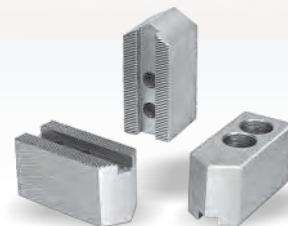


# 2019

**Accutek**<sup>®</sup>  
Efficiency + Precision. Delivered.

Main Catalog 2019



# CNC Tooling System by Accutek®

AccuClamp™	Hydraulic Tool Holding
AccuGrip™	Shrink Fit Tooling
AccuLock™	Polygon Taper Interface (PTI) - Sandvik Capto® equivalent ISO 26623-1 tooling KM Taper Interface (KTI) - ISO26622-1 tooling
AccuMill™	MultiMill Chuck (MMC) System
AccuPlus™	Face Contact Sleep Taper Shank Tooling
AccuTap™	Tapping Product Range
AccuTrac™	Threaded Connection Chucks



# TABLE OF CONTENTS

<b>Accutek® Offering Overview</b>	8
<b>Tool holder Selection Guide</b>	13
Spindle Selection	13
Tool Clamping Technology and Selection	15
AccuPlus™ Steep-Taper Face-Contact Chucks Technical Features	17
Balancing Guide	19
<b>CAT Taper Holders</b>	24
CAT40 End Mill Holder (ANSI/ASME B5.50-1994)	24
CAT40 End Mill Holder X-Long (ANSI/ASME B5.50-1994)	25
CAT40 Morse Taper Socket (ANSI/ASME B5.50-1994)	26
CAT40 Shell Mill Holder (ANSI/ASME B5.50-1994)	26
CAT40 Shell Mill Holder X-Long (ANSI/ASME B5.50-1994)	27
CAT40 ER Collet Holder (ANSI/ASME B5.50-1994)	28
CAT40 AccuMill™ Milling Chuck (ANSI/ASME B5.50-1994)	29
CAT40 AccuClamp™ Hydraulic Chucks (ANSI/ASME B5.50-1994)	29
CAT50 End Mill Holder (ANSI/ASME B5.50-1994)	30
CAT50 End Mill Holder X-Long (ANSI/ASME B5.50-1994)	31
CAT50 Shell Mill Holder (ANSI/ASME B5.500-1994)	32
CAT50 Shell Mill Holder X-Long (ANSI/ASME B5.500-1994)	33
CAT50 ER Collet Holder (ANSI/ASME B5.50-1994)	34
CAT50 AccuMill™ Milling Chuck (ANSI/ASME B5.50-1994)	35
CAT50 AccuClamp™ Hydraulic Chucks (ANSI/ASME B5.50-1994)	35
CAT50 Morse Taper Holder (ANSI/ASME B5.50-1994)	36
CAT ER-Z Short Collet Chuck (ANSI/ASME B5.50-1994)	37
BT ER-Z Short Collet Chuck (MAS 403)	37
<b>CATP AccuPlus™ Face Contact Holders</b>	38
AccuPlus™ CATP40 Face Contact End Mill Holder	38
AccuPlus™ CATP40 Face Contact ER Collet Holder	39
AccuPlus™ CATP40 Face Contact Shell Mill Holder	40
AccuPlus™ CATP40 Face Contact AccuMill™ Multi-Milling Chucks	41
AccuPlus™ CATP50 Face Contact End Mill Holder	42
AccuPlus™ CATP50 Face Contact ER Collet Holder	43
AccuPlus™ CATP50 Face Contact Shell Mill Holder	44
AccuPlus™ CATP50 Face Contact AccuMill™ Multi-Milling Chucks	45

<b>BT Taper Holders</b>	46
BT End Mill Holders (MAS403)	46
BT ER Collet Chucks (MAS 403)	47
BT Shell Mill Holder (MAS 403)	48
BT AccuMill™ Milling Chuck (MAS 403)	49
BT AccuClamp™ Hydraulic Chuck (MAS 403)	49
<b>BTP AccuPlus™ Face Contact Holders</b>	50
BTP End Mill Holders	50
BTP ER Collet Chucks	51
BTP Shell Mill Holder	52
BTP AccuMill™ Milling Chuck	53
<b>HSK Taper Holders</b>	54
HSK End Mill Holder (DIN 6499 AND DIN 1835/B) - Inch ID	54
HSK End Mill Holder (DIN 6499 AND DIN 1835/B) - Metric ID	55
HSK-A ER Collet Chucks (DIN 69893 A+C)	56
HSK-A Shell Mill Holder (DIN 69893 A+C)	57
HSK-A AccuMill™ Milling Chuck (DIN 69893 A+C)	58
HSK-A AccuClamp™ Hydraulic Chuck (DIN 69893 A+C)	58
HSK-A Morse Taper Holders (DIN 69893 A+C)	59
<b>PTI Taper Holders</b>	60
PTI End Mill Holder (ISO 26623-1)	60
PTI ER Collet Holder (ISO 26623-1)	61
PTI Shell Mill Holder (ISO 26623-1)	62
PTI AccuMill™ Milling Chuck (ISO 26623-1)	63
PTI Hydraulic Chuck (ISO 26623-1)	63
PTI Extension Adapter (ISO 26623-2)	64
PTI Extension Front Clamping	65
PTI Reduction Adaptor	66
PTI Indexable Static Turning Tools	67
<b>KTI Taper Holders</b>	70
KTI End Mill Holder (ISO26622-1)	70
KTI ER Collet Holder (ISO 26622-1)	71
KTI TG Collect Chuck (ISO 26622-1)	72
KTI Shell Mill Holder (ISO 26622-1)	72
KTI Extension Front Clamping	73
KTI Static Indexable Turning Tools (ISO 26622-1)	74
KTI Square Shank Holder (ISO 26622-1)	77

<b>AccuGrip™ Shrink Fit Technology Offering</b>	<b>78</b>
CAT40 AccuGrip™ Shrink Fit Holders – Standard DIN Length	81
CAT40 AccuGrip™ Shrink Fit Holders – Long DIN Length	82
CAT40 AccuGrip™ Shrink Fit Holders – X-Long DIN Length	83
CAT50 AccuGrip™ Shrink Fit Holders – Standard DIN Length	84
CAT50 AccuGrip™ Shrink Fit Holders – Long DIN Length	85
CAT50 AccuGrip™ Shrink Fit Holders – X-Long DIN Length	86
BT30 AccuGrip™ Shrink Fit Holders – Standard DIN Length	87
BT40 AccuGrip™ Shrink Fit Holders – Standard DIN Length	88
BT40 AccuGrip™ Shrink Fit Holders – Long DIN Length	89
BT40 AccuGrip™ Shrink Fit Holders – X-Long DIN Length	90
HSK63A AccuGrip™ Shrink Fit Holders – Standard DIN Length	91
HSK63A AccuGrip™ Shrink Fit Holders – Long DIN Length	92
HSK63A AccuGrip™ Shrink Fit Holders – X-Long DIN Length	93
HSK100A AccuGrip™ Shrink Fit Holders – Standard DIN Length	94
HSK63F AccuGrip™ Shrink Fit Holders – Standard DIN Length	95
PTI AccuGrip™ Shrink Fit Holders – Standard DIN Length - Metric ID	96
PTI AccuGrip™ Shrink Fit Holders – Standard DIN Length - Inch ID	97
CATP40 AccuPlus™ Face Contact AccuGrip™ Shrink Fit Holders	98
CATP50 AccuPlus™ Face Contact AccuGrip™ Shrink Fit Holders	99
BTP30 AccuPlus™ Face Contact AccuGrip™ Shrink Fit Holders	100
BTP40 AccuPlus™ Face Contact AccuGrip™ Shrink Fit Holders	101
Straight Shank Extension AccuGrip™ Shrink Fit Holders	102
KTI AccuGrip Shrink Fit Holders (ISO 26622-1)	103
<b>Blanks</b>	<b>104</b>
CAT Blanks (ANSI/ASME 5.50-1994)	104
CATP AccuPlus™ Face Contact Blank	104
BT Blanks (MAS 403)	105
BTP AccuPlus™ Face Contact Blank Bars	105
PTI Blanks (ISO 26623-1)	106
KTI Blank Bars (ISO 26622-1)	107
HSK Blanks (DIN 69893-1)	107
<b>Spindle Test Mandrel</b>	<b>108</b>
Test Mandrels CAT/BT/HSK (3 μm / .0001" TIR)	108
Test Mandrels PTI/CATP/BTP (3 μm / .0001" TIR)	109

<b>Quick Change Tapping Systems &amp; Accessories</b>	110
Tapping Chucks - Tension & Compression Style with High Pressure Coolant-Through-QCLC-IK	111
Modular Shank Holders	111
Tapping Chucks - Rigid Style with Coolant-Through - QCK/IK	112
Tapping Chucks - Tension & Compression Style - Non-Coolant Through - QCLK	113
<b>Tap Adapter Guide</b>	115
Tap Adapters QA Style - ANSI Shank Taps	117
Tap Adapters QA Style - DIN Shank Taps	118
Tap Adapters QA/IK Style -Inch Shank Taps	119
Tap Adapters QA/IK Style - Metric Shank Taps	120
Tap Adapters QA/K Style - Inch Shank Taps	121
Tap Adapters QA/K Style - Metric Shank Taps	122
Tap Adapters QASB Style - Inch Shank Taps	123
Tap Adapters QASB Style - Metric Shank Taps	124
Tap Adapters QASB/K Style - Inch Shank Taps	125
Tap Adapters QASB/K Style- Metric Shank Taps	126
Tap Adapters QASB/IK Style - Inch Shank Taps	127
Tap Adapters QASB/IK Style - Metric Shank Taps	128
Tap Adapters QAN Style - Inch Shank Taps	129
Tap Adapters QAN Style - Metric Shank Taps	130
Tap Adapter QRE Style	131
Tap Adapter GWA Style Pin Wrench	132
Tap Adapter Sets	132
HR & HRF Reversible Tapping Attachments	133
<b>AccuTap™ ERT/E ER</b>	134
ERT/E ER Quick Change Tap Collets	136
Attachable Quick Change Chucks QSB Style - Over the Spindle Design	137
Adjustable Rubber Collet Chucks ARH Style	139

<b>Hardware and Accessories</b>	140
Morse Taper Sockets and Extensions	140
Floating Holder Chucks	141
ER Collets- Standard, High Precision, and Sealed Collets - Inch and Metric ID Sizes	142
ER Collet Sets	146
ER-T Collets - Inch Tap Collets for Rigid Tapping - DIN6499/ISO15488	147
Straight Shank - Double-end for Swiss Machine Tools	148
Straight Shank	149
Reduction Collets for AccuMill™ Multi Milling Chucks and AccuClamp Hydraulic™ Chucks	150
ER Collet Nuts	151
Retention Knobs	152
HSK Coolant Tubes	153
Length Adjustment Screws for ER Collet Chucks	154
“Y” Spanner Wrenches for AccuMill™ Multi-Milling Chucks	154
Shell Mill Arbor Screws	155
Tool Shank Holding Fixtures	156
ER Nut Wrenches and ERZ Nut Spanner	156
ER Collet Nut Wrench Heads for Interchangeable Torque Wrench	157
HSK Coolant Tube Wrench	157
Wrenches and Accessories	158
Spindle Taper Wipers	159
<b>Work Holding</b>	161
SJ - Standard Jaw - Self Centering Chucks	161
AD - AccuTru™- Self Centering Chucks	161
MTJ - Master & Top Jaw - Self Centering Chucks	162
DP - Dust Proof- Self Centering Chucks	163
T-Nuts/Jaw Nuts	163
Soft Jaws - Serrated (1.5 x 60°) and Tongue & Groove	164
<b>Taper Shank Standards</b>	165
<b>Tap Standards ANSI / Metric</b>	168

# Overview of Products & Technology

## Accutek® Offering Overview

Given the constant evolution of tooling and machining technology plus the ever-increasing needs of our customers for greater accuracy and efficiency - Accutek is committed to consistently working on developing innovative products and expanding our product offering to meet our customers' production and manufacturing process needs. The following section highlights the Accutek tooling solutions available.

### Standard CNC Tooling Solutions

End Mill, Shell Mill, ER Collet, MT Socket, Jacobs Taper, Straight Shank, and R8 Shank tooling



### Technology Tooling Solutions

AccuMill™ Milling Chucks, AccuGrip™ Shrink Fit Chucks, AccuPlus™ Face Contact Chucks, AccuLock™ KTI and PTI Polygon Shank Chucks, AccuTrac™ Threaded Connection Chucks, and AccuClamp™ Hydraulic Chucks



### Industry Standard Spindle Connections

DIN, ANSI, BT-MAS, Face Contact, KTI Taper Interface ISO 26622-1 and Polygon Taper Interface ISO26623-1 Shanks



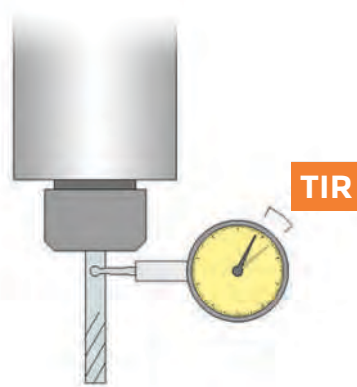


# Overview of Products & Technology

Accutek® - Precision manufactured to the global industrial standard specifications and according to ISO 9001-2008 process standards.

Precision and Accuracy as Accutek is Focused on the "Centerline of Performance"

- TIR maintained to 0.0004"
- Balanced to G6.3 @ 20,000 RPM or G2.5 @ 25,000 RPM (varies based on shank size and style)
- Bore tolerance: H6/H7
- Taper-to-Bore runout <0.0002"
- Taper shank ground to AT3 (or better)
- CMM and certified gauge inspection equipment
- All surfaces ground and corrosion resistant oxide coating where required
- All tool holders shipped with Certificate of Balance Accuracy



The cost of poor TIR on cutting tooling life is 10% for every .0001" of runout.

## Quick Change Tapping Systems - AccuTap™



# Overview of Products & Technology

## AccuMill™ High Performance Milling Chucks

AccuMill™ High Performance Milling Chucks are excellent products for roughing to finishing in all types of materials. This Accutek design provides the highest possible tool shank gripping force (torsion) with flexibility of reduction sleeves to allow for multiple cutting tools shanks sizes and no loss of TIR. This versatility allows the use of HSS shank tools, solid carbide shank tools, indexable carbide insert tooling, indexable drills, reamers, and many more tools.



Design of the AccuMill™ is unique to Accutek to maximize metal-removal performance while maximizing cutting edge tool life and providing superior part finishes. The AccuMill™ design incorporates an inner chuck body with a needle roller bearing assembly, and a heavy-wall locking nut to create a high torque rate on the tool shank maximizing torsion break-away of the tool shank. There are internal grooves parallel to the axis of the bore to allow maximum gripping force without loss of TIR accuracy. The needle roller bearing cage squeezes the ID bore when the locking nut is rotated clockwise using a specific wrench with a handle length specifically decide to produce the highest torque WITHOUT the need for “hammer” or “cheater bar” to apply additional pressure. There are no threads on the internal connection between the tool body and the locking nut. The special taper design allows the roller bearing cage to move down axially to tighten the ID bore around the tool shank. This locking pressure is distributed 360° around the tool shank and to the entire cylindrical length of the tool shank providing maximum TIR accuracy at 4 x Diameter of the tool shank.



### Key Features of the AccuMill Milling Chuck:

- Individual bearing seats in bearing cage
- Strong carbon-steel bearing cage
- Internal vertical grooves for accurate ID grinding and “dirt grooves” prevent tool slippage
- Positive “stop” to prevent over-torqueing of clamp nut
- “O” Ring seals prevent coolant and “swarf” from entering bearing cage area



### Benefits of using the AccuMill Milling Chuck:

- Improved TIR results in long cutting-edge tool life
- Improved TIR results in better piece part surface finish
- Cylindrical gripping and axial forces create a more rigid cutting tool resulting in strong radial load ability
- Reduction sleeves offer multiple diameter tool shank flexibility
- Increased machining rates due to high accuracy (TIR) and radial load capability



# Overview of Products & Technology

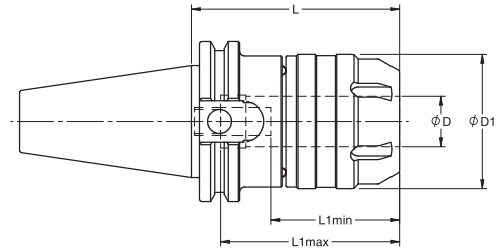
## AccuMill™ High Performance Milling Chucks

To achieve maximum gripping force on the tool shank, rotate the locking nut clock-wise until the rotation force of “normal” pulling force on the wrench handle is achieved. Once this is achieved back-off the locknut counter clockwise 5°-10° and you are all set to begin machining.

AccuMill™ also includes multiple “O”-Ring seals on the top and bottom of the lock nut to prevent coolant and solutions from entering the bearing cage area for maximum tool usage and minimal maintenance. Should the bearing grease be contaminated during use, the tool can be return for a low-cost refurbishment of the grease.

## Why AccuMill vs. TG or ER collet chucks and side lock holders?

- High Quality AT3 steep tapers and HSK tapers
- Uniform gripping pressure 360-degrees around tool shank – ER/TG collets do not provide uniform 360-degree gripping forces and are 70% less in overall gripping torque than AccuMill
- Uniform gripping forces the entire length of tool shank – ER/TG collet chucks as well as side lock holders do not provide uniform tool shank gripping pressure the entire length of the tool shank during heavy radial loads.
- Symmetrical design and balance allow for higher RPM machining applications without vibrations from unbalanced/non-symmetrical tool design.
- Cutting tool shank is held with a cylindrical force and maintains cylindricity which allows excellent TIR at 4 x Dia.



### FEATURES

- **Balanced to G6.3 @ 20,000 RPM**
- **T.I.R. < 0.0002"**
- **Taper shank ground to AT3 accuracy (or better)**
- **Bore tolerance: H6**

## Proper Care Will Increase AccuMill™ Performance Life

The following simple steps will help maintain maximum operational performance of your AccuMill™ chuck.

