 2



Standard

Torque Control

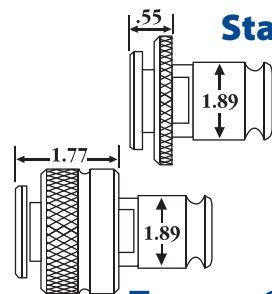
*Add -T at end of Part No. to specify Torque Control Collet.

| | | | |
|-----------|-------|-------|-------------------|
| XTC2-0312 | 0.318 | 0.238 | 5/16 |
| XTC2-0375 | 0.381 | 0.286 | 3/8 |
| XTC2-0437 | 0.323 | 0.242 | 7/16 |
| XTC2-0500 | 0.367 | 0.275 | 1/2 |
| XTC2-0562 | 0.429 | 0.322 | 9/16 |
| XTC2-0625 | 0.480 | 0.360 | 5/8 |
| XTC2-0687 | 0.542 | 0.406 | 11/16 |
| XTC2-0750 | 0.590 | 0.442 | 3/4 |
| XTC2-0812 | 0.652 | 0.489 | 13/16 |
| XTC2-0875 | 0.697 | 0.523 | 7/8 |
| XTC2-P250 | 0.562 | 0.421 | 1/4 Pipe |
| XTC2-P375 | 0.700 | 0.531 | 3/8 Pipe |
| XTC2-P500 | 0.687 | 0.515 | 1/2 Pipe |
| XTC2-13ST | | | Set of 13 Collets |

| | | | |
|-----------|------|------|--------|
| XTC2-M060 | 6.0 | 4.9 | M6, M8 |
| XTC2-M080 | 8.0 | 6.2 | M8 |
| XTC2-M100 | 10.0 | 8.0 | M10 |
| XTC2-M070 | 7.0 | 5.5 | M10 |
| XTC2-M090 | 9.0 | 7.0 | M12 |
| XTC2-M110 | 11.0 | 9.0 | M14 |
| XTC2-M120 | 12.0 | 9.0 | M16 |
| XTC2-M140 | 14.0 | 11.0 | M18 |
| XTC2-M160 | 16.0 | 12.0 | M20 |

* Add -T at end of Part No. to specify Torque Control Collet.

Collet # 3



Standard

Torque Control

*Add -T at end of Part No. to specify Torque Control Collet.

| | | | |
|-----------|-------|-------|------------------|
| XTC3-0812 | 0.652 | 0.489 | 13/16 |
| XTC3-0875 | 0.697 | 0.523 | 7/8 |
| XTC3-0937 | 0.760 | 0.570 | 15/16 |
| XTC3-1000 | 0.800 | 0.600 | 1 |
| XTC3-1125 | 0.896 | 0.672 | 1 1/8 |
| XTC3-1250 | 1.021 | 0.766 | 1 1/4 |
| XTC3-1375 | 1.108 | 0.831 | 1 3/8 |
| XTC3-P750 | 0.906 | 0.679 | 3/4 Pipe |
| XTC3-P100 | 1.125 | 0.843 | 1 Pipe |
| XTC3-09ST | | | Set of 9 Collets |

| | | | |
|-----------|------|------|----------|
| XTC3-M110 | 11.0 | 9.0 | M14 |
| XTC3-M120 | 12.0 | 9.0 | M16 |
| XTC3-M140 | 14.0 | 11.0 | M18 |
| XTC3-M160 | 16.0 | 12.0 | M20 |
| XTC3-M180 | 18.0 | 14.5 | M22, M24 |
| XTC3-M200 | 20.0 | 16.0 | M27 |
| XTC3-M220 | 22.0 | 18.0 | M30 |
| XTC3-M250 | 25.0 | 20.0 | M33 |

* Add -T at end of Part No. to specify Torque Control Collet.

QUICK CHANGE TAP COLLETS

Notes

- Check tap shank & square size before ordering Tap Collets.
- Torque-Control style tap collets not recommended for use with Synchronous (Rigid) Tap Holders.
- Metric Torque-Control Tap collets are non-stock, special order, contact Command Customer Service.

Boring Head Holders

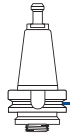
Command Toolholder Benefits:

- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Less tool wear and replacement — less scrap.
- Fully ground flange and V-groove — easy on the tool changers for less spindle and changer maintenance.
- All tapers and lengths ready to ship — get your tools fast!

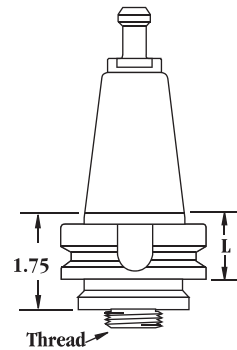


Note: Boring Head
Not Included

BT-Flange

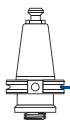


| Taper | Part No. | Standard | | Boring Heads |
|-------|------------------|----------|------|------------------------|
| | | Thread | L | |
| BT 30 | B2H4-1018 | 5/8-18 | .87 | Erickson #37 & #50 |
| BT 30 | B2H4-1420 | 7/8-20 | .87 | SPI, Yuasa & Criterion |
| BT 35 | B3H4-1018 | 5/8-18 | .87 | Erickson #37 & #50 |
| BT 35 | B3H4-1420 | 7/8-20 | .87 | SPI, Yuasa & Criterion |
| BT 40 | B4H4-1018 | 5/8-18 | 1.06 | Erickson #37 & #50 |
| BT 40 | B4H4-1420 | 7/8-20 | 1.06 | SPI, Yuasa & Criterion |
| BT 40 | B4H4-2418 | 11/2-18 | 1.06 | SPI, Yuasa & Criterion |
| BT 45 | B5H4-1018 | 5/8-18 | 1.31 | Erickson #37 & #50 |
| BT 45 | B5H4-1420 | 7/8-20 | 1.31 | SPI, Yuasa & Criterion |
| BT 45 | B5H4-2418 | 11/2-18 | 1.31 | SPI, Yuasa & Criterion |
| BT 50 | B6H4-1018 | 5/8-18 | 1.50 | Erickson #37 & #50 |
| BT 50 | B6H4-1420 | 7/8-20 | 1.50 | SPI, Yuasa & Criterion |
| BT 50 | B6H4-2418 | 11/2-18 | 1.50 | SPI, Yuasa & Criterion |

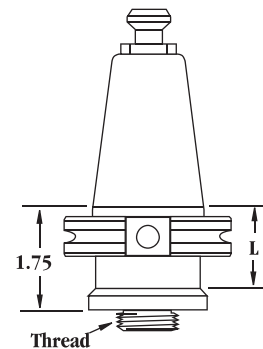


SPECIALTY TOOLHOLDERS

V-Flange



| Taper | Part No. | Standard | | Boring Heads |
|-------|------------------|----------|------|------------------------|
| | | Thread | L | |
| V 40 | C4H4-1018 | 5/8-18 | 1.38 | Erickson #37 & #50 |
| V 40 | C4H4-1420 | 7/8-20 | 1.38 | SPI, Yuasa & Criterion |
| V 40 | C4H4-2418 | 11/2-18 | 1.38 | SPI, Yuasa & Criterion |
| V 45 | C5H4-1018 | 5/8-18 | 1.38 | Erickson #37 & #50 |
| V 45 | C5H4-1420 | 7/8-20 | 1.38 | SPI, Yuasa & Criterion |
| V 45 | C5H4-2418 | 11/2-18 | 1.38 | SPI, Yuasa & Criterion |
| V 50 | C6H4-1018 | 5/8-18 | 1.38 | Erickson #37 & #50 |
| V 50 | C6H4-1420 | 7/8-20 | 1.38 | SPI, Yuasa & Criterion |
| V 50 | C6H4-2418 | 11/2-18 | 1.38 | SPI, Yuasa & Criterion |



Notes

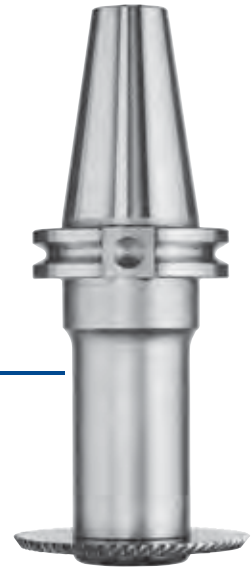
- Black oxide complete is available upon request for standard toolholders, page A-2.
- Retention Knobs & Setup Holding Fixtures, pages D-76 & D-77, D-78.

Semi-Flush Slitting Saw Holders & Accessories

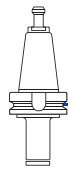
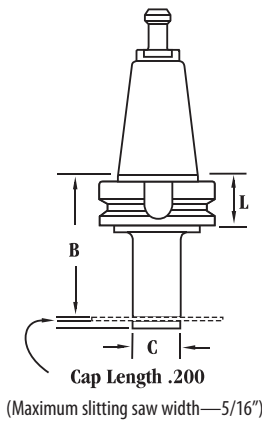


Semi-Flush Slitting Saw Holders:

- Semi flush nose cap gets in tight areas.
- Change saw width without spacers.
- Face is held perpendicular to centerline within .0002".
- Pilot diameter is sized for precision fit with cutter and is keyed for positive drive.
- Designed for slitting saws up to 5/16" thick —wider cutters use Stub Arbor Holder.

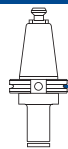
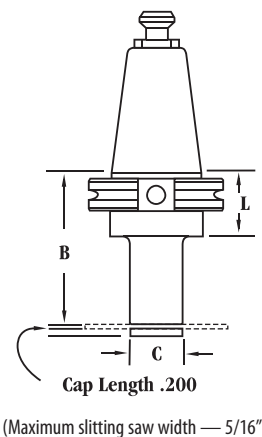


BT-Flange



| Taper | Part No. | Saw Size ID | B | C | L |
|-------|------------------|-------------|------|------|------|
| BT 40 | B4G4-1000 | 1.00 | 4.00 | 1.50 | 1.06 |
| BT 40 | B4G4-1250 | 1.25 | 4.00 | 2.00 | 1.06 |

V-Flange



| Taper | Part No. | Saw Size ID | B | C | L |
|-------|------------------|-------------|------|------|------|
| V 40 | C4G4-1000 | 1.00 | 4.00 | 1.50 | 1.38 |
| V 40 | C4G4-1250 | 1.25 | 4.00 | 2.00 | 1.44 |
| V 45 | C5G4-1000 | 1.00 | 4.00 | 1.50 | 1.38 |
| V 45 | C5G4-1250 | 1.25 | 4.00 | 2.00 | 1.38 |
| V 50 | C6G4-1000 | 1.00 | 4.00 | 1.50 | 1.38 |
| V 50 | C6G5-1000 | 1.00 | 6.00 | 1.50 | 1.38 |
| V 50 | C6G4-1250 | 1.25 | 4.00 | 2.00 | 1.38 |
| V 50 | C6G5-1250 | 1.25 | 6.00 | 2.00 | 1.38 |

Replacement Parts

| Part No. | Description | Part No. | Description |
|------------------|------------------|------------------|----------------------|
| XSFC-1000 | Cap For 1" | XSFC-1250 | Cap For 1 1/4" |
| XSSK-1000 | Drive Key For 1" | XSSK-1250 | Drive Key For 1 1/4" |

Notes

~ Black oxide complete is available upon request for standard toolholders, page A-2.

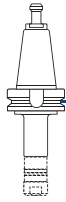
~ Retention Knobs & Setup Holding Fixtures, pages D-76 & D-77, D-78.

Stub Arbor Holders

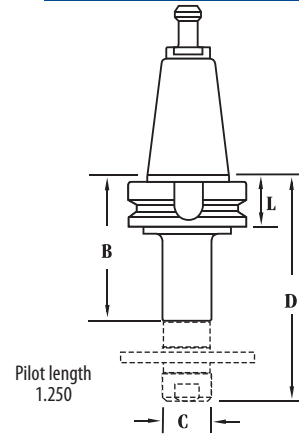
- Pilot thread is ground concentric to the tapered shank.
- Face is perpendicular to centerline within .0002".
- Pilot Diameter is sized for precision fit with cutter and is keyed for positive drive.
- Heavy duty locking nut and three arbor spacers are included - 1/4", 3/8", 3/4".



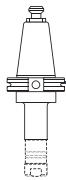
BT-Flange



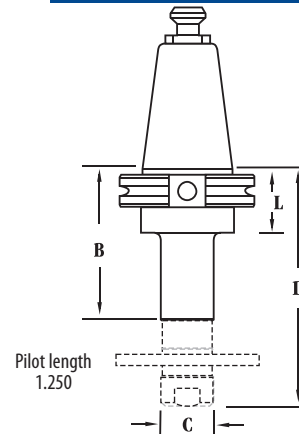
| Taper | Part No. | Cutter Size ID | B | C | D | L |
|-------|------------------|----------------|------|------|------|------|
| BT 40 | B4F4-1000 | 1.00 | 4.00 | 1.56 | 6.25 | 1.06 |
| BT 40 | B4F4-1250 | 1.25 | 4.00 | 1.87 | 6.50 | 1.06 |
| BT 45 | B5F4-1000 | 1.00 | 4.00 | 1.56 | 6.25 | 1.31 |
| BT 45 | B5F4-1250 | 1.25 | 4.00 | 1.87 | 6.50 | 1.31 |
| BT 50 | B6F4-1000 | 1.00 | 4.00 | 1.56 | 6.25 | 1.50 |
| BT 50 | B6F5-1000 | 1.00 | 6.00 | 1.56 | 8.25 | 1.50 |
| BT 50 | B6F4-1250 | 1.25 | 4.00 | 1.87 | 6.50 | 1.50 |
| BT 50 | B6F5-1250 | 1.25 | 6.00 | 1.87 | 8.50 | 1.50 |



V-Flange



| Taper | Part No. | Cutter Size ID | B | C | D | L |
|-------|------------------|----------------|------|------|------|------|
| V 40 | C4F4-1000 | 1.00 | 4.00 | 1.56 | 6.25 | 1.38 |
| V 40 | C4F4-1250 | 1.25 | 4.00 | 1.87 | 6.50 | 1.44 |
| V 45 | C5F4-1000 | 1.00 | 4.00 | 1.56 | 6.25 | 1.38 |
| V 45 | C5F4-1250 | 1.25 | 4.00 | 1.87 | 6.50 | 1.38 |
| V 50 | C6F4-1000 | 1.00 | 4.00 | 1.56 | 6.25 | 1.38 |
| V 50 | C6F5-1000 | 1.00 | 6.00 | 1.56 | 8.25 | 1.38 |
| V 50 | C6F4-1250 | 1.25 | 4.00 | 1.87 | 6.50 | 1.38 |
| V 50 | C6F5-1250 | 1.25 | 6.00 | 1.87 | 8.50 | 1.38 |



Replacement Parts

| Part No. | Description | Part No. | Description |
|------------------|---------------------------------|------------------|--------------------------------------|
| XSAN-1000 | Nut For 1" | XSAN-1250 | Nut For 1 1/4" |
| XKEY-1000 | Key For 1" with 1/4" Square Key | XKEY-1250 | Key For 1 1/4" with 5/16" Square Key |
| X100-0250 | 1/4" Spacer For 1" | X125-0250 | 1/4" Spacer For 1 1/4" |
| X100-0375 | 3/8" Spacer For 1" | X125-0375 | 3/8" Spacer For 1 1/4" |
| X100-0750 | 3/4" Spacer For 1" | X125-0750 | 3/4" Spacer For 1 1/4" |

Notes

- Black oxide complete is available upon request for standard toolholders, page A-2.

- Retention Knobs & Setup Holding Fixtures, pages D-76 & D-77, D-78.

Morse Taper Holders



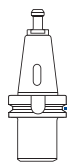
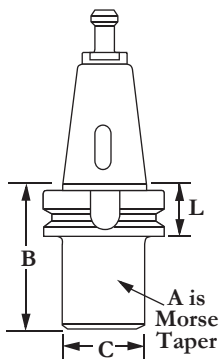
Morse Taper Holders Features:

- Precision ground Morse taper.
- Morse taper pocket held to .0002" accuracy for the best locking fit of the Morse shank.
- Not for high speed use.
- Must be cleaned before use and degreased for proper assembly.

Command Morse Taper Holder Benefits:

- AT3 or better shank taper — accurate, rigid toolholder-to-spindle mount.
- Less tool wear and replacement — less scrap.
- Fully ground flange and V-groove — easy on the tool changers for less spindle and changer maintenance.
- All tapers and lengths ready to ship — get your tools fast!

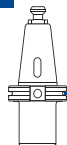
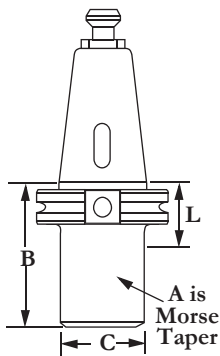
BT-Flange



| | | Standard | | | | |
|-------|------------------|----------|------|------|------|--|
| Taper | Part No. | A | B | C | L | |
| BT 30 | B2M4-0002 | #2 | 2.50 | 1.26 | .87 | |
| BT 35 | B3M4-0002 | #2 | 2.36 | 1.26 | .87 | |
| BT 35 | B3M4-0003 | #3 | 2.95 | 1.58 | .87 | |
| BT 35 | B3M4-0004 | #4 | 3.85 | 1.97 | .87 | |
| BT 40 | B4M4-0002 | #2 | 2.36 | 1.26 | 1.06 | |
| BT 40 | B4M4-0003 | #3 | 2.95 | 1.58 | 1.06 | |
| BT 40 | B4M4-0004 | #4 | 3.74 | 1.97 | 1.06 | |

| | | Standard (continued) | | | | |
|-------|------------------|----------------------|------|------|------|--|
| Taper | Part No. | A | B | C | L | |
| BT 45 | B5M4-0002 | #2 | 1.77 | 1.26 | 1.31 | |
| BT 45 | B5M4-0003 | #3 | 2.36 | 1.58 | 1.31 | |
| BT 45 | B5M4-0004 | #4 | 3.35 | 1.97 | 1.31 | |
| BT 45 | B5M4-0005 | #5 | 4.72 | 2.56 | 1.31 | |
| BT 50 | B6M4-0002 | #2 | 2.36 | 1.26 | 1.50 | |
| BT 50 | B6M4-0003 | #3 | 2.95 | 1.58 | 1.50 | |
| BT 50 | B6M4-0004 | #4 | 3.74 | 1.97 | 1.50 | |
| BT 50 | B6M4-0005 | #5 | 4.13 | 2.56 | 1.50 | |

V-Flange



| | | Standard | | | | |
|-------|------------------|----------|------|------|------|--|
| Taper | Part No. | A | B | C | L | |
| V 40 | C4M4-0002 | #2 | 2.00 | 1.75 | N/A | |
| V 40 | C4M4-0003 | #3 | 2.75 | 1.75 | N/A | |
| V 40 | C4M4-0004 | #4 | 3.63 | 1.75 | N/A | |
| V 45 | C5M4-0002 | #2 | 1.81 | 2.25 | N/A | |
| V 45 | C5M4-0003 | #3 | 2.44 | 2.25 | N/A | |
| V 45 | C5M4-0004 | #4 | 3.31 | 2.25 | N/A | |
| V 45 | C5M4-0005 | #5 | 4.63 | 2.63 | 1.38 | |
| V 50 | C6M4-0002 | #2 | 1.38 | 2.75 | 1.38 | |
| V 50 | C6M4-0003 | #3 | 1.88 | 2.75 | 1.38 | |
| V 50 | C6M4-0004 | #4 | 2.75 | 2.75 | 1.38 | |
| V 50 | C6M4-0005 | #5 | 4.06 | 2.75 | 1.38 | |

Notes

- Black oxide complete is available upon request for standard toolholders, page A-2.
- Retention Knobs & Setup Holding Fixtures, pages D-76 & D-77, D-78.

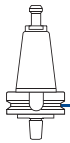
SPECIALTY TOOLHOLDERS

Jacobs Taper Holders:

- Precision ground Jacobs pilot.
- Jacobs taper held to better than .0002" accuracy for best mating with the drill chuck.

- Not for high speed use.
- For proper assembly, clean before use. Clean and degrease both ID and OD of Jacobs holder.

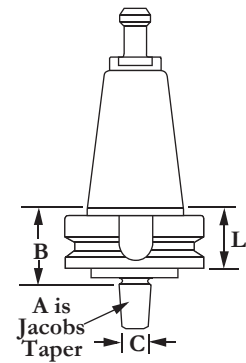
BT-Flange



| Standard | | | | | |
|----------|------------------|-----|------|-------|------|
| Taper | Part No. | A | B | C | L |
| BT 30 | B2J4-0001 | # 1 | 1.18 | .384 | .87 |
| BT 30 | B2J4-0033 | #33 | 1.77 | .624 | .87 |
| BT 35 | B3J4-0001 | # 1 | 1.18 | .384 | .87 |
| BT 35 | B3J4-0002 | # 2 | 1.77 | .559 | .87 |
| BT 35 | B3J4-0003 | # 3 | 1.77 | .811 | .87 |
| BT 35 | B3J4-0033 | #33 | 1.77 | .624 | .87 |
| BT 40 | B4J4-0001 | # 1 | 1.34 | .384 | 1.06 |
| BT 40 | B4J4-0002 | # 2 | 1.77 | .559 | 1.06 |
| BT 40 | B4J4-0003 | # 3 | 1.77 | .811 | 1.06 |
| BT 40 | B4J4-0004 | # 4 | 1.77 | 1.124 | 1.06 |
| BT 40 | B4J4-0033 | #33 | 1.77 | .624 | 1.06 |

continued in next column

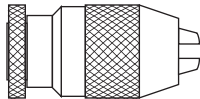
| Standard (continued) | | | | | |
|----------------------|------------------|-----|------|-------|------|
| Taper | Part No. | A | B | C | L |
| BT 45 | B5J4-0001 | # 1 | 1.77 | .384 | 1.31 |
| BT 45 | B5J4-0002 | # 2 | 1.77 | .559 | 1.31 |
| BT 45 | B5J4-0003 | # 3 | 1.77 | .811 | 1.31 |
| BT 45 | B5J4-0004 | # 4 | 1.77 | 1.124 | 1.31 |
| BT 45 | B5J4-0006 | # 6 | 1.77 | .676 | 1.31 |
| BT 45 | B5J4-0033 | #33 | 1.77 | .624 | 1.31 |
| BT 50 | B6J4-0001 | # 1 | 1.81 | .384 | 1.50 |
| BT 50 | B6J4-0002 | # 2 | 1.77 | .559 | 1.50 |
| BT 50 | B6J4-0003 | # 3 | 1.77 | .811 | 1.50 |
| BT 50 | B6J4-0004 | # 4 | 1.77 | 1.124 | 1.50 |
| BT 50 | B6J4-0006 | # 6 | 1.77 | .676 | 1.50 |
| BT 50 | B6J4-0033 | #33 | 1.77 | .624 | 1.50 |



SPECIALTY TOOL HOLDERS

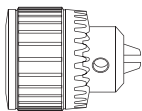
ACCESSORIES

Keyless Chuck



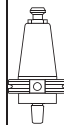
| Part No. | Model | Capacity | Taper |
|------------------|--------|----------|-------|
| X650-J100 | 65J1 | 0-1/4 | #1 |
| X800-J200 | 80J2 | 0-5/16 | #2 |
| X100-J330 | 100J33 | 0-3/8 | #33 |
| X130-J200 | 130J2 | 1/32-1/2 | #2 |

Ball Bearing Key Type Super Chuck



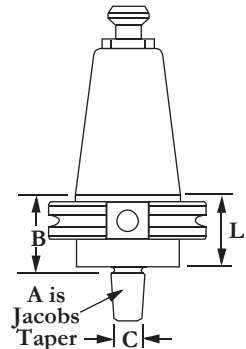
Replacement Key

| Part No. | Model | Capacity | Taper | Part No. |
|------------------|-------|----------|-------|------------------|
| X11N-J200 | 11N | 0-3/8 | #2 | XK32-J000 |
| X14N-J300 | 14N | 0-1/2 | #3 | XK30-J000 |
| X16N-J300 | 16N | 1/8-5/8 | #3 | XK40-J000 |
| X18N-J400 | 18N | 1/8-3/4 | #4 | XK40-J000 |



| Standard | | | | | |
|----------|------------------|-----|------|-------|------|
| Taper | Part No. | A | B | C | L |
| V 40 | C4J4-0001 | # 1 | 1.50 | .384 | 1.38 |
| V 40 | C4J4-0002 | # 2 | 1.50 | .559 | 1.38 |
| V 40 | C4J4-0003 | # 3 | 1.50 | .811 | 1.38 |
| V 40 | C4J4-0004 | # 4 | 1.50 | 1.124 | 1.38 |
| V 40 | C4J4-0006 | # 6 | 1.50 | .676 | 1.38 |
| V 40 | C4J4-0033 | #33 | 1.50 | .624 | 1.38 |
| V 45 | C5J4-0001 | # 1 | 1.50 | .384 | 1.38 |
| V 45 | C5J4-0002 | # 2 | 1.50 | .559 | 1.38 |
| V 45 | C5J4-0003 | # 3 | 1.50 | .811 | 1.38 |
| V 45 | C5J4-0004 | # 4 | 1.50 | 1.124 | 1.38 |
| V 45 | C5J4-0006 | # 6 | 1.50 | .676 | 1.38 |
| V 45 | C5J4-0033 | #33 | 1.50 | .624 | 1.38 |
| V 50 | C6J4-0001 | # 1 | 1.50 | .384 | 1.38 |
| V 50 | C6J4-0002 | # 2 | 1.50 | .559 | 1.38 |
| V 50 | C6J4-0003 | # 3 | 1.50 | .811 | 1.38 |
| V 50 | C6J4-0004 | # 4 | 1.50 | 1.124 | 1.38 |
| V 50 | C6J4-0006 | # 6 | 1.50 | .676 | 1.38 |
| V 50 | C6J4-0033 | #33 | 1.50 | .624 | 1.38 |

V-Flange



Notes

- Black oxide complete is available upon request for standard toolholders, page A-2.
- Retention Knobs & Setup Holding Fixtures, pages D-76 & D-77, D-78.