- **Keep your Milling Chuck clean**
  - Debris caught in between the chuck, reduction sleeve, and tool shank can not only reduce chuck life, it can also reduce accuracy and gripping force of the tool shank. Before assembling the tool's shank into the ID bore and/or reduction sleeve bore, make sure the shank and ID bores are free from grease/coolant, chips, and dirt. Clean slots of reduction sleeves with solvent or compressed air.
- **Store your Milling Chucks Properly**
  - When your milling chuck is not in use, make sure to follow these few guidelines:
    - Loosen the locking nut to relieve pressure on the roller bearing cage
    - Remove reduction sleeves and/or cutting tools from the ID of the milling chuck
    - Wipe Milling Chuck so it is free from coolant and spray with anti-rust solution like WD40™ or LPS 2™
- **DO NOT over-tighten your Milling Chuck**
  - The design of the AccuMill™ and its roller bearing cage are such that excessive torque from “cheater bars” or “hammering the wrench handle” will over tighten the bearing cage causing ID bore distortion and possible long-term TIR run-out. Only use “Y” Spanner Wrench supplied and use “normal” human pressure to the end of the wrench.

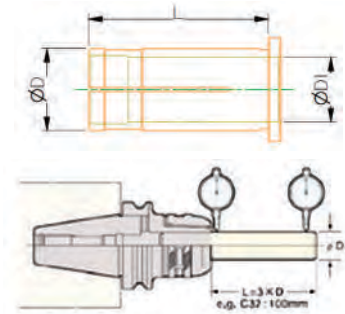
# Overview of Products & Technology

## Assembly Instructions for MC Reduction collets for use with AccuMill and AccuClamp Chucks

AccuMill™ High Performance Milling Chucks are excellent products for roughing to finishing in all types of materials. This Accutek design provides the highest possible tool shank gripping force (torsion) with flexibility of reduction sleeves to allow for multiple cutting tools shanks sizes and no loss of TIR. This versatility allows the use of HSS shank tools, solid carbide shank tools, indexable carbide insert tooling, indexable drills, reamers, and many more tools.

### High Quality Reduction Collets

MC reduction collets are designed to be used in the Accutek AccuMill milling chucks as well as the AccuClamp hydraulic chucks. The TIR accuracy of the reduction collet has been designed for hydraulic chuck use which is better for TIR in milling chucks as well (5-micron TIR at 3 x D). They have been designed for high-quality cylindrical clamping of all type straight shanks including Weldon Flat and Whistle Notch styles.



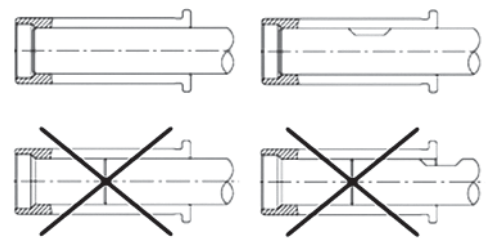
### Assembly Instructions

Make sure the Hydraulic Chuck or Milling Chucks id has been opened to allow for the insertion of the reduction collet into the ID bore easily (should slide in with simple finger pressure). Once reduction collet has been inserted the full depth of the ID bore and the flange on the reduction sleeve is resting on the top of the ID opening, slide the shank of your cutting tool into the ID bore of the reduction collet. Make sure that the end of the shank is inserted all the full depth into the reduction sleeve and bottoms out. Do not allow and notches (Weldon or Whistle) to extend out beyond the top of the reduction collet.



### Disassembly of Reduction collet

Make sure all machining swarf/chips and coolant are removed from the chuck and reduction collet area. Unclamp the hydraulic pressure using the torque wrench provided or unclamp the milling chuck nose using the hook wrench provided. Loosen the pressure on the reduction collet and cutting tool shank enough so that the tool shank can slide out easily and the reduction collet can be removed using your fingertips. Make sure you clean bore ID before inserting a new reduction collet and/or tool shank.



#### Please Note!

Improper insertion of reduction collet and/or shank of cutting tool can lead to chuck damage and potentially permanently damage chuck TIR.

- Only clamp H6 or H7 shank tools
- Insert cutting tool shank the entire depth of the chuck and/or reduction collet ID bore.
- Do not over tighten or over torque milling chuck collet nose or hydraulic chuck pressure screw.
- Do not tighten hydraulic chuck or milling chuck without tool shank in ID bore.

# Tool holder Selection Guide

## Spindle Selection

What type of spindles are available on machine tools, and which is best for me?

Over the past five to six decades, machine tool builders have developed many varied sizes and styles of machine tool tapers to hold the tool holders and cutting tools they want their machines to utilize. They look at multiple factors such as rigidity, RPM/Speed of spindle, size, and overall performance desired between machine control, accuracy of machine, and speed of table/head feed rate.

Over the past three decades, the metal cutting industry has settled on five to six different spindle connections and machine tool builders design their equipment using any one of these taper technologies as it best suits their machine design.

**1. NMTB** - Old technology mainly used on manual equipment and large boring mills where automatic tool changes are not needed.



01

**2. CAT40/CAT50** - The ANSI/ASME B5.50 was designed in the early 1980s for use with automatic tool changing systems in machines. This replaced the manual tool changes with automatic tool change arms and tool carousel storage. This steep taper design was produced to help the machine tool builders and the metal working end-users to standardize the spindle connection since many of the machine tool builders in the 1970s and early 1980s had designed their own connection thus making it difficult for the manufacturers to standardize their equipment as they purchased new machines and tooling. The steep taper design allows for more rigid applications when heavy radial loads are part of the machining process. This design has some limitations regarding spindle RPM as high RPM machining tends to cause taper "bell-mouthing" at the spindle's largest opening allowing increased tool TIR growth and loss of machine taper/tool holder taper contact. CAT is a largely a North American spindle connection compared to balance of the world.



02

**3. BT30/BT40/BT50** - MAS403 spindle connection. Originally a standard design on all Japanese designed and produced machine tools. It has slightly better "balanced by design" features and the tool change arm allows for faster tool changes between spindle and tool storage system. Uses the same steep taper design that the ANSI/ASME style offers but allows higher spindle RPM due the "balanced by design" flange. Similar performance as the ANSI/ASME style where heavy radial loads are used in many machining processes.

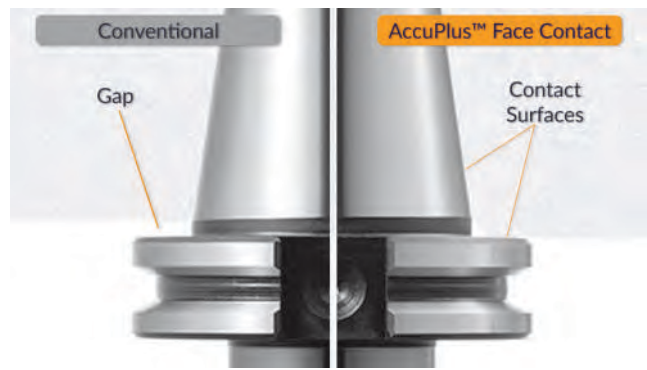


03

**4. BT and CAT Face Contact** designs, which were developed by Daishowa Seiki Co. in 1994 under US Patent 5352073, took the benefits of the MAS403 and ANSI/ASME designs but removed the "weakness"

## Tool holder Selection Guide

from higher RPM machining by utilizing a face contact between the flange of the tool holder and the spindle face of the machine tool spindle. This additional contact surface allows more rigidity because of the larger “footprint” the spindle face contact offers. This large diameter of contacts increases the “leverage point” between spindle taper, spindle face, tool taper, and tool flange face. Excellent design where long-length tools and/or large diameter tools benefit from additional tool/taper contact for accuracy and rigidity. While this design is like the BT-MAS and CAT-ANSI, interchanging styles of tapers in a face contact spindle is not recommended. Accutek follows the expired US Patent 5352073 to maintain the integrity of the design as our AccuPlus™ product.



04

**5. HSK – DIN 69893 A, C, E, and F styles** – HSK means “hollow shank” and uses a drawbar that pulls the taper into the machine using internal gripping vs. the external drawbar gripping that steep taper designs use with a retention knob. While this is a spindle connection for metal working machines like the steep taper designs, this design allows for much higher spindle RPM machining because of the spindle/drawbar, and connection design. The “low profile design” and balanced orientation slots allows for a much higher spindle RPM without the spindle opening “bell-mouthing” seen in the steep taper designs. HSK also uses the face contact to increase tool holder rigidity for radial loads. HSK does require a change in “machine programming culture”. With ANSI and MAS403 designs, heavy radial loads at lower spindle RPMs is the normal practice. With the HSK shank such heavy radial loads are handled differently by increasing spindle RPM, lighter chip loads on cutting tools, and an overall increase in machining metal removal rates. By reducing chip load and increasing spindle RPM, most of the “heat” created during the machining process goes with the chip/swarf and not into the cutting tool or work piece material. Better tool life, better work piece accuracy, and better part finishes can be achieved using HSK spindle technology over steep taper designs. As HSK spindle RPM increases, HSK shank tooling tapers and diameters can “shrink” in sizes to better match the machining processes and high spindle RPM demands for high tool assembly balance needs. HSK shanks are available in sizes 20 taper through 125 (number indicates OD size of flange diameter). Styles of flanges can also be changed to increase balance of holder by changing from “A” or “C” styles to “E” or “F” styles.



05

**6.** In the mid-1990s the new machine technology was the Multi-Tasking machining center or the Mill-Turn machining centers. This new machining technology required a spindle connection that not only could rotate for rotational machining applications like milling, drilling, tapping, etc. but also maintain a static or stationary position for turning – thus the multi-tasking or mill-turn names. Rotational tool machining presents a specific set or forces that static or stationary turning does not present. Conversely, static or stationary turning presents machining forces not seen in rotation tooling applications. This required new spindle connect designs to allow the “complete” machining process with a single style tool holder and machine connection. After several attempts by cutting tool manufacturers to develop the “best” spindle/tool holder interface that performs well in both rotating and static applications, two designs have become the primary choices by machine tool builders and metal working customers – ISO 26622-1 KM®

## Tool holder Selection Guide

tool shank and ISO26623-1 CAPTO®<sup>1</sup> shank. The KM®<sup>2</sup> shank was an original design by Kennametal Inc. and CAPTO® was an original design by Sandvik Coromant. Both designs achieve the desired results of rigidity, quick tool changes, accuracy, and strength in static operations and rotational operations. The style preference is up to the individual's comfort.



ISO26623-1



ISO26622-1

Determining your spindle connection for your next machine tool purchase depends on your comfort level with new spindle technology, need for increased machining capabilities, and type of work you plan to process through the new machine. While there are advantages with Steep Taper designs as well as HSK Taper designs, you will need to match those advantages to your specific machining needs. Most important fact about spindle and tool connection selection – TIR (Total Indicator Runout) is the primary consideration. Quality, price, and accuracy of the tool holder are all considerations, but for every .0001 of TIR away from the tool assembly centerline, 10% of your cutting tool life is lost due to uneven cutting tool edge material loads. TIR can be measured where the cutting tool shank and tool holder meet but the true assembly TIR should be measured at the tip of the cutting tool where the dimensional accuracy of your tool assembly and cutting parameters are determined.

## Tool Clamping Technology and Selection

Which tool clamping or tool holding system is your best overall value for your machining processes?

When it comes to selecting the proper or the “best value” tool clamping system for your machining applications, you must first look at the type and size of cutting tools you want or need to use. The following factors will all have an impact on steering the decision for the most appropriate technology for your application:

1. Shank styles and sizes
2. Shank types – HSS/Tool Steel or Carbide
3. Material you will be machining and whether roughing, semi-roughing/semi-finishing, or finishing
4. Length of surface to be machined with regards to radial load on the cutting tool
5. Metal-removal rates – Aggressive or more “normal”
6. Spindle RPM capability and Spindle type – HSK, Steep-Taper, Steep-Taper with Face Contact, or Multi-tasking tapers like CAPTO® or KM®, and finally
7. Budgetary constraints – how much are you able or willing to spend for a tool clamping system

With regards to the last item, it is important to recognize that cost of a tooling system is not the same as the Total Cost of Ownership (TCO). The often-overlooked component of the cost of the tool life lost due to excessive runout can have a big impact on the long term financial calculations:

**Total Cost of Ownership = Tooling System Cost + Tool Life Loss Selection**

**Example 1:** CAT40 End Mill Holder with Solid Carbide four flute ½” end mill:

Tooling System Cost = \$100.00 (holder) + \$50.00 (endmill) = \$150.00

Tool Life Loss = 0.6 (average TIR of 0.0006 = 60% reduction of tool life) x \$50.00 = \$30.00.

Total Cost of Ownership = TSC + TLL = \$150 + \$30.00 = \$180.00

<sup>1</sup> CAPTO is a registered trademark of Sandvik Intellectual Property AB

<sup>2</sup> KM is a registered trademark of Kennametal Inc.

## Tool holder Selection Guide

This means you need to add an additional \$30.00 to your total tooling cost to account for the reduced life you'll get because of the runout associated with a standard endmill holder.

**Example 2:** CAT40 ER32 Collet Chuck with the same four-flute, ½” end mill:

Tooling System Cost = \$180.00 (holder) + \$50.00 (endmill) = \$230.00

Tool Life Loss = 0.4 (average TIR of 0.0004 = 40% reduction of tool life) x \$50.00 = \$20.00.

Total Cost of Ownership = TSC + TLL = \$230 + \$20.00 = \$250.00

The TCO concept becomes far more important when we consider a longer production run since the TLL will overshadow the initial TSC.

Tool Clamping System	Tool Holder Cost \$	Cutting Tool Cost	Tool Life Loss (per cutting tool)	# of Cutting Tools Used	Total Cost of Ownership
CAT40 End Mill Holder	\$100.00	\$50.00	\$30.00 (60% loss)	10 endmills	\$900.00
CAT40 ER32 Holder	\$180.00	\$50.00	\$20.00 (40% loss)	10 endmills	\$880.00
CAT40 AccuMill™	\$350.00	\$50.00	\$10.00 (20% loss)	10 endmills	\$950.00*
CAT40 AccuGrip™	\$220.00	\$50.00	\$5.00 (10% loss)	10 endmills	\$770.00**

\* Actual TCO is better due to improved metal removal and higher productivity rates

\*\* TCO is lower, but additional cost of the shrink fit machine needs to be factored in

From these examples, we can see that the cost of a tool holder is only part of the total cost of ownership associated with a tool holding solution, therefore one must look at the total machining processes to determine which tool clamping system is the best value for each application. TIR of your tool clamping system will play a significant role minimizing the TCO.

The following table summarizes how various tool holder clamping systems compare against each other:

	END MILL HOLDER	ER COLLET CHUCK	HIGH PRECISION COLLET CHUCK	MILLING CHUCK	HYDRAULIC CHUCK	SHRINK FIT HOLDER
TIR ACCURACY						
VERSATILITY						
RIGIDITY						
EASE OF USE						
PRECISION RELIABILITY						
BALANCE						
COST \$						

	POOR		FAIR		AVERAGE		GOOD		GREAT
--	------	--	------	--	---------	--	------	--	-------

For more details when selecting a Tool Clamping System, please refer to our Accutek Tool Selection Guide at the back of the catalog.



# Tool holder Selection Guide

## AccuPlus™ Steep-Taper Face-Contact Chucks Technical Features



### AccuPlus™ Steep-Taper Face-Contact Technical Data



Taper and face contact result in greater tool holder stiffness

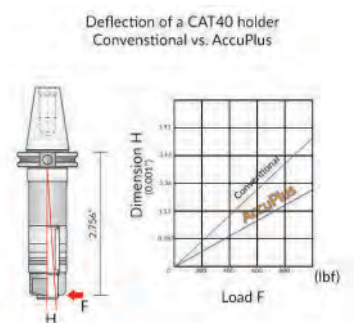
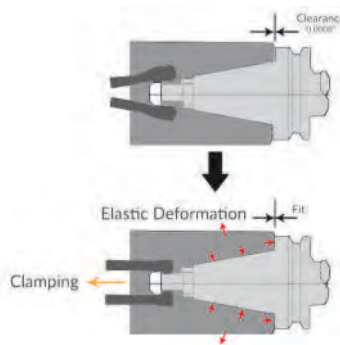
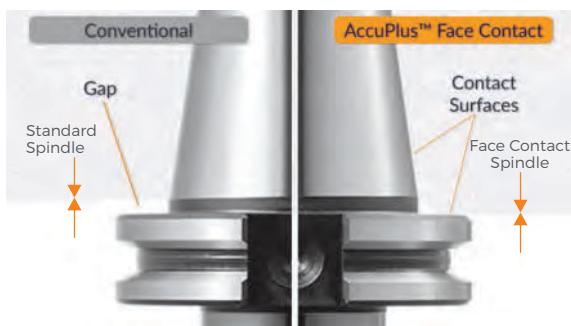


Compatible with BIG-PLUS © spindles and standard spindles



### Primary Applications

- Face-Contact tapers provide additional radial load capabilities due to the large spindle contact surface compared with standard ANSI B5.50 or MAS BT 403 tapers.
- Excellent for long-reach axial cutting tools where cutting tool tip TIR is critical for part dimension achievement and machined surface location/
- With the wide face-contact longer axial cutting tools with high radial loads will have less “bending” or improved dynamic stiffness and rigidity. The vibration dampening of these holders reduces spindle wear and extends cutting tool life.
- Designed for use in CNC Machining Centers with Face Contact spindles and automatic tool changers



# Tool holder Selection Guide

## Principle Behind Face-Contact Technology

- Prior to spindle clamping, the tool taper and spindle are in contact with each other to establish good taper interface and once clamped, face contact is made because the elastic deformation of the spindle clamping system provides the proper face clamping force between spindle face and tool holder flange face.
- This simultaneous fit provides a strong spindle/tool shank connection for more accurate machining processes and increased tool life due to improved tool assembly (spindle-toolholder-cutting tool)
- Face Contact holders are universally suitable for Drilling, Face milling, End mill with radial loads, Reaming, and even grinding is machine control is capable. The vibration dampening of this face contact system reduces spindle wear and extends cutting tool life.

Important Note about AccuPlus™ and other face contact steep taper tools:

If machine has standard face contact spindle design and face contact holders are to be used, ALL tool holders should be face contact style. Do not inter-mix standard steep taper holders with face contact holders for use in same machine spindle. Face contact holders must maintain contact with spindle face surface to maintain accuracy and proper toolholder shank/machine tool spindle taper interface. Using standard steep taper tools will allow chips, swarf, and residue to collect on the face when face contact is not being maintained thus using a face contact tool holder after using a standard steep taper tool could allow the face of the spindle to have contamination between spindle face and face contact of tool holder causing damage to spindle face and/or face contact holder. Start with AccuPlus and face contact and stay with it for ALL tool holder style in that machine.

# Tool holder Selection Guide

## Balancing Guide

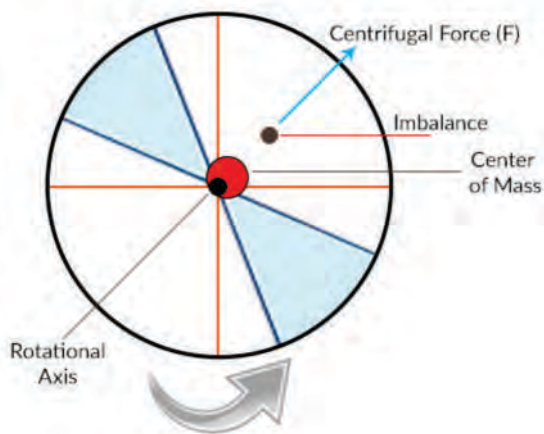
### Accutek Balancing Methodology

Accutek's high quality and high precision tool clamping products conform to the latest ISO/DIN balancing specifications. In this section, you will find a copy of an actual balance specification sheet supplied with each Accutek rotating product to show exact balancing dynamics of the product purchased. Before we dive into the specifics of our holder balancing certificate, let's cover some theoretical and practical factors that govern the balancing framework that we follow.

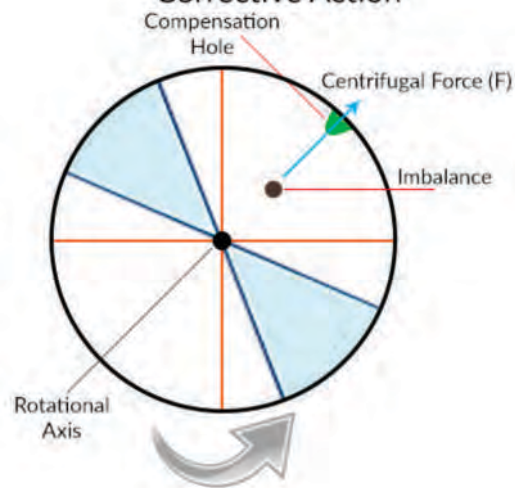
### Proven Theory of ISO/DIN 1940-1 and ISO/DIN 1940-2 Balancing specifications

The balance of a rotating tool clamping product is critical to machine spindle wear and cutting tool performance, but how perfect does the balancing need to be? To answer that, we must first look at what imbalance is and how it impacts a holder.

#### Imbalance Before Corrective Action

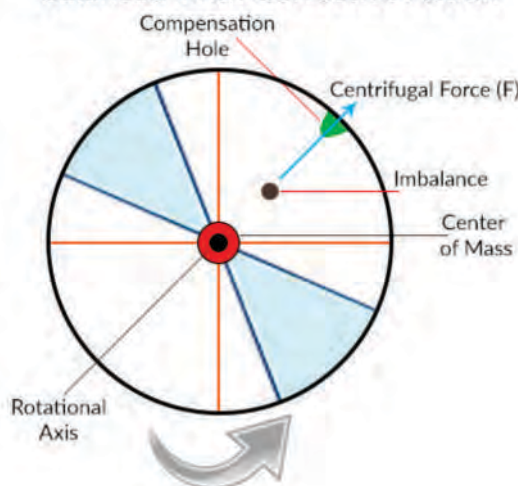


#### Corrective Action



Imbalance - an unbalanced tool holder (one which has its center of mass away from its rotational axis) produces a centrifugal force at the rotation spindle, impeding efficient operation of a cutting tool. Imbalance also has a negative effect on machine spindle bearings lifespan and cutting tool performance. As in the figure above, corrective action of material removal (compensation hole) rebalances the holder and brings the center of mass back in alignment with the rotational axis.

#### Balanced With Corrective Action



# Tool holder Selection Guide

## Balancing Guide

At Accutek, we balance our general purpose holders to a realistic G6.3 @20,000 RPM specification designated by ISO/DIN 1940-2. For most tool holders, any higher degree of balancing is impractical and misleading since the percentage of error increases and the practical application requires rebalancing of every tool assembly to maintain the higher standard. For example, an ER Collet holder balanced to G2.5 will not remain balanced once a retention knob, collet, and cutting tool have been installed. Multiple studies have proven that G2.5 balance levels cannot be maintained on steep taper and HSK taper CNC holders (End mill, Shell mill, ER collet chucks, etc.). The following variances create a high degree of imbalance that makes G2.5 a false rating and misrepresentation of actual repetitive tool assembly balance:

Product	Causes of imbalance in assembly of tool after established G rating Balance					
	Pre-Balance	Retention Knobs	Collets	Collet Nut/Torque	Locking Screw	Arbor Screw
ER COLLET CHUKS	Balancing with Collet Nut and Gauge Pin	✓	✓	✓	-	-
END MILL HOLDERS	Balancing with Gauge pin	✓	-	-	✓	-
SHELL MILL HOLDERS	Balancing with Arbor Screw	✓	-	-	-	✓
SHRINK FIT HOLDERS	*	✓	-	-	-	-
HYDRAULIC HOLDERS	Balancing with Gauge pin	✓	-	-	-	-
Steep Taper Tools						

Higher balance rating on AccuGrip Shrink Fit holders and AccuClamp Hydraulic Holders of G2.5 @25,000 RPM is achievable and maintained because there are limited mechanically moving parts to cause variances other than the retention knob. To mitigate any impact of the retention knob installation, all of our holders come with a ground pilot ID for the retention knob pilot location accuracy.

Accutek balancing methodology ensures performance balance of G6.3 @ 20,000 RPM on all CNC holders and G2.5 @ 25,000 RPM on all AccuGrip shrink fit and AccuClamp Hydraulic holders.

All Accutek rotation products are balanced with certified test gauge pins and collets to maintain a consistent accuracy reading. All rotating products are balanced in an “assembly” mode – meaning gauge pin and lock screw or gauge pin and ER collet with specific torque ratings to provide accurate and consistent measurements in accordance with ISO/DIN 1940-2 specifications.

# Tool holder Selection Guide

## Balancing Guide

DIN ISO 1940 Teil 1 Seite 7

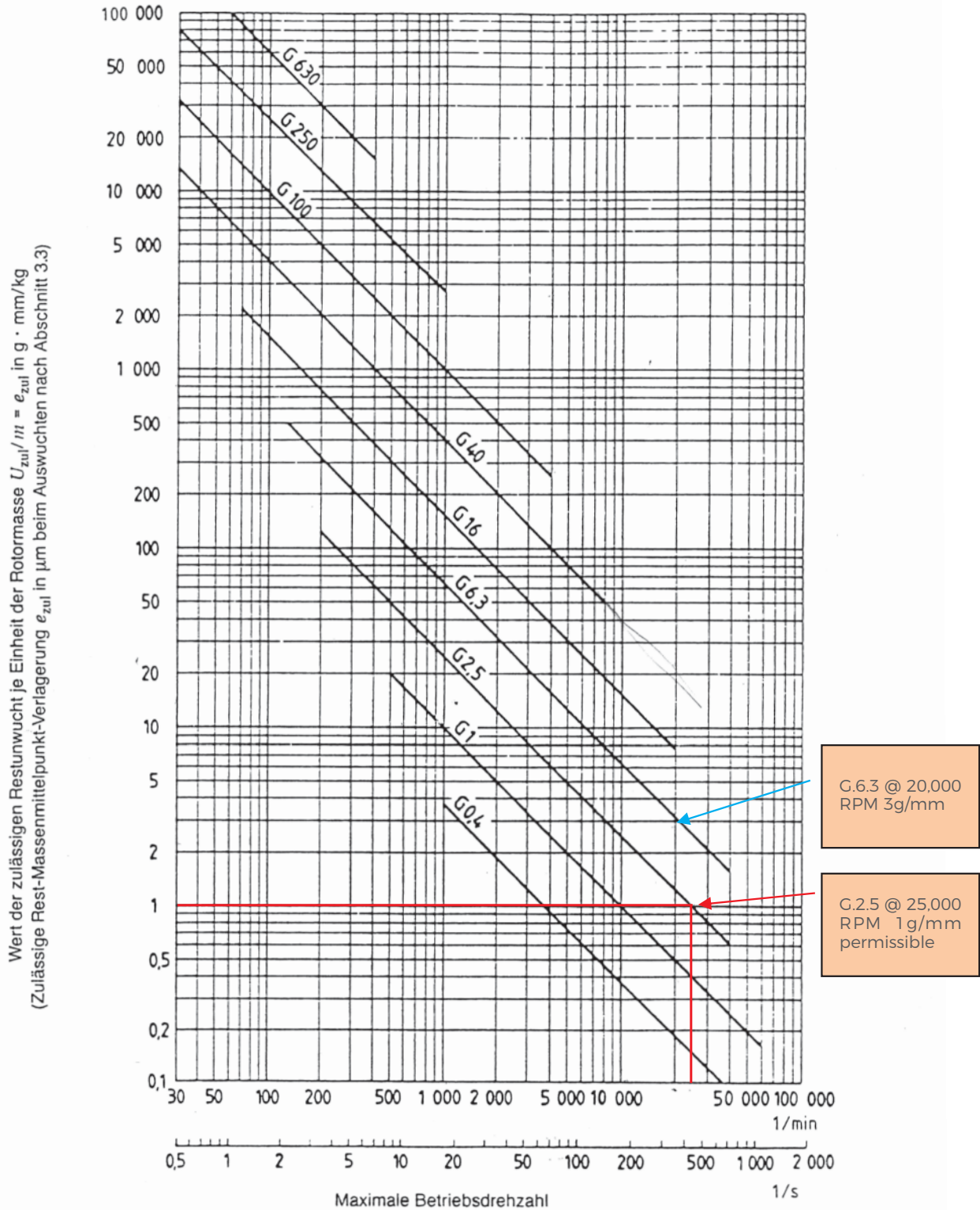


Bild 2: Wert der maximal zulässigen spezifischen Restunwucht entsprechend verschiedener Auswucht-Gütestufen

# Tool holder Selection Guide

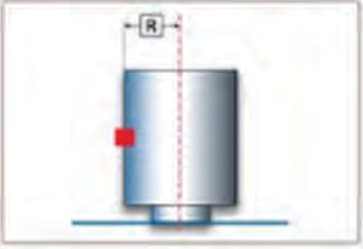
## Balancing Guide

### Calculations of Balancing Grade Totals - Assembly: Spindle - Tool Holder - Cutting Tool

<p>Illustration of Balancing grade total</p>	<p>Spindle with 4-point spanner</p>	<p>Spindle grade of rotating parts</p>
<p><math>U_{total} = U_{spindle} + U_{toolholder} + U_{cutting\ tool}</math></p>		<p>Toolholder TIR 2 μm</p>
<p>Example</p>	<p>Hydraulic Chuck</p>	<p>Cutting Tool TIR 3 μm</p>
<p><math>U_{total} = U_{spindle(60.4)} + U_{toolholder(2.5)} + U_{cutting\ tool(6.3)}</math></p>	<p>Cutting Tool</p>	<p>Sum of System n=30,000 U/min      Balancing grade total n= 30,000 rpm</p>
<p>Calculation of static imbalance</p> <p><math>U = \frac{G \times 60}{2 \times \pi \times m} \times m</math></p>	<p>Total Sum of System</p>	
<p><math>U_{spindle} = \frac{0.4 \times 60}{2 \times \pi \times 30,000} \times 15,000 = 1,910</math></p> <p><math>U_{toolholder} = \frac{2.5 \times 60}{2 \times \pi \times 30,000} \times 1125 = 0.825</math></p> <p><math>U_{cutting\ tool} = \frac{6.3 \times 60}{2 \times \pi \times 30,000} \times 215 = .431</math></p> <p><math>U_{total\ in\ gmm} = 3,236</math></p>		
<p>Balancing grade conversion of the total system</p> <p>Example:</p> <p><math>G = U_{total} \times 2 \times \pi \times \frac{n}{60} \times m_{total}</math></p> <p><math>G = 3,236\ gmm \times 2 \times \pi \times \frac{30,000 \times U/min}{60\ s \times 16340\ g}</math></p> <p>0.62</p>		

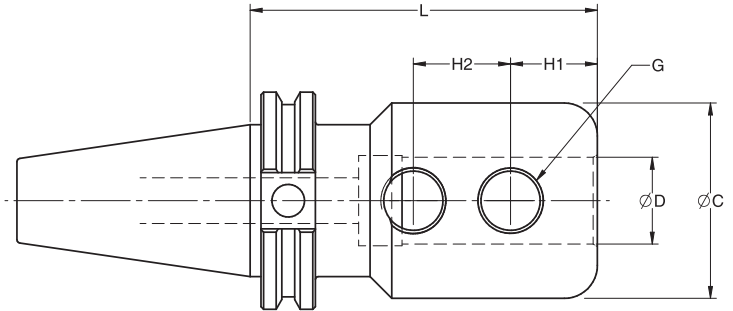
# Tool holder Selection Guide

## Balancing Guide

Balancing report		
Rotor ID	R008061	<input type="text"/>
<b>Type data</b>		
Rotor type	HSK100A CHE 20-6.00	
Last change	08/07/2018 13:58	
Set speed	1200 rpm (Direction of Rotation: Forward)	
ABC geometry		
Radius 1	46.0 mm	
		
<b>DIN ISO 21940-11 calculation</b>		
Calculation based on	Quality grade G	
Deviation (+/-)%	10	Permissible error
Balancing quality grade	G 2.5	"C" Grade
Mass of rotor	2.75 kg	
Service speed	25000 rpm	RPM balance target
Permissible unbalance	2.9 g-mm	Permissible Imbalance
<b>Individual index compensation</b>		
Run	08/07/2018 / 14:22:12	
Measuring speed	Rotor 0° mounted at machineposition 180.0°	
Unbalance	1081 rpm	
Static	139 g-mm	119.6 ° Initial Imbalance
<b>Measuring Results, Run: 3</b>		
Active compensations	08/07/2018 / 14:23:40	
Measuring speed	Indexing	
Unbalance	1081 rpm	
Static	2.67 g-mm	329.5 ° Post-Correction Imbalance
Correction	in Tol	
Correction Plane 1 - Drilling	0.926 mm	329.5 ° Correction Detail
Date	Signature	Stamp

# CAT Holders

## CAT40 End Mill Holder (ANSI/ASME B5.50-1994)



### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0004"
- Taper shank ground to AT3 accuracy (or better)
- Bore tolerance: H6

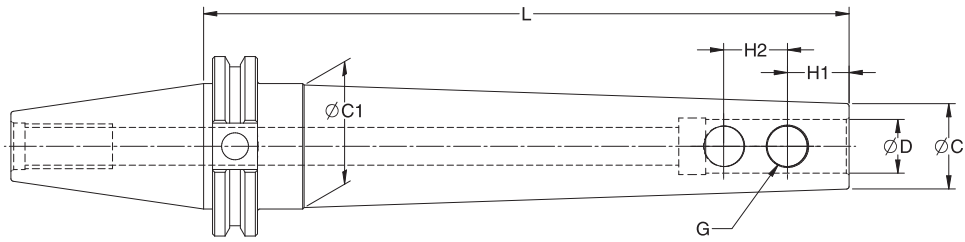
Catalog Number	Description	"D" (inch)	"L" (inch)	"C" (inch)	H1	H2	"G"	Coolant Style
84240712	CAT40-EMH 0.125-2.38	0.125	2.38	0.50	0.22	-	#10-32	AD Thru
84240913	CAT40-EMH 0.187-2.50	0.187	2.50	0.69	0.56	-	#10-32	AD Thru
84240915	CAT40-EMH 0.187-3.00	0.187	3.00	0.69	0.56	-	#10-32	AD Thru
84241113	CAT40-EMH 0.250-2.50	0.250	2.50	0.69	0.56	-	1/4"-28	AD Thru
84241120	CAT40-EMH 0.250-4.00	0.250	4.00	0.69	0.56	-	1/4"-28	AD Thru
84241313	CAT40-EMH 0.312-2.50	0.312	2.50	1.00	0.75	-	1/4"-28	AD Thru
84242613	CAT40-EMH 0.375-2.50	0.375	2.50	1.00	0.75	-	3/8"-24	AD Thru
84242620	CAT40-EMH 0.375-4.00	0.375	4.00	1.00	0.75	-	3/8"-24	AD Thru
84241509	CAT40-EMH 0.500-1.75	0.500	1.75	1.75	0.88	-	7/16"-20	AD Thru
84241513	CAT40-EMH 0.500-2.50	0.500	2.50	1.25	0.88	-	7/16"-20	AD Thru
84241523	CAT40-EMH 0.500-4.62	0.500	4.62	1.25	0.88	-	7/16"-20	AD Thru
84241534	CAT40-EMH 0.500-6.62	0.500	6.62	1.25	0.88	-	7/16"-20	AD Thru
84241709	CAT40-EMH 0.625-1.75	0.625	1.75	1.75	0.94	-	9/16"-18	AD Thru
84241715	CAT40-EMH 0.625-3.00	0.625	3.00	1.50	0.94	-	9/16"-18	AD Thru
84241719	CAT40-EMH 0.625-3.75	0.625	3.75	1.62	0.94	-	9/16"-18	AD Thru
84241729	CAT40-EMH 0.625-5.75	0.625	5.75	1.62	0.94	-	9/16"-18	AD Thru
84242809	CAT40-EMH 0.750-1.75	0.750	1.75	1.75	1.00	-	5/8"-18	AD Thru
84242815	CAT40-EMH 0.750-3.00	0.750	3.00	1.75	1.00	-	5/8"-18	AD Thru
84242819	CAT40-EMH 0.750-3.75	0.750	3.75	1.75	1.00	-	5/8"-18	AD Thru
84242829	CAT40-EMH 0.750-5.75	0.750	5.75	1.75	1.00	-	5/8"-18	AD Thru
84241918	CAT40-EMH 0.875-3.50	0.875	3.50	1.75	1.00	-	5/8"-18	AD Thru
84241929	CAT40-EMH 0.875-5.75	0.875	5.75	2.00	1.00	0.81	5/8"-18*	AD Thru
84242109	CAT40-EMH 1.000-1.75	1.000	1.75	1.75	1.12	-	5/8"-18	AD Thru
84242115	CAT40-EMH 1.000-3.00	1.000	3.00	1.95	0.88	1.00	5/8"-18*	AD Thru
84242120	CAT40-EMH 1.000-4.00	1.000	4.00	2.25	1.00	1.12	3/4"-16*	AD Thru
84242130	CAT40-EMH 1.000-6.00	1.000	6.00	2.25	1.12	1.12	3/4"-16*	AD Thru
84242210	CAT40-EMH 1.250-2.00	1.250	2.00	2.25	1.12	-	5/8"-18	AD Thru
84242220	CAT40-EMH 1.250-4.00	1.250	4.00	2.50	1.00	1.12	3/4"-16*	AD Thru
84242230	CAT40-EMH 1.250-6.00	1.250	6.00	2.50	1.00	1.12	3/4"-16*	AD Thru
84242323	CAT40-EMH 1.500-4.62	1.500	4.62	2.75	1.12	1.00	3/4"-16*	AD Thru
84242330	CAT40-EMH 1.500-6.00	1.500	6.00	2.75	1.12	1.00	3/4"-16*	AD Thru