Integral Shank Keyless Chuck & Replacement Parts

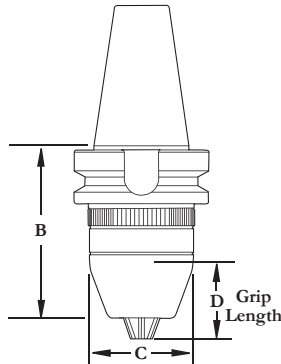


Tight Grip Throughout Wide Clamping Range with Guaranteed Concentricity

Features & Benefits:

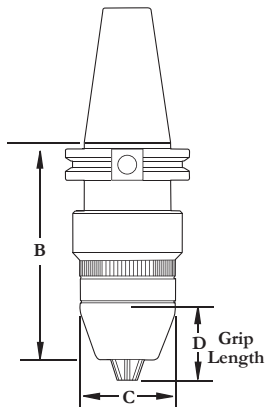
- Accurate — Maximum .0006" TIR at 1.5" from the end of the holder.
- Tight grip ensured with worm drive lateral clamping — even when spindles stop or change rotation.
- Performs at higher speeds (up to 10,000 RPM) than conventional taper/drill chucks.
- Designed for free directional rotation — no loss of gripping force with change in direction of spindle rotation.
- Higher metal removal capacity than conventional taper/drill chucks.
- Cost effective performance, reliable, maintenance-free, replaceable parts.
- Fast tool change for milling, drilling, reaming, or countersinking.
- Longer tool life for end mills, drills, thread mills, reamers.
- Short, compact design.
- Dimensions given in inches (mm).
- AT3 or better shank taper.
- Coolant through capability.

BT-Flange



| Taper | Part No. | Clamping Range | B | C | D Grip Length | Holding Torque- Ft.-Lbs |
|-------|------------------|------------------------|----------------|-------|---------------|-------------------------|
| BT 40 | B4J4-X130 | .020 - .512 (.5-13 mm) | 4.331 (110 mm) | 1.949 | 1.142 | 51 |

V-Flange



| Taper | Part No. | Clamping Range (mm) | B (mm) | C | D Grip Length | Holding Torque- Ft.-Lbs |
|-------|------------------|---------------------|-------------|-------|---------------|-------------------------|
| V 40 | C4J4-X100 | .020 - .394 (.5-10) | 4.331 (110) | 1.732 | 1.142 | 33 |
| V 40 | C4J4-X160 | .118 - .630 (3-16) | 4.331 (110) | 2.047 | 1.142 | 59 |
| V 50 | C6J4-X130 | .020 - .512 (.5-13) | 4.331 (110) | 1.949 | 1.142 | 51 |
| V 50 | C6J4-X160 | .118 - .630 (3-16) | 4.331 (110) | 2.042 | 1.142 | 59 |

Replacement Parts

| Part No. | Description | Part No. | Description | Part No. | Description |
|------------------|------------------------------|------------------|------------------|------------------|-----------------|
| XJCW-04MM | Hex wrench replacement (4mm) | XJSK-0001 | Coolant seal key | XJSS-0003 | Seal sleeve set |

Notes

- Integral Shank Keyless Drill Chucks available only with shiny shank; no black oxide.
- Tool Installation Wrench (4 mm) included.
- Compatible with solid carbide or high speed steel round shank tools (no flats).
- Retention Knobs & Setup Holding Fixtures, pages D-76 & D-77, D-78.

Command's Tooling Accessories

True Zero



The True Zero Collet offers:

- 6 point fine tune adjustment.
- Eliminates the need for floating toolholders when reaming.
- Increased tool life.
- Improves surface finishes.
- Adjustments can be made on the spindle or the turret.
- Spindle concentricity errors can be compensated.

| True Zero Part No. | True Zero Corresponding Wrench Part No. |
|--------------------|---|
| XGZN-0016 | 30mm Hex |
| XGZN-0020 | XCCW-D025 |
| XGZN-0025 | XCCW-D032 |
| XGZN-0032 | XCCW-0040 |
| XGZN-0040 | XCCW-0050 |



True Zero Setup Instructions



- Use collets with a standard capacity, no high precision collets.
- Use collets that are the closest fit to the shank of your tool, example: 8mm diameter shank you should use a 7-8mm collet.
- Back off the adjusting screws so they do not contact the adjusting surface.
- Torque the True-Zero nut to the appropriate specifications for the collet chuck, Do Not Over Tighten.
- Adjust the concentricity by using the 6 screws on the outside diameter of the collet nut.
- Take care that each screw is in contact with the clamped tool.
- Now you're ready to work.

Please find a live adjustment example in the category "video" on <http://www.ews-tools.de>

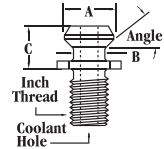
Retention Knobs



- Command retention knobs for CNC machining centers are made to industry standards.
- Top quality Command retention knobs are available for all popular domestic and imported machining centers.
- Knobs are finest quality steel specifically treated to give an excellent wear surface over a tough and shock resistant core.
- Many machines use their own special knobs. If you don't see what you need-just give us a call. We stock knobs for hundreds of machining centers.
- **Note:** Retention knobs are manufactured to the specifications of the machine tool builder and deviations from this could cause serious problems. If you are in doubt about a particular application, send us a print of the knob so that we may find the correct part. Please specify machine make and the toolholder shank style being used when ordering.

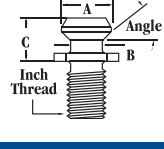
| Recommended Installation Torque | |
|---------------------------------|-----------------|
| Taper | Torque (Ft-lbs) |
| 30 | 8 |
| 35 | 12 |
| 40 | 30 |
| 45 | 50 |
| 50 | 75 |
| 60 | 120 |

V-Flange



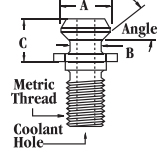
| | | U.S. ANSI | | | | Thread Size | Retention Knob Wrench |
|-----------------------------------|-----------|-----------|------|------|-------|-------------|-----------------------|
| Taper & Flange | Part No. | A | B | C | Angle | | |
| With through-spindle coolant hole | | | | | | | |
| V 30 | RC2E-0001 | 0.52 | 0.39 | 0.46 | 45 | 1/2-13 | ** |
| V 40 | RC4E-0001 | 0.74 | 0.49 | 0.64 | 45 | 5/8-11 | XRKW-0750 |
| V 45 | RC5E-0001 | 0.94 | 0.61 | 0.82 | 45 | 3/4-10 | XRKW-1000 |
| V 50 | RC6E-0001 | 1.14 | 0.83 | 1.00 | 45 | 1-8 | XRKW-1187 |

V-Flange



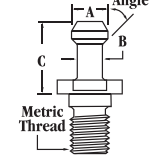
| Taper & Flange | Part No. | A | B | C | Angle | Thread Size | Retention Knob Wrench |
|--------------------------------------|-----------|------|------|------|-------|-------------|-----------------------|
| Without through-spindle coolant hole | | | | | | | |
| V 40 | RC4E-0002 | 0.74 | 0.49 | 0.64 | 45 | 5/8-11 | XRKW-0750 |
| V 45 | RC5E-0002 | 0.94 | 0.61 | 0.82 | 45 | 3/4-10 | XRKW-1000 |
| V 50 | RC6E-0002 | 1.14 | 0.83 | 1.00 | 45 | 1-8 | XRKW-1187 |

BT-Flange



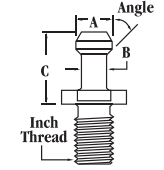
| Taper & Flange | Part No. | A | B | C | Angle | Thread Size | Retention Knob Wrench |
|---|-----------|------|------|------|-------|-------------|-----------------------|
| With through-spindle coolant hole and metric thread | | | | | | | |
| BT 40 | RS4M-0105 | 0.74 | 0.49 | 0.64 | 45 | M16-2 | XRKW-0750 |
| BT 40 | RS4M-0115 | 0.74 | 0.49 | 0.75 | 45 | M16-2 | XRKW-0750 |
| BT 45 | RS5M-0106 | 0.94 | 0.61 | 0.82 | 45 | M20-2.5 | XRKW-1000 |
| BT 50 | RS6M-0105 | 1.14 | 0.83 | 1.00 | 45 | M24-3.0 | XRKW-1187 |

BT-Flange



| | | Mas Style | | | | Thread Size | Retention Knob Wrench |
|----------------|-------------|-----------|------|------|-------|-------------|-----------------------|
| Taper & Flange | Part No. | A | B | C | Angle | | |
| BT 30 | RB2M-0001 | 0.43 | 0.27 | 0.90 | 45 | M12-1.75 | *** |
| BT 30 | RB2M-0001-C | 0.43 | 0.27 | 0.90 | 45 | M12-1.75 | *** |
| BT 30 | RB2M-0002 | 0.43 | 0.27 | 0.90 | 60 | M12-1.75 | *** |
| BT 35 | RB3M-0001 | 0.51 | 0.33 | 1.10 | 45 | M12-1.75 | *** |
| BT 35 | RB3M-0002 | 0.51 | 0.33 | 1.10 | 60 | M12-1.75 | *** |
| BT 40 | RB4M-0001 | 0.59 | 0.39 | 1.38 | 45 | M16-2.0 | XRKW-0750 |
| BT 40 | RB4M-0001-C | 0.59 | 0.39 | 1.38 | 45 | M16-2.0 | XRKW-0750 |
| BT 40 | RB4M-0002 | 0.59 | 0.39 | 1.38 | 60 | M16-2.0 | XRKW-0750 |
| BT 40 | RB4M-0002-C | 0.59 | 0.39 | 1.38 | 60 | M16-2.0 | XRKW-0750 |
| BT 40 | RB4M-0003 | 0.59 | 0.39 | 1.38 | 90 | M16-2.0 | XRKW-0750 |
| BT 45 | RB5M-0001 | 0.75 | 0.55 | 1.57 | 45 | M20-2.5 | XRKW-1000 |
| BT 45 | RB5M-0002 | 0.75 | 0.55 | 1.57 | 60 | M20-2.5 | XRKW-1000 |
| BT 45 | RB5M-0003 | 0.75 | 0.55 | 1.57 | 90 | M20-2.5 | XRKW-1000 |
| BT 50 | RB6M-0001 | 0.91 | 0.67 | 1.77 | 45 | M24-3.0 | XRKW-1187 |
| BT 50 | RB6M-0001-C | 0.91 | 0.67 | 1.77 | 45 | M24-3.0 | XRKW-1187 |
| BT 50 | RB6M-0002 | 0.91 | 0.67 | 1.77 | 60 | M24-3.0 | XRKW-1187 |
| BT 50 | RB6M-0003 | 0.91 | 0.67 | 1.77 | 90 | M24-3.0 | XRKW-1187 |
| BT 50 | RB6M-0003-C | 0.91 | 0.67 | 1.77 | 90 | M24-3.0 | XRKW-1187 |

V-Flange



| | | | | | | | | |
|------|-------------|------|------|------|----|--------|-----------|-------------|
| V 40 | RB4E-0001 | 0.59 | 0.39 | 1.27 | 45 | 5/8-11 | XRKW-0750 | .124 Flange |
| V 40 | RB4E-0001-C | 0.59 | 0.39 | 1.27 | 45 | 5/8-11 | XRKW-0750 | .124 Flange |
| V 40 | RS4E-0221 | 0.59 | 0.39 | 1.27 | 45 | 5/8-11 | XRKW-0750 | .234 Flange |
| V 40 | RS4E-0221-C | 0.59 | 0.39 | 1.27 | 45 | 5/8-11 | XRKW-0750 | .234 Flange |
| V 40 | RB4E-0002 | 0.59 | 0.39 | 1.27 | 60 | 5/8-11 | XRKW-0750 | |
| V 40 | RB4E-0002-C | 0.59 | 0.39 | 1.27 | 60 | 5/8-11 | XRKW-0750 | |
| V 40 | RB4E-0003 | 0.59 | 0.39 | 1.27 | 90 | 5/8-11 | XRKW-0750 | |
| V 40 | RB4E-0003-C | 0.59 | 0.39 | 1.27 | 90 | 5/8-11 | XRKW-0750 | |
| V 45 | RB5E-0001 | 0.75 | 0.55 | 1.58 | 45 | 3/4-10 | XRKW-1000 | |
| V 45 | RB5E-0003 | 0.75 | 0.55 | 1.58 | 90 | 3/4-10 | XRKW-1000 | |
| V 50 | RB6E-0001 | 0.91 | 0.67 | 1.78 | 45 | 1-8 | XRKW-1187 | |
| V 50 | RB6E-0001-C | 0.91 | 0.67 | 1.78 | 45 | 1-8 | XRKW-1187 | |
| V 50 | RB6E-0002 | 0.91 | 0.67 | 1.78 | 60 | 1-8 | XRKW-1187 | |
| V 50 | RB6E-0002-C | 0.91 | 0.67 | 1.78 | 60 | 1-8 | XRKW-1187 | |
| V 50 | RB6E-0003 | 0.91 | 0.67 | 1.78 | 90 | 1-8 | XRKW-1187 | |
| V 50 | RB6E-0003-C | 0.91 | 0.67 | 1.78 | 90 | 1-8 | XRKW-1187 | |

TOOLING ACCESSORIES

Notes

- At end of part no. "C" designates coolant hole; "H" designates O-Ring included.
- Retention knob wrench, page D-78. Retention knob wrench & torque wrench details, page D-78.
- Avoid cost of damaged holders and spindles from incorrectly torqued retention knobs.
- Special retention knob, page D-77.

Retention Knobs

| V-Flange | Taper & Flange | Part No. | A | B | C | Thread Angle | Retention Knob Size | Wrench |
|----------|----------------|-------------|------|------|------|--------------|---------------------|-----------|
| | V 30 | RS2E-0114-C | 0.51 | 0.35 | 0.95 | 75 | 1/2-13 | *** |
| | V 40 | RS4E-0114 | 0.75 | 0.55 | 1.02 | 75 | 5/8-11 | XRKW-0750 |
| | V 40 | RS4E-0114-C | 0.75 | 0.55 | 1.02 | 75 | 5/8-11 | XRKW-0750 |
| | V 50 | RS6E-0114 | 1.10 | 0.83 | 1.34 | 75 | 1-8 | XRKW-1187 |
| | V 50 | RS6E-0114-C | 1.10 | 0.83 | 1.34 | 75 | 1-8 | XRKW-1187 |

| DIN-Flange | Taper & Flange | Part No. | A | B | C | Thread Angle | Retention Knob Size | Wrench |
|------------|----------------|-------------|------|------|------|--------------|---------------------|-----------|
| | din 30 | RS2M-0114 | 0.51 | 0.35 | 0.94 | 75 | M12-1.75 | *** |
| | din 40 | RS4M-0114 | 0.75 | 0.55 | 1.02 | 75 | M16-2.0 | XRKW-0750 |
| | din 40 | RS4M-0114-C | 0.75 | 0.55 | 1.02 | 75 | M16-2.0 | XRKW-0750 |
| | din 50 | RS6M-0114 | 1.10 | 0.83 | 1.34 | 75 | M24-3.0 | XRKW-1187 |
| | din 50 | RS6M-0114-C | 1.10 | 0.83 | 1.34 | 75 | M24-3.0 | XRKW-1187 |

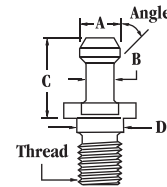
Other Retention Knobs for Domestic and Imported Machines

| BT-Flange | Taper & Flange | Part No. | A | B | C | Angle | Thread Size | Retention Knob Wrench |
|-----------|----------------|-------------|------|------|------|--------|-------------|-----------------------|
| | BT 30 | RB2M-0100 | 0.47 | 0.31 | 0.94 | .16 R* | M12-1.75 | *** |
| | BT 30 | RS2M-0207-C | 0.47 | 0.31 | 0.92 | 75 | M12-1.75 | *** |
| | BT 35 | RB3M-0100 | 0.54 | 0.35 | 1.10 | 60 | M12-1.75 | *** |
| | BT 35 | RB3M-0101 | 0.55 | 0.31 | 0.91 | 90 | M12-1.75 | *** |
| | BT 40 | RS4M-0205 | 0.75 | 0.55 | 1.14 | 75 | M16-2.0 | XRKW-1250 |
| | BT 40 | RS4M-0205-C | 0.75 | 0.55 | 1.14 | 75 | M16-2.0 | XRKW-0750 |
| | BT 40 | RS4M-0206 | 0.59 | 0.39 | 1.09 | 90 | M16-2.0 | XRKW-0750 |
| | BT 40 | RS4M-0210 | 0.59 | 0.39 | 0.98 | 90 | M16-2.0 | XRKW-0750 |
| | BT 40 | RS4M-0217-H | 0.75 | 0.55 | 1.14 | 75 | M16-2.0 | XRKW-0750 |
| | BT 45 | RS5M-0108-C | 0.91 | 0.67 | 1.18 | 75 | M20-2.5 | XRKW-1000 |

| V-Flange | Taper & Flange | Part No. | A | B | C | Angle | Thread Size | Retention Knob Wrench |
|----------|----------------|-------------|------|------|------|--------|-------------|-----------------------|
| | V 30 | RS2E-0206 | 0.50 | 0.40 | 0.76 | 45 | 1/2-13 | *** |
| | V 30 | RS2E-0207 | 0.50 | 0.31 | 0.75 | 75 | 1/2-13 | *** |
| | V 40 | RB4E-0100 | 0.59 | 0.39 | 1.05 | 90 | 5/8-11 | XRKW-0750 |
| | V 40 | RB4E-0101 | 0.59 | 0.39 | 0.98 | 90 | 5/8-11 | XRKW-0750 |
| | V 40 | RS4E-0104 | 0.59 | 0.41 | 1.44 | 45 | 5/8-11 | XRKW-0750 |
| | V 40 | RS4E-0104-C | 0.59 | 0.41 | 1.44 | 45 | 5/8-11 | XRKW-0750 |
| | V 40 | RS4E-0106 | 0.59 | 0.39 | 1.38 | 45 | 5/8-11 | XRKW-0750 |
| | V 40 | RS4E-0109 | 0.52 | 0.39 | 0.47 | 50 | 5/8-11 | XRKW-0750 |
| | V 40 | RS4E-0110 | 0.98 | 0.83 | 0.99 | 75 | 5/8-11 | *** |
| | V 40 | RS4E-0111 | 0.50 | 0.31 | 0.75 | 75 | 5/8-11 | *** |
| | V 40 | RS4E-0114-H | 0.75 | 0.55 | 1.02 | 75 | 5/8-11 | XRKW-0750 |
| | V 40 | RS4E-0201 | 0.50 | 0.31 | 0.87 | 75 | 5/8-11 | *** |
| | V 40 | RS4E-0203 | 0.50 | 0.31 | 2.38 | 90 | 5/8-11 | *** |
| | V 40 | RS4E-0207 | 0.74 | 0.48 | 0.87 | 75 | 5/8-11 | XRKW-0750 |
| | V 40 | RS4E-0208-C | 0.74 | 0.49 | 0.64 | 45 | 5/8-11 | XRKW-0750 |
| | V 40 | RS4E-0209-C | 0.74 | 0.55 | 1.03 | 75 | 5/8-11 | XRKW-0750 |
| | V 40 | RS4E-0211-C | 0.74 | 0.49 | 0.64 | 45 | 5/8-11 | XRKW-0750 |
| | V 40 | RS4E-0212 | 0.75 | 0.55 | 1.02 | 75 | 5/8-11 | XRKW-0750 |
| | V 40 | RS4E-0212-C | 0.75 | 0.55 | 1.02 | 75 | 5/8-11 | XRKW-0750 |
| | V 40 | RS4E-0212-H | 0.75 | 0.55 | 1.02 | 75 | 5/8-11 | XRKW-0750 |
| | V 40 | RS4E-0215-C | 0.75 | 0.55 | 1.14 | 75 | 5/8-11 | XRKW-0750 |
| | V 40 | RS4E-0220-H | 0.59 | 0.39 | 1.26 | 45 | 5/8-11 | XRKW-0750 |
| | V 40 | RS4E-0228-H | 0.74 | 0.49 | 0.64 | 45 | 5/8-11 | XRKW-0750 |
| | V 40 | RS4E-0254-C | 0.75 | 0.55 | 1.03 | 75 | 5/8-11 | XRKW-0750 |
| | V 45 | RS5E-0203 | 0.81 | 0.56 | 1.20 | 90 | 3/4-10 | *** |
| | V 45 | RS5E-0205 | 0.94 | 0.64 | 1.34 | 45 | 3/4-10 | XRKW-1000 |
| | V 45 | RS5E-0205-C | 0.94 | 0.64 | 1.34 | 45 | 3/4-10 | XRKW-1000 |
| | V 50 | RB6E-0100** | 0.91 | 0.67 | 1.78 | 90 | 1-8 | XRKW-0750 |
| | V 50 | RS6E-0101 | 0.94 | 0.71 | 1.23 | 90 | 1-8 | XRKW-1187 |
| | V 50 | RS6E-0101-C | 0.94 | 0.71 | 1.23 | 90 | 1-8 | XRKW-1187 |
| | V 50 | RS6E-0102-C | 0.95 | 0.70 | 2.48 | .22 R* | 1-8 | XRKW-1250 |
| | V 50 | RS6E-0103-C | 0.95 | 0.70 | 3.48 | .22 R* | 1-8 | XRKW-1250 |
| | V 50 | RS6E-0204-C | 1.14 | 0.82 | 1.00 | 45 | 1-8 | XRKW-1187 |
| | V 50 | RS6E-0214-H | 0.75 | 0.67 | 1.78 | 60 | 1-8 | XRKW-1187 |
| | V 50 | RS6E-0232-H | 0.90 | 0.66 | 1.78 | 45 | 1-8 | XRKW-1187 |
| V 50 | RS6E-0242-H | 0.90 | 0.66 | 1.78 | 60 | 1-8 | XRKW-1187 | |

Need A Special Retention Knob?