Retention knobs on page 152



# CAT Holders

## CAT40 End Mill Holder X-Long (ANSI/ASME B5.50-1994)



### FEATURES

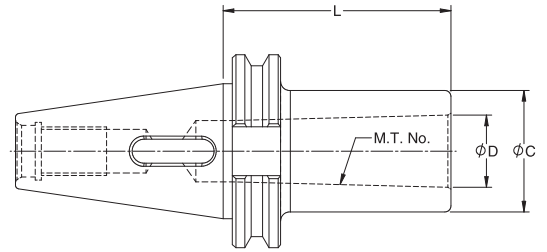
- Balanced to G6.3 @ 20,000 RPM
- Taper shank ground to AT3 accuracy (or better)
- T.I.R. < 0.0004"
- Bore tolerance: H6

Catalog Number	Description	"D" (inch)	"C1" (inch)	"C" (inch)	L	H1	H2	"C"	Coolant Style
84240720	CAT40-EMHXL .125-4	0.125	0.56	0.38	4.00	0.22	-	#10-32 x 3/32	AD THRU
84240730	CAT40-EMHXL .125-6	0.125	0.70	0.38	6.00	0.22	-	#10-32 X 3/32	AD THRU
84240746	CAT40-EMHXL .125-9	0.125	0.91	0.38	9.00	0.22	-	#10-32 X 3/32	AD THRU
84240920	CAT40-EMHXL .187-4	0.187	0.62	0.44	4.00	0.56	-	#10-32 X 1/8	AD THRU
84240930	CAT40-EMHXL .187-6	0.187	0.76	0.44	6.00	0.56	-	#10-32 X 1/8	AD THRU
84240946	CAT40-EMHXL .187-9	0.187	0.97	0.44	9.00	0.56	-	#10-32 X 1/8	AD THRU
84241120	CAT40-EMHXL .250-4	0.250	0.68	0.5	4.00	0.56	-	#10-32 X 1/8	AD THRU
84241130	CAT40-EMHXL .250-6	0.250	0.82	0.5	6.00	0.56	-	#10-32 X 1/8	AD THRU
84241146	CAT40-EMHXL .250-9	0.250	1.03	0.5	9.00	0.56	-	#10-32 X 1/8	AD THRU
84241320	CAT40-EMHXL .312-4	0.312	0.74	0.56	4.00	0.75	-	1/4-28 X 1/8	AD THRU
84241330	CAT40-EMHXL.312-6	0.312	0.88	0.56	6.00	0.75	-	1/4-28 X 1/8	AD THRU
84241346	CAT40-EMHXL .312-9	0.312	1.09	0.56	9.00	0.75	-	1/4-28 X 1/8	AD THRU
84242620	CAT40-EMHXL .375-4	0.375	0.92	0.75	4.00	0.75	-	5/16-24 X 5/32	AD THRU
84242630	CAT40-EMHXL .375-6	0.375	1.06	0.75	6.00	0.75	-	5/16-24 X 5/32	AD THRU
84242646	CAT40-EMHXL .375-9	0.375	1.27	0.75	9.00	0.75	-	5/16-24 X 5/32	AD THRU
84242720	CAT40-EMHXL .437-4	0.437	0.98	0.81	4.00	0.88	-	3/8-24 X 3/16	AD THRU
84242730	CAT40-EMHXL .437-6	0.437	1.12	0.81	6.00	0.88	-	3/8-24 X 3/16	AD THRU
84242746	CAT40-EMHXL .437-9	0.437	1.33	0.81	9.00	0.88	-	3/8-24 X 3/16	AD THRU
84241520	CAT40-EMHXL .500-4	0.500	1.05	0.88	4.00	0.88	-	7/16-20 X 7/32	AD THRU
84241530	CAT40-EMHXL .500-6	0.500	1.19	0.88	6.00	0.88	-	7/16-20 X 7/32	AD THRU
84241546	CAT40-EMHXL .500-9	0.500	1.4	0.88	9.00	0.88	-	7/16-20 X 7/32	AD THRU
84243320	CAT40-EMHXL .562-4	0.562	1.11	0.94	4.00	0.94	-	1/2-20 X 1/4	AD THRU
84243330	CAT40-EMHXL .562-6	0.562	1.25	0.94	6.00	0.94	-	1/2-20 X 1/4	AD THRU
84243346	CAT40-EMHXL .562-9	0.562	1.46	0.94	9.00	0.94	-	1/2-20 X 1/4	AD THRU
84241720	CAT40-EMHXL .625-4	0.625	1.23	1.06	4.00	0.94	-	1/2-20 X 1/4	AD THRU
84241730	CAT40-EMHXL .625-6	0.625	1.37	1.06	6.00	0.94	-	1/2-20 X 1/4	AD THRU
84241746	CAT40-EMHXL .625-9	0.625	1.58	1.06	9.00	0.94	-	1/2-20 X 1/4	AD THRU
84242820	CAT40-EMHXL .750-4	0.750	1.36	1.19	4.00	1.00	-	1/2-20 X 1/4	AD THRU
84242830	CAT40-EMHXL .750-6	0.750	1.50	1.19	6.00	1.00	-	1/2-20 X 1/4	AD THRU
84242846	CAT40-EMHXL .750-9	0.750	1.71	1.19	9.00	1.00	-	1/2-20 X 1/4	AD THRU
84241920	CAT40-EMHXL .875-4	0.875	1.48	1.31	4.00	1.00	0.81	5/8-18 X 5/16	AD THRU
84241930	CAT40-EMHXL .875-6	0.875	1.62	1.31	6.00	1.00	0.81	5/8-18 X 5/16	AD THRU
84241946	CAT40-EMHXL .875-9	0.875	1.75	1.31	9.00	1.00	0.81	5/8-18 X 5/16	AD THRU
84242120	CAT40-EMHXL 1.000-4	1.000	1.75	1.62	4.00	1.12	1.00	5/8-18 X 5/16	AD THRU
84242130	CAT40-EMHXL 1.000-6	1.000	1.75	1.62	6.00	1.12	1.00	5/8-18 X 5/16	AD THRU
84242146	CAT40-EMHXL 1.000-9	1.000	1.75	1.62	9.00	1.12	1.00	5/8-18 X 5/16	AD THRU
84242220	CAT40-EMHXL 1.250-4	1.250	2.04	1.75	4.00	1.12	1.00	5/8-18 X 5/16	AD THRU
84242230	CAT40-EMHXL 1.250-6	1.250	2.18	1.75	6.00	1.12	1.00	5/8-18 X 5/16	AD THRU
84242246	CAT40-EMHXL 1.250-9	1.250	2.39	1.75	9.00	1.12	1.00	5/8-18 X 5/16	AD THRU

Retention knobs on page 152

# CAT Holders

## CAT40 Morse Taper Socket (ANSI-ASME B5.50-1994)

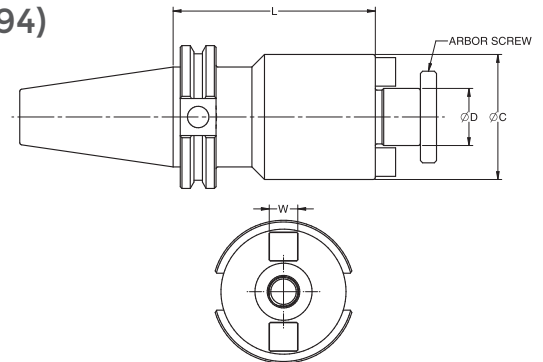


### FEATURES

- Taper shank ground to AT3 accuracy (or better)

Catalog Number	Description	MT Socket	"D" (inch)	"L" (inch)	"C" (inch)	Coolant Style
88024109	CAT40-MTA 1-1.77	1	0.475	1.77	0.98	N/A
88024209	CAT40-MTA 2-1.77	2	0.700	1.77	1.25	N/A
88024315	CAT40-MTA 3-2.95	3	0.938	2.95	1.57	N/A
88024418	CAT40-MTA 4-3.54	4	1.231	3.54	1.97	N/A

## CAT40 Shell Mill Holder (ANSI-ASME B5.50-1994)



### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0002"
- Taper shank ground to AT3 accuracy (or better)

Catalog Number	Description	"D" (inch)	"L" (inch)	"C" (inch)	"W" (inch)	Coolant Style
81245007	CAT40-SMH 0.500-1.38	0.500	1.38	1.75	0.250	AD Thru
81247509	CAT40-SMH 0.750-1.77	0.750	1.77	1.75	0.312	AD Thru
81247518	CAT40-SMH 0.750-3.54	0.750	3.54	1.75	0.312	AD Thru
81241012	CAT40-SMH 1.000-2.36	1.000	2.36	2.19	0.375	AD Thru
81241018	CAT40-SMH 1.000-3.54	1.000	3.54	2.19	0.375	AD Thru
81241030	CAT40-SMH 1.000-6.00	1.000	6.00	2.19	0.375	AD Thru
81241212	CAT40-SMH 1.250-2.36	1.250	2.36	2.75	0.500	AD Thru
81241222	CAT40-SMH 1.250-4.25	1.250	4.25	2.75	0.500	AD Thru
80241512	CAT40-SMH 1.500-2.36	1.500	2.36	3.38	0.625	AD Thru
80241520	CAT40-SMH 1.500-4.00	1.500	4.00	3.38	0.625	AD Thru

**NOTE:**

ALL Shell Mill Holders are supplied with coolant through the center up to the arbor screw hole.

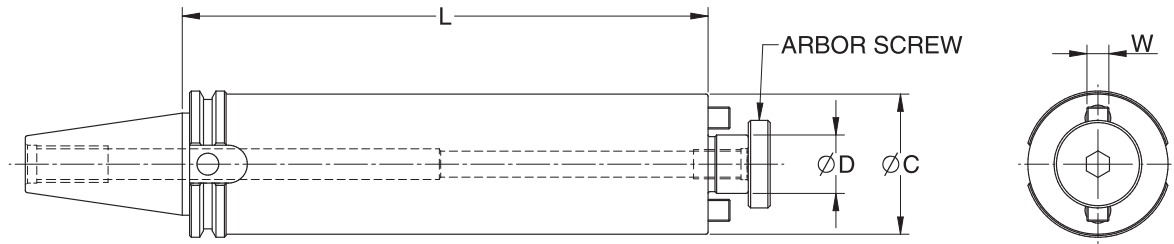
Retention knobs **on page 152**

Non-Coolant and Coolant Arbor Screws **on page 155**

Arbor Screw Wrenches **on page 158**

# CAT Holders

## CAT40 Shell Mill Holder X-Long (ANSI-ASME B5.50-1994)



### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0004"
- Taper shank ground to AT3 accuracy (or better)

Catalog Number	Description	"D" (inch)	"C" (inch)	"L" (inch)	"W" (inch)	Arbor Screw	Coolant Style
81245025C	CAT40-SMHXL .500-5	0.500	1.25	5.00	0.250	1/4"-28	AD THRU
81245041C	CAT40-SMHXL .500-8	0.500	1.25	8.00	0.250	1/4"-28	AD THRU
812475S20C	CAT-40-SMHXL .750-4S	0.750	1.40	4.00	0.312	3/8"-24	AD THRU
812475S30C	CAT40-SMHXL .750-6S	0.750	1.40	6.00	0.312	3/8"-24	AD THRU
812475S46C	CAT40-SMHXL .750-9S	0.750	1.40	9.00	0.312	3/8"-24	AD THRU
812475W20C	CAT40-SMHXL .750-4W	0.750	1.90	4.00	0.312	3/8"-24	AD THRU
812475W30C	CAT40-SMHXL .750-6W	0.750	1.90	6.00	0.312	3/8"-24	AD THRU
812475W46C	CAT40-SMHXL .750-9W	0.750	1.90	9.00	0.312	3/8"-24	AD THRU
81241020C	CAT40-SMHXL1.000-4	1.000	2.40	4.00	0.375	1/2"-20	AD THRU
81241030C	CAT40-SMHXL1.000-6	1.000	2.40	6.00	0.375	1/2"-20	AD THRU
81241046C	CAT40-SMHXL1.000-9	1.000	2.40	9.00	0.375	1/2"-20	AD THRU
81241220C	CAT40-SMHXL1.250-4	1.250	2.90	4.00	0.500	5/8"-18	AD THRU
81241230C	CAT40-SMHXL1.250-6	1.250	2.90	6.00	0.500	5/8"-18	AD THRU
81241246C	CAT40-SMHXL1.250-9	1.250	2.90	9.00	0.500	5/8"-18	AD THRU
80241520C	CAT40-SMHXL1.500-4	1.500	3.88	4.00	0.625	3/4"-16	AD THRU
80242017C	CAT40-SMHXL 2.00-3.25	2.000	4.00	3.25	0.750	1"-14	AD THRU

NOTE:

ALL Shell Mill Holders are supplied with coolant through the center up to the arbor screw hole.

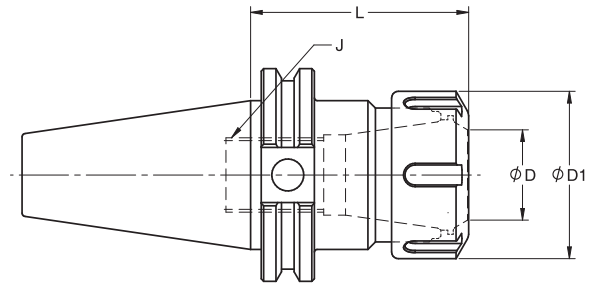
Retention knobs **on page 152**

Non-Coolant and Coolant Arbor Screws **on page 155**

Arbor Screw Wrenches **on page 158**

# CAT Holders

## CAT40 ER Collet Holder (ANSI/ASME B5.50-1994)



### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0002"
- AD coolant thru the spindle
- Taper shank ground to AT3 accuracy (or better)

Catalog Number	Description	Collet Size	"D" Range	"D1" (inch)	"L" (inch)	"J" (inch)	Coolant Style
87224014	CAT40-CHE 11-2.75	ER11	.118 - .275	0.748	2.75	5/16-24LH	AD Thru
87224020	CAT40-CHE 11-4.00	ER11	.118 - .275	0.748	4.00	5/16-24LH	AD Thru
87224025	CAT40-CHE 11-5.00	ER11	.118 - .275	0.748	5.00	5/16-24LH	AD Thru
87224114	CAT40-CHE 16-2.75	ER16	.118 - .393	1.102	2.76	7/16-16LH	AD Thru
87224120	CAT40-CHE 16-4.00	ER16	.118 - .393	1.102	4.00	7/16-16LH	AD Thru
87224125	CAT40-CHE 16-5.00	ER16	.118 - .393	1.102	5.00	7/16-16LH	AD Thru
87224214	CAT40-CHE 20-2.75	ER20	.118 - .511	1.338	2.75	9/16-16LH	AD Thru
87224220	CAT40-CHE 20-4.00	ER20	.118 - .511	1.338	4.00	9/16-16LH	AD Thru
87224320	CAT40-CHE 20-6.00	ER20	.118 - .511	1.338	5.51	9/16-16LH	AD Thru
87224314	CAT40-CHE 25-2.75	ER25	.118 - .629	1.653	2.75	11/16-16LH	AD Thru
87224320	CAT40-CHE 25-4.00	ER25	.118 - .629	1.653	4.00	11/16-16LH	AD Thru
87224414	CAT40-CHE 32-2.75	ER32	.118 - .787	1.968	2.75	7/8-16LH	AD Thru
87224420	CAT40-CHE 32-4.00	ER32	.118 - .787	1.968	4.00	7/8-16LH	AD Thru
87224430	CAT40-CHE 32-6.00	ER32	.118 - .787	1.968	6.00	7/8-16LH	AD Thru
87224515	CAT40-CHE 40-3.00	ER40	.157 - 1.023	2.480	3.00	1.1/8-16LH	AD Thru
87224520	CAT40-CHE 40-4.00	ER40	.157 - 1.023	2.480	4.00	1.1/8-16LH	AD Thru