Just call or fax. We will assist you in selecting the proper retention knob.



For assistance, provide the following information:

Quantity _____
 Dimension A _____ in / mm
 Dimension B _____ in / mm
 Dimension C _____ in / mm
 Dimension D _____ in / mm
 Angle _____ degrees
 Thread Size _____
 Toolholder Shank Style _____
 Machine Make _____
 Machine Model _____

Coolant Hole? Yes / No
 Coolant Hole Diameter _____ in / mm
 O-Ring Required? Yes / No
 Send sketch of O-Ring position

Fax to: 1-800-555-7694 or 763-576-6911

Recommended Installation Torque

| Taper | Torque (Ft-lbs) |
|-------|-----------------|
| 30 | 8 |
| 35 | 12 |
| 40 | 30 |
| 45 | 50 |
| 50 | 75 |
| 60 | 120 |

At end of part number

C designates coolant hole.
 H designates O-Ring included.
 * R designates radius.
 ** Wrench flats are on knob end.
 *** Consult Command Customer Service

Torque Wrenches for Nosepieces & Retention Knobs



Wrenches for Retention Knobs

- Avoid costs of damaged toolholders or spindles from incorrectly torqued retention knob.
- Wrenches for retention knobs come with a drive square to adapt to torque wrench.
- See pages D-76 & D-77 for proper wrench for retention knobs.

| Part No. | Drive Square | Distance Across Retention Knob Flats |
|-----------|--------------|--------------------------------------|
| XRKW-1250 | 1/2" | 1.250" |
| XRKW-1187 | 1/2" | 1.187" |
| XRKW-1000 | 1/2" | 1.000" |
| XRKW-0750 | 3/8" | 0.750" |

Torque Wrenches

- Quick readings of torque setting.
- Accurate and repeatable torque readings.



| Part No. | Drive Square | Torque Range Ft-Lbs. |
|-----------|--------------|----------------------|
| XTQW-0045 | 3/8" | 5-45 |
| XTQW-0080 | 3/8" | 15-80 |
| XTQW-0150 | 1/2" | 30-150 |

Wrenches for Collet Chuck Nosepieces

- Overtightening of collet chuck nosepieces commonly causes distortion of the collet chuck pocket and uneven compression of collets. This can result in excessive runout in the tool assembly.
- Gross overtightening can result in damage to the collet, tool body or nosepiece.
- Collet chuck nose piece wrenches come with a drive square to adapt to torque wrench.
- A torque wrench is required to accurately measure these values.



Setup Holding Fixtures

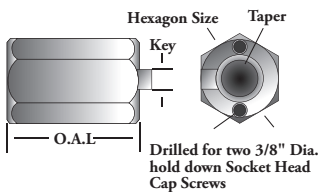
Setup Holding Fixtures

- Setup holding fixtures have precision machined internal bores that cradle flanges precisely.

- Ready to mount — drilled and counterbored for cap screws.
- Heavy-duty keylocks for tightening tools.

Bottom Mount

- Extra long—no need to remove retention knobs.
- Available in all tapers. Fits both BT and V-flanges.

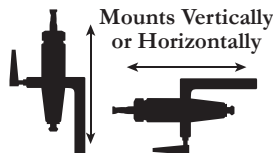


Bottom Mount

| Taper | Part No. | Hex | O.A.L. | Key | Replacement Key |
|-------|-----------|-----|--------|-------|-----------------|
| 30 | XHDF-0002 | 3.0 | 3.41 | .625 | XHDF-K004 |
| 35 | XHDF-0003 | 3.0 | 3.42 | .530 | XHDF-K003 |
| 40 | XHDF-0004 | 3.0 | 4.15 | .625 | XHDF-K004 |
| 45 | XHDF-0005 | 3.5 | 4.90 | .750 | XHDF-K005 |
| 50 | XHDF-0006 | 4.0 | 5.85 | 1.000 | XHDF-K006 |
| 60 | XHDF-0007 | 5.7 | 8.50 | 1.000 | XHDF-K007 |

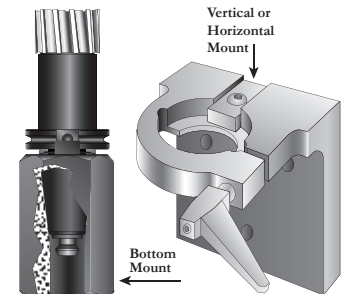
Vertical or Horizontal Mount

- Open design for easy access to retention knobs.
- Removable keylock for keyed or unkeyed use.
- High torque split clamp with ratchet handle, mar-free grip.
- Durable heat treated premium grade aircraft aluminum.



Vertical or Horizontal Mount

| Taper | Part No. | Key | Replacement Key |
|-------|-----------|------|-----------------|
| BT 30 | XFGF-00B2 | .625 | XFGF-K0B2 |
| BT 35 | XFGF-00B3 | .531 | XFGF-K0B2 |
| BT 40 | XFGF-00B4 | .625 | XFGF-K0B2 |



| Taper | Part No. | Key | Replacement Key |
|-------|-----------|-------|-----------------|
| V 40 | XFGF-0004 | .625 | XFGF-K004 |
| V 50 | XFGF-0006 | 1.000 | XFGF-K006 |

| Taper | Part No. |
|--------|-----------|
| HSK40 | XFGF-00H2 |
| HSK50 | XFGF-00H3 |
| HSK63 | XFGF-00H4 |
| HSK100 | XFGF-00H6 |

Replacement Parts

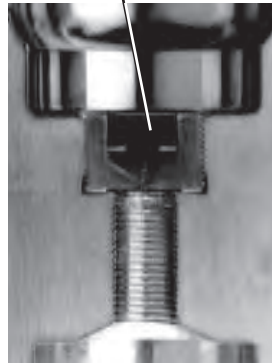
| Part No. | Description |
|-----------|--|
| XFGF-H000 | Replacement handle for vertical or horizontal mount setup holding fixtures |

HSK Accessories & Setup Holding Fixtures

HSK Accessories

| Taper | Part No. | Description |
|-------------|-----------|------------------------|
| HSK40A/E | XSCCA0040 | Compliant Coolant Tube |
| HSK40A/E | XCTWA0040 | Coolant Tube Wrench |
| HSK40A/E | XCHPA0040 | Coolant Hole Plug |
| HSK50 E/63F | XSCCA0050 | Compliant Coolant Tube |
| HSK50 E/63F | XCTWA0050 | Coolant Tube Wrench |
| HSK50 E/63F | XCHPA0050 | Coolant Hole Plug |
| HSK63A | XSCCA0063 | Compliant Coolant Tube |
| HSK63A | XCTWA0063 | Coolant Tube Wrench |
| HSK63A | XCHPA0063 | Coolant Hole Plug |
| HSK100A | XSCCA0100 | Compliant Coolant Tube |
| HSK100A | XCTWA0100 | Coolant Tube Wrench |
| HSK100A | XCHPA0100 | Coolant Hole Plug |

Coolant Hole Plug



Coolant Tube

Zero Master Edge Finder

For quick, precise workpiece location to eliminate errors

- Increases productivity by eliminating calculation errors.
- Can be used on any milling machine.
- Also for use on EDM machines (with insulated probe).
- Measures X, Y, or Z-axis.
- Locates workpiece edges (from spindle center) or workpiece length.
- Easy-to-read digital display in inch units.
- Splash-proof, dust-proof unit can be stored in the machine tool carousel; ready for use.
- Battery operated (3V Lithium) for up to 3000 hours continuous operation.
- Extended probe displacement range helps against damage.



Quick and easy to use—

- Clamp into machine spindle (or electrode head).
- Adjust TIR to zero.
- The digital readout indicates the distance between the spindle axis and workpiece edge.

| Part No. | Description |
|-----------|---------------------------------|
| XWEF-0001 | Command Zero Master Edge Finder |

Replacement Parts

| Part No. | Description |
|-------------|-------------------|
| XWEF-0001-5 | Replacement probe |
| XWEF-0001-6 | Optional probe |

Specifications:

| | |
|----------------------------------|-------------|
| Measures in increments of | 0.0004" |
| Smallest unit of measure | 0.0004" |
| Repeatability | 0.0004" |
| Measuring Accuracy | 0.0004" |
| Display size | 1.2" x 0.5" |
| Height of display numbers | 0.3" |
| Length of probe tip | 1" |
| Diameter of probe's ball tip | 0.2" |
| Probe Range of Movement (Radial) | .120" |
| Probe Range of Movement (Axial) | .200" |

Taper Check™

Features & Benefits:

- Detects toolholder shank wear in seconds.
- Combine with System II™ Drawbar Dynamometer to optimize the spindle-toolholder interface.
- Maximize tool life and spindle life.
- Ensure toolholder performance.
- Available for 30, 35, 40, 45, and 50 taper toolholders.
- Toolholder can be tested with components assembled, works with retention knob installed.
- Includes (A) and (B) indicators with .0001" resolution.
- Carbide locating pins for long life.
- Made with hardened tool steel body.
- Comes with setup taper/master shank (C).



Easy-to-use:

- Place the master shank (C) into the Taper Check™.
- Adjust the two indicators (A) and (B) so they both read zero with the master shank.
- Remove the setup taper/master shank.
- Place the toolholder to be tested into the Taper Check™.
- Simply take the reading from each indicator and find the difference between the two, (B) – (A), to detect shank wear.

| Part No. | For Taper |
|-----------|-----------|
| XSIT-0030 | 30 |
| XSIT-0035 | 35 |
| XSIT-0040 | 40 |
| XSIT-0045 | 45 |
| XSIT-0050 | 50 |

Notes

- Combine with System II™ Drawbar Dynamometer to optimize spindle-toolholder interface, page D-80.

System II™ Adaptive Drawbar Dynamometer



- Detect inadequate retention force in seconds without disassembling drawbar.
- Modular components fit most machining centers.
- Ensure original machine performance.
- Maximize tool life, spindle life and system rigidity.
- Combat toolholder shank fretting.
- For all 30, 35, 40, 45 & 50 steep taper machining centers (requiring retention knobs) and HSK40A, HSK40E, HSK50A, HSK63A, HSK100A, and HSK63F.
- Not for use with screw type drawbar mechanisms.
- Includes carrying case.

Precision Maintenance Tool

Provides accurate drawbar force measurements on steep taper (CAT, BT, DIN, etc.) and HSK machining centers. Verifies the machine's drawbar performance against the manufacturers' specifications or from readings taken when the machine was new to ensure optimum cutting tool performance.

Fast Performance

Quickly identifies if retention force losses are at fault when poor surface finishes appear or when tool performance deteriorates.

Simple Operation

Operation is fast and easy. Simply attach the taper adapter and retention knob adapter, screw in a retention knob, and install it in your spindle like an ordinary toolholder. The load cell is stretched by the machine's drawbar. This stretch is measured electronically and is instantly displayed on the digital readout. Spring deterioration or maladjustment can be detected in no time. No costly disassembly. No machine downtime.



Services Entire Machine Shop

A compact load cell with an electronic display and a family of taper adapters combine to make a single measuring unit that can service an entire machine shop employing a variety of machining centers.

Convenient Display

Features standard 0-10,000 lb. range, large easy-to-read digital display, auto-off feature, and touch sensitive buttons sealed for dust-proof operation.

1000 Hours Operation

Operates on two 9 volt batteries for up to 1000 hours continuous operation. Calibration data is stored on a non-volatile memory chip — no programming to enter, no data to remember.

Custom Calibration Available

Standard calibration is 0-10,000 pounds. Can be custom calibrated. Call factory for quote.

Notes

- Only available in shiny shank; no black oxide.

- Retention Knobs & Setup Holding Fixtures, pages D-76 & D-77, D-78.

Modular Design

A simple three piece design allows you to quickly change tapers from BT30 up to CT50. The retention knob adapters accept standard retention knobs, allowing measurements to be taken on virtually any machining center. Reads pounds, kilonewtons, and kilograms.

| Part No. | Description |
|-----------|--|
| GDKT-0001 | System II™ Adaptive Drawbar Dynamometer Kit: Dynamometer, Case, 30, 40 & 50 taper sleeves. CT and BT retention knob adapters – excludes HSK & DIN Adapters |
| GDAT-0001 | System II™ Adaptive Drawbar Dynamometer: Dynamometer & carrying case. Adapters sold separately |

Replacement Parts

| Part No. | Description | Part No. | Description |
|-----------|-------------------------------|-----------|--|
| XDTA-0002 | 30 Taper adapter sleeve | XDBA-0002 | BT 30 Retention knob adapter |
| XDTA-0003 | 35 Taper adapter sleeve | XDCA-0002 | CT 30 Retention knob adapter |
| XDTA-0004 | 40 Taper adapter sleeve | XDBA-0003 | BT 35 Retention knob adapter |
| XDTA-0005 | 45 Taper adapter sleeve | XDBA-0004 | BT 40 Retention knob adapter |
| XDTA-0006 | 50 Taper adapter sleeve | XDCA-0004 | CT 40 Retention knob adapter |
| XDFA-0040 | HSK40A/E Flange adapter | XDBA-0005 | BT 45 Retention knob adapter |
| XDTA-0040 | HSK40A/E Drawbar adapter | XDCA-0005 | CT 45 Retention knob adapter |
| XDFA-0050 | HSK50A/HSK63F Flange adapter | XDBA-0006 | BT 50 Retention knob adapter |
| XDTA-0050 | HSK50A/HSK63F Drawbar adapter | XDCA-0006 | CT 50 Retention knob adapter |
| XDFA-0063 | HSK63A Flange adapter | XDDA-0002 | DIN69872 30 Taper retention knob adapter |
| XDTA-0063 | HSK63A Drawbar adapter | XDDA-0004 | DIN69872 40 Taper retention knob adapter |
| XDFA-0100 | HSK100A Flange adapter | XDDA-0006 | DIN69872 50 Taper retention knob adapter |
| XDTA-0100 | HSK100A Drawbar adapter | XDCS-0001 | Replacement carrying case |
| XDNA-0006 | NMTB50 adapter | XDRP-0001 | Retention knob pallet (optional)-For holding retention knobs inside case |



TOOLING ACCESSORIES

Notes

- Combine with Taper Check™ to optimize spindle-toolholder interface, page D-79.

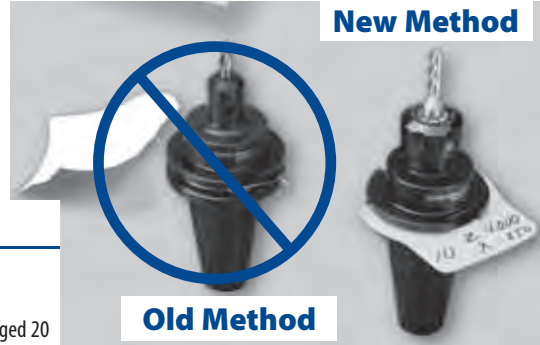
Reusable Tool Identification Reduce Setup Time Minimize Mistakes

- Stays in place by snapping onto the toolholder.
- Removable and easily cleaned with WD40 for new applications.
- No need for wire tags.
- Provides identification for stored toolholders.
- Patent Pending.
- Use grease pencil.

Mark the smooth rewritable surface with:

- Part Number
- Type of Holder
- Job Number
- Preset Length
- Preset Diameter
- Other Information

| Part No. | For Flange Style |
|-----------|--|
| XCTT-0004 | 40 V-Flange; HSK63 Packaged 20 per bag |
| XCTT-0006 | 50 V-Flange; HSK100 Packaged 20 per bag |

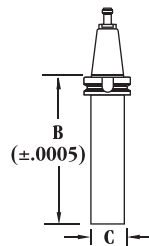


Precision Test Bars & Accessories

Precision Test Bars:

- Individually inspected and certified to assure accuracy in maintaining machines, tools and equipment.
- Calibrated, certified precision test bars accurately align workpieces and/or holding fixtures.
- Hardened, normalized, and ground for reliable, permanent accuracy.
- Wooden storage cases sold separately.
- Nose specifications:
 - Concentric to taper within .0002" TIR.
 - Diameter within .0002" over the entire length.

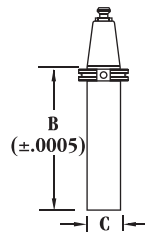
BT-Flange



Note: Shown with wooden storage case, sold separately.

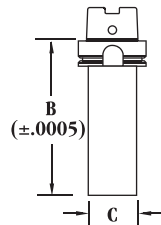
| Taper | Standard Part No. | B | C |
|-------|-------------------|------|-----|
| BT 35 | B3W4-0003 | 8.0 | 2.0 |
| BT 40 | B4W4-0004 | 10.0 | 2.0 |
| BT 45 | B5W4-0005 | 12.0 | 2.0 |
| BT 50 | B6W4-0006 | 12.0 | 2.0 |

V-Flange



| Taper | Standard Part No. | B | C |
|-------|-------------------|------|-----|
| V 40 | C4W4-0004 | 10.0 | 2.0 |
| V 45 | C5W4-0005 | 12.0 | 2.0 |
| V 50 | C6W4-0006 | 12.0 | 2.0 |

HSK



| Taper | Standard Part No. | B | C |
|------------|-------------------|------|-----|
| HSK40A/40E | H2W4A0002 | 8.0 | 1.5 |
| HSK50A/63F | H3W4A0003 | 8.0 | 1.5 |
| HSK63A | H4W4A0004 | 10.0 | 2.0 |
| HSK100A | H6W4A0006 | 12.0 | 2.0 |

(HSK Form A Illustrated)

Accessories

Wooden Storage Cases

- Available to fit BT or V-Flange test bars.
- Premium Craftmanship.
- Not for shipping purposes.

| Part No. | For Taper | Part No. | For Taper |
|-----------|------------|-----------|-----------------|
| XTBC-0002 | HSK40A/40E | XTBC-0004 | 30/35/40/HSK63A |
| XTBC-0003 | HSK50A/63F | XTBC-0006 | 45/50/HSK100A |

Notes

- Only available in shiny shank; no black oxide.

- Retention Knobs & Setup Holding Fixtures, pages D-76 & D-77, D-78.

Tool Carts



ToolScoot CNC V-Flange & HSK Tool Cart



- Quality and mobility at an affordable price.
- Durable nylon inserts on both shelves help protect toolholders.
- Lower shelf angled for quick, easy tool access from either side.
- Solid, interlocking side panel construction for maximum strength and stability.
- Two end storage trays with universal mounting holes for setup holding fixture.
- Heavy duty 5" x 1 1/4" casters load rated at 1,000 lbs.
- All steel painted with durable Ecolo-Clad in red and black.

| Part No. | Description |
|-----------|--|
| XCTH-S040 | 40 Taper, 48 Tool Capacity Cart, Standard Duty |
| XCTH-S050 | 50 Taper, 36 Tool Capacity Cart, Standard Duty |
| XCTH-S063 | HSK63A, 48 Tool Capacity Cart, Standard Duty |
| XCTH-S010 | HSK100A, 36 Tool Capacity Cart, Standard Duty |

ToolScoot Specifications: Dimensions: 18" W x 35.25" L x 35" H Weight: 75 lbs. Casters Load Rated at 1,000 lbs. See page D-78 for Setup Holding Fixtures

SuperScoot CNC V-Flange & HSK Tool Cart



- Constructed of prime 12 gauge steel for rugged heavy duty use.
- Almost twice the storage capacity for less!
- Heavier duty than others in its class.
- New outrigger base design for improved stability, easier maneuverability for a safe, smooth tool ride.
- Heavy duty, extra smooth rolling casters load rated to 1,600 lbs. for long caster life, with locking caster mechanism.
- Phosphate pretreatment undercoating for additional toughness.

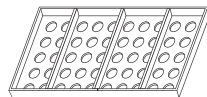
| Part No. | Description |
|-----------|---|
| XCTH-L040 | 40 Taper, 90 Tool Capacity Cart, Heavy Duty |
| XCTH-L050 | 50 Taper, 52 Tool Capacity Cart, Heavy Duty |
| XCTH-L063 | HSK63A, 90 Tool Capacity Cart, Heavy Duty |
| XCTH-L010 | HSK100A, 52 Tool Capacity Cart, Heavy Duty |

SuperScoot Specifications: Dimensions: 45.25" W x 17.5" L x 40" H (width includes handle & end tray) Weight: 132 lbs. Casters Load Rated at 1.600 lbs. See page D-78 for Setup Holding Fixtures

Econo-Kart™



- Heavy gauge steel construction — large ball bearing casters: smooth rolling. Shown with optional organizer rack in middle position and optional tool tightening fixture.
- Total weight capacity 1000 lbs.



Same shelves used for stand alone shelving.

| Taper | Part No. | Description | Optional tool tightening fixture | |
|-----------|-----------|--------------------------|----------------------------------|-----------|
| | | | Taper | Part No. |
| 30 & 35 | XCRT-EK11 | Holds 50 toolholders | 50 | XCRT-EK09 |
| 40/HSK63 | XCRT-EK01 | Holds 50 toolholders | 40 | XCRT-EK03 |
| 45 | XCRT-EK45 | Holds 32 toolholders | | |
| 50/HSK100 | XCRT-EK07 | Holds 32 toolholders | | |
| | XCRT-EK10 | Optional organizer racks | | |

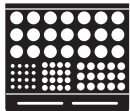
Econo-Kart and Stand Alone shelves are ten gauge steel with welded cross braces for strength. Order extra Econo-Kart shelves from Stand Alone list.

Collet Racks



Here's a tool handling and storage system that keeps frequently used tools organized and mobile for quicker setups, yet with full access to coordinated shelf storage of remaining tools. Toolholder and collet rack modules are available with receptacles sized for all toolholder tapers or collet shapes and made to fit in both the tool cart and tool shelves — tools can be organized by size and/or by job.

Collet Racks for Tool Carts



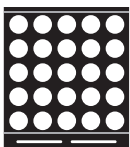
XCRT-CRMP - 12" x 10.625" x 2"
Holds 68 Micro Precision® collets
(4 complete sets; 16-ER11, 16-ER16, 16-ER20, 21-ER32)



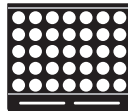
XCRT-CR01 - 6" x 8" x 1.375"
Holds 36 DA10 Double Angle collets



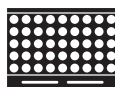
XCRT-CR02 - 7.25" x 6.625" x 1.375"
Holds 54 collets
(27 DA20, 18 DA30, 9 ER16)



XCRT-CR03 - 12.125" x 14" x 2.375"
Holds 25 TG150 Comflex® collets
(or #3 tap collets)



XCRT-CR04 - 12" x 10.625" x 2"
Holds 35 TG100 Comflex® collets
(or #2 tap collets)



XCRT-CR05 - 10.75" x 8" x 1.5"
Holds 45 DA18 collets
(or #1 tap collets)



XCRT-CR11 - 6" x 8"
Holds 36 ER11 collets



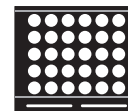
XCRT-CR16 - 6" x 8"
Holds 36 ER16 collets



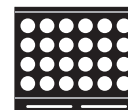
XCRT-CR20 - 6" x 8"
Holds 36 ER20 collets



XCRT-CR25 - 12" x 10.5"
Holds 30 ER25 collets



XCRT-CR32 - 12" x 10.5"
Holds 30 ER32 collets

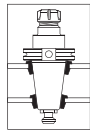
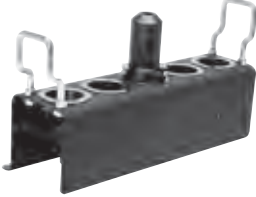


XCRT-CR40 - 12" x 10.5"
Holds 24 ER40 collets

Rack Modules, Workbench Storage, Tool Shelving

Toolholder Racks for Tool Carts

Optional handles available: Set of 2



Mar-free plastic inserts support toolholders, top and bottom.

| Taper | Part No. | Holds | Rack Dimensions |
|---------------------|------------------|-------|-----------------------|
| 30&35 | XCRT-R030 | 6 | 15.5" x 4.375" x 4.5" |
| Optional Handle Set | XCRT-34HL | | |
| 40 | XCRT-R040 | 5 | 15.5" x 4.375" x 4.5" |
| Optional Handle Set | XCRT-34HL | | |
| 45 | XCRT-R045 | 4 | 17" x 6" x 6.625" |
| Optional Handle Set | XCRT-56HL | | |
| 50 | XCRT-R050 | 4 | 17" x 6" x 6.625" |
| Optional Handle Set | XCRT-56HL | | |

Workbench Storage

- Shown with optional Collet Racks (sold separately).
- Comes with four plastic side bins
- 36" L x 12" W x 15" H.



| Taper | Part No. | Holds |
|-------|---------------------|----------------|
| 30&35 | XCDY-17-1 | 30 toolholders |
| 40 | XCDY-17-2 | 30 toolholders |
| 45 | XCDY-17-3-45 | 24 toolholders |
| 50 | XCDY-17-3 | 24 toolholders |

Stand Alone Shelving

- Steel shelving stores inactive tools organized by size and/or job — shelves available with receptacles for all toolholder tapers in both BT and V-Flange styles — plain shelves for storing loaded modules from tool cart.
- Sturdy construction — heavy ten gauge steel legs with floor-bolt tabs and shelves with welded steel cross braces.
- Shelves with toolholder receptacles include mar-free plastic inserts.
- Stand Alone Shelving is 7' H x 36" W x 18" — order leg sets and individual shelves separately from list below.
- All shelving comes disassembled (assembly required) — stand alone units must be bolted to floor.
- Replacement rings available, contact customer service.



Shelving with Assembly Hardware

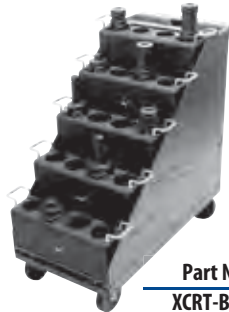
| Taper | Part No. | Shelf Holds |
|-------|---------------------|----------------|
| 30&35 | XSHF-16-1 | 50 toolholders |
| 40 | XSHF-16-2 | 50 toolholders |
| 45 | XSHF-16-3-45 | 32 toolholders |
| 50 | XSHF-16-3 | 32 toolholders |
| | XSHF-16-4 | Plain Shelf |

Legs

| Part No. | Description |
|------------------|---------------|
| XSHF-16-0 | Set of 4 legs |

Tool Caddy

- Each Tool Caddy comes with your choice of 6 shelves, specify the shelves you need using the chart below.
- Comes with large capacity 5" casters (casters are the only assembly required).
- Total weight capacity per unit: 2000 lbs.
- Overall Dimensions: 54" H x 29.125" W x 27.75" D.
- Interchangeable shelving will accept V-Flange, BT-Flange, or HSK toolholders.
- Shelves can be mounted on an angle or horizontally.
- Made of heavy steel with welded construction.



Part No.
XCRT-BASE

Tool Cart

- Tool carts hold up to five toolholder rack modules in the front, plus collet rack and setup tool storage in the back and on top — connecting shelves can join two carts to create a setup work station.
- Comes with six plastic bins, casters, and assembly hardware.
- Toolholder and Collet Rack Modules stack on the shelf bars.
- Order racks separately to suit your needs.
- 37" L x 17 1/2" W x 34" H.
- Shipped unassembled – assembly required.

| Part No. | Description |
|------------------|--|
| XCTC-BASE | Tool Caddy Base Unit with wheels & 6 shelves |
| XCTC-RACK | Tool Rack Base Unit with 8 shelves |



Tool Rack

Tool Rack comes with your choice of eight shelves. 62" H x 29.125" W x 27.75" D.

| Shelf Options | | |
|------------------|----------------------|-----------------|
| Part No. | Description | Holes per shelf |
| XCTC-SF30 | 30 taper shelf | 32 |
| XCTC-SF35 | 35 taper shelf | 28 |
| XCTC-SF40 | 40 taper shelf | 18 |
| XCTC-SF45 | 45 taper shelf | 12 |
| XCTC-SF50 | 50 taper shelf | 10 |
| XCTC-SF63 | HSK63A shelf | 18 |
| XCTC-SH40 | HSK40A shelf | 32 |
| XCTC-SH50 | HSK50A/63F shelf | 28 |
| XCTC-S100 | HSK100A shelf | 10 |
| XCTC-SFPN | Plain shelf with lip | 0 |

| Center Insert Options | | |
|-----------------------|--------------------------------|-----------------|
| Part No. | Description | Holes per shelf |
| XCTC-IH40 | HSK40A taper center insert | 8 |
| XCTC-IH50 | HSK50A/63F taper center insert | 7 |
| XCTC-IN30 | 30 taper center insert | 8 |
| XCTC-IN35 | 35 taper center insert | 7 |
| XCTC-IN40 | 40 taper center insert | 6 |
| XCTC-IN45 | 45 taper center insert | 6 |
| XCTC-IN50 | 50 taper center insert | 5 |
| XCTC-IN63 | HSK63A center insert | 6 |
| XCTC-I100 | HSK100A center insert | 5 |
| XCTC-INPN | Plain shelf center insert | 0 |

| | | | | | | | | |
|---|--------------|------|--------------|------|--------------|------|--------------|------|
| B | | | | | | | | |
| | B2C3-0016 | B-15 | B3T4-0001 | C-66 | B4I4-0750 | C-62 | B5P2-0001 | C-67 |
| | B2C3-0016-ZX | B-33 | B3T4-0002 | C-66 | B4I4-1250 | C-62 | B5P2-0002 | C-67 |
| | B2C3-0020 | B-17 | B3W4-0003 | D-81 | B4J4-0001 | C-73 | B5P5-0001 | C-67 |
| | B2C3-0020-ZX | B-35 | B3X3-0003 | C-63 | B4J4-0002 | C-73 | B5P5-0002 | C-67 |
| | B2C3-0032 | B-21 | B3X4-0003 | C-63 | B4J4-0003 | C-73 | B5P5-0003 | C-67 |
| | B2C3-0032-ZX | B-39 | B4C1-0032 | B-13 | B4J4-0004 | C-73 | B5S4-0750 | C-64 |
| | B2C4-0011 | B-14 | B4C3-0020-ZX | B-35 | B4J4-0033 | C-73 | B5S4-1000 | C-64 |
| | B2C4-0011-ZX | B-32 | B4C3-0025 | B-19 | B4J4-X130 | C-74 | B5S4-1250 | C-64 |
| | B2C4-0016 | B-15 | B4C3-0025-ZX | B-37 | B4K5-0020 | B-17 | B5S4-1500 | C-64 |
| | B2C4-0016-ZX | B-33 | B4C3-0032 | B-21 | B4K5-0020-ZX | B-35 | B5S4-2000 | C-64 |
| | B2C4-0020 | B-17 | B4C3-0032-ZX | B-39 | B4K5-0032 | B-21 | B5S5-0750 | C-64 |
| | B2C4-0020-ZX | B-35 | B4C3-0040 | B-23 | B4K5-0032-ZX | B-39 | B5S5-1000 | C-64 |
| | B2C4-0032 | B-21 | B4C3-0040-ZX | B-41 | B4K5-0375 | C-57 | B5S5-1250 | C-64 |
| | B2C4-0032-ZX | B-39 | B4C3-HP16 | C-45 | B4K5-0500 | C-57 | B5S5-1500 | C-64 |
| | B2C4-1000 | C-47 | B4C3-HP32 | C-45 | B4K5-0625 | C-57 | B5S5-2000 | C-64 |
| | B2E4-0125 | C-56 | B4C4-0011 | B-14 | B4K5-0750 | C-57 | B5T4-0001 | C-66 |
| | B2E4-0187 | C-56 | B4C4-0011-ZX | B-32 | B4M4-0002 | C-72 | B5T4-0002 | C-66 |
| | B2E4-0250 | C-56 | B4C4-0016 | B-15 | B4M4-0003 | C-72 | B5T4-0003 | C-66 |
| | B2E4-0312 | C-56 | B4C4-0016-ZX | B-33 | B4M4-0004 | C-72 | B5W4-0005 | D-81 |
| | B2E4-0375 | C-56 | B4C4-0020 | B-17 | B4P2-0001 | C-67 | B5X3-0005 | C-63 |
| | B2E4-0437 | C-56 | B4C4-0020-ZX | B-35 | B4P2-0002 | C-67 | B5X4-0005 | C-63 |
| | B2E4-0500 | C-56 | B4C4-0025 | B-19 | B4P5-0001 | C-67 | B6C3-HP32 | C-45 |
| | B2E4-0562 | C-56 | B4C4-0025-ZX | B-37 | B4P5-0002 | C-67 | B6C4-0016 | B-15 |
| | B2E4-0625 | C-56 | B4C4-0032 | B-21 | B4S4-0750 | C-64 | B6C4-0016-ZX | B-33 |
| | B2E4-0750 | C-56 | B4C4-0032-ZX | B-39 | B4S4-1000 | C-64 | B6C4-0020 | B-17 |
| | B2H4-1018 | C-69 | B4C4-0040 | B-23 | B4S4-1250 | C-64 | B6C4-0020-ZX | B-35 |
| | B2H4-1420 | C-69 | B4C4-0040-ZX | B-41 | B4S4-1500 | C-64 | B6C4-0032 | B-21 |
| | B2J4-0001 | C-73 | B4C4-1000 | C-47 | B4S5-0750 | C-64 | B6C4-0032-ZX | B-39 |
| | B2J4-0033 | C-73 | B4C4-1500 | C-49 | B4S5-1000 | C-64 | B6C4-0040 | B-23 |
| | B2M4-0002 | C-72 | B4C5-0016 | B-15 | B4S5-1250 | C-64 | B6C4-0040-ZX | B-41 |
| | B2P2-0001 | C-67 | B4C5-0016-ZX | B-33 | B4S5-1500 | C-64 | B6C4-1000 | C-47 |
| | B2S4-0750 | C-64 | B4C5-0020 | B-17 | B4T4-0001 | C-66 | B6C4-1500 | C-49 |
| | B2S4-1000 | C-64 | B4C5-0020-ZX | B-35 | B4T4-0002 | C-66 | B6C5-1000 | C-47 |
| | B2T4-0001 | C-66 | B4C5-0025 | B-19 | B4W4-0004 | D-81 | B6C5-1500 | C-49 |
| | B2X3-0002 | C-63 | B4C5-0025-ZX | B-37 | B4X3-0004 | C-63 | B6E4-0375 | C-57 |
| | B3C4-0011 | B-14 | B4C5-0032 | B-21 | B4X4-0004 | C-63 | B6E4-0500 | C-57 |
| | B3C4-0011-ZX | B-32 | B4C5-0032-ZX | B-39 | B5C4-0016 | B-15 | B6E4-0625 | C-57 |
| | B3C4-0016 | B-15 | B4C5-0040 | B-23 | B5C4-0016-ZX | B-33 | B6E4-0750 | C-57 |
| | B3C4-0016-ZX | B-33 | B4C5-0040-ZX | B-41 | B5C4-0020 | B-17 | B6E4-0875 | C-57 |
| | B3C4-0020 | B-17 | B4C5-1000 | C-47 | B5C4-0020-ZX | B-35 | B6E4-1000 | C-57 |
| | B3C4-0020-ZX | B-35 | B4E3-0500 | C-56 | B5C4-0032 | B-21 | B6E4-1250 | C-57 |
| | B3C4-0032 | B-21 | B4E3-0625 | C-56 | B5C4-0032-ZX | B-39 | B6E4-1500 | C-57 |
| | B3C4-0032-ZX | B-39 | B4E3-0750 | C-56 | B5C4-1000 | C-47 | B6E4-2000 | C-57 |
| | B3C4-1000 | C-47 | B4E3-1000 | C-56 | B5C4-1500 | C-49 | B6E5-0375 | C-57 |
| | B3C5-0016 | B-15 | B4E3-1250 | C-56 | B5C5-1000 | C-47 | B6E5-0500 | C-57 |
| | B3C5-0016-ZX | B-33 | B4E4-0125 | C-56 | B5C5-1500 | C-49 | B6E5-0625 | C-57 |
| | B3C5-0020 | B-17 | B4E4-0187 | C-56 | B5E4-0375 | C-57 | B6E5-0750 | C-57 |
| | B3C5-0020-ZX | B-35 | B4E4-0250 | C-56 | B5E4-0500 | C-57 | B6E5-0875 | C-57 |
| | B3C5-0032 | B-21 | B4E4-0312 | C-56 | B5E4-0625 | C-57 | B6E5-1000 | C-57 |
| | B3C5-0032-ZX | B-39 | B4E4-0375 | C-56 | B5E4-0750 | C-57 | B6E5-1250 | C-57 |
| | B3C5-1000 | C-47 | B4E4-0437 | C-56 | B5E4-0875 | C-57 | B6E5-1500 | C-57 |
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| | B3E4-0250 | C-56 | B4E4-0562 | C-56 | B5E4-1250 | C-57 | B6F4-1000 | C-71 |
| | B3E4-0375 | C-56 | B4E4-0625 | C-56 | B5E4-1500 | C-57 | B6F4-1250 | C-71 |
| | B3E4-0500 | C-56 | B4E4-0750 | C-56 | B5E5-0375 | C-57 | B6F5-1000 | C-71 |
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| | B3E4-1000 | C-56 | B4E4-1500 | C-57 | B5E5-0875 | C-57 | B6H4-2418 | C-69 |
| | B3E4-1250 | C-56 | B4E5-0125 | C-57 | B5E5-1000 | C-57 | B6J4-0001 | C-73 |
| | B3H4-1018 | C-69 | B4E5-0187 | C-57 | B5E5-1250 | C-57 | B6J4-0002 | C-73 |
| | B3H4-1420 | C-69 | B4E5-0250 | C-57 | B5E5-1500 | C-57 | B6J4-0003 | C-73 |
| | B3J4-0001 | C-73 | B4E5-0312 | C-57 | B5F4-1000 | C-71 | B6J4-0004 | C-73 |
| | B3J4-0002 | C-73 | B4E5-0375 | C-57 | B5F4-1250 | C-71 | B6J4-0006 | C-73 |
| | B3J4-0003 | C-73 | B4E5-0500 | C-57 | B5H4-1018 | C-69 | B6J4-0033 | C-73 |
| | B3J4-0033 | C-73 | B4E5-0625 | C-57 | B5H4-1420 | C-69 | B6M4-0002 | C-72 |
| | B3M4-0002 | C-72 | B4E5-0750 | C-57 | B5H4-2418 | C-69 | B6M4-0003 | C-72 |
| | B3M4-0003 | C-72 | B4E5-0875 | C-57 | B5J4-0001 | C-73 | B6M4-0004 | C-72 |
| | B3M4-0004 | C-72 | B4E5-1000 | C-57 | B5J4-0002 | C-73 | B6M4-0005 | C-72 |
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| | B3P2-0002 | C-67 | B4F4-1000 | C-71 | B5J4-0004 | C-73 | B6P2-0002 | C-67 |
| | B3S4-0750 | C-64 | B4F4-1250 | C-71 | B5J4-0006 | C-73 | B6P5-0001 | C-67 |
| | B3S4-1000 | C-64 | B4G4-1000 | C-70 | B5J4-0033 | C-73 | B6P5-0002 | C-67 |
| | B3S4-1250 | C-64 | B4G4-1250 | C-70 | B5M4-0002 | C-72 | B6P5-0003 | C-67 |
| | B3S5-0750 | C-64 | B4H4-1018 | C-69 | B5M4-0003 | C-72 | B6S4-1000 | C-64 |
| | B3S5-1000 | C-64 | B4H4-1420 | C-69 | B5M4-0004 | C-72 | B6S4-1250 | C-64 |
| | | | B4H4-2418 | C-69 | B5M4-0005 | C-72 | B6S4-2000 | C-64 |

| | |
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| B6S5-1250 | C-64 |
| B6S5-1500 | C-64 |
| B6S5-2000 | C-64 |
| B6T4-0001 | C-66 |
| B6T4-0002 | C-66 |
| B6T4-0003 | C-66 |
| B6W4-0006 | D-81 |
| B6X3-0006 | C-63 |
| B6X4-0006 | C-63 |
| C | |
| C2C4-0016 | B-15 |
| C2C4-0016-ZX | B-33 |
| C2C4-0020 | B-17 |
| C2C4-0020-ZX | B-35 |
| C2C4-0032 | B-21 |
| C2C4-0032-ZX | B-39 |
| C2C4-1000 | C-47 |
| C4C1-0032 | B-13 |
| C4C3-0011 | B-14 |
| C4C3-0011-ZX | B-32 |
| C4C3-0016 | B-15 |
| C4C3-0016-ZX | B-33 |
| C4C3-0020 | B-17 |
| C4C3-0020-ZX | B-35 |
| C4C3-0025 | B-19 |
| C4C3-0025-ZX | B-37 |
| C4C3-0032 | B-21 |
| C4C3-0032-ZX | B-39 |
| C4C3-0040 | B-23 |
| C4C3-0040-ZX | B-41 |
| C4C3-1000 | C-47 |
| C4C3-HP16 | C-45 |
| C4C3-HP32 | C-45 |
| C4C4-0011 | B-14 |
| C4C4-0011-ZX | B-32 |
| C4C4-0016 | B-15 |
| C4C4-0016-ZX | B-33 |
| C4C4-0020 | B-17 |
| C4C4-0020-ZX | B-35 |
| C4C4-0025 | B-19 |
| C4C4-0025-ZX | B-37 |
| C4C4-0032 | B-21 |
| C4C4-0032-ZX | B-39 |
| C4C4-0040 | B-23 |
| C4C4-0040-ZX | B-41 |
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| C4C4-1000 | C-47 |
| C4C4-1500 | C-49 |
| C4C5-0016 | B-15 |
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| C4C5-0020 | B-17 |
| C4C5-0020-ZX | B-35 |
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| C4C5-0025-ZX | B-37 |
| C4C5-0032 | B-21 |
| C4C5-0032-ZX | B-39 |
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| C4C5-0040-ZX | B-41 |
| C4C5-1000 | C-47 |
| C4C6-0020 | B-17 |
| C4C6-0020-ZX | B-35 |
| C4C6-0032 | B-21 |
| C4C6-0032-ZX | B-39 |
| C4C6-1000 | C-47 |
| C4E3-0250 | C-58 |
| C4E3-0375 | C-58 |
| C4E3-0500 | C-58 |
| C4E3-0625 | C-58 |
| C4E3-0750 | C-58 |
| C4E3-1000 | C-58 |
| C4E3-1250* | C-58 |
| C4E4-0125 | C-58 |
| C4E4-0187 | C-58 |
| C4E4-0250 | C-58 |
| C4E4-0312 | C-58 |
| C4E4-0375 | C-58 |

| | |
|--------------|------|
| C4E4-0437 | C-58 |
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| C4E4-0875 | C-58 |
| C4E4-1000 | C-58 |
| C4E4-1250 | C-58 |
| C4E4-1500 | C-58 |
| C4E4-M006 | C-59 |
| C4E4-M008 | C-59 |
| C4E4-M010 | C-59 |
| C4E4-M012 | C-59 |
| C4E4-M014 | C-59 |
| C4E4-M016 | C-59 |
| C4E4-M018 | C-59 |
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| C4E5-0187 | C-59 |
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| C4E5-0500 | C-59 |
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| C4E6-0500 | C-59 |
| C4E6-0625 | C-59 |
| C4E6-1000 | C-59 |
| C4F4-1000 | C-71 |
| C4F4-1250 | C-71 |
| C4G4-1000 | C-70 |
| C4G4-1250 | C-70 |
| C4H4-1018 | C-69 |
| C4H4-1420 | C-69 |
| C4H4-2418 | C-69 |
| C4I4-0750 | C-62 |
| C4I4-1250 | C-62 |
| C4J4-0001 | C-73 |
| C4J4-0002 | C-73 |
| C4J4-0003 | C-73 |
| C4J4-0004 | C-73 |
| C4J4-0006 | C-73 |
| C4J4-0033 | C-73 |
| C4J4-X100 | C-74 |
| C4J4-X160 | C-74 |
| C4K5-0020 | B-17 |
| C4K5-0020-ZX | B-35 |
| C4K5-0375 | C-59 |
| C4K5-0500 | C-59 |
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| C4M4-0003 | C-72 |
| C4M4-0004 | C-72 |
| C4P2-0001 | C-67 |
| C4P2-0002 | C-67 |
| C4P5-0001 | C-67 |
| C4P5-0002 | C-67 |
| C4S4-0500 | C-64 |
| C4S4-0750 | C-64 |
| C4S4-1000 | C-64 |
| C4S4-1250 | C-64 |
| C4S4-1500 | C-64 |
| C4S5-0500 | C-64 |
| C4S5-0750 | C-64 |
| C4S5-1000 | C-64 |
| C4S5-1250 | C-64 |
| C4S5-1500 | C-64 |
| C4T4-0001 | C-66 |
| C4T4-0002 | C-66 |
| C4W4-0004 | D-81 |
| C4X3-0004 | C-63 |
| C4X4-0004 | C-63 |
| C5C4-0016 | B-15 |
| C5C4-0016-ZX | B-33 |
| C5C4-0020 | B-17 |