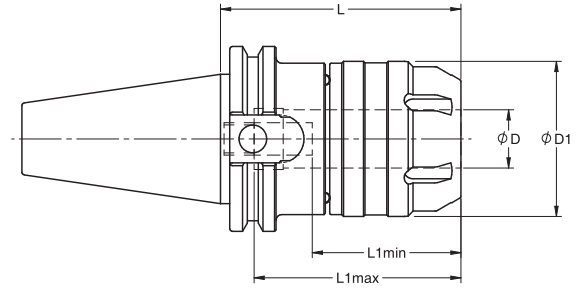
ER Collets [on page 142](#)

ER Nut Wrenches [on page 156](#)

Retention knobs [on page 152](#)

# CAT Holders

## CAT40 AccuMill™ Milling Chuck (ANSI-ASME B5.50-1994)



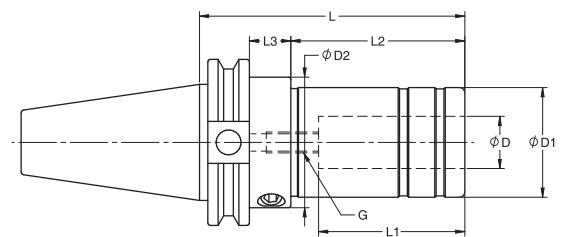
### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0002"
- Taper shank ground to AT3 accuracy (or better)
- Bore tolerance: H6

Catalog Number	Description	Collet	Collect Capacity Range	"D"	"D1"	"L"	"L1" Min/Max	Coolant Style
<b>CAT40 Inch</b>								
97242816	CAT40-MMC 0.750-3.25	MC75	.125 - .625	0.75	2.09	3.25	2.50/2.75	AD Thru
97242825	CAT40-MMC 0.750-5.00	MC75	.125 - .625	0.75	2.09	5.00	2.50/2.75	AD Thru
97242216	CAT40-MMC 1.250-3.25	MC125	.125 - 1.00	1.25	2.64	3.25	3.09/3.34	AD Thru
97242225	CAT40-MMC 1.250-5.00	MC125	.125 - 1.00	1.25	2.64	5.00	3.09/3.34	AD Thru
<b>CAT40 Metric</b>								
97242024	CAT40-MMC 20-120	MC20	3 -- 16	20	53	120	63/70	AD Thru
97242016	CAT40-MMC 20-80	MC20	3 -- 16	20	53	80	63/70	AD Thru
97243224	CAT40-MMC 32-120	MC32	3 -- 25	32	67	120	78/85	AD Thru
97243218	CAT40-MMC 32-90	MC32	3 -- 25	32	67	90	78/85	AD Thru

AccuMill™ Collets [on page 150](#)  
 AccuMill™ Collet Nut wrenches [on page 154](#)  
 Retention knobs [on page 152](#)

## CAT40 AccuClamp™ Hydraulic Chucks (ANSI/ASME B5.50-1994)



### FEATURES

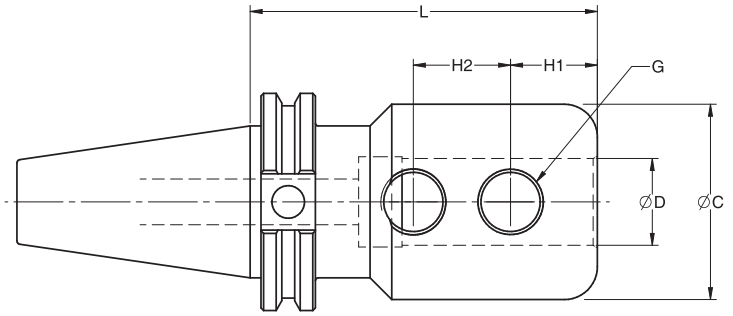
- Balanced to G2.5 @ 25,000 RPM
- T.I.R. < 0.0002"
- Taper shank ground to AT3 accuracy (or better)
- Bore tolerance: H6

Catalog Number	Description	"D" (inch)	"D1" (inch)	"D2" (inch)	"L" (inch)	"L1" (inch)	"L2" (inch)	"L3" (inch)	"C" (inch)	Coolant Style
68242820	CAT40-HCS 0.750-4.00	0.750	1.65	2.05	4.00	2.05	2.62	0.63	M8x1	AD Thru
68242223	CAT40-HCS 1.250-4.52	1.250	2.36	2.36	4.52	2.44	3.77	-	M8x1	AD Thru

AccuClamp™ Torque wrenches [on page 158](#)  
 AccuClamp™ Reduction Sleeves [on page 150](#)  
 Retention knobs [on page 152](#)

# CAT Holders

## CAT50 End Mill Holder (ANSI/ASME B5.50-1994)



### FEATURES

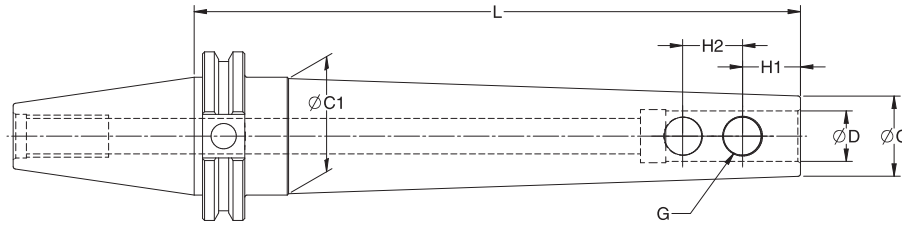
- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0004"
- Taper shank ground to AT3 accuracy (or better)
- Bore tolerance: H6

Catalog Number	Description	"D" (inch)	"L" (inch)	"C" (inch)	H1	H2	"G"	Coolant Style
84260713	CAT50-EMH 0.187-2.50	0.187	2.50	0.69	0.56	-	#10-32	AD Thru
84261113	CAT50-EMH 0.250-2.50	0.250	2.50	0.69	0.56	-	1/4"-28	AD Thru
84261313	CAT50-EMH 0.312-2.50	0.312	2.50	1.00	0.75	-	1/4"-28	AD Thru
84262613	CAT50-EMH 0.375-2.50	0.750	2.50	1.00	0.75	-	3/8"-24	AD Thru
84262620	CAT50-EMH 0.375-4.00	0.375	4.00	1.00	0.75	-	3/8"-24	AD Thru
84262630	CAT50-EMH 0.375-6.00	0.375	6.00	1.00	0.75	-	3/8"-24	AD Thru
84261513	CAT50-EMH 0.500-2.62	0.500	2.62	1.38	0.88	-	7/16"-20	AD Thru
84261520	CAT50-EMH 0.500-4.00	0.500	4.00	1.38	0.88	-	7/16"-20	AD Thru
84261530	CAT50-EMH 0.500-6.00	0.500	6.00	1.38	0.88	-	7/16"-20	AD Thru
84261720	CAT50-EMH 0.625-4.00	0.625	4.00	1.62	0.94	-	9/16"-18	AD Thru
84261730	CAT50-EMH 0.625-6.00	0.625	6.00	1.62	0.94	-	9/16"-18	AD Thru
84261741	CAT50-EMH 0.625-8.00	0.625	8.00	1.62	0.94	-	9/16"-18	AD Thru
84262820	CAT50-EMH 0.750-4.00	0.750	4.00	1.75	1.00	-	5/8"-18	AD Thru
84262830	CAT50-EMH 0.750-6.00	0.750	6.00	1.75	1.00	-	5/8"-18	AD Thru
84262841	CAT50-EMH 0.750-8.00	0.750	8.00	1.75	1.00	-	5/8"-18	AD Thru
84261920	CAT50-EMH 0.875-4.00	0.875	4.00	2.00	1.00	0.81	5/8"-18	AD Thru
84261930	CAT50-EMH 0.875-6.00	0.875	6.00	2.00	1.00	0.81	5/8"-18	AD Thru
84262113	CAT50-EMH 1.000-2.62	1.000	2.62	2.75	1.12	-	3/4"-16	AD Thru
84262120	CAT50-EMH 1.000-4.00	1.000	4.00	2.25	1.12	1.00	3/4"-16	AD Thru
84262130	CAT50-EMH 1.000-6.00	1.000	6.00	2.25	1.12	1.00	3/4"-16	AD Thru
84262141	CAT50-EMH 1.000-8.00	1.000	8.00	2.25	1.12	1.00	3/4"-16	AD Thru
84262220	CAT50-EMH 1.250-4.00	1.250	4.00	2.50	1.12	1.00	3/4"-16	AD Thru
84262230	CAT50-EMH 1.250-6.00	1.250	6.00	2.50	1.12	1.00	3/4"-16	AD Thru
84262241	CAT50-EMH 1.250-8.00	1.250	8.00	2.50	1.12	1.00	3/4"-16	AD Thru
84262320	CAT50-EMH 1.500-4.00	1.500	4.00	2.75	1.12	1.00	3/4"-16	AD Thru
84262330	CAT50-EMH 1.500-6.00	1.500	6.00	2.75	1.12	1.00	3/4"-16	AD Thru
84262341	CAT50-EMH 1.500-8.00	1.500	8.00	2.75	1.12	1.00	3/4"-16	AD Thru
84262929	CAT50-EMH 2.000-5.62	2.000	5.62	3.75	1.38	1.50	1"-14	AD Thru
84262939	CAT50-EMH 2.000-7.75	2.000	7.75	3.75	1.38	1.50	1"-14	AD Thru
84263130	CAT50-EMH 2.500-6.00	2.500	6.00	4.25	1.56	1.69	1"-14	AD Thru

Retention knobs on page 152

# CAT Holders

## CAT50 End Mill Holder X-Long (ANSI/ASME B5.50-1994)



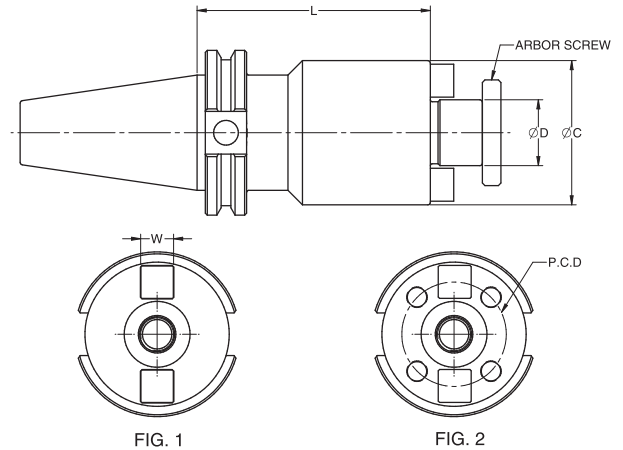
### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- Taper shank ground to AT3 accuracy (or better)
- T.I.R. < 0.0004"

Catalog Number	Description	"D" (inch)	"C1" (inch)	"C" (inch)	L	H1	H2	"G"	Coolant Style
84260746	CAT50-EMHXL .125-9	0.125	0.92	0.39	9.0	0.22	-	#10-32 X 3/32	AD THRU
84260930	CAT50-EMHXL .187-6	0.187	0.76	0.44	6.0	0.56	-	#10-32 X 1/8	AD THRU
84260946	CAT50-EMHXL .187-9	0.187	0.99	0.44	9.0	0.56	-	#10-32 X 1/8	AD THRU
84261130	CAT50-EMHXL .250-6	0.250	0.82	0.50	6.0	0.56	-	#10-32 X 1/8	AD THRU
84261146	CAT50-EMHXL .250-9	0.250	1.03	0.50	9.0	0.56	-	#10-32 X 1/8	AD THRU
84261161	CAT50-EMHXL .250-12	0.250	1.24	0.50	12.0	0.56	-	#10-32 X 1/8	AD THRU
84261176	CAT50-EMHXL .250-15	0.250	1.45	0.50	15.0	0.56	-	#10-32 X 1/8	AD THRU
84261330	CAT50-EMHXL .312-6	0.312	0.88	0.56	6.0	0.75	-	1/4-28 X 1/8	AD THRU
84261346	CAT50-EMHXL .312-9	0.312	1.09	0.56	9.0	0.75	-	1/4-28 X 1/8	AD THRU
84261361	CAT50-EMHXL .312-12	0.312	1.3	0.56	12.0	0.75	-	1/4-28 X 1/8	AD THRU
84261361	CAT50-EMHXL .312-15	0.312	1.51	0.56	15.0	0.75	-	1/4-28 X 1/8	AD THRU
84262630	CAT50-EMHXL .375-6	0.375	1.06	0.75	6.0	0.75	-	5/16-24 X 5/32	AD THRU
84262646	CAT50-EMHXL .375-9	0.375	1.27	0.75	9.0	0.75	-	5/16-24 X 5/32	AD THRU
84262661	CAT50-EMHXL .375-12	0.375	1.48	0.75	12.0	0.75	-	5/16-24 X 5/32	AD THRU
84262676	CAT50-EMHXL .375-15	0.375	1.69	0.75	15.0	0.75	-	5/16-24 X 5/32	AD THRU
84262730	CAT50-EMHXL .437-6	0.437	1.13	0.81	6.0	0.88	-	3/8-24 X 3/16	AD THRU
84262746	CAT50-EMHXL .437-9	0.437	1.34	0.81	9.0	0.88	-	3/8-24 X 3/16	AD THRU
84262761	CAT50-EMHXL .437-12	0.437	1.55	0.81	12.0	0.88	-	3/8-24 X 3/16	AD THRU
84262776	CAT50-EMHXL .437-15	0.437	1.76	0.81	15.0	0.88	-	3/8-24 X 3/16	AD THRU
84261530	CAT50-EMHXL .500-6	0.500	1.19	0.88	6.0	0.88	-	7/16-20 X 7/32	AD THRU
84261546	CAT50-EMHXL .500-9	0.500	1.4	0.88	9.0	0.88	-	7/16-20 X 7/32	AD THRU
84261561	CAT50-EMHXL .500-12	0.500	1.61	0.88	12.0	0.88	-	7/16-20 X 7/32	AD THRU
84261576	CAT50-EMHXL .500-15	0.500	1.82	0.88	15.0	0.88	-	7/16-20 X 7/32	AD THRU
84261730	CAT50-EMHXL .625-6	0.625	1.37	1.06	6.0	0.94	-	1/2-20 X 1/4	AD THRU
84261746	CAT50-EMHXL .625-9	0.625	1.58	1.06	9.0	0.94	-	1/2-20 X 1/4	AD THRU
84261761	CAT50-EMHXL .625-12	0.625	1.79	1.06	12.0	0.94	-	1/2-20 X 1/4	AD THRU
84261776	CAT50-EMHXL .625-15	0.625	2.00	1.06	15.0	0.94	-	1/2-20 X 1/4	AD THRU
84262830	CAT50-EMHXL .750-6	0.750	1.5	1.19	6.0	1.00	-	1/2-20 X 1/4	AD THRU
84262846	CAT50-EMHXL .750-9	0.750	1.71	1.19	9.0	1.00	-	1/2-20 X 1/4	AD THRU
84262861	CAT50-EMHXL .750-12	0.750	1.92	1.19	12.0	1.00	-	1/2-20 X 1/4	AD THRU
84262876	CAT50-EMHXL .750-15	0.750	2.13	1.19	15.0	1.00	-	1/2-20 X 1/4	AD THRU
84261930	CAT50-EMHXL .875-6	0.875	1.62	1.43	6.0	1.00	0.81	5/8-18 X 5/16	AD THRU
84261946	CAT50-EMHXL .875-9	0.875	1.83	1.43	9.0	1.00	0.81	5/8-18 X 5/16	AD THRU
84261961	CAT50-EMHXL .875-12	0.875	2.04	1.43	12.0	1.00	0.81	5/8-18 X 5/16	AD THRU
84261976	CAT50-EMHXL .875-15	0.875	2.25	1.43	15.0	1.00	0.81	5/8-18 X 5/16	AD THRU
84262130	CAT50-EMHXL 1.000-6	1.000	1.93	1.62	6.0	1.12	1.00	5/8-18 X 5/16	AD THRU
84262146	CAT50-EMHXL 1.000-9	1.000	2.13	1.62	9.0	1.12	1.00	5/8-18 X 5/16	AD THRU
84262161	CAT50-EMHXL 1.000-12	1.000	2.34	1.62	12.0	1.12	1.00	5/8-18 X 5/16	AD THRU
84262176	CAT50-EMHXL 1.000-15	1.000	2.55	1.62	15.0	1.12	1.00	5/8-18 X 5/16	AD THRU
84262230	CAT50-EMHXL 1.250-6	1.250	2.19	1.88	6.0	1.12	1.00	5/8-18 X 5/16	AD THRU
84262246	CAT50-EMHXL 1.250-9	1.250	2.39	1.88	9.0	1.12	1.00	5/8-18 X 5/16	AD THRU
84262246STR	CAT50-EMHXL1.250-9-STR	1.250	1.90	1.90	9.0	1.12	1.00	5/8-18 X 5/16	AD THRU
84262261	CAT50-EMHXL 1.250-12	1.250	2.60	1.88	12.0	1.12	1.00	5/8-18 X 5/16	AD THRU
84262276	CAT50-EMHXL 1.250-15	1.250	2.75	1.88	15.0	1.12	1.00	5/8-18 X 5/16	AD THRU
84262330	CAT50-EMHXL 1.500-6	1.500	2.55	2.25	6.0	1.12	1.00	3/4-16 X 3/8	AD THRU
84262346	CAT50-EMHXL 1.500-9	1.500	2.75	2.25	9.0	1.12	1.00	3/4-16 X 3/8	AD THRU
84262361	CAT50-EMHXL 1.500-12	1.500	2.96	2.25	12.0	1.12	1.00	3/4-16 X 3/8	AD THRU
84262376	CAT50-EMHXL 1.500-15	1.500	3.17	2.25	15.0	1.12	1.00	3/4-16 X 3/8	AD THRU
84262930	CAT50-EMHXL 2.000-6	2.000	3.46	3.19	6.0	1.38	1.50	1-14 X 3/4	AD THRU
84262946	CAT50-EMHXL 2.000-9	2.000	3.66	3.19	9.0	1.38	1.50	1-14 X 3/4	AD THRU
84262961	CAT50-EMHXL 2.000-12	2.000	3.86	3.19	12.0	1.38	1.50	1-14 X 3/4	AD THRU
84262976	CAT50-EMHXL 2.000-15	2.000	3.86	3.19	15.0	1.38	1.50	1-14 X 3/4	AD THRU
84263136	CAT50-EMHXL 2.500-7	2.500	4.5	4.5	7.0	1.56	1.69	1-14 X 3/4	AD THRU

# CAT Holders

## CAT50 Shell Mill Holder (ANSI-ASME B5.500-1994)



### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0004"
- Taper shank ground to AT3 accuracy (or better)

Catalog Number	Description	FIG.	"D" (inch)	"L" (inch)	"C" (inch)	"W" (inch)	PCD	Arbor Screw	Coolant Style
81265020	CAT50-SMH 0.50-4.00	1	0.50	4.00	1.75	0.250	-	¼-28	AD THRU
81267518	CAT50-SMH 0.75-3.50	1	0.75	3.50	1.75	0.312	-	3/8-24	AD THRU
81267528	CAT50-SMH 0.75-5.50	1	0.75	5.50	1.75	0.312	-	3/8-24	AD THRU
81267541	CAT50-SMH 0.75-8.00	1	0.75	8.00	1.75	0.312	-	3/8-24	AD THRU
81261020	CAT50-SMH 1.00-4.00	1	1.00	4.00	2.19	0.375	-	½-20	AD THRU
81261030	CAT50-SMH 1.00-6.00	1	1.00	6.00	2.19	0.375	-	½-20	AD THRU
81261041	CAT50-SMH 1.00-8.00	1	1.00	8.00	2.19	0.375	-	½-20	AD THRU
81261051	CAT50-SMH 1.00-10.00	1	1.00	10.00	2.19	0.375	-	½-20	AD THRU
81261209	CAT50-SMH 1.25-1.75	1	1.25	1.75	2.75	0.500	-	5/8-18	AD THRU
81261218	CAT50-SMH 1.25-3.50	1	1.25	3.50	2.75	0.500	-	5/8-18	AD THRU
81261230	CAT50-SMH 1.25-6.00	1	1.25	6.00	2.75	0.500	-	5/8-18	AD THRU
81261513	CAT50-SMH 1.50-2.50	1	1.50	2.50	3.94	0.625	-	¾-16	AD THRU
80261520	CAT50-SMH 1.50-4.00	1	1.50	4.00	3.94	0.625	-	¾-16	AD THRU
80261530	CAT50-SMH 1.50-6.00	1	1.50	6.00	3.94	0.625	-	¾-16	AD THRU
80262013	CAT50-SMH 2.00-2.50	1	2.00	2.50	4.44	0.750	-	1-14	AD THRU
80262020	CAT50-SMH 2.00-4.00	1	2.00	4.00	4.44	0.750	-	1-14	AD THRU
80262030	CAT50-SMH 2.00-6.00	1	2.00	6.00	4.44	0.750	-	1-14	AD THRU
80262513	CAT50-SMH 2.50-2.50	1	2.50	2.50	4.88	1.000	-	1-14	AD THRU
80262520	CAT50-SMH 2.50-4.00	1	2.50	4.00	4.88	1.000	-	1-14	AD THRU
802620F13	CAT50-FMH 2.00-2.50	2	2.00	2.50	4.88	0.750	4.0	1-14	AD THRU
802620F20	CAT50-FMH 2.00-4.00	2	2.00	4.00	4.88	0.750	4.0	1-14	AD THRU
802625F13	CAT50-FMH 2.50-2.50	2	2.50	2.50	4.88	1.000	4.0	1-14	AD THRU
802625F20	CAT50-FMH 2.50-4.00	2	2.50	4.00	4.88	1.000	4.0	1-14	AD THRU

**NOTE:**

ALL Shell Mill Holders are supplied with coolant through the center up to the arbor screw hole.

Retention knobs **on page 152**

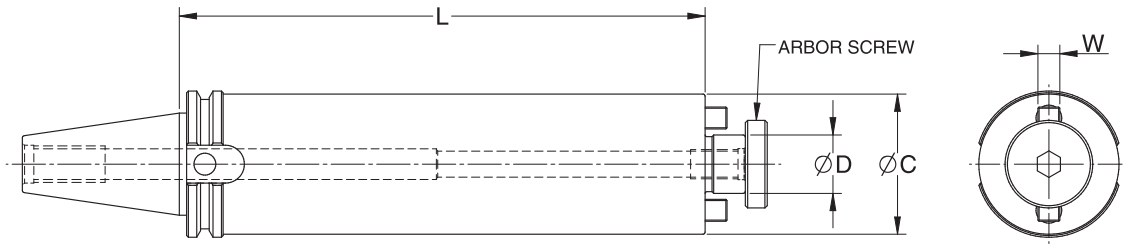
Non-Coolant and Coolant Arbor Screws **on page 155**

Arbor Screw Wrenches **on page 158**



# CAT Holders

## CAT50 Shell Mill Holder X-Long (ANSI-ASME B5.500-1994)



### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0004"
- Taper shank ground to AT3 accuracy (or better)

Catalog Number	Description	"D" (inch)	"C" (inch)	"L" (inch)	"W" (inch)	Arbor Screw	Coolant Style
81265030C	CAT50-SMHXL .500-6	0.500	1.25	6.00	0.250	1/4"-28	AD THRU
81267520C	CAT50-SMHXL .750-4	0.750	1.90	4.00	0.312	3/8"-24	AD THRU
81267530C	CAT50-SMHXL .750-6	0.750	1.90	6.00	0.312	3/8"-24	AD THRU
81267546C	CAT50-SMHXL .750-9	0.750	1.90	9.00	0.312	3/8"-24	AD THRU
81267561C	CAT50-SMHXL .750-12	0.750	1.90	12.00	0.312	3/8"-24	AD THRU
81267576C	CAT50-SMHXL .750-15	0.750	1.90	15.00	0.312	3/8"-24	AD THRU
81261025C	CAT50-SMHXL 1.000-5	1.000	2.40	5.00	0.375	1/2"-20	AD THRU
81261036C	CAT50-SMHXL 1.000-7	1.000	2.40	7.00	0.375	1/2"-20	AD THRU
81261051C	CAT50-SMHXL 1.000-10	1.000	2.40	10.00	0.375	1/2"-20	AD THRU
81261061C	CAT50-SMHXL 1.000-12	1.000	2.40	12.00	0.375	1/2"-20	AD THRU
81261076C	CAT50-SMHXL 1.000-15	1.000	2.40	15.00	0.375	1/2"-20	AD THRU
81261230C	CAT50-SMHXL 1.250-6	1.250	2.90	6.00	0.500	5/8"-18	AD THRU
81261246C	CAT50-SMHXL 1.250-9	1.250	2.90	9.00	0.500	5/8"-18	AD THRU
81261261C	CAT50-SMHXL 1.250-12	1.250	2.90	12.00	0.500	5/8"-18	AD THRU
81261276C	CAT50-SMHXL 1.250-15	1.250	2.90	15.00	0.500	5/8"-18	AD THRU
80261525C	CAT50-SMHXL 1.500-5	1.500	3.88	5.00	0.625	3/4"-16	AD THRU
80261541C	CAT50-SMHXL 1.500-8	1.500	3.88	8.00	0.625	3/4"-16	AD THRU
80261561C	CAT50-SMHXL 1.500-12	1.500	3.88	12.00	0.625	3/4"-16	AD THRU
80261576C	CAT50-SMHXL 1.500-15	1.500	3.88	15.00	0.625	3/4"-16	AD THRU
80262030C	CAT50-SMHXL 2.000-6	2.000	4.38	6.00	0.750	1"-14	AD THRU
80262061C	CAT50-SMHXL 2.000-12	2.000	4.38	12.00	0.750	1"-14	AD THRU
80262520C	CAT50-SMHXL 2.500-4	2.500	4.9	4.00	1.000	5/8-18 4" BHC	AD THRU
80262541C	CAT50-SMHXL 2.500-8	2.500	4.9	8.00	1.000	5/8-18 4" BHC	AD THRU

**NOTE:**

ALL Shell Mill Holders are supplied with coolant through the center up to the arbor screw hole.

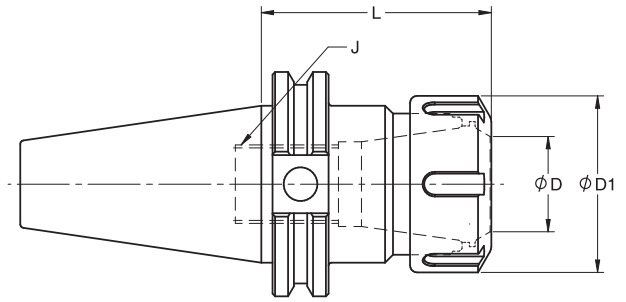
Retention knobs **on page 152**

Non-Coolant and Coolant Arbor Screws **on page 155**

Arbor Screw Wrenches **on page 158**

# CAT Holders

## CAT50 ER Collet Holder (ANSI/ASME B5.50-1994)



### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0002"
- AD coolant thru the spindle
- Taper shank ground to AT3 accuracy (or better)

Catalog Number	Description	Collet Size	"D" Range (inch)	"D1" (inch)	"L" (inch)	"J" (inch)	Coolant Style
87226120	CAT50-CHE 16-4.00	ER16	.118 - .275	0.748	4.00	7/16-16LH	AD Thru
87226130	CAT50-CHE 16-6.00	ER16	.118 - .275	0.748	6.00	7/16-16LH	AD Thru
87226220	CAT50-CHE 20-4.00	ER20	.118 - .393	1.102	4.00	9/16-16LH	AD Thru
87226230	CAT50-CHE 20-6.00	ER20	.118 - .393	1.102	6.00	9/16-16LH	AD Thru
87226320	CAT50-CHE 25-4.00	ER25	.118 - .629	1.653	4.00	11/16-16LH	AD Thru
87226330	CAT50-CHE 25-6.00	ER25	.118 - .629	1.653	6.00	11/16-16LH	AD Thru
87226420	CAT50-CHE 32-4.00	ER32	.118 - .787	1.968	4.00	7/8-16LH	AD Thru
87226430	CAT50-CHE 32-6.00	ER32	.118 - .787	1.968	6.00	7/8-16LH	AD Thru
87226441	CAT50-CHE 32-8.00	ER32	.118 - .787	1.968	8.00	7/8-16LH	AD Thru
87226520	CAT50-CHE 40-4.00	ER40	.157 - 1.023	2.480	4.00	1-1/8-16LH	AD Thru
87226530	CAT50-CHE 40-6.00	ER40	.157 - 1.023	2.480	6.00	1-1/8-16LH	AD Thru

ER Collets on page 142  
 ER Nut Wrenches on page 156  
 Retention knobs on page 152

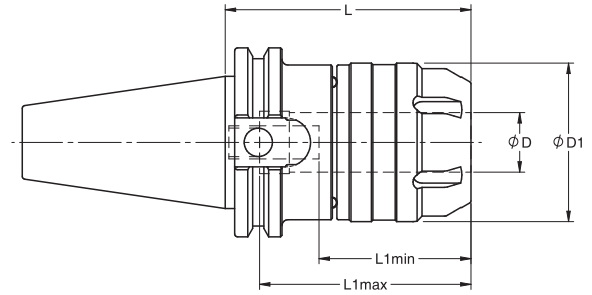
## Did you know?

In the U.S., for every \$1.00 spent in manufacturing, another \$1.89 is added to the economy. That is the highest multiplier effect of any economic sector.

[nam.org](http://nam.org)

# CAT Holders

## CAT50 AccuMill™ Milling Chuck (ANSI-ASME B5.50-1994)



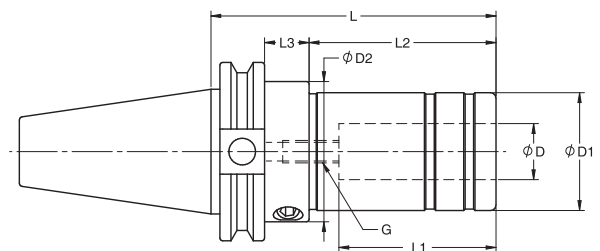
### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0002"
- Taper shank ground to AT3 accuracy (or better)
- Bore tolerance: H6

	Catalog Number	Description	Collet Size	Collet Capacity Range	"D"	"D1"	"L"	"L1" Min/Max	Coolant Style
<b>CAT50 Inch</b>	97262816	CAT50-MMC 0.750-3.25	MC75	.125 - .625	0.75	2.09	3.25	2.50/2.75	AD Thru
	97262825	CAT50-MMC 0.750-5.00	MC75	.125 - .625	0.75	2.09	5.00	2.50/2.75	AD Thru
	97262216	CAT50-MMC 1.250-3.25	MC125	.125 - 1.00	1.25	2.64	3.25	3.09/3.38	AD Thru
	97262225	CAT50-MMC 1.250-5.00	MC125	.125 - 1.00	1.25	2.64	5.00	3.09/3.38	AD Thru
<b>CAT50 Metric</b>	97262024	CAT50-MMC 20-120	MC20	3 -- 16	20	53	120	63/70	AD Thru
	97262016	CAT50-MMC 20-80	MC20	3 -- 16	20	53	80	63/70	AD Thru
	97263224	CAT50-MMC 32-120	MC32	3 -- 25	32	67	120	78/85	AD Thru
	97263218	CAT50-MMC 32-90	MC32	3 -- 25	32	67	90	78/85	AD Thru

AccuMill™ Collets [on page 150](#)  
 AccuMill™ Collet Nut wrenches [on page 154](#)  
 Retention knobs [on page 152](#)

## CAT50 AccuClamp™ Hydraulic Chucks (ANSI/ASME B5.50-1994)



### FEATURES

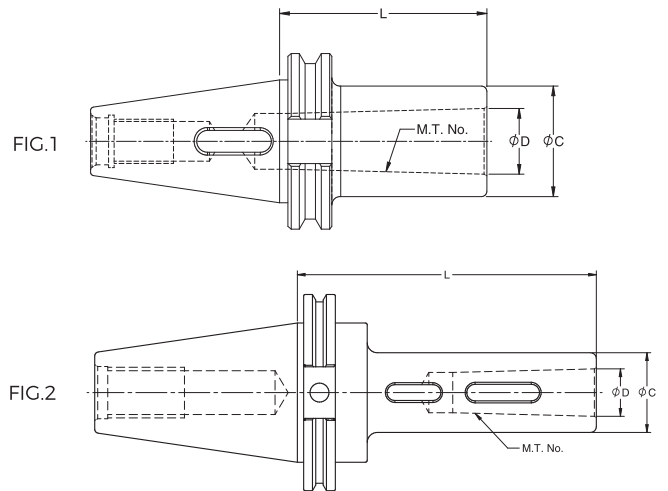
- Balanced to G2.5 @ 25,000 RPM
- T.I.R. < 0.0002"
- Taper shank ground to AT3 accuracy (or better)
- Bore tolerance: H6

Catalog Number	Description	"D" (inch)	"D1" (inch)	"D2" (inch)	"L" (inch)	"L1" (inch)	"L2" (inch)	"L3" (inch)	"C" (inch)	Coolant Style
68262820	CAT50-HCS 0.750-4.00	0.750	1.65	2.05	4.00	2.05	2.28	0.63	M8X1	AD Thru
68262225	CAT50-HCS 1.250-5.00	1.250	2.36	2.75	5.00	2.44	3.46	0.63	M8X1	AD Thru

AccuClamp™ Torque wrenches [on page 158](#)  
 AccuClamp™ Reduction Sleeves [on page 150](#)  
 Retention knobs [on page 152](#)

# CAT Holders

## CAT50 Morse Taper Holder (ANSI/ASME B5.50-1994)



### FEATURES

- T.I.R. < 0.0004"
- Taper shank ground to AT3 accuracy (or better)

Catalog Number	Description	MT Socket	"D" (inch)	"L" (inch)	"C" (inch)	Coolant Style
88026109	CAT50-MTA 1-1.77	1	0.475	1.77	0.98	N/A
88026124	CAT50-MTA 1-4.72	1	0.475	4.72*	0.98	N/A
88026136	CAT50-MTA 1-7.08	1	0.475	7.08*	0.98	N/A
88026209	CAT50-MTA 2-1.77	2	0.700	1.77	1.25	N/A
88026227	CAT50-MTA 2-5.31	2	0.700	5.31*	1.25	N/A
88026236	CAT50-MTA 2-7.08	2	0.700	7.08*	1.25	N/A
88026309	CAT50-MTA 3-1.77	3	0.938	1.77	1.57	N/A
88026330	CAT50-MTA 3-5.90	3	0.938	5.90*	1.57	N/A
88026336	CAT50-MTA 3-7.08	3	0.938	7.08*	1.57	N/A
88026415	CAT50-MTA 4-2.95	4	1.231	2.95	1.97	N/A
88026436	CAT50-MTA 4-7.08	4	1.231	7.08*	1.97	N/A
88026521	CAT50-MTA 5-4.13	5	1.748	4.13	2.55	N/A
88026542	CAT50-MTA 5-8.26	5	1.748	8.26*	2.55	N/A

Retention knobs on page 152

NOTE: \* Fig. 2 style above

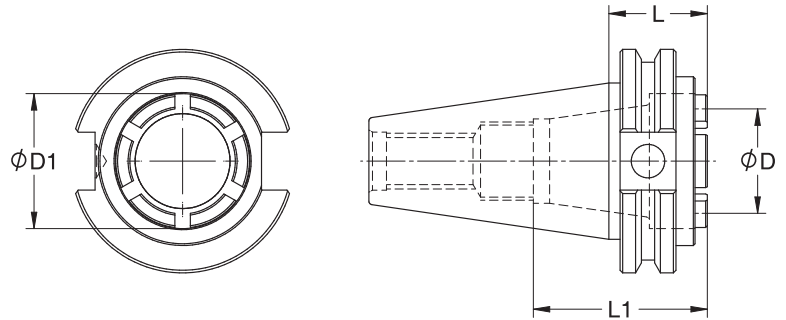
## Did you know?