| | |
|--------------|------|
| C5C4-0020-ZX | B-35 |
| C5C4-0032 | B-21 |
| C5C4-0032-ZX | B-39 |
| C5C4-1000 | C-47 |
| C5C4-1500 | C-49 |
| C5C5-1000 | C-47 |
| C5C5-1500 | C-49 |
| C5C6-1000 | C-47 |
| C5C6-1500 | C-49 |
| C5E4-0375 | C-58 |
| C5E4-0500 | C-58 |
| C5E4-0625 | C-58 |
| C5E4-0750 | C-58 |
| C5E4-0875 | C-58 |
| C5E4-1000 | C-58 |
| C5E4-1250 | C-58 |
| C5E4-1500 | C-58 |
| C5E4-2000 | C-58 |
| C5E5-0375 | C-59 |
| C5E5-0500 | C-59 |
| C5E5-0625 | C-59 |
| C5E5-0750 | C-59 |
| C5E5-0875 | C-59 |
| C5E5-1000 | C-59 |
| C5E5-1250 | C-59 |
| C5E5-1500 | C-59 |
| C5E5-2000 | C-59 |
| C5E6-0375 | C-59 |
| C5E6-0500 | C-59 |
| C5E6-0625 | C-59 |
| C5E6-0750 | C-59 |
| C5E6-0875 | C-59 |
| C5E6-1000 | C-59 |
| C5E6-1250 | C-59 |
| C5E6-1500 | C-59 |
| C5E6-2000 | C-59 |
| C5F4-1000 | C-71 |
| C5F4-1250 | C-71 |
| C5G4-1000 | C-70 |
| C5G4-1250 | C-70 |
| C5H4-1018 | C-69 |
| C5H4-1420 | C-69 |
| C5H4-2418 | C-69 |
| C5J4-0001 | C-73 |
| C5J4-0002 | C-73 |
| C5J4-0003 | C-73 |
| C5J4-0004 | C-73 |
| C5J4-0006 | C-73 |
| C5J4-0033 | C-73 |
| C5M4-0002 | C-72 |
| C5M4-0003 | C-72 |
| C5M4-0004 | C-72 |
| C5M4-0005 | C-72 |
| C5P2-0001 | C-67 |
| C5P2-0002 | C-67 |
| C5P5-0001 | C-67 |
| C5P5-0002 | C-67 |
| C5P5-0003 | C-67 |
| C5S4-0500 | C-64 |
| C5S4-0750 | C-64 |
| C5S4-1000 | C-64 |
| C5S4-1250 | C-64 |
| C5S4-1500 | C-64 |
| C5S4-2000 | C-64 |
| C5S5-0500 | C-64 |
| C5S5-0750 | C-64 |
| C5S5-1000 | C-64 |
| C5S5-1250 | C-64 |
| C5S5-1500 | C-64 |
| C5S5-2000 | C-64 |
| C5S6-0500 | C-64 |
| C5S6-0750 | C-64 |
| C5S6-1000 | C-64 |
| C5S6-1250 | C-64 |
| C5S6-1500 | C-64 |
| C5S6-2000 | C-64 |
| C5T4-0001 | C-66 |

| | |
|--------------|------|
| C5T4-0002 | C-66 |
| C5T4-0003 | C-66 |
| C5W4-0005 | D-81 |
| C5X3-0005 | C-63 |
| C5X4-0005 | C-63 |
| C6C1-0032 | B-13 |
| C6C3-1000 | C-47 |
| C6C3-HP16 | C-45 |
| C6C3-HP32 | C-45 |
| C6C4-0016 | B-15 |
| C6C4-0016-ZX | B-33 |
| C6C4-0020 | B-17 |
| C6C4-0020-ZX | B-35 |
| C6C4-0025 | B-19 |
| C6C4-0025-ZX | B-37 |
| C6C4-0032 | B-21 |
| C6C4-0032-ZX | B-39 |
| C6C4-0040 | B-23 |
| C6C4-0040-ZX | B-41 |
| C6C4-1000 | C-47 |
| C6C4-1500 | C-49 |
| C6C5-0016 | B-15 |
| C6C5-0016-ZX | B-33 |
| C6C5-0020 | B-17 |
| C6C5-0020-ZX | B-35 |
| C6C5-0025-ZX | B-37 |
| C6C5-0032 | B-21 |
| C6C5-0032-ZX | B-39 |
| C6C5-0040 | B-23 |
| C6C5-0040-ZX | B-41 |
| C6C5-1000 | C-47 |
| C6C5-1500 | C-49 |
| C6C6-0020 | B-17 |
| C6C6-0020-ZX | B-35 |
| C6C6-0032 | B-21 |
| C6C6-0032-ZX | B-39 |
| C6C6-1000 | C-47 |
| C6C6-1500 | C-49 |
| C6E3-0375 | C-58 |
| C6E3-0500 | C-58 |
| C6E3-0625 | C-58 |
| C6E3-0750 | C-58 |
| C6E3-0875 | C-58 |
| C6E3-1000 | C-58 |
| C6E3-1250 | C-58 |
| C6E3-1500 | C-58 |
| C6E4-0125 | C-58 |
| C6E4-0187 | C-58 |
| C6E4-0250 | C-58 |
| C6E4-0312 | C-58 |
| C6E4-0375 | C-58 |
| C6E4-0437 | C-58 |
| C6E4-0500 | C-58 |
| C6E4-0562 | C-58 |
| C6E4-0625 | C-58 |
| C6E4-0750 | C-59 |
| C6E4-0875 | C-59 |
| C6E4-1000 | C-59 |
| C6E4-1250 | C-59 |
| C6E4-1500 | C-59 |
| C6E4-2000 | C-59 |
| C6E4-M006 | C-59 |
| C6E4-M008 | C-59 |
| C6E4-M010 | C-59 |
| C6E4-M012 | C-59 |
| C6E4-M014 | C-59 |
| C6E4-M016 | C-59 |
| C6E4-M018 | C-59 |
| C6E4-M020 | C-59 |
| C6E5-0375 | C-59 |
| C6E5-0500 | C-59 |
| C6E5-0625 | C-59 |
| C6E5-0750 | C-59 |
| C6E5-0875 | C-59 |
| C6E5-1000 | C-59 |
| C6E5-1250 | C-59 |
| C6E5-1500 | C-59 |

| | |
|--------------|------|
| C6E5-2000 | C-59 |
| C6E6-0375 | C-59 |
| C6E6-0500 | C-59 |
| C6E6-0625 | C-59 |
| C6E6-0750 | C-59 |
| C6E6-0875 | C-59 |
| C6E6-1000 | C-59 |
| C6E6-1250 | C-59 |
| C6F4-1000 | C-71 |
| C6F4-1250 | C-71 |
| C6F5-1000 | C-71 |
| C6F5-1250 | C-71 |
| C6G4-1000 | C-70 |
| C6G4-1250 | C-70 |
| C6G5-1000 | C-70 |
| C6G5-1250 | C-70 |
| C6H4-1018 | C-69 |
| C6H4-1420 | C-69 |
| C6H4-2418 | C-69 |
| C6I4-0750 | C-62 |
| C6I4-1250 | C-62 |
| C6J4-0001 | C-73 |
| C6J4-0002 | C-73 |
| C6J4-0003 | C-73 |
| C6J4-0004 | C-73 |
| C6J4-0006 | C-73 |
| C6J4-0033 | C-73 |
| C6J4-X130 | C-74 |
| C6J4-X160 | C-74 |
| C6K5-0020 | B-17 |
| C6K5-0020-ZX | B-35 |
| C6K5-0032 | B-21 |
| C6K5-0032-ZX | B-39 |
| C6K5-0312 | C-59 |
| C6K5-0375 | C-59 |
| C6K5-0500 | C-59 |
| C6K5-0625 | C-59 |
| C6K5-0750 | C-59 |
| C6K5-1000 | C-59 |
| C6K6-0020 | B-17 |
| C6K6-0020-ZX | B-35 |
| C6K6-0032 | B-21 |
| C6K6-0032-ZX | B-39 |
| C6K6-0375 | C-59 |
| C6K6-0500 | C-59 |
| C6K6-0625 | C-59 |
| C6K6-0750 | C-59 |
| C6K6-1000 | C-59 |
| C6K7-0375 | C-59 |
| C6K7-0500 | C-59 |
| C6K7-0625 | C-59 |
| C6K7-0750 | C-59 |
| C6K7-1000 | C-59 |
| C6K8-0375 | C-59 |
| C6K8-0500 | C-59 |
| C6K8-0625 | C-59 |
| C6K8-0750 | C-59 |
| C6K8-1000 | C-59 |
| C6M4-0002 | C-72 |
| C6M4-0003 | C-72 |
| C6M4-0004 | C-72 |
| C6M4-0005 | C-72 |
| C6P2-0001 | C-67 |
| C6P2-0002 | C-67 |
| C6P5-0001 | C-67 |
| C6P5-0002 | C-67 |
| C6P5-0003 | C-67 |
| C6S4-0500 | C-64 |
| C6S4-0750 | C-64 |
| C6S4-1000 | C-64 |
| C6S4-1250 | C-64 |
| C6S4-1500 | C-64 |
| C6S4-2000 | C-64 |
| C6S4-2500 | C-64 |
| C6S5-0500 | C-64 |
| C6S5-0750 | C-64 |
| C6S5-1000 | C-64 |

| | |
|------------|------|
| C6S5-1250 | C-64 |
| C6S5-1500 | C-64 |
| C6S5-2000 | C-64 |
| C6S5-2500 | C-64 |
| C6S6-0500 | C-64 |
| C6S6-0750 | C-64 |
| C6S6-1000 | C-64 |
| C6S6-1250 | C-64 |
| C6S6-1500 | C-64 |
| C6S6-2000 | C-64 |
| C6T4-0001 | C-66 |
| C6T4-0002 | C-66 |
| C6T4-0003 | C-66 |
| C6W4-0006 | D-81 |
| C6X3-0006 | C-63 |
| C6X4-0006 | C-63 |
| CSD16-0350 | B-29 |
| CSD16-0400 | B-29 |
| CSD16-0450 | B-29 |
| CSD16-0500 | B-29 |
| CSD16-0550 | B-29 |
| CSD16-0600 | B-29 |
| CSD16-0650 | B-29 |
| CSD16-0700 | B-29 |
| CSD16-0750 | B-29 |
| CSD16-0800 | B-29 |
| CSD16-0850 | B-29 |
| CSD16-0900 | B-29 |
| CSD16-0950 | B-29 |
| CSD16-1000 | B-29 |
| CSD20-0350 | B-29 |
| CSD20-0400 | B-29 |
| CSD20-0450 | B-29 |
| CSD20-0500 | B-29 |
| CSD20-0550 | B-29 |
| CSD20-0600 | B-29 |
| CSD20-0650 | B-29 |
| CSD20-0700 | B-29 |
| CSD20-0750 | B-29 |
| CSD20-0800 | B-29 |
| CSD20-0850 | B-29 |
| CSD20-0900 | B-29 |
| CSD20-0950 | B-29 |
| CSD20-1000 | B-29 |
| CSD20-1050 | B-29 |
| CSD20-1100 | B-29 |
| CSD20-1150 | B-29 |
| CSD20-1200 | B-29 |
| CSD20-1250 | B-29 |
| CSD20-1300 | B-29 |
| CSD25-0350 | B-29 |
| CSD25-0400 | B-29 |
| CSD25-0450 | B-29 |
| CSD25-0500 | B-29 |
| CSD25-0550 | B-29 |
| CSD25-0600 | B-29 |
| CSD25-0650 | B-29 |
| CSD25-0700 | B-29 |
| CSD25-0750 | B-29 |
| CSD25-0800 | B-29 |
| CSD25-0850 | B-29 |
| CSD25-0900 | B-29 |
| CSD25-0950 | B-29 |
| CSD25-1000 | B-29 |
| CSD25-1050 | B-29 |
| CSD25-1100 | B-29 |
| CSD25-1150 | B-29 |
| CSD25-1200 | B-29 |
| CSD25-1250 | B-29 |
| CSD25-1300 | B-29 |
| CSD25-1350 | B-29 |
| CSD25-1400 | B-29 |
| CSD25-1450 | B-29 |
| CSD25-1500 | B-29 |
| CSD25-1550 | B-29 |
| CSD25-1600 | B-29 |
| CSD32-0350 | B-30 |

| | |
|------------|------|
| CSD32-0400 | B-30 |
| CSD32-0450 | B-30 |
| CSD32-0500 | B-30 |
| CSD32-0550 | B-30 |
| CSD32-0600 | B-30 |
| CSD32-0650 | B-30 |
| CSD32-0700 | B-30 |
| CSD32-0750 | B-30 |
| CSD32-0800 | B-30 |
| CSD32-0850 | B-30 |
| CSD32-0900 | B-30 |
| CSD32-0950 | B-30 |
| CSD32-1000 | B-30 |
| CSD32-1050 | B-30 |
| CSD32-1100 | B-30 |
| CSD32-1150 | B-30 |
| CSD32-1200 | B-30 |
| CSD32-1250 | B-30 |
| CSD32-1300 | B-30 |
| CSD32-1350 | B-30 |
| CSD32-1400 | B-30 |
| CSD32-1450 | B-30 |
| CSD32-1500 | B-30 |
| CSD32-1550 | B-30 |
| CSD32-1600 | B-30 |
| CSD32-1650 | B-30 |
| CSD32-1700 | B-30 |
| CSD32-1750 | B-30 |
| CSD32-1800 | B-30 |
| CSD32-1850 | B-30 |
| CSD32-1900 | B-30 |
| CSD32-1950 | B-30 |
| CSD32-2000 | B-30 |
| CSD32-2050 | B-30 |
| CSD32-2100 | B-30 |
| CSD40-0350 | B-30 |
| CSD40-0400 | B-30 |
| CSD40-0450 | B-30 |
| CSD40-0500 | B-30 |
| CSD40-0550 | B-30 |
| CSD40-0600 | B-30 |
| CSD40-0650 | B-30 |
| CSD40-0700 | B-30 |
| CSD40-0750 | B-30 |
| CSD40-0800 | B-30 |
| CSD40-0850 | B-30 |
| CSD40-0900 | B-30 |
| CSD40-0950 | B-30 |
| CSD40-1000 | B-30 |
| CSD40-1050 | B-30 |
| CSD40-1100 | B-30 |
| CSD40-1150 | B-30 |
| CSD40-1200 | B-30 |
| CSD40-1250 | B-30 |
| CSD40-1300 | B-30 |
| CSD40-1350 | B-30 |
| CSD40-1400 | B-30 |
| CSD40-1450 | B-30 |
| CSD40-1500 | B-30 |
| CSD40-1550 | B-30 |
| CSD40-1600 | B-30 |
| CSD40-1650 | B-30 |
| CSD40-1700 | B-30 |
| CSD40-1750 | B-30 |
| CSD40-1800 | B-30 |
| CSD40-1850 | B-30 |
| CSD40-1900 | B-30 |
| CSD40-1950 | B-30 |
| CSD40-2000 | B-30 |
| CSD40-2050 | B-30 |
| CSD40-2100 | B-30 |
| CSD40-2150 | B-30 |
| CSD40-2200 | B-30 |
| CSD40-2250 | B-30 |
| CSD40-2300 | B-30 |
| CSD40-2350 | B-30 |
| CSD40-2400 | B-30 |

| | |
|---------------|------|
| CSD40-2450 | B-30 |
| CSD40-2500 | B-30 |
| CSD40-2550 | B-30 |
| CSD40-2600 | B-30 |
| CSER16-0200HP | C-46 |
| CSER16-0300HP | C-46 |
| CSER16-0400HP | C-46 |
| CSER16-0500HP | C-46 |
| CSER16-0600HP | C-46 |
| CSER16-0700HP | C-46 |
| CSER16-0800HP | C-46 |
| CSER16-0900HP | C-46 |
| CSER16-1000HP | C-46 |
| CSER16-F125HP | C-46 |
| CSER16-F187HP | C-46 |
| CSER16-F250HP | C-46 |
| CSER16-F312HP | C-46 |
| CSER16-F375HP | C-46 |
| CSER32-0300HP | C-46 |
| CSER32-0400HP | C-46 |
| CSER32-0500HP | C-46 |
| CSER32-0600HP | C-46 |
| CSER32-0700HP | C-46 |
| CSER32-0800HP | C-46 |
| CSER32-0900HP | C-46 |
| CSER32-1000HP | C-46 |
| CSER32-1100HP | C-46 |
| CSER32-1200HP | C-46 |
| CSER32-1300HP | C-46 |
| CSER32-1400HP | C-46 |
| CSER32-1500HP | C-46 |
| CSER32-1600HP | C-46 |
| CSER32-1700HP | C-46 |
| CSER32-1800HP | C-46 |
| CSER32-1900HP | C-46 |
| CSER32-2000HP | C-46 |
| CSER32-F125HP | C-46 |
| CSER32-F187HP | C-46 |
| CSER32-F250HP | C-46 |
| CSER32-F312HP | C-46 |
| CSER32-F375HP | C-46 |
| CSER32-F437HP | C-46 |
| CSER32-F500HP | C-46 |
| CSER32-F562HP | C-46 |
| CSER32-F625HP | C-46 |
| CSER32-F750HP | C-46 |
| D | |
| DA10-29ST | C-54 |
| DA10-0125 | C-54 |
| DA10-0140 | C-54 |
| DA10-0156 | C-54 |
| DA10-0171 | C-54 |
| DA10-0187 | C-54 |
| DA10-0203 | C-54 |
| DA10-0218 | C-54 |
| DA10-0234 | C-54 |
| DA10-0250 | C-54 |
| DA10-0265 | C-54 |
| DA10-0281 | C-54 |
| DA10-0296 | C-54 |
| DA10-0312 | C-54 |
| DA10-0328 | C-54 |
| DA10-0343 | C-54 |
| DA10-0359 | C-54 |
| DA10-0375 | C-54 |
| DA10-0390 | C-54 |
| DA10-0406 | C-54 |
| DA10-0421 | C-54 |
| DA10-0437 | C-54 |
| DA10-0453 | C-54 |
| DA10-0468 | C-54 |
| DA10-0484 | C-54 |
| DA10-0500 | C-54 |
| DA10-0515 | C-54 |
| DA10-0531 | C-54 |
| DA10-0546 | C-54 |
| DA10-0562 | C-54 |