There are nearly 12.5 million manufacturing workers in the United States, accounting for 8.5 percent of the workforce. Since the end of the Great Recession, manufacturers have hired more than one million workers. There are 7.8 million and 4.7 million workers in durable and nondurable goods manufacturing, respectively.

Bureau of Labor Statistics via. [nam.org](http://nam.org)

# CAT Holders

## CAT ER-Z Short Collet Chuck (ANSI/ASME B5.50-1994)

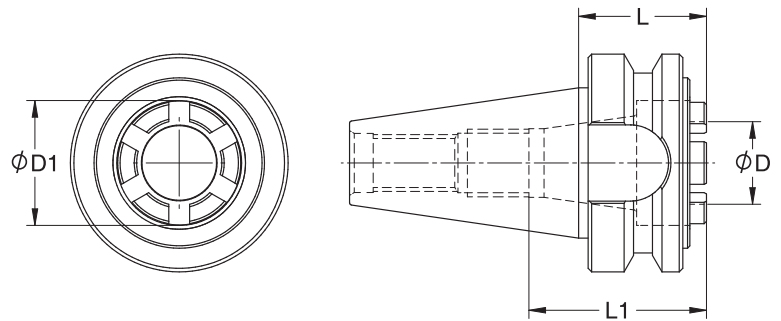


### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0002"
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	Collet Size	"D" Range (inch)	"D1" (inch)	"L" (inch)	"L1" (inch)	Coolant Style
<b>CAT40</b>	872Z24406	CAT40-CHEZ 32-1.10	ER32	.118 - .787	1.26	1.10	1.34	AD Thru
<b>CAT50</b>	872Z26406	CAT50-CHEZ 32-1.10	ER32	.118 - .787	1.26	1.10	1.34	AD Thru

## BT ER-Z Short Collet Chuck (MAS 403)



### FEATURES

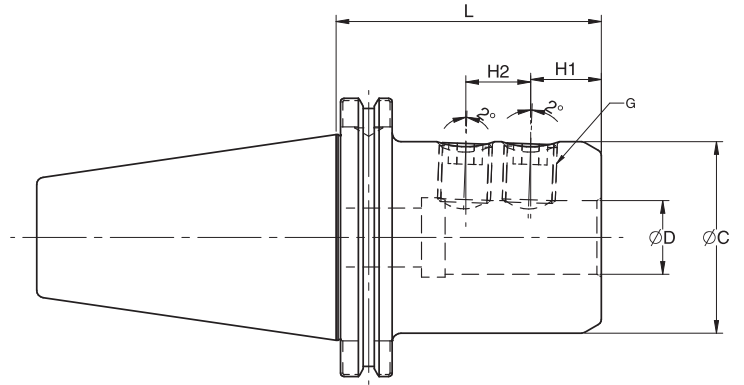
- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0002"
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	Collet Size	"D" Range (inch)	"D1" (inch)	"L" (inch)	"L1" (inch)	Coolant Style
<b>BT30</b>	872Z10205	BT30-CHEZ 20-27	ER20	.118 - .511	1.10	1.06	1.41	AD Thru
<b>BT40</b>	872Z12407	BT40-CHEZ 32-36	ER32	.118 - .787	1.26	1.47	1.71	AD Thru

ER Collets on page 142  
 ER-Z Nut Wrenches on page 156  
 ER-Z Nut on page 151  
 Retention knobs on page 152

# CATP AccuPlus™ Face Contact Holders

## CATP40 Face Contact End Mill Holder



### FEATURES

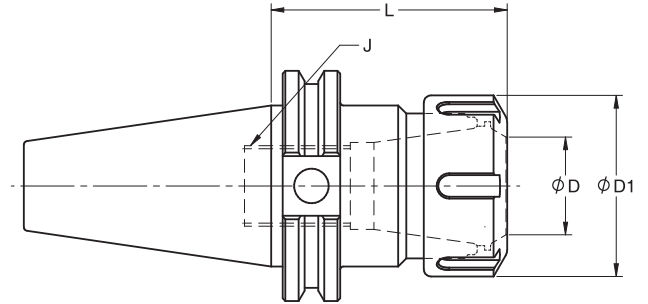
- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0004"
- Taper shank ground to AT3 accuracy (or better)
- Bore tolerance: H6

	Catalog Number	Description	"D" (inch)	"L" (inch)	"C" (inch)	H1	H2	"C"	Coolant Style
<b>CATP40</b>	851360713	CATP40-EMH 0.125-2.50	0.125	2.50	0.50	0.22	-	10-32	AD Thru
	851360913	CATP40-EMH 0.187-2.50	0.187	2.50	0.69	0.56	-	10-32	AD Thru
	851361113	CATP40-EMH 0.250-2.50	0.250	2.50	0.69	0.56	-	1/4"-28	AD Thru
	851361313	CATP40-EMH 0.312-2.50	0.312	2.50	1.00	0.75	-	1/4"-28	AD Thru
	851362613	CATP40-EMH 0.375-2.50	0.375	2.50	1.00	0.75	-	3/8"-24	AD Thru
	851362626	CATP40-EMH 0.375-5.00	0.375	5.00	1.00	0.75	-	3/8"-24	AD Thru
	851361509	CATP40-EMH 0.500-1.75	0.500	1.75	1.75	0.88	-	7/16"-20	AD Thru
	851361516	CATP40-EMH 0.500-3.00	0.500	3.00	1.25	0.88	-	7/16"-20	AD Thru
	851361523	CATP40-EMH 0.500-4.50	0.500	4.50	1.25	0.88	-	7/16"-20	AD Thru
	851361716	CATP40-EMH 0.625-3.00	0.625	3.00	1.50	0.94	-	9/16"-18	AD Thru
	851361723	CATP40-EMH 0.625-4.50	0.625	4.50	1.62	0.94	-	9/16"-18	AD Thru
	851361730	CATP40-EMH 0.625-5.75	0.625	5.75	1.62	0.94	-	9/16"-18	AD Thru
	851362809	CATP40-EMH 0.750-1.75	0.750	1.75	1.75	1.00	-	5/8"-18	AD Thru
	851362816	CATP40-EMH 0.750-3.00	0.750	3.00	1.75	1.00	-	5/8"-18	AD Thru
	851362823	CATP40-EMH 0.750-4.5	0.750	4.50	1.75	1.00	-	5/8"-18	AD Thru
	851362116	CATP40-EMH 1.000-3.00	1.000	3.00	1.95	0.88	1.00	3/4"-16*	AD Thru
	851362123	CATP40-EMH 1.000-4.50	1.000	4.50	2.25	1.00	1.12	3/4"-16*	AD Thru
	851362223	CATP40-EMH 1.250-4.50	1.250	4.50	2.25	1.00	1.12	3/4"-16*	AD Thru
851362326	CATP40-EMH 1.500-5.00	1.500	5.00	2.75	1.12	1.00	3/4"-16*	AD Thru	

Retention knobs on page 152

# CATP AccuPlus™ Face Contact Holders

## CATP40 Face Contact ER Collet Holder



### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- AD coolant thru the spindle
- Taper shank ground to AT3 accuracy (or better)
- T.I.R. < 0.0002

	Catalog Number	Description	Collet Size	"D" Range inch	"D1" (inch)	"L" (inch)	"J" Adj. Screw	Coolant Style
<b>CATP40</b>	872136016	CATP40-CHE 11-3.00	ER11	.118 - .275	0.748	3.00	5/16-24LH	AD Thru
	872136116	CATP40-CHE 16-3.00	ER16	.118 - .393	1.102	3.00	7/16-16LH	AD Thru
	872136131	CATP40-CHE 16-6.00	ER16	.118 - .393	1.102	6.00	7/16-16LH	AD Thru
	872136216	CATP40-CHE 20-3.00	ER20	.118 - .511	1.338	3.00	9/16-16LH	AD Thru
	872136231	CATP40-CHE 20-6.00	ER20	.118 - .511	1.338	6.00	9/16-16LH	AD Thru
	872136321	CATP40-CHE 25-4.00	ER25	.118 - .629	1.653	4.00	11/16-16LH	AD Thru
	872136331	CATP40-CHE 25-6.00	ER25	.118 - .629	1.653	6.00	11/16-16LH	AD Thru
	872136416	CATP40-CHE 32-3.00	ER32	.118 - .787	1.968	3.00	7/8-16LH	AD Thru
	872136431	CATP40-CHE 32-6.00	ER32	.118 - .787	1.968	6.00	7/8-16LH	AD Thru

ER Collets [on page 142](#)  
 ER Nut Wrenches [on page 156](#)  
 Retention knobs [on page 152](#)

# CATP AccuPlus™ Face Contact Holders

## CATP40 Face Contact Shell Mill Holder

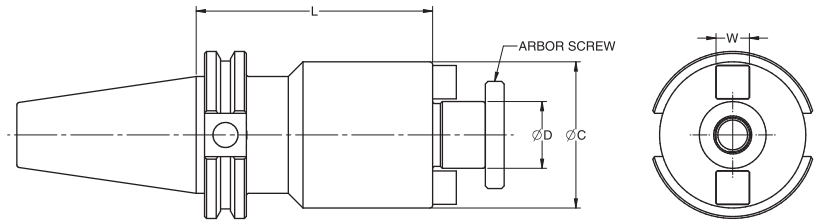


FIG. 1

### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- < 0.0002"
- AD coolant thru the spindle
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	"D" (inch)	"L" (inch)	"C" (inch)	"W" (inch)	Coolant Style
CATP40	811365011	CATP40-SMH 0.500-2.00	0.500	2.00	1.75	0.250	AD Thru
	811365021	CATP40-SMH 0.500-4.00	0.500	4.00	1.75	0.250	AD Thru
	811367511	CATP40-SMH 0.750-2.00	0.750	2.00	1.75	0.312	AD Thru
	811367521	CATP40-SMH 0.750-4.00	0.750	4.00	1.75	0.312	AD Thru
	811367531	CATP40-SMH 0.750-6.00	0.750	6.00	1.75	0.312	AD Thru
	811361011	CATP40-SMH 1.000-2.00	1.000	2.00	2.19	0.375	AD Thru
	811361021	CATP40-SMH 1.000-4.00	1.000	4.00	2.19	0.375	AD Thru
	811361031	CATP40-SMH 1.000-6.00	1.000	6.00	2.19	0.375	AD Thru
	811361211	CATP40-SMH 1.250-2.00	1.250	2.00	2.75	0.500	AD Thru
	811361511	CATP40-SMH 1.500-2.00	1.500	2.00	3.38	0.625	AD Thru
	811361513	CATP40-SMH 1.500-2.50	1.500	2.50	3.38	0.625	AD Thru
	811365921	CATP40-SMH 1.500-4.00	1.500	4.00	3.38	0.625	AD Thru
	811362021	CATP40-SMH 2.000-4.00	2.000	4.00	4.44	0.750	AD Thru

**NOTE:**

ALL Shell Mill Holders are supplied with coolant through the center up to the arbor screw hole.

Retention knobs **on page 152**

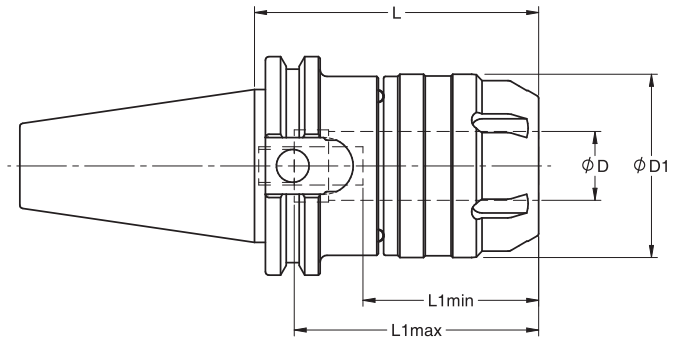
Non-Coolant and Coolant Arbor Screws **on page 155**

Arbor Screw Wrenches **on page 158**



# CATP AccuPlus™ Face Contact Holders

## CATP40 Face Contact AccuMill™ Multi-Milling Chucks



### FEATURES

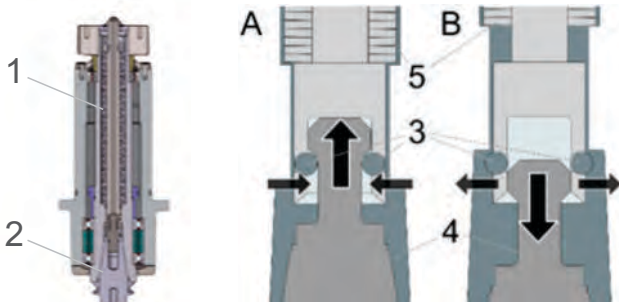
- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0002"
- Bore Tolerance: H6
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	Collet Size	Collet Capacity Range	"D"	"D1"	"L"	"L1" Min.	"L1" Max.	Coolant Style
CATP40	971362017	CATP40-MMC 20-85	MC20	3 -- 16	20	53	85	50	70	Thru
	971363220	CATP40-MMC 32-100	MC32	3 -- 25	32	74	100	60	75	Thru
	971362817	CATP40-MMC 0.750-3.25	MC 0.750	.125 - .625	0.75	2.09	3.25	1.96	2.75	Thru
	971362825	CATP40-MMC 0.750-5.00	MC 0.750	.125 - .625	0.75	2.09	5.00	1.96	2.75	Thru
	971362217	CATP40-MMC 1.250-3.25	MC 1.250	.125 - 1.00	1.25	2.91	3.25	2.36	2.75	Thru
	971362225	CATP40-MMC 1.250-5.00	MC 1.250	.125 - 1.00	1.25	2.91	5.00	2.36	2.75	Thru

AccuMill™ Collets **on page 150**  
 AccuMill™ Collet Nut wrenches **on page 154**  
 Retention knobs **on page 152**

### Accutek Manufacturing Tip #1

Checking Drawbar force - It is critical that your PM (Preventive Maintenance) Program includes a regularly scheduled (at minimum every 90 days) inspection and check of the drawbar pulling force in your spindle. All machining centers use a drawbar that has spring packs that PULL the TOOLHOLDER back into the SPINDLE. Only mechanical pressure is used to push the drawbar "out" to release a tool shank during tool changes. This PULLBACK pressure created by the spring packs will wear or fatigue over time and the proper PULLBACK pressure will weaken. This loss of pressure allows the shank of your tool holder to move "out" of the spindle socket with radial load. There is a min/max pressure point for every brand of machine and type of spindle. Making sure your PULL BACK pressure is maintained within the proper range is critical to your machining processes, tool holder and cutting tool wear, spindle surface wear, and spindle bearing life. The process takes no more than 10-15 minutes to complete. Using a quality Drawbar Force Gauge fitted with the proper shank for your machine, hand load the Drawbar Force gauge into your spindle and let the drawbar pull it back into the spindle socket. The reading on the indicator will tell you what your drawbar force pressure is currently at vs. what should be maintained. If it is out of proper specifications, then have a certified maintenance person make the adjustment to bring the pressure back into the proper range.