| | | | | | | | |
|-----------|------|-------------|------|-------------|------|-------------|------|
| DA18-335 | C-54 | DACE-0020 | C-53 | ER16-1000SS | B-27 | ER20-0800S | B-27 |
| DA18-0187 | C-54 | DACE-0030 | C-53 | ER16-F062 | B-25 | ER20-0900 | B-25 |
| DA18-0250 | C-54 | DACN-0010 | C-54 | ER16-F093 | B-25 | ER20-0900EC | B-27 |
| DA18-0265 | C-54 | DACN-0018 | C-54 | ER16-F125 | B-25 | ER20-0900S | B-27 |
| DA18-0281 | C-54 | DACN-0020 | C-53 | ER16-F125EC | B-27 | ER20-1000 | B-25 |
| DA18-0296 | C-54 | DACN-0030 | C-53 | ER16-F125HP | C-46 | ER20-1000EC | B-27 |
| DA18-0312 | C-54 | | | ER16-F125S | B-27 | ER20-1000S | B-27 |
| DA18-0328 | C-54 | E | | ER16-F125SS | B-27 | ER20-1100 | B-25 |
| DA18-0343 | C-54 | ER11-03ST | B-25 | ER16-F156 | B-25 | ER20-1100EC | B-27 |
| DA18-0359 | C-54 | ER11-13ST | B-25 | ER16-F156EC | B-27 | ER20-1100S | B-27 |
| DA18-0375 | C-54 | ER11-0100 | B-25 | ER16-F156S | B-27 | ER20-1200 | B-25 |
| DA18-0390 | C-54 | ER11-0150 | B-25 | ER16-F156SS | B-27 | ER20-1200EC | B-27 |
| DA18-0406 | C-54 | ER11-0200 | B-25 | ER16-F187 | B-25 | ER20-1200S | B-27 |
| DA18-0421 | C-54 | ER11-0250 | B-25 | ER16-F187EC | B-27 | ER20-1300 | B-25 |
| DA18-0437 | C-54 | ER11-0300 | B-25 | ER16-F187HP | C-46 | ER20-1300EC | B-27 |
| DA18-0453 | C-54 | ER11-0350 | B-25 | ER16-F187S | B-27 | ER20-1300S | B-27 |
| DA18-0468 | C-54 | ER11-0400 | B-25 | ER16-F187SS | B-27 | ER20-F062 | B-25 |
| DA18-0484 | C-54 | ER11-0450 | B-25 | ER16-F218 | B-25 | ER20-F093 | B-25 |
| DA18-0500 | C-54 | ER11-0500 | B-25 | ER16-F218EC | B-27 | ER20-F125 | B-25 |
| DA18-0515 | C-54 | ER11-0550 | B-25 | ER16-F218S | B-27 | ER20-F125EC | B-27 |
| DA18-0531 | C-54 | ER11-0600 | B-25 | ER16-F218SS | B-27 | ER20-F125S | B-27 |
| DA18-0546 | C-54 | ER11-0650 | B-25 | ER16-F250 | B-25 | ER20-F156 | B-25 |
| DA18-0562 | C-54 | ER11-0700 | B-25 | ER16-F250EC | B-27 | ER20-F156EC | B-27 |
| DA18-0578 | C-54 | ER11-F125 | B-25 | ER16-F250HP | C-46 | ER20-F156S | B-27 |
| DA18-0593 | C-54 | ER11-F187 | B-25 | ER16-F250S | B-27 | ER20-F156SS | B-27 |
| DA18-0609 | C-54 | ER11-F250 | B-25 | ER16-F250SS | B-27 | ER20-F187 | B-25 |
| DA18-0625 | C-54 | ER16-08STEC | B-27 | ER16-F281 | B-25 | ER20-F187EC | B-27 |
| DA18-0640 | C-54 | ER16-08STS | B-27 | ER16-F281EC | B-27 | ER20-F187S | B-27 |
| DA18-0656 | C-54 | ER16-9FSTEC | B-27 | ER16-F281S | B-27 | ER20-F187SS | B-27 |
| DA18-0671 | C-54 | ER16-09STS | B-27 | ER16-F281SS | B-27 | ER20-F218 | B-25 |
| DA18-0687 | C-54 | ER16-09STSS | B-27 | ER16-F312 | B-25 | ER20-F218EC | B-27 |
| DA18-0703 | C-54 | ER16-10ST | B-25 | ER16-F312EC | B-27 | ER20-F218S | B-27 |
| DA18-0718 | C-54 | ER16-11ST | B-25 | ER16-F312HP | C-46 | ER20-F218SS | B-27 |
| DA18-0734 | C-54 | ER16-0100 | B-25 | ER16-F312S | B-27 | ER20-F250 | B-25 |
| DA18-0750 | C-54 | ER16-0100HP | C-46 | ER16-F312SS | B-27 | ER20-F250EC | B-27 |
| DA20-215T | C-53 | ER16-0150 | B-25 | ER16-F343 | B-25 | ER20-F250S | B-27 |
| DA20-0062 | C-53 | ER16-0200 | B-25 | ER16-F343EC | B-27 | ER20-F250SS | B-27 |
| DA20-0078 | C-53 | ER16-0200HP | C-46 | ER16-F343S | B-27 | ER20-F281 | B-25 |
| DA20-0093 | C-53 | ER16-0250 | B-25 | ER16-F343SS | B-27 | ER20-F281EC | B-27 |
| DA20-0109 | C-53 | ER16-0300 | B-25 | ER16-F375 | B-25 | ER20-F281S | B-27 |
| DA20-0125 | C-53 | ER16-0300EC | B-27 | ER16-F375EC | B-27 | ER20-F281SS | B-27 |
| DA20-0140 | C-53 | ER16-0300HP | C-46 | ER16-F375HP | C-46 | ER20-F312 | B-25 |
| DA20-0156 | C-53 | ER16-0300S | B-27 | ER16-F375S | B-27 | ER20-F312EC | B-27 |
| DA20-0171 | C-53 | ER16-0300SS | B-27 | ER16-F375SS | B-27 | ER20-F312S | B-27 |
| DA20-0187 | C-53 | ER16-0400 | B-25 | ER16-T006 | B-25 | ER20-F312SS | B-27 |
| DA20-0203 | C-53 | ER16-0400EC | B-27 | ER16-T008 | B-25 | ER20-F343 | B-25 |
| DA20-0218 | C-53 | ER16-0400HP | C-46 | ER16-T010 | B-25 | ER20-F343EC | B-27 |
| DA20-0234 | C-53 | ER16-0400S | B-27 | ER16-T012 | B-25 | ER20-F343S | B-27 |
| DA20-0250 | C-53 | ER16-0400SS | B-27 | ER16-T250 | B-25 | ER20-F343SS | B-27 |
| DA20-0265 | C-53 | ER16-0500 | B-25 | ER20-11STEC | B-27 | ER20-F375 | B-25 |
| DA20-0281 | C-53 | ER16-0500EC | B-27 | ER20-11STS | B-27 | ER20-F375EC | B-27 |
| DA20-0296 | C-53 | ER16-0500HP | C-46 | ER20-12ST | B-25 | ER20-F375S | B-27 |
| DA20-0312 | C-53 | ER16-0500S | B-27 | ER20-12STS3 | B-27 | ER20-F375SS | B-27 |
| DA20-0328 | C-53 | ER16-0500SS | B-27 | ER20-13STEC | B-27 | ER20-F406 | B-25 |
| DA20-0343 | C-53 | ER16-0600 | B-25 | ER20-13STS | B-27 | ER20-F406EC | B-27 |
| DA20-0359 | C-53 | ER16-0600EC | B-27 | ER20-15ST | B-25 | ER20-F406S | B-27 |
| DA20-0375 | C-53 | ER16-0600HP | C-46 | ER20-0150 | B-25 | ER20-F406SS | B-27 |
| DA30-14ST | C-53 | ER16-0600S | B-27 | ER20-0200 | B-25 | ER20-F437 | B-25 |
| DA30-0046 | C-53 | ER16-0600SS | B-27 | ER20-0250 | B-25 | ER20-F437EC | B-27 |
| DA30-0062 | C-53 | ER16-0700 | B-25 | ER20-0300 | B-25 | ER20-F437S | B-27 |
| DA30-0078 | C-53 | ER16-0700EC | B-27 | ER20-0300EC | B-27 | ER20-F468 | B-25 |
| DA30-0093 | C-53 | ER16-0700HP | C-46 | ER20-0300S | B-27 | ER20-F468EC | B-27 |
| DA30-0109 | C-53 | ER16-0700S | B-27 | ER20-0400 | B-25 | ER20-F468S | B-27 |
| DA30-0125 | C-53 | ER16-0700SS | B-27 | ER20-0400EC | B-27 | ER20-F468SS | B-27 |
| DA30-0140 | C-53 | ER16-0800 | B-25 | ER20-0400S | B-27 | ER20-F500 | B-25 |
| DA30-0156 | C-53 | ER16-0800EC | B-27 | ER20-0500 | B-25 | ER20-F500EC | B-27 |
| DA30-0171 | C-53 | ER16-0800HP | C-46 | ER20-0500EC | B-27 | ER20-F500S | B-27 |
| DA30-0187 | C-53 | ER16-0800S | B-27 | ER20-0600 | B-25 | ER20-F500SS | B-27 |
| DA30-0203 | C-53 | ER16-0800SS | B-27 | ER20-0600EC | B-27 | ER20-T008 | B-25 |
| DA30-0218 | C-53 | ER16-0900 | B-25 | ER20-0600S | B-27 | ER20-T010 | B-25 |
| DA30-0234 | C-53 | ER16-0900EC | B-27 | ER20-0600SS | B-27 | ER20-T012 | B-25 |
| DA30-0250 | C-53 | ER16-0900HP | C-46 | ER20-0700 | B-25 | ER20-T250 | B-25 |
| DA30-0265 | C-53 | ER16-0900S | B-27 | ER20-0700EC | B-27 | ER20-T312 | B-25 |
| DA30-0300 | C-53 | ER16-0900SS | B-27 | ER20-0700S | B-27 | ER20-T375 | B-25 |
| DA30-0350 | C-53 | ER16-1000 | B-25 | ER20-0800 | B-25 | ER20-T437 | B-25 |
| DA30-0400 | C-53 | ER16-1000EC | B-27 | ER20-0800EC | B-27 | ER20-T500 | B-25 |
| DACE-0010 | C-54 | ER16-1000HP | C-46 | | | | |
| DACE-0018 | C-54 | ER16-1000S | B-27 | | | | |

| | |
|-------------|------|
| ER25-07STSS | B-27 |
| ER25-09ST | B-26 |
| ER25-09STEC | B-27 |
| ER25-09STSS | B-27 |
| ER25-14STEC | B-27 |
| ER25-14STS | B-27 |
| ER25-14STSS | B-27 |
| ER25-15ST | B-26 |
| ER25-0150 | B-26 |
| ER25-0200 | B-26 |
| ER25-0250 | B-26 |
| ER25-0300 | B-26 |
| ER25-0300EC | B-27 |
| ER25-0300SS | B-27 |
| ER25-0300SS | B-27 |
| ER25-0400 | B-26 |
| ER25-0400EC | B-27 |
| ER25-0400SS | B-27 |
| ER25-0400SS | B-27 |
| ER25-0500 | B-26 |
| ER25-0500EC | B-27 |
| ER25-0500SS | B-27 |
| ER25-0500SS | B-27 |
| ER25-0600 | B-26 |
| ER25-0600EC | B-27 |
| ER25-0600SS | B-27 |
| ER25-0600SS | B-27 |
| ER25-0700 | B-26 |
| ER25-0700EC | B-27 |
| ER25-0700SS | B-27 |
| ER25-0700SS | B-27 |
| ER25-0800 | B-26 |
| ER25-0800EC | B-27 |
| ER25-0800SS | B-27 |
| ER25-0800SS | B-27 |
| ER25-0900 | B-26 |
| ER25-0900EC | B-27 |
| ER25-0900SS | B-27 |
| ER25-0900SS | B-27 |
| ER25-1000 | B-26 |
| ER25-1000EC | B-27 |
| ER25-1000SS | B-27 |
| ER25-1000SS | B-27 |
| ER25-1100 | B-26 |
| ER25-1100EC | B-27 |
| ER25-1100SS | B-27 |
| ER25-1100SS | B-27 |
| ER25-1200 | B-26 |
| ER25-1200EC | B-27 |
| ER25-1200SS | B-27 |
| ER25-1200SS | B-27 |
| ER25-1300 | B-26 |
| ER25-1300EC | B-27 |
| ER25-1300SS | B-27 |
| ER25-1300SS | B-27 |
| ER25-1400 | B-26 |
| ER25-1400EC | B-27 |
| ER25-1400SS | B-27 |
| ER25-1400SS | B-27 |
| ER25-1500 | B-26 |
| ER25-1500EC | B-27 |
| ER25-1500SS | B-27 |
| ER25-1500SS | B-27 |
| ER25-1600 | B-26 |
| ER25-1600EC | B-27 |
| ER25-1600SS | B-27 |
| ER25-1600SS | B-27 |
| ER25-F125 | B-26 |
| ER25-F125EC | B-27 |
| ER25-F125SS | B-27 |
| ER25-F187 | B-26 |
| ER25-F187EC | B-27 |
| ER25-F187SS | B-27 |
| ER25-F250 | B-26 |
| ER25-F250EC | B-27 |
| ER25-F250SS | B-27 |
| ER25-F250SS | B-27 |

| | |
|-------------|------|
| ER25-F312 | B-26 |
| ER25-F312EC | B-27 |
| ER25-F312SS | B-27 |
| ER25-F312SS | B-27 |
| ER25-F375 | B-26 |
| ER25-F375EC | B-27 |
| ER25-F375SS | B-27 |
| ER25-F375SS | B-27 |
| ER25-F437 | B-26 |
| ER25-F437EC | B-27 |
| ER25-F437SS | B-27 |
| ER25-F437SS | B-27 |
| ER25-F500 | B-26 |
| ER25-F500EC | B-27 |
| ER25-F500SS | B-27 |
| ER25-F500SS | B-27 |
| ER25-F562 | B-26 |
| ER25-F562EC | B-27 |
| ER25-F562SS | B-27 |
| ER25-F562SS | B-27 |
| ER25-F625 | B-26 |
| ER25-F625EC | B-27 |
| ER25-F625SS | B-27 |
| ER25-F625SS | B-27 |
| ER25-P062 | B-26 |
| ER25-P125 | B-26 |
| ER25-T008 | B-26 |
| ER25-T010 | B-26 |
| ER25-T012 | B-26 |
| ER25-T250 | B-26 |
| ER25-T312 | B-26 |
| ER25-T375 | B-26 |
| ER25-T437 | B-26 |
| ER25-T500 | B-26 |
| ER25-T562 | B-26 |
| ER25-T625 | B-26 |
| ER32-08STSS | B-28 |
| ER32-09STSS | B-28 |
| ER32-11ST | B-26 |
| ER32-11STEC | B-28 |
| ER32-11STSS | B-28 |
| ER32-13STSS | B-28 |
| ER32-17STEC | B-28 |
| ER32-17STSS | B-28 |
| ER32-18ST | B-26 |
| ER32-0300 | B-26 |
| ER32-0300HP | C-46 |
| ER32-0400 | B-26 |
| ER32-0400EC | B-28 |
| ER32-0400HP | C-46 |
| ER32-0400SS | B-28 |
| ER32-0400SS | B-28 |
| ER32-0500 | B-26 |
| ER32-0500EC | B-28 |
| ER32-0500HP | C-46 |
| ER32-0500SS | B-28 |
| ER32-0500SS | B-28 |
| ER32-0600 | B-26 |
| ER32-0600EC | B-28 |
| ER32-0600HP | C-46 |
| ER32-0600SS | B-28 |
| ER32-0600SS | B-28 |
| ER32-0700 | B-26 |
| ER32-0700EC | B-28 |
| ER32-0700HP | C-46 |
| ER32-0700SS | B-28 |
| ER32-0700SS | B-28 |
| ER32-0800 | B-26 |
| ER32-0800EC | B-28 |
| ER32-0800HP | C-46 |
| ER32-0800SS | B-28 |
| ER32-0800SS | B-28 |
| ER32-0900 | B-26 |
| ER32-0900EC | B-28 |
| ER32-0900HP | C-46 |
| ER32-0900SS | B-28 |
| ER32-0900SS | B-28 |

| | |
|-------------|------|
| ER32-1000 | B-26 |
| ER32-1000EC | B-28 |
| ER32-1000HP | C-46 |
| ER32-1000SS | B-28 |
| ER32-1000SS | B-28 |
| ER32-1100 | B-26 |
| ER32-1100EC | B-28 |
| ER32-1100HP | C-46 |
| ER32-1100SS | B-28 |
| ER32-1100SS | B-28 |
| ER32-1200 | B-26 |
| ER32-1200EC | B-28 |
| ER32-1200HP | C-46 |
| ER32-1200SS | B-28 |
| ER32-1200SS | B-28 |
| ER32-1300 | B-26 |
| ER32-1300EC | B-28 |
| ER32-1300HP | C-46 |
| ER32-1300SS | B-28 |
| ER32-1300SS | B-28 |
| ER32-1400 | B-26 |
| ER32-1400EC | B-28 |
| ER32-1400HP | C-46 |
| ER32-1400SS | B-28 |
| ER32-1400SS | B-28 |
| ER32-1500 | B-26 |
| ER32-1500EC | B-28 |
| ER32-1500HP | C-46 |
| ER32-1500SS | B-28 |
| ER32-1600 | B-26 |
| ER32-1600EC | B-28 |
| ER32-1600HP | C-46 |
| ER32-1600SS | B-28 |
| ER32-1600SS | B-28 |
| ER32-1700 | B-26 |
| ER32-1700EC | B-28 |
| ER32-1700HP | C-46 |
| ER32-1700SS | B-28 |
| ER32-1800 | B-26 |
| ER32-1800EC | B-28 |
| ER32-1800HP | C-46 |
| ER32-1800SS | B-28 |
| ER32-1800SS | B-28 |
| ER32-1900 | B-26 |
| ER32-1900EC | B-28 |
| ER32-1900HP | C-46 |
| ER32-1900SS | B-28 |
| ER32-2000 | B-26 |
| ER32-2000EC | B-28 |
| ER32-2000HP | C-46 |
| ER32-2000SS | B-28 |
| ER32-2000SS | B-28 |
| ER32-F125 | B-26 |
| ER32-F125EC | B-28 |
| ER32-F125HP | C-46 |
| ER32-F125SS | B-28 |
| ER32-F187 | B-26 |
| ER32-F187EC | B-28 |
| ER32-F187HP | C-46 |
| ER32-F187SS | B-28 |
| ER32-F250 | B-26 |
| ER32-F250EC | B-28 |
| ER32-F250HP | C-46 |
| ER32-F250SS | B-28 |
| ER32-F250SS | B-28 |
| ER32-F281 | B-26 |
| ER32-F281SS | B-28 |
| ER32-F312 | B-26 |
| ER32-F312EC | B-28 |
| ER32-F312HP | C-46 |
| ER32-F312SS | B-28 |
| ER32-F312SS | B-28 |
| ER32-F375 | B-26 |
| ER32-F375EC | B-28 |
| ER32-F375HP | C-46 |
| ER32-F375SS | B-28 |

| | |
|-------------|------|
| ER32-F375SS | B-28 |
| ER32-F437 | B-26 |
| ER32-F437EC | B-28 |
| ER32-F437HP | C-46 |
| ER32-F437SS | B-28 |
| ER32-F437SS | B-28 |
| ER32-F500 | B-26 |
| ER32-F500EC | B-28 |
| ER32-F500HP | C-46 |
| ER32-F500SS | B-28 |
| ER32-F500SS | B-28 |
| ER32-F562 | B-26 |
| ER32-F562EC | B-28 |
| ER32-F562HP | C-46 |
| ER32-F562SS | B-28 |
| ER32-F562SS | B-28 |
| ER32-F625 | B-26 |
| ER32-F625EC | B-28 |
| ER32-F625HP | C-46 |
| ER32-F625SS | B-28 |
| ER32-F625SS | B-28 |
| ER32-F687 | B-26 |
| ER32-F687EC | B-28 |
| ER32-F687SS | B-28 |
| ER32-F687SS | B-28 |
| ER32-F750 | B-26 |
| ER32-F750EC | B-28 |
| ER32-F750HP | C-46 |
| ER32-F750SS | B-28 |
| ER32-F750SS | B-28 |
| ER32-P062 | B-26 |
| ER32-P125 | B-26 |
| ER32-P250 | B-26 |
| ER32-T008 | B-26 |
| ER32-T010 | B-26 |
| ER32-T012 | B-26 |
| ER32-T250 | B-26 |
| ER32-T312 | B-26 |
| ER32-T375 | B-26 |
| ER32-T437 | B-26 |
| ER32-T500 | B-26 |
| ER32-T562 | B-26 |
| ER32-T625 | B-26 |
| ER32-T687 | B-26 |
| ER32-T750 | B-26 |
| ER32-T812 | B-26 |
| ER40-09STSS | B-28 |
| ER40-15ST | B-26 |
| ER40-15STEC | B-28 |
| ER40-15STSS | B-28 |
| ER40-23ST | B-26 |
| ER40-23STEC | B-28 |
| ER40-23STSS | B-28 |
| ER40-0400 | B-26 |
| ER40-0400EC | B-28 |
| ER40-0400SS | B-28 |
| ER40-0500 | B-26 |
| ER40-0500EC | B-28 |
| ER40-0500SS | B-28 |
| ER40-0600 | B-26 |
| ER40-0600EC | B-28 |
| ER40-0600SS | B-28 |
| ER40-0700 | B-26 |
| ER40-0700EC | B-28 |
| ER40-0700SS | B-28 |
| ER40-0800 | B-26 |
| ER40-0800EC | B-28 |
| ER40-0800SS | B-28 |
| ER40-0900 | B-26 |
| ER40-0900EC | B-28 |
| ER40-0900SS | B-28 |
| ER40-1000 | B-26 |
| ER40-1000EC | B-28 |
| ER40-1000SS | B-28 |
| ER40-1100 | B-26 |
| ER40-1100EC | B-28 |
| ER40-1100SS | B-28 |

| | | | | | | | |
|-------------|------|--------------|------|--------------|------|--------------|------|
| ER40-1200 | B-26 | ER40-F562S | B-28 | H2C5A0011-ZX | B-32 | H4E3A1500 | C-60 |
| ER40-1200EC | B-28 | ER40-F562SS | B-28 | H2C5A0016-ZX | B-15 | H4E4A0250 | C-60 |
| ER40-1200S | B-28 | ER40-F625 | B-26 | H2C5A0016-ZX | B-33 | H4E4A0312 | C-60 |
| ER40-1300 | B-26 | ER40-F625EC | B-28 | H2C5A0020 | B-17 | H4E4A0375 | C-60 |
| ER40-1300EC | B-28 | ER40-F625S | B-28 | H2C5A0020-ZX | B-35 | H4E4A0500 | C-60 |
| ER40-1300S | B-28 | ER40-F625SS | B-28 | H2C5E0011 | B-14 | H4E4A0625 | C-60 |
| ER40-1400 | B-26 | ER40-F687 | B-26 | H2C5E0016 | B-15 | H4E4A0750 | C-60 |
| ER40-1400EC | B-28 | ER40-F687EC | B-28 | H2C5E0016-ZX | B-33 | H4E4A0875 | C-60 |
| ER40-1400S | B-28 | ER40-F687S | B-28 | H2C5E0020 | B-17 | H4E4A1000 | C-60 |
| ER40-1500 | B-26 | ER40-F687SS | B-28 | H2C5E0020-ZX | B-35 | H4E4A1250 | C-60 |
| ER40-1500EC | B-28 | ER40-F750 | B-26 | H2W4A0002 | D-81 | H4E4A1500 | C-60 |
| ER40-1500S | B-28 | ER40-F750EC | B-28 | H2X3A0002 | C-63 | H4E5A0250 | C-60 |
| ER40-1600 | B-26 | ER40-F750S | B-28 | H3W4A0003 | D-81 | H4E5A0312 | C-60 |
| ER40-1600EC | B-28 | ER40-F750SS | B-28 | H4C3A0011 | B-14 | H4E5A0375 | C-60 |
| ER40-1600S | B-28 | ER40-F812 | B-26 | H4C3A0011-ZX | B-32 | H4E5A0500 | C-60 |
| ER40-1700 | B-26 | ER40-F812EC | B-28 | H4C3A0016 | B-15 | H4E5A0625 | C-60 |
| ER40-1700EC | B-28 | ER40-F812S | B-28 | H4C3A0016-ZX | B-33 | H4E5A0750 | C-60 |
| ER40-1700S | B-28 | ER40-F875 | B-26 | H4C3A0020 | B-17 | H4E5A0875 | C-60 |
| ER40-1800 | B-26 | ER40-F875EC | B-28 | H4C3A0020-ZX | B-35 | H4P2A0001 | C-67 |
| ER40-1800EC | B-28 | ER40-F875S | B-28 | H4C3A0025 | B-19 | H4P2A0002 | C-67 |
| ER40-1800S | B-28 | ER40-F875SS | B-28 | H4C3A0025-ZX | B-37 | H4S3A0750 | C-65 |
| ER40-1900 | B-26 | ER40-F937 | B-26 | H4C3A0032 | B-21 | H4S3A1000 | C-65 |
| ER40-1900EC | B-28 | ER40-F937EC | B-28 | H4C3A0032-ZX | B-39 | H4S3A1250 | C-65 |
| ER40-1900S | B-28 | ER40-F937S | B-28 | H4C3A0040 | B-23 | H4S3A1500 | C-65 |
| ER40-2000 | B-26 | ER40-T100 | B-26 | H4C3A0040-ZX | B-41 | H4S3F0750 | C-65 |
| ER40-2000EC | B-28 | ER40-T250 | B-26 | H4C3A1000 | C-47 | H4W4A0004 | D-81 |
| ER40-2000S | B-28 | ER40-T312 | B-26 | H4C3A1500 | C-49 | H4X3A0004 | C-63 |
| ER40-2100 | B-26 | ER40-T375 | B-26 | H4C3AHP16 | C-45 | H6C3A0016 | B-15 |
| ER40-2100EC | B-28 | ER40-T437 | B-26 | H4C3AHP32 | C-45 | H6C3A0016-ZX | B-33 |
| ER40-2100S | B-28 | ER40-T500 | B-26 | H4C3F0011 | B-14 | H6C3A0020 | B-17 |
| ER40-2200 | B-26 | ER40-T562 | B-26 | H4C3F0011-ZX | B-32 | H6C3A0020-ZX | B-35 |
| ER40-2200EC | B-28 | ER40-T625 | B-26 | H4C3F0016 | B-15 | H6C3A0025 | B-19 |
| ER40-2200S | B-28 | ER40-T687 | B-26 | H4C3F0016-ZX | B-33 | H6C3A0025-ZX | B-37 |
| ER40-2300 | B-26 | ER40-T750 | B-26 | H4C3F0020 | B-17 | H6C3A0032 | B-21 |
| ER40-2300EC | B-28 | ER40-T812 | B-26 | H4C3F0020-ZX | B-35 | H6C3A0032-ZX | B-39 |
| ER40-2300S | B-28 | ER40-T875 | B-26 | H4C3F0032 | B-21 | H6C3A1000 | C-47 |
| ER40-2400 | B-26 | ER40-T937 | B-26 | H4C3F0032-ZX | B-39 | H6C3A1500 | C-49 |
| ER40-2400EC | B-28 | ERCE-0011 | B-14 | H4C4A0011 | B-14 | H6C3AHP32 | C-45 |
| ER40-2400S | B-28 | ERCE-0011-ZX | B-32 | H4C4A0011-ZX | B-32 | H6C4A0016 | B-15 |
| ER40-2500 | B-26 | ERCE-0016 | B-16 | H4C4A0016 | B-15 | H6C4A0016-ZX | B-33 |
| ER40-2500EC | B-28 | ERCE-0016-ZX | B-34 | H4C4A0016-ZX | B-33 | H6C4A0020 | B-17 |
| ER40-2500S | B-28 | ERCE-0020 | B-18 | H4C4A0020 | B-17 | H6C4A0020-ZX | B-35 |
| ER40-2600 | B-26 | ERCE-0020-ZX | B-36 | H4C4A0020-ZX | B-35 | H6C4A0025 | B-19 |
| ER40-2600EC | B-28 | ERCE-0025 | B-20 | H4C4A0025 | B-19 | H6C4A0025-ZX | B-37 |
| ER40-2600S | B-28 | ERCE-0025-ZX | B-38 | H4C4A0025-ZX | B-37 | H6C4A0032 | B-21 |
| ER40-2600S | B-28 | ERCE-0032 | B-22 | H4C4A0032 | B-21 | H6C4A0032-ZX | B-39 |
| ER40-F100 | B-26 | ERCE-0032-ZX | B-40 | H4C4A0032-ZX | B-39 | H6C4A0040 | B-23 |
| ER40-F100EC | B-28 | ERCE-0040 | B-24 | H4C4A0040 | B-23 | H6C4A0040-ZX | B-41 |
| ER40-F100S | B-28 | ERCE-0040-ZX | B-42 | H4C4A0040-ZX | B-41 | H6C4A1000 | C-47 |
| ER40-F100SS | B-28 | G | | H4C4A1000 | C-47 | H6C4A1500 | C-49 |
| ER40-F125 | B-26 | GDAT-0001 | D-80 | H4C4F0011 | B-14 | H6C5A0016 | B-15 |
| ER40-F125EC | B-28 | GDKT-0001 | D-80 | H4C4F0011-ZX | B-32 | H6C5A0016-ZX | B-33 |
| ER40-F125S | B-28 | H | | H4C4F0016 | B-15 | H6C5A0020 | B-17 |
| ER40-F187 | B-26 | H2C3A0011 | B-14 | H4C4F0016-ZX | B-33 | H6C5A0020-ZX | B-35 |
| ER40-F187EC | B-28 | H2C3A0011-ZX | B-32 | H4C4F0020 | B-17 | H6C5A0025 | B-19 |
| ER40-F187S | B-28 | H2C3A0016 | B-15 | H4C4F0020-ZX | B-35 | H6C5A0025-ZX | B-37 |
| ER40-F250 | B-26 | H2C3A0016-ZX | B-33 | H4C4F0032 | B-21 | H6C5A0032 | B-21 |
| ER40-F250EC | B-28 | H2C3A0020 | B-17 | H4C4F0032-ZX | B-39 | H6C5A0032-ZX | B-39 |
| ER40-F250S | B-28 | H2C3A0020-ZX | B-35 | H4C5A0016 | B-15 | H6E3A0250 | C-60 |
| ER40-F312 | B-26 | H2C3E0011 | B-14 | H4C5A0016-ZX | B-33 | H6E3A0312 | C-60 |
| ER40-F312EC | B-28 | H2C3E0011-ZX | B-32 | H4C5A0020 | B-17 | H6E3A0375 | C-60 |
| ER40-F312S | B-28 | H2C3E0016 | B-15 | H4C5A0020-ZX | B-35 | H6E3A0500 | C-60 |
| ER40-F3435 | B-28 | H2C3E0016-ZX | B-33 | H4C5A0025 | B-19 | H6E3A0625 | C-60 |
| ER40-F375 | B-26 | H2C3E0020 | B-17 | H4C5A0025-ZX | B-37 | H6E3A0750 | C-60 |
| ER40-F375EC | B-28 | H2C3E0020-ZX | B-35 | H4C5A0032 | B-21 | H6E3A0875 | C-60 |
| ER40-F375S | B-28 | H2C4A0011 | B-14 | H4C5A0032-ZX | B-39 | H6E3A1000 | C-60 |
| ER40-F375SS | B-28 | H2C4A0011-ZX | B-32 | H4C5F0020 | B-17 | H6E3A1250 | C-60 |
| ER40-F437 | B-26 | H2C4A0016 | B-15 | H4C5F0020-ZX | B-35 | H6E3A1500 | C-60 |
| ER40-F437EC | B-28 | H2C4A0016-ZX | B-33 | H4E3A0250 | C-60 | H6E3A2000 | C-60 |
| ER40-F437S | B-28 | H2C4A0020 | B-17 | H4E3A0312 | C-60 | H6E4A0250 | C-60 |
| ER40-F437SS | B-28 | H2C4A0020-ZX | B-35 | H4E3A0375 | C-60 | H6E4A0312 | C-60 |
| ER40-F500 | B-26 | H2C4E0011 | B-14 | H4E3A0500 | C-60 | H6E4A0375 | C-60 |
| ER40-F500EC | B-28 | H2C4E0016 | B-15 | H4E3A0625 | C-60 | H6E4A0500 | C-60 |
| ER40-F500S | B-28 | H2C4E0016-ZX | B-33 | H4E3A0750 | C-60 | H6E4A0625 | C-60 |
| ER40-F500SS | B-28 | H2C4E0020 | B-17 | H4E3A0875 | C-60 | H6E4A0750 | C-60 |
| ER40-F562 | B-26 | H2C4E0020-ZX | B-35 | H4E3A1000 | C-60 | H6E4A0875 | C-60 |
| ER40-F562EC | B-28 | H2C5A0011 | B-14 | H4E3A1250 | C-60 | H6E4A1000 | C-60 |

| | |
|-------------|------|
| H6E4A1250 | C-60 |
| H6E4A1500 | C-60 |
| H6E5A0250 | C-60 |
| H6E5A0312 | C-60 |
| H6E5A0375 | C-60 |
| H6E5A0500 | C-60 |
| H6E5A0625 | C-60 |
| H6E5A0750 | C-60 |
| H6E5A0875 | C-60 |
| H6P2A0001 | C-67 |
| H6P2A0002 | C-67 |
| H6S3A0750 | C-65 |
| H6S3A1000 | C-65 |
| H6S3A1250 | C-65 |
| H6S3A1500 | C-65 |
| H6S3A2000 | C-65 |
| H6W4A0006 | D-81 |
| H6X3A0006 | C-63 |
| R | |
| RB2M-0001 | D-76 |
| RB2M-0001-C | D-76 |
| RB2M-0002 | D-76 |
| RB2M-0100 | D-77 |
| RB3M-0001 | D-76 |
| RB3M-0002 | D-76 |
| RB3M-0100 | D-77 |
| RB3M-0101 | D-77 |
| RB4E-0001 | D-76 |
| RB4E-0001-C | D-76 |
| RB4E-0002 | D-76 |
| RB4E-0002-C | D-76 |
| RB4E-0003 | D-76 |
| RB4E-0003-C | D-76 |
| RB4E-0100 | D-77 |
| RB4E-0101 | D-77 |
| RB4M-0001 | D-76 |
| RB4M-0001-C | D-76 |
| RB4M-0002 | D-76 |
| RB4M-0002-C | D-76 |
| RB4M-0003 | D-76 |
| RB5E-0001 | D-76 |
| RB5E-0003 | D-76 |
| RB5M-0001 | D-76 |
| RB5M-0002 | D-76 |
| RB5M-0003 | D-76 |
| RB6E-0001 | D-76 |
| RB6E-0001-C | D-76 |
| RB6E-0002 | D-76 |
| RB6E-0002-C | D-76 |
| RB6E-0003 | D-76 |
| RB6E-0003-C | D-76 |
| RB6E-0100 | D-77 |
| RB6M-0001 | D-76 |
| RB6M-0001-C | D-76 |
| RB6M-0002 | D-76 |
| RB6M-0003 | D-76 |
| RB6M-0003-C | D-76 |
| RC2E-0001 | D-76 |
| RC4E-0001 | D-76 |
| RC4E-0002 | D-76 |
| RC5E-0001 | D-76 |
| RC5E-0002 | D-76 |
| RC6E-0001 | D-76 |
| RC6E-0002 | D-76 |
| RS2E-0114-C | D-77 |
| RS2E-0206 | D-77 |
| RS2E-0207 | D-77 |
| RS2M-0114 | D-77 |
| RS2M-0207-C | D-77 |
| RS4E-0104 | D-77 |
| RS4E-0104-C | D-77 |
| RS4E-0106 | D-77 |
| RS4E-0109 | D-77 |
| RS4E-0110 | D-77 |
| RS4E-0111 | D-77 |
| RS4E-0114 | D-77 |
| RS4E-0114-C | D-77 |

| | |
|-------------|------|
| RS4E-0114-H | D-77 |
| RS4E-0201 | D-77 |
| RS4E-0203 | D-77 |
| RS4E-0207 | D-77 |
| RS4E-0208-C | D-77 |
| RS4E-0209-C | D-77 |
| RS4E-0211-C | D-77 |
| RS4E-0212 | D-77 |
| RS4E-0212-C | D-77 |
| RS4E-0212-H | D-77 |
| RS4E-0215-C | D-77 |
| RS4E-0220-H | D-77 |
| RS4E-0221 | D-76 |
| RS4E-0221-C | D-76 |
| RS4E-0228-C | D-76 |
| RS4E-0254-C | D-76 |
| RS4M-0105 | D-76 |
| RS4M-0114 | D-77 |
| RS4M-0114-C | D-77 |
| RS4M-0115 | D-76 |
| RS4M-0205 | D-77 |
| RS4M-0205-C | D-77 |
| RS4M-0206 | D-77 |
| RS4M-0210 | D-77 |
| RS4M-0217-H | D-77 |
| RS5E-0203 | D-77 |
| RS5E-0205 | D-77 |
| RS5E-0205-C | D-77 |
| RS5M-0106 | D-76 |
| RS5M-0108-C | D-77 |
| RS6E-0101 | D-77 |
| RS6E-0101-C | D-77 |
| RS6E-0102-C | D-77 |
| RS6E-0103-C | D-77 |
| RS6E-0114 | D-77 |
| RS6E-0114-C | D-77 |
| RS6E-0204-C | D-77 |
| RS6E-0204-C | D-77 |
| RS6E-0232-H | D-77 |
| RS6E-0242-H | D-77 |
| RS6M-0105 | D-76 |
| RS6M-0114 | D-77 |
| RS6M-0114-C | D-77 |
| S | |
| SC12-0375 | C-62 |
| SC12-0437 | C-62 |
| SC12-0500 | C-62 |
| SC12-0625 | C-62 |
| SC12-0750 | C-62 |
| SC12-0875 | C-62 |
| SC12-1000 | C-62 |
| SC34-0375 | C-62 |
| SC34-0437 | C-62 |
| SC34-0500 | C-62 |
| SC34-0625 | C-62 |
| T | |
| T16-F093 | B-43 |
| TG10-21ST | C-51 |
| TG10-21STS | C-51 |
| TG10-30ST | C-51 |
| TG10-30STS | C-51 |
| TG10-41ST | C-51 |
| TG10-41STS | C-51 |
| TG10-59ST | C-51 |
| TG10-59STS | C-51 |
| TG10-0093 | C-51 |
| TG10-0093S | C-51 |
| TG10-0109 | C-51 |
| TG10-0109S | C-51 |
| TG10-0125 | C-51 |
| TG10-0125S | C-51 |
| TG10-0140 | C-51 |
| TG10-0140S | C-51 |
| TG10-0156 | C-51 |
| TG10-0156S | C-51 |
| TG10-0171 | C-51 |
| TG10-0171S | C-51 |

| | |
|-------------|------|
| TG10-0187 | C-51 |
| TG10-0187S | C-51 |
| TG10-0203 | C-51 |
| TG10-0203S | C-51 |
| TG10-0218 | C-51 |
| TG10-0218S | C-51 |
| TG10-0234 | C-51 |
| TG10-0234S | C-51 |
| TG10-0250 | C-51 |
| TG10-0250S | C-51 |
| TG10-0265 | C-51 |
| TG10-0265S | C-51 |
| TG10-0281 | C-51 |
| TG10-0281S | C-51 |
| TG10-0296 | C-51 |
| TG10-0296S | C-51 |
| TG10-0312 | C-51 |
| TG10-0312S | C-51 |
| TG10-0328 | C-51 |
| TG10-0328S | C-51 |
| TG10-0343 | C-51 |
| TG10-0343S | C-51 |
| TG10-0359 | C-51 |
| TG10-0359S | C-51 |
| TG10-0375 | C-51 |
| TG10-0375NP | C-51 |
| TG10-0375S | C-51 |
| TG10-0390 | C-51 |
| TG10-0390S | C-51 |
| TG10-0406 | C-51 |
| TG10-0406S | C-51 |
| TG10-0421 | C-51 |
| TG10-0421S | C-51 |
| TG10-0437 | C-51 |
| TG10-0437S | C-51 |
| TG10-0453 | C-51 |
| TG10-0453S | C-51 |
| TG10-0468 | C-51 |
| TG10-0468S | C-51 |
| TG10-0484 | C-51 |
| TG10-0484S | C-51 |
| TG10-0500 | C-51 |
| TG10-0500NP | C-51 |
| TG10-0500S | C-51 |
| TG10-0515 | C-51 |
| TG10-0515S | C-51 |
| TG10-0531 | C-51 |
| TG10-0531S | C-51 |
| TG10-0546 | C-51 |
| TG10-0546S | C-51 |
| TG10-0562 | C-51 |
| TG10-0562S | C-51 |
| TG10-0578 | C-51 |
| TG10-0578S | C-51 |
| TG10-0593 | C-51 |
| TG10-0593S | C-51 |
| TG10-0609 | C-51 |
| TG10-0609S | C-51 |
| TG10-0625 | C-51 |
| TG10-0625NP | C-51 |
| TG10-0625S | C-51 |
| TG10-0640 | C-51 |
| TG10-0640S | C-51 |
| TG10-0656 | C-51 |
| TG10-0656S | C-51 |
| TG10-0671 | C-51 |
| TG10-0671S | C-51 |
| TG10-0687 | C-51 |
| TG10-0687S | C-51 |
| TG10-0703 | C-51 |
| TG10-0703S | C-51 |
| TG10-0718 | C-51 |
| TG10-0718S | C-51 |
| TG10-0734 | C-51 |
| TG10-0734S | C-51 |
| TG10-0750 | C-51 |
| TG10-0750NP | C-51 |

| | |
|-------------|------|
| TG10-0750S | C-51 |
| TG10-0765 | C-51 |
| TG10-0765S | C-51 |
| TG10-0781 | C-51 |
| TG10-0781S | C-51 |
| TG10-0796 | C-51 |
| TG10-0796S | C-51 |
| TG10-0812 | C-51 |
| TG10-0812S | C-51 |
| TG10-0828 | C-51 |
| TG10-0828S | C-51 |
| TG10-0843 | C-51 |
| TG10-0843S | C-51 |
| TG10-0859 | C-51 |
| TG10-0859S | C-51 |
| TG10-0875 | C-51 |
| TG10-0875NP | C-51 |
| TG10-0875S | C-51 |
| TG10-0890 | C-51 |
| TG10-0890S | C-51 |
| TG10-0906 | C-51 |
| TG10-0906S | C-51 |
| TG10-0921 | C-51 |
| TG10-0921S | C-51 |
| TG10-0937 | C-51 |
| TG10-0937S | C-51 |
| TG10-0953 | C-51 |
| TG10-0953S | C-51 |
| TG10-0968 | C-51 |
| TG10-0968S | C-51 |
| TG10-0984 | C-51 |
| TG10-0984S | C-51 |
| TG10-1000 | C-51 |
| TG10-1000NP | C-51 |
| TG10-1000S | C-51 |
| TG15-33ST | C-52 |
| TG15-33STS | C-52 |
| TG15-65ST | C-52 |
| TG15-65STS | C-52 |
| TG15-0500 | C-52 |
| TG15-0500NP | C-52 |
| TG15-0500S | C-52 |
| TG15-0515 | C-52 |
| TG15-0515S | C-52 |
| TG15-0531 | C-52 |
| TG15-0531S | C-52 |
| TG15-0546 | C-52 |
| TG15-0546S | C-52 |
| TG15-0562 | C-52 |
| TG15-0562S | C-52 |
| TG15-0578 | C-52 |
| TG15-0578S | C-52 |
| TG15-0593 | C-52 |
| TG15-0593S | C-52 |
| TG15-0609 | C-52 |
| TG15-0609S | C-52 |
| TG15-0625 | C-52 |
| TG15-0625NP | C-52 |
| TG15-0625S | C-52 |
| TG15-0640 | C-52 |
| TG15-0640S | C-52 |
| TG15-0656 | C-52 |
| TG15-0656S | C-52 |
| TG15-0671 | C-52 |
| TG15-0671S | C-52 |
| TG15-0687 | C-52 |
| TG15-0687S | C-52 |
| TG15-0703 | C-52 |
| TG15-0703S | C-52 |
| TG15-0718 | C-52 |
| TG15-0718S | C-52 |
| TG15-0734 | C-52 |
| TG15-0734S | C-52 |
| TG15-0750 | C-52 |
| TG15-0750NP | C-52 |
| TG15-0750S | C-52 |
| TG15-0765 | C-52 |

| | | | | | | | |
|-------------|------|-------------|------------------------|--------------|------------|------------|------|
| TG15-0765S | C-52 | TG15-1343S | C-52 | XCCW-H100 | A-11, C-48 | XCRT-R030 | D-83 |
| TG15-0781 | C-52 | TG15-1359 | C-52 | XCCW-H016 | B-16 | XCRT-R040 | D-83 |
| TG15-0781S | C-52 | TG15-1359S | C-52 | XCCW-H020 | B-18 | XCRT-R045 | D-83 |
| TG15-0796 | C-52 | TG15-1375 | C-52 | XCCW-HP16 | C-46 | XCRT-R050 | D-83 |
| TG15-0796S | C-52 | TG15-1375S | C-52 | XCCW-HP32 | C-46 | XCCT-BASE | D-83 |
| TG15-0812 | C-52 | TG15-1390 | C-52 | XCCW-P032INT | A-11, B-13 | XCCTC-I100 | D-83 |
| TG15-0812S | C-52 | TG15-1390S | C-52 | XCCW-T011 | A-11, B-32 | XCCTC-IH40 | D-83 |
| TG15-0828 | C-52 | TG15-1406 | C-52 | XCDY-17-1 | D-83 | XCCTC-IH50 | D-83 |
| TG15-0828S | C-52 | TG15-1406S | C-52 | XCDY-17-2 | D-83 | XCCTC-IN30 | D-83 |
| TG15-0843 | C-52 | TG15-1421 | C-52 | XCDY-17-3 | D-83 | XCCTC-IN35 | D-83 |
| TG15-0843S | C-52 | TG15-1421S | C-52 | XCDY-17-3-45 | D-83 | XCCTC-IN40 | D-83 |
| TG15-0859 | C-52 | TG15-1437 | C-52 | XCHPA0040 | D-79 | XCCTC-IN45 | D-83 |
| TG15-0859S | C-52 | TG15-1437S | C-52 | XCHPA0050 | D-79 | XCCTC-IN50 | D-83 |
| TG15-0875 | C-52 | TG15-1453 | C-52 | XCHPA0063 | D-79 | XCCTC-IN63 | D-83 |
| TG15-0875NP | C-52 | TG15-1453S | C-52 | XCHPA0100 | D-79 | XCCTC-INPN | D-83 |
| TG15-0875S | C-52 | TG15-1468 | C-52 | XCNA-0011 | B-14 | XCCTC-RACK | D-83 |
| TG15-0890 | C-52 | TG15-1468S | C-52 | XCNA-0016 | B-16 | XCCTC-S100 | D-83 |
| TG15-0890S | C-52 | TG15-1484 | C-52 | XCNA-0020 | B-18 | XCCTC-SF30 | D-83 |
| TG15-0906 | C-52 | TG15-1484S | C-52 | XCNA-0025 | B-20 | XCCTC-SF35 | D-83 |
| TG15-0906S | C-52 | TG15-1500 | C-52 | XCNA-0032 | B-22 | XCCTC-SF40 | D-83 |
| TG15-0921 | C-52 | TG15-1500NP | C-52 | XCNA-0040 | B-24 | XCCTC-SF45 | D-83 |
| TG15-0921S | C-52 | TG15-1500S | C-52 | XCNA-1000 | C-48 | XCCTC-SF50 | D-83 |
| TG15-0937 | C-52 | U | | XCNA-1500 | C-50 | XCCTC-SF63 | D-83 |
| TG15-0937S | C-52 | U1X3B0001 | C-63 | XCNA-BB25 | B-20 | XCCTC-SFPN | D-83 |
| TG15-0953 | C-52 | U2X3B0002 | C-63 | XCNA-BB32 | B-22 | XCCTC-SH40 | D-83 |
| TG15-0953S | C-52 | U3X3B0003 | C-63 | XCNA-FB10 | C-48 | XCCTC-SH50 | D-83 |
| TG15-0968 | C-52 | U4X3B0004 | C-63 | XCNA-FB16 | B-16 | XCTH-L010 | D-82 |
| TG15-0968S | C-52 | U5X4B0005 | C-63 | XCNA-FB20 | B-18 | XCTH-L040 | D-82 |
| TG15-0984 | C-52 | U6X4B0006 | C-63 | XCNA-FB25 | B-20 | XCTH-L050 | D-82 |
| TG15-0984S | C-52 | U7X4B0007 | C-63 | XCNA-FB32 | B-22 | XCTH-L063 | D-82 |
| TG15-1000 | C-52 | X | | XCNA-FB40 | B-24 | XCTH-S010 | D-82 |
| TG15-1000NP | C-52 | X11N-J200 | C-73 | XCNA-FT10 | C-48 | XCTH-S040 | D-82 |
| TG15-1000S | C-52 | X14N-J300 | C-73 | XCNA-FT16 | B-16 | XCTH-S050 | D-82 |
| TG15-1015 | C-52 | X16N-J300 | C-73 | XCNA-FT20 | B-18 | XCTH-S063 | D-82 |
| TG15-1015S | C-52 | X18N-J400 | C-73 | XCNA-FT25 | B-20 | XCTT-0004 | D-81 |
| TG15-1031 | C-52 | X100-0250 | C-71 | XCNA-FT32 | B-22 | XCTT-0006 | D-81 |
| TG15-1031S | C-52 | X100-0375 | C-71 | XCNA-FT40 | B-24 | XCTWA0040 | D-79 |
| TG15-1046 | C-52 | X100-0750 | C-71 | XCNA-H100 | C-48 | XCTWA0050 | D-79 |
| TG15-1046S | C-52 | X100-J330 | C-73 | XCNA-H016 | B-16 | XCTWA0063 | D-79 |
| TG15-1062 | C-52 | X125-0250 | C-71 | XCNA-H020 | B-18 | XCTWA0100 | D-79 |
| TG15-1062S | C-52 | X125-0375 | C-71 | XCNA-K016 | B-16 | XD10-0250 | C-55 |
| TG15-1078 | C-52 | X125-0750 | C-71 | XCNA-K020 | B-18 | XD10-0312 | C-55 |
| TG15-1078S | C-52 | X130-J200 | C-73 | XCNA-K025 | B-20 | XD10-0359 | C-55 |
| TG15-1093 | C-52 | X650-J100 | C-73 | XCNA-K032 | B-22 | XD10-0375 | C-55 |
| TG15-1093S | C-52 | X800-J200 | C-73 | XCNA-T011 | B-32 | XD10-0390 | C-55 |
| TG15-1109 | C-52 | XCCS-221 | B-40 | XCNA-T016 | B-34 | XD10-0406 | C-55 |
| TG15-1109S | C-52 | XCCS-0720 | B-16, B-34 | XCNA-T020 | B-36 | XD10-0421 | C-55 |
| TG15-1125 | C-52 | XCCS-0720-C | B-16 | XCNA-T025 | B-38 | XD10-0437 | C-55 |
| TG15-1125S | C-52 | XCCS-1415 | B-18, B-36 | XCNA-T032 | B-40 | XD10-0453 | C-55 |
| TG15-1140 | C-52 | XCCS-1415-C | B-18, B-36 | XCNA-T040 | B-42 | XD10-0468 | C-55 |
| TG15-1140S | C-52 | XCCS-1815 | B-20, B-38 | XCNA-TT16 | B-34 | XD10-0484 | C-55 |
| TG15-1156 | C-52 | XCCS-1815-C | B-20, B-38 | XCNA-TT20 | B-36 | XD10-0500 | C-55 |
| TG15-1156S | C-52 | XCCS-1816 | B-24, B-42, C-48 | XCNA-TT25 | B-38 | XD10-0515 | C-55 |
| TG15-1171 | C-52 | XCCS-1816-C | B-24, B-42 | XCNA-TT32 | B-40 | XD10-0531 | C-55 |
| TG15-1171S | C-52 | XCCS-2212 | C-50 | XCNA-TT40 | B-42 | XD10-0546 | C-55 |
| TG15-1187 | C-52 | XCCS-2215 | B-22 | XCRT-34HL | D-83 | XD10-0562 | C-55 |
| TG15-1187S | C-52 | XCCS-2215-C | B-22, B-40 | XCRT-56HL | D-83 | XD10-0578 | C-55 |
| TG15-1203 | C-52 | XCCS-2612 | C-50 | XCRT-BASE | D-83 | XD10-0593 | C-55 |
| TG15-1203S | C-52 | XCCW-0040 | A-11, B-24, B-42, D-75 | XCRT-CR01 | D-82 | XD10-0609 | C-55 |
| TG15-1218 | C-52 | XCCW-0050 | D-75 | XCRT-CR02 | D-82 | XD10-0625 | C-55 |
| TG15-1218S | C-52 | XCCW-1000 | A-11, C-48 | XCRT-CR03 | D-82 | XD10-0640 | C-55 |
| TG15-1234 | C-52 | XCCW-1500 | A-11, C-50 | XCRT-CR04 | D-82 | XD10-0656 | C-55 |
| TG15-1234S | C-52 | XCCW-D011 | A-11 | XCRT-CR05 | D-82 | XD10-0671 | C-55 |
| TG15-1250 | C-52 | XCCW-D016 | A-11, B-16, B-34 | XCRT-CR11 | D-82 | XD10-0687 | C-55 |
| TG15-1250NP | C-52 | XCCW-D020 | A-11, B-18, B-36 | XCRT-CR16 | D-82 | XD10-0703 | C-55 |
| TG15-1250S | C-52 | XCCW-D025 | A-11, B-20, B-38, D-75 | XCRT-CR20 | D-82 | XD10-0718 | C-55 |
| TG15-1265 | C-52 | XCCW-D032 | A-11, B-22, B-40, D-75 | XCRT-CR25 | D-82 | XD10-0734 | C-55 |
| TG15-1265S | C-52 | XCCW-FT10 | A-11, C-48 | XCRT-CR32 | D-82 | XD10-0750 | C-55 |
| TG15-1281 | C-52 | XCCW-FT16 | A-11, B-16 | XCRT-CR40 | D-82 | XD10-0765 | C-55 |
| TG15-1281S | C-52 | XCCW-FT20 | A-11, B-18 | XCRT-CRMP | D-82 | XD10-0781 | C-55 |
| TG15-1296 | C-52 | XCCW-FT25 | A-11, B-20 | XCRT-EK01 | D-82 | XD10-0796 | C-55 |
| TG15-1296S | C-52 | XCCW-FT32 | A-11, B-22 | XCRT-EK03 | D-82 | XD10-0812 | C-55 |
| TG15-1312 | C-52 | XCCW-FT40 | A-11, B-24 | XCRT-EK07 | D-82 | XD10-0828 | C-55 |
| TG15-1312S | C-52 | XCCW-H016 | A-11 | XCRT-EK09 | D-82 | XD10-0843 | C-55 |
| TG15-1328 | C-52 | XCCW-H020 | A-11 | XCRT-EK10 | D-82 | XD10-0859 | C-55 |
| TG15-1328S | C-52 | | | XCRT-EK11 | D-82 | XD10-0875 | C-55 |
| TG15-1343 | C-52 | | | XCRT-EK45 | D-82 | XD10-0890 | C-55 |

INDEX



| | | | | | | | |
|-----------|------|-----------|------|--------------|------------------|--------------|------------|
| XD10-0906 | C-55 | XD32-1500 | C-55 | XDTA-0003 | D-80 | XRKW-1250 | D-77, D-78 |
| XD10-0921 | C-55 | XD32-1550 | C-55 | XDTA-0004 | D-80 | XRTH-A100 | C-67 |
| XD10-0937 | C-55 | XD32-1600 | C-55 | XDTA-0005 | D-80 | XRTH-A200 | C-67 |
| XD10-0953 | C-55 | XD32-1650 | C-55 | XDTA-0006 | D-80 | XSAN-1000 | C-71 |
| XD10-0968 | C-55 | XD32-1700 | C-55 | XDTA-0040 | D-80 | XSAN-1250 | C-71 |
| XD10-0984 | C-55 | XD32-1750 | C-55 | XDTA-0050 | D-80 | XSAS-0500 | C-65 |
| XD10-1000 | C-55 | XD32-1800 | C-55 | XDTA-0063 | D-80 | XSAS-0750 | C-65 |
| XD16-0350 | C-55 | XD32-1850 | C-55 | XDTA-0100 | D-80 | XSAS-1000 | C-65 |
| XD16-0400 | C-55 | XD32-1900 | C-55 | XEML-0232 | C-61 | XSAS-1250 | C-65 |
| XD16-0450 | C-55 | XD32-1950 | C-55 | XEML-0332 | C-61 | XSAS-1500 | C-65 |
| XD16-0500 | C-55 | XD32-2000 | C-55 | XEML-0428 | C-61 | XSAS-2000 | C-65 |
| XD16-0550 | C-55 | XD40-0350 | C-55 | XEML-0524 | C-61 | XSAS-2500 | C-65 |
| XD16-0600 | C-55 | XD40-0400 | C-55 | XEML-0610 | C-61 | XSCCA0040 | D-79 |
| XD16-0650 | C-55 | XD40-0450 | C-55 | XEML-0624 | C-61 | XSCCA0050 | D-79 |
| XD16-0700 | C-55 | XD40-0500 | C-55 | XEML-0720 | C-61 | XSCCA0063 | D-79 |
| XD16-0750 | C-55 | XD40-0550 | C-55 | XEML-0813 | C-61 | XSCCA0100 | D-79 |
| XD16-0800 | C-55 | XD40-0600 | C-55 | XEML-0820 | C-61 | XSCW-0750 | C-62 |
| XD20-0350 | C-55 | XD40-0650 | C-55 | XEML-1015 | C-61 | XSCW-1250 | C-62 |
| XD20-0400 | C-55 | XD40-0700 | C-55 | XEML-1018 | C-61 | XSDK-0500 | C-65 |
| XD20-0450 | C-55 | XD40-0750 | C-55 | XEML-1216 | C-61 | XSDK-0750 | C-65 |
| XD20-0500 | C-55 | XD40-0800 | C-55 | XEML-1218 | C-61 | XSDK-1000 | C-65 |
| XD20-0550 | C-55 | XD40-0850 | C-55 | XEML-1420 | C-61 | XSDK-1250 | C-65 |
| XD20-0600 | C-55 | XD40-0900 | C-55 | XEML-1614 | C-61 | XSDK-1500 | C-65 |
| XD20-0650 | C-55 | XD40-0950 | C-55 | XEML-1620 | C-61 | XSDK-2000 | C-65 |
| XD20-0700 | C-55 | XD40-1000 | C-55 | XFCN-0016 | C-46 | XSDK-2500 | C-65 |
| XD20-0750 | C-55 | XD40-1050 | C-55 | XFCN-0032 | C-46 | XSFC-1000 | C-70 |
| XD20-0800 | C-55 | XD40-1100 | C-55 | XFGF-00B2 | D-78 | XSFC-1250 | C-70 |
| XD20-0850 | C-55 | XD40-1150 | C-55 | XFGF-00B3 | D-78 | XSHF-16-0 | D-83 |
| XD20-0900 | C-55 | XD40-1200 | C-55 | XFGF-00B4 | D-78 | XSHF-16-1 | D-83 |
| XD20-0950 | C-55 | XD40-1250 | C-55 | XFGF-00H2 | D-78 | XSHF-16-2 | D-83 |
| XD20-1000 | C-55 | XD40-1300 | C-55 | XFGF-00H3 | D-78 | XSHF-16-3 | D-83 |
| XD25-0350 | C-55 | XD40-1350 | C-55 | XFGF-00H4 | D-78 | XSHF-16-3-45 | D-83 |
| XD25-0400 | C-55 | XD40-1400 | C-55 | XFGF-00H6 | D-78 | XSHF-16-4 | D-83 |
| XD25-0450 | C-55 | XD40-1450 | C-55 | XFGF-0004 | D-78 | XSIT-0030 | D-79 |
| XD25-0500 | C-55 | XD40-1500 | C-55 | XFGF-0006 | D-78 | XSIT-0035 | D-79 |
| XD25-0550 | C-55 | XD40-1550 | C-55 | XFGF-H000 | D-78 | XSIT-0040 | D-79 |
| XD25-0600 | C-55 | XD40-1600 | C-55 | XGCM-0032INT | B-13 | XSIT-0045 | D-79 |
| XD25-0650 | C-55 | XD40-1650 | C-55 | XGCM-C016 | B-29 | XSIT-0050 | D-79 |
| XD25-0700 | C-55 | XD40-1700 | C-55 | XGCM-C020 | B-29 | XSSK-1000 | C-70 |
| XD25-0750 | C-55 | XD40-1750 | C-55 | XGCM-C025 | B-29 | XSSK-1250 | C-70 |
| XD25-0800 | C-55 | XD40-1800 | C-55 | XGCM-C032 | B-30 | XSTH-0001 | C-66 |
| XD25-0850 | C-55 | XD40-1850 | C-55 | XGCM-C040 | B-30 | XSTH-0002 | C-66 |
| XD25-0900 | C-55 | XD40-1900 | C-55 | XGSN-0011 | B-14 | XT16-115T | B-43 |
| XD25-0950 | C-55 | XD40-1950 | C-55 | XGSN-0016 | B-16 | XT16-165T | B-43 |
| XD25-1000 | C-55 | XD40-2000 | C-55 | XGSN-0020 | B-18 | XT16-0100 | B-43 |
| XD25-1050 | C-55 | XD40-2050 | C-55 | XGSN-0025 | B-20 | XT16-0125 | B-43 |
| XD25-1100 | C-55 | XD40-2100 | C-55 | XGSN-0032 | B-22 | XT16-0150 | B-43 |
| XD25-1150 | C-55 | XD40-2150 | C-55 | XGSN-0040 | B-24 | XT16-0175 | B-43 |
| XD25-1200 | C-55 | XD40-2200 | C-55 | XGZN-0016 | D-75 | XT16-0200 | B-43 |
| XD25-1250 | C-55 | XD40-2250 | C-55 | XGZN-0020 | D-75 | XT16-0225 | B-43 |
| XD25-1300 | C-55 | XD40-2300 | C-55 | XGZN-0025 | D-75 | XT16-0250 | B-43 |
| XD25-1350 | C-55 | XD40-2350 | C-55 | XGZN-0032 | D-75 | XT16-0300 | B-43 |
| XD25-1400 | C-55 | XD40-2400 | C-55 | XGZN-0040 | D-75 | XT16-0350 | B-43 |
| XD25-1450 | C-55 | XD40-2450 | C-55 | XHDF-0002 | D-78 | XT16-0400 | B-43 |
| XD32-0350 | C-55 | XD40-2500 | C-55 | XHDF-0003 | D-78 | XT16-0500 | B-43 |
| XD32-0400 | C-55 | XD40-2550 | C-55 | XHDF-0004 | D-78 | XT16-0600 | B-43 |
| XD32-0450 | C-55 | XD40-2600 | C-55 | XHDF-0005 | D-78 | XT16-0700 | B-43 |
| XD32-0500 | C-55 | XDBA-0002 | D-80 | XHDF-0006 | D-78 | XT16-0800 | B-43 |
| XD32-0550 | C-55 | XDBA-0003 | D-80 | XHDF-0007 | D-78 | XT16-0900 | B-43 |
| XD32-0600 | C-55 | XDBA-0004 | D-80 | XHDF-K003 | D-78 | XT16-1000 | B-43 |
| XD32-0650 | C-55 | XDBA-0005 | D-80 | XHDF-K004 | D-78 | XT16-F062 | B-43 |
| XD32-0700 | C-55 | XDBA-0006 | D-80 | XHDF-K005 | D-78 | XT16-F125 | B-43 |
| XD32-0750 | C-55 | XDCA-0002 | D-80 | XHDF-K006 | D-78 | XT16-F156 | B-43 |
| XD32-0800 | C-55 | XDCA-0004 | D-80 | XHDF-K007 | D-78 | XT16-F187 | B-43 |
| XD32-0850 | C-55 | XDCA-0005 | D-80 | XIBS-1815-C | C-62 | XT16-F218 | B-43 |
| XD32-0900 | C-55 | XDCA-0006 | D-80 | XIBS-2815-C | C-62 | XT16-F250 | B-43 |
| XD32-0950 | C-55 | XDCS-0001 | D-80 | XJCW-04MM | C-74 | XT16-F281 | B-43 |
| XD32-1000 | C-55 | XDDA-0002 | D-80 | XJSK-0001 | C-74 | XT16-F312 | B-43 |
| XD32-1050 | C-55 | XDDA-0004 | D-80 | XJSS-0003 | C-74 | XT16-F343 | B-43 |
| XD32-1100 | C-55 | XDDA-0006 | D-80 | XK30-J000 | C-73 | XT16-F375 | B-43 |
| XD32-1150 | C-55 | XDFA-0040 | D-80 | XK32-J000 | C-73 | XT20-145T | B-43 |
| XD32-1200 | C-55 | XDFA-0050 | D-80 | XK40-J000 | C-73 | XT20-155T | B-43 |
| XD32-1250 | C-55 | XDFA-0063 | D-80 | XKEY-1000 | C-71 | XT20-0200 | B-43 |
| XD32-1300 | C-55 | XDFA-0100 | D-80 | XKEY-1250 | C-71 | XT20-0225 | B-43 |
| XD32-1350 | C-55 | XDNA-0006 | D-80 | XRKW-0750 | D-76, D-77, D-78 | XT20-0250 | B-43 |
| XD32-1400 | C-55 | XDRP-0001 | D-80 | XRKW-1000 | D-76, D-77, D-78 | XT20-0300 | B-43 |
| XD32-1450 | C-55 | XDTA-0002 | D-80 | XRKW-1187 | D-76, D-77, D-78 | XT20-0350 | B-43 |



INDEX

| | | | | | |
|-----------|------|-----------|------|--------------|------------|
| XT20-0400 | B-43 | XT32-F500 | B-44 | XTC2-0687 | C-68 |
| XT20-0500 | B-43 | XT32-F562 | B-44 | XTC2-0750 | C-68 |
| XT20-0600 | B-43 | XT32-F625 | B-44 | XTC2-0812 | C-68 |
| XT20-0700 | B-43 | XT32-F687 | B-44 | XTC2-0875 | C-68 |
| XT20-0800 | B-43 | XT32-F750 | B-44 | XTC2-M060 | C-68 |
| XT20-0900 | B-43 | XT40-155T | B-44 | XTC2-M070 | C-68 |
| XT20-1000 | B-43 | XT40-235T | B-44 | XTC2-M080 | C-68 |
| XT20-1100 | B-43 | XT40-0400 | B-44 | XTC2-M090 | C-68 |
| XT20-1200 | B-43 | XT40-0500 | B-44 | XTC2-M100 | C-68 |
| XT20-1300 | B-43 | XT40-0600 | B-44 | XTC2-M110 | C-68 |
| XT20-F093 | B-43 | XT40-0700 | B-44 | XTC2-M120 | C-68 |
| XT20-F125 | B-43 | XT40-0800 | B-44 | XTC2-M140 | C-68 |
| XT20-F156 | B-43 | XT40-0900 | B-44 | XTC2-M160 | C-68 |
| XT20-F187 | B-43 | XT40-1000 | B-44 | XTC2-P250 | C-68 |
| XT20-F218 | B-43 | XT40-1100 | B-44 | XTC2-P375 | C-68 |
| XT20-F250 | B-43 | XT40-1200 | B-44 | XTC2-P500 | C-68 |
| XT20-F281 | B-43 | XT40-1300 | B-44 | XTC3-095T | C-68 |
| XT20-F312 | B-43 | XT40-1400 | B-44 | XTC3-0812 | C-68 |
| XT20-F343 | B-43 | XT40-1500 | B-44 | XTC3-0875 | C-68 |
| XT20-F375 | B-43 | XT40-1600 | B-44 | XTC3-0937 | C-68 |
| XT20-F406 | B-43 | XT40-1700 | B-44 | XTC3-1000 | C-68 |
| XT20-F437 | B-43 | XT40-1800 | B-44 | XTC3-1125 | C-68 |
| XT20-F468 | B-43 | XT40-1900 | B-44 | XTC3-1250 | C-68 |
| XT20-F500 | B-43 | XT40-2000 | B-44 | XTC3-1375 | C-68 |
| XT25-095T | B-44 | XT40-2100 | B-44 | XTC3-M110 | C-68 |
| XT25-155T | B-44 | XT40-2200 | B-44 | XTC3-M120 | C-68 |
| XT25-0300 | B-44 | XT40-2300 | B-44 | XTC3-M140 | C-68 |
| XT25-0350 | B-44 | XT40-2400 | B-44 | XTC3-M160 | C-68 |
| XT25-0400 | B-44 | XT40-2500 | B-44 | XTC3-M180 | C-68 |
| XT25-0500 | B-44 | XT40-2600 | B-44 | XTC3-M200 | C-68 |
| XT25-0600 | B-44 | XT40-F100 | B-44 | XTC3-M220 | C-68 |
| XT25-0700 | B-44 | XT40-F125 | B-44 | XTC3-M250 | C-68 |
| XT25-0800 | B-44 | XT40-F187 | B-44 | XTC3-P100 | C-68 |
| XT25-0900 | B-44 | XT40-F250 | B-44 | XTC3-P750 | C-68 |
| XT25-1000 | B-44 | XT40-F312 | B-44 | XTQW-0045 | A-11, D-78 |
| XT25-1100 | B-44 | XT40-F375 | B-44 | XTQW-0080 | A-11, D-78 |
| XT25-1200 | B-44 | XT40-F437 | B-44 | XTQW-0150 | A-11, D-78 |
| XT25-1300 | B-44 | XT40-F500 | B-44 | XWFEF-0001 | D-79 |
| XT25-1400 | B-44 | XT40-F562 | B-44 | XWFEF-0001-5 | D-79 |
| XT25-1500 | B-44 | XT40-F625 | B-44 | XWFEF-0001-6 | D-79 |
| XT25-1600 | B-44 | XT40-F687 | B-44 | | |
| XT25-F125 | B-44 | XT40-F750 | B-44 | | |
| XT25-F187 | B-44 | XT40-F812 | B-44 | | |
| XT25-F250 | B-44 | XT40-F875 | B-44 | | |
| XT25-F312 | B-44 | XT40-F937 | B-44 | | |
| XT25-F375 | B-44 | XTBC-0002 | D-81 | | |
| XT25-F437 | B-44 | XTBC-0003 | D-81 | | |
| XT25-F500 | B-44 | XTBC-0004 | D-81 | | |
| XT25-F562 | B-44 | XTBC-0006 | D-81 | | |
| XT25-F625 | B-44 | XTC1-0006 | C-68 | | |
| XT32-115T | B-44 | XTC1-0008 | C-68 | | |
| XT32-195T | B-44 | XTC1-0010 | C-68 | | |
| XT32-0300 | B-44 | XTC1-0012 | C-68 | | |
| XT32-0350 | B-44 | XTC1-125T | C-68 | | |
| XT32-0400 | B-44 | XTC1-0250 | C-68 | | |
| XT32-0500 | B-44 | XTC1-0312 | C-68 | | |
| XT32-0600 | B-44 | XTC1-0375 | C-68 | | |
| XT32-0700 | B-44 | XTC1-0437 | C-68 | | |
| XT32-0800 | B-44 | XTC1-0500 | C-68 | | |
| XT32-0900 | B-44 | XTC1-0562 | C-68 | | |
| XT32-1000 | B-44 | XTC1-M035 | C-68 | | |
| XT32-1100 | B-44 | XTC1-M045 | C-68 | | |
| XT32-1200 | B-44 | XTC1-M060 | C-68 | | |
| XT32-1300 | B-44 | XTC1-M070 | C-68 | | |
| XT32-1400 | B-44 | XTC1-M080 | C-68 | | |
| XT32-1500 | B-44 | XTC1-M090 | C-68 | | |
| XT32-1600 | B-44 | XTC1-M100 | C-68 | | |
| XT32-1700 | B-44 | XTC1-M110 | C-68 | | |
| XT32-1800 | B-44 | XTC1-P062 | C-68 | | |
| XT32-1900 | B-44 | XTC1-P125 | C-68 | | |
| XT32-2000 | B-44 | XTC2-135T | C-68 | | |
| XT32-F125 | B-44 | XTC2-0312 | C-68 | | |
| XT32-F187 | B-44 | XTC2-0375 | C-68 | | |
| XT32-F250 | B-44 | XTC2-0437 | C-68 | | |
| XT32-F312 | B-44 | XTC2-0500 | C-68 | | |
| XT32-F375 | B-44 | XTC2-0562 | C-68 | | |
| XT32-F437 | B-44 | XTC2-0625 | C-68 | | |



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