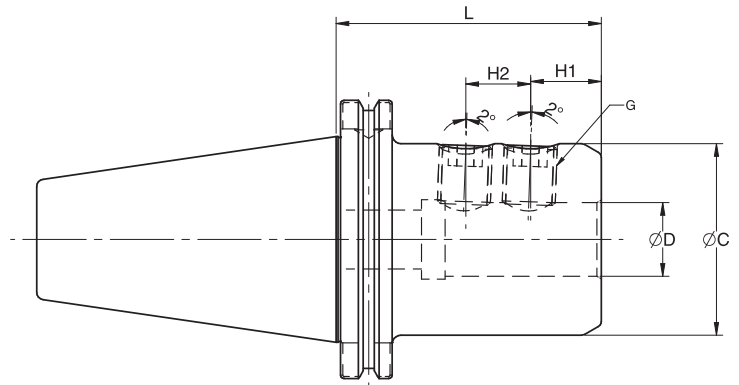
Images courtesy of HAAS Automation



Images courtesy of OTT Spindle

# CATP AccuPlus™ Face Contact Holders

## CATP50 Face Contact End Mill Holder (1835 E)



### FEATURES

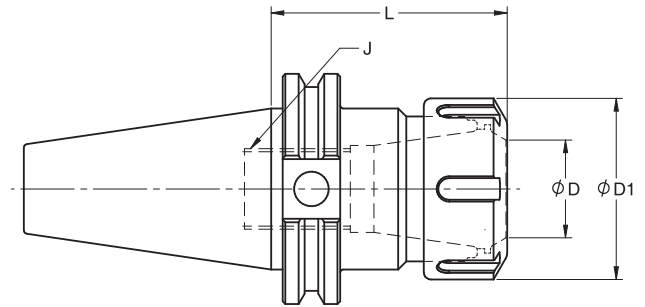
- Balanced to G6.3 @ 20,000 RPM
- AD coolant thru the spindle
- T.I.R. < 0.0004"
- Bore Tolerance: H6
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	"D" (inch)	"L" (inch)	"C" (inch)	H1	H2	"G"	Coolant Style
CATP50	851382613	CATP50-EMH 0.375-2.50	0.375	2.50	1.00	0.75	-	3/8"-24	AD Thru
	851382629	CATP50-EMH 0.375-4.50	0.375	4.50	1.00	0.75	-	3/8"-24	AD Thru
	851382631	CATP50-EMH 0.375-6.00	0.375	6.00	1.00	0.75	-	3/8"-24	AD Thru
	851381529	CATP50-EMH 0.500-4.50	0.500	4.50	1.38	0.88	-	7/16"-20	AD Thru
	851381531	CATP50-EMH 0.500-6.00	0.500	6.00	1.38	0.88	-	7/16"-20	AD Thru
	851382829	CATP50-EMH 0.750-4.50	0.750	4.50	1.75	1.00	-	5/8"-18	AD Thru
	851382831	CATP50-EMH 0.750-6.00	0.750	6.00	1.75	1.00	-	5/8"-18	AD Thru
	851382129	CATP50-EMH 1.000-4.50	1.000	4.50	2.25	1.12	1.00	3/4"-16*	AD Thru
	851382131	CATP50-EMH 1.000-6.00	1.000	6.00	2.25	1.12	1.00	3/4"-16*	AD Thru
	851382141	CATP50-EMH 1.000-8.00	1.000	8.00	2.25	1.12	1.00	3/4"-16*	AD Thru
	851382222	CATP50-EMH 1.250-4.25	1.250	4.25	2.50	1.12	1.00	3/4"-16*	AD Thru
	851382231	CATP50-EMH 1.250-6.00	1.250	6.00	2.50	1.12	1.00	3/4"-16*	AD Thru
	851382241	CATP50-EMH 1.250-8.00	1.250	8.00	2.50	1.12	1.00	3/4"-16*	AD Thru
	851382329	CATP50-EMH 1.500-4.50	1.500	4.50	2.75	1.12	1.00	3/4"-16*	AD Thru
	851382331	CATP50-EMH 1.500-6.00	1.500	6.00	2.75	1.12	1.00	3/4"-16*	AD Thru
	851382341	CATP50-EMH 1.500-8.00	1.500	8.00	2.75	1.12	1.00	3/4"-16*	AD Thru
851382931	CATP50-EMH 2.000-6.00	2.000	6.00	3.75	1.38	1.50	1--14*	AD Thru	
851383131	CATP50-EMH 2.500-6.00	2.500	6.00	4.25	1.56	1.69	1--14*	AD Thru	

Retention knobs on page 152

# CATP AccuPlus™ Face Contact Holders

## CATP50 Face Contact ER Collet Holder



### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- Taper shank ground to AT3 accuracy (or better)
- T.I.R. < 0.0002"

	Catalog Number	Description	Collet Size	"D" Range inch	"D1" (inch)	"L" (inch)	"J" Adj. Screw	Coolant Style
<b>CATP50</b>	872138121	CATP50-CHE 16-4.00	ER16	.118 - .275	0.748	4.00	7/16-16LH	AD Thru
	872138131	CATP50-CHE 16-6.00	ER16	.118 - .275	0.748	6.00	7/16-16LH	AD Thru
	872138221	CATP50-CHE 20-4.00	ER20	.118 - .393	1.102	4.00	9/16-16LH	AD Thru
	872138321	CATP50-CHE 25-4.00	ER25	.118 - .629	1.653	4.00	11/16-16LH	AD Thru
	872138331	CATP50-CHE 25-6.00	ER25	.118 - .629	1.653	6.00	11/16-16LH	AD Thru
	872138421	CATP50-CHE 32-4.00	ER32	.118 - .787	1.968	4.00	7/8-16LH	AD Thru
	872138431	CATP50-CHE 32-6.00	ER32	.118 - .787	1.968	6.00	7/8-16LH	AD Thru
	872138441	CATP50-CHE 32-8.00	ER32	.118 - .787	1.968	8.00	7/8-16LH	AD Thru
	872138521	CATP50-CHE 40-4.00	ER40	.157 - 1.023	2.480	4.00	1.1/8-16LH	AD Thru

ER Collets **on page 142**  
 ER Nut Wrenches **on page 156**  
 Retention knobs **on page 152**

### Accutek Manufacturing Tip #2

TIR (Total Indicator Run-out) is critical to your manufacturing processes. TIR accuracy has a direct impact on cutting edge tool life, machined part finish, machined surface dimensional accuracy, and spindle bearing life. When selecting your tool holder style and brand, make sure you are getting the best TIR accuracy from your holder assembly.

Things that impact TIR accuracy:

- 1) Tool holder manufactured quality
- 2) Tool shank care and cleanliness
- 3) Spindle care and cleanliness
- 4) Torque on collet nut, mill chuck nut, and torque on hydraulic pressure screw
- 5) Cleanliness of tool holder and cutting tool assembly

# CATP AccuPlus™ Face Contact Holders

## CATP50 Face Contact Shell Mill Holder

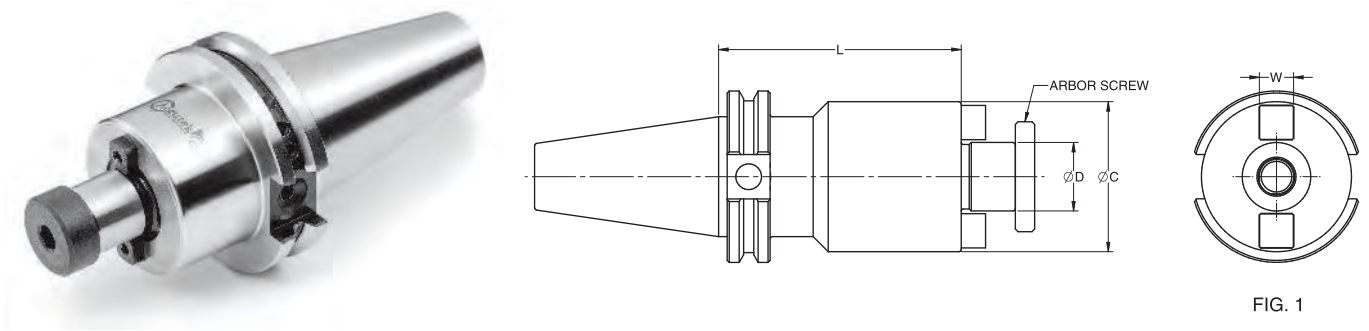


FIG. 1

### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0002"
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	"D" (inch)	"L" (inch)	"C" (inch)	"W" (inch)	Coolant Style
CATP50	811387511	CATP50-SMH .750-2.00	0.75	2.00	1.75	0.312	AD Thru
	811387521	CATP50-SMH .750-4.00	0.75	4.00	1.75	0.312	AD Thru
	811387531	CATP50-SMH .750-6.00	0.75	6.00	1.75	0.312	AD Thru
	811381011	CATP50-SMH 1.00-2.00	1.00	2.00	2.19	0.375	AD Thru
	811381021	CATP50-SMH 1.00-4.00	1.00	4.00	2.19	0.375	AD Thru
	811381031	CATP50-SMH 1.00-6.00	1.00	6.00	2.19	0.375	AD Thru
	811381041	CATP50-SMH 1.00-8.00	1.00	8.00	2.19	0.375	AD Thru
	811381051	CATP50-SMH 1.00-10.00	1.00	10.00	2.19	0.375	AD Thru
	811381061	CATP50-SMH 1.00-12.00	1.00	12.00	2.19	0.375	AD Thru
	811381211	CATP50-SMH 1.25-2.00	1.25	2.00	2.75	0.500	AD Thru
	811381221	CATP50-SMH 1.25-4.00	1.25	4.00	2.75	0.500	AD Thru
	811381231	CATP50-SMH 1.25-6.00	1.25	6.00	2.75	0.500	AD Thru
	811381241	CATP50-SMH 1.25-8.00	1.25	8.00	2.75	0.500	AD Thru
	811381251	CATP50-SMH 1.25-10.00	1.25	10.00	2.75	0.500	AD Thru
	811381261	CATP50-SMH 1.25-12.00	1.25	12.00	2.75	0.500	AD Thru
	811381511	CATP50-SMH 1.50-2.00	1.50	2.00	3.94	0.625	AD Thru
	811381521	CATP50-SMH 1.50-4.00	1.50	4.00	3.94	0.625	AD Thru
	811381531	CATP50-SMH 1.50-6.00	1.50	6.00	3.94	0.625	AD Thru
	811381541	CATP50-SMH 1.50-8.00	1.50	8.00	3.94	0.625	AD Thru
	811381551	CATP50-SMH 1.50-10.00	1.50	10.00	3.94	0.625	AD Thru
811381561	CATP50-SMH 1.50-12.00	1.50	12.00	3.94	0.625	AD Thru	
811382013	CATP50-SMH 2.00-2.50	2.00	2.50	4.44	0.750	AD Thru	
811382021	CATP50-SMH 2.00-4.00	2.00	4.00	4.44	0.750	AD Thru	
8113812013	CATP50-SMH 2.50-2.50	2.50	2.50	4.88	1.000	AD Thru	

**NOTE:**

ALL Shell Mill Holders are supplied with coolant through the center up to the arbor screw hole.

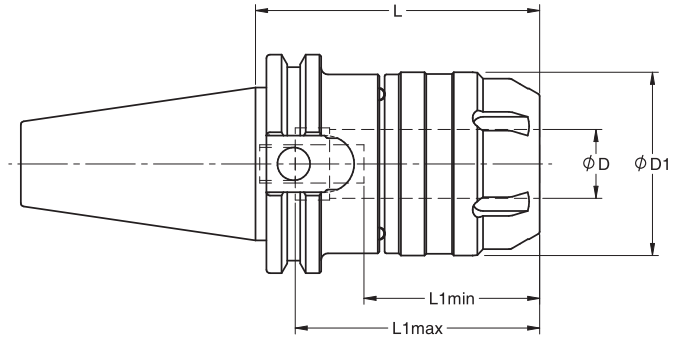
Retention knobs **on page 152**

Non-Coolant and Coolant Arbor Screws **on page 155**

Arbor Screw Wrenches **on page 158**

# CATP AccuPlus™ Face Contact Holders

## CATP50 Face Contact AccuMill™ Multi Milling Chucks



### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0002"
- Taper shank ground to AT3 accuracy (or better)
- Bore tolerance: H6

	Catalog Number	Description	Collet Size	Collet Capacity Range	"D"	"D1"	"L"	"L1" Min.	"L1" Max.	Coolant Style
CATP50	971382021	CATP50-MMC 20-105	MC20	3 -- 16	20	53	105	63.5	70	AD Thru
	971383221	CATP50-MMC 32-105	MC32	3 -- 25	32	67	105	78	85	AD Thru
	971382817	CATP50-MMC 0.750-3.25	MC 0.750	.125 - .625	0.75	2.09	3.25	2.50	2.75	AD Thru
	971382825	CATP50-MMC 0.750-5.00	MC 0.750	.125 - .625	0.75	2.09	5.00	2.50	2.75	AD Thru
	971382217	CATP50-MMC 1.250-3.25	MC 1.250	.125 - 1.00	1.25	2.64	3.25	3.09	3.34	AD Thru
	971382225	CATP50-MMC 1.250-5.00	MC 1.250	.125 - 1.00	1.25	2.64	5.00	3.09	3.34	AD Thru

AccuMill™ Collets [on page 150](#)  
 AccuMill™ Collet Nut wrenches [on page 154](#)  
 Retention knobs [on page 152](#)

### Accutek Manufacturing Tip #3

Spindle run-out - No matter how accurate your cutting tool or tool holder are, if your spindle is out of alignment or has spindle bearing run-out, your part processing accuracy will only be as good and accurate as the machine allows you to control. Spindle alignment should be checked every 90 days or no less than twice per year regardless of machine usage. It also should be checked after any "crash" or "Spindle/toolholder contact" with fixtures, part, or any object not being machined. Using a high quality, high precision certified Test Arbor is critical. Load the Test Arbor in the machine spindle manually and using a .0001" Dial Indicator, check spindle rotation at the diameter closest to the spindle face, halfway down the test arbor shaft, and 1.0" from end of test arbor shaft and compare readings to determine if there is spindle bearing or spindle taper run-out. Then starting at the end of the test arbor, run the indicator the entire length of the test arbor shaft to determine if there is mis-alignment with the table surface as the spindle should rotate at a perfect 90° angle to the table of fixture. Any abnormal alignment or rotational error should be corrected as soon as it is detected to improve machining processes but also protect spindle and tooling from excessive wear.



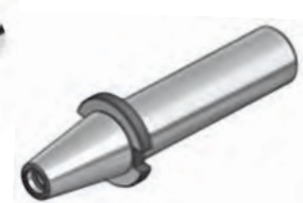
Standard Steep Taper



HSK Taper



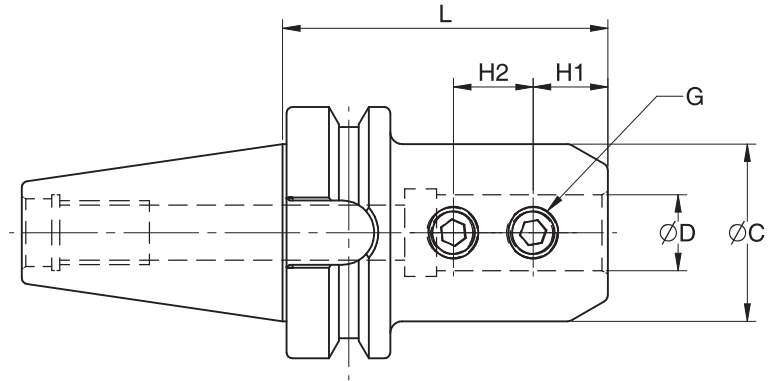
Polygon Taper



Face Contact Taper

# BT Holders

## BT End Mill Holders (MAS403)



### FEATURES

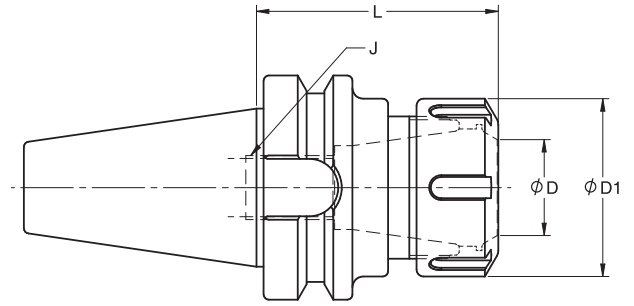
- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0004"
- Taper shank ground to AT3 accuracy (or better)
- Bore tolerance: H6

	Catalog Number	Description	"D"	"L"	"C"	"G"	"H1"	"H2"	Coolant Style
<b>BT30 Inch</b>	84100712	BT30-EMH .125-2.36	0.125	2.36	0.50	#10-32	0.21	-	AD Thru
	84100912	BT30-EMH .187-2.36	0.187	2.36	0.69	#10-32	0.56	-	AD Thru
	84101112	BT30-EMH .250-2.36	0.250	2.36	0.69	1/4"-28	0.56	-	AD Thru
	84102612	BT30-EMH .375-2.36	0.375	2.36	1.00	3/8"-24	0.75	-	AD Thru
	84101512	BT30-EMH .500-2.36	0.500	2.36	1.25	7/16"-20	0.88	-	AD Thru
	84101712	BT30-EMH .625-2.36	0.625	2.36	1.62	9/16"-18	0.94	-	AD Thru
	84102812	BT30-EMH .750-2.36	0.750	2.36	1.75	5/8"-18	1.00	-	AD Thru
<b>BT30 Metric</b>	84100612	BT30-EMH 6-60	6	60	25	M6	18.0	-	AD Thru
	84100812	BT30-EMH 8-60	8	60	28	M8	18.0	-	AD Thru
	84101012	BT30-EMH 10-60	10	60	35	M10	20.0	-	AD Thru
	84101212	BT30-EMH 12-60	12	60	42	M12	22.5	-	AD Thru
	84101618	BT30-EMH 16-60	16	60	48	M14	24.0	-	AD Thru
	84102018	BT30-EMH 20-60	20	60	52	M16	25.0	-	AD Thru
<b>BT40 Inch</b>	84121113	BT40-EMH .250-2.55	0.250	2.55	0.69	1/4"-28	0.56	-	AD Thru
	84121313	BT40-EMH .312-2.55	0.312	2.55	1.00	1/4"-28	0.75	-	AD Thru
	84122613	BT40-EMH .375-2.55	0.375	2.55	1.00	3/8"-24	0.75	-	AD Thru
	84121513	BT40-EMH .500-2.55	0.500	2.55	1.25	7/16"-20	0.75	-	AD Thru
	84121520	BT40-EMH .500-4.00	0.500	4.00	1.25	7/16"-20	0.75	-	AD Thru
	84121713	BT40-EMH .625-2.55	0.625	2.55	1.50	9/16"-18	0.94	-	AD Thru
	84122813	BT40-EMH .750-2.55	0.750	2.55	1.75	5/8"-18	1.00	-	AD Thru
	84121917	BT40-EMH .875-3.35	0.875	3.35	1.75	5/8"-18	1.00	0.81	AD Thru
	84122119	BT40-EMH 1.000-3.74	1.000	3.74	2.25	3/4"-16	1.13	1.00	AD Thru
	84122125	BT40-EMH 1.000-5.00	1.000	5.00	2.25	3/4"-16	1.13	1.00	AD Thru
84122218	BT40-EMH 1.250-3.50	1.250	3.50	2.25	3/4"-16	1.00	1.00	AD Thru	
<b>BT40 Metric</b>	84120615	BT40-EMH 6-75	6	75	25	M6	18.0	-	AD Thru
	84120815	BT40-EMH 8-75	8	75	28	M8	18.0	-	AD Thru
	84121015	BT40-EMH 10-75	10	75	35	M10	20.0	-	AD Thru
	84121216	BT40-EMH 12-75	12	75	42	M12	22.5	-	AD Thru
	84121615	BT40-EMH 16-75	16	75	48	M14	24.0	-	AD Thru
	84122016	BT40-EMH 20-75	20	75	52	M16	25.0	-	AD Thru
	84122518	BT40-EMH 25-90	25	90	65	M18	24.0	-	AD Thru
	84123224	BT40-EMH 32-120	32	120	72	M20	24.0	-	AD Thru
	84124024	BT40-EMH 40-120	40	120	90	M20	30.0	-	AD Thru

Retention knobs on page 152

# BT Holders

## BT ER Collet Chucks (MAS 403)



### FEATURES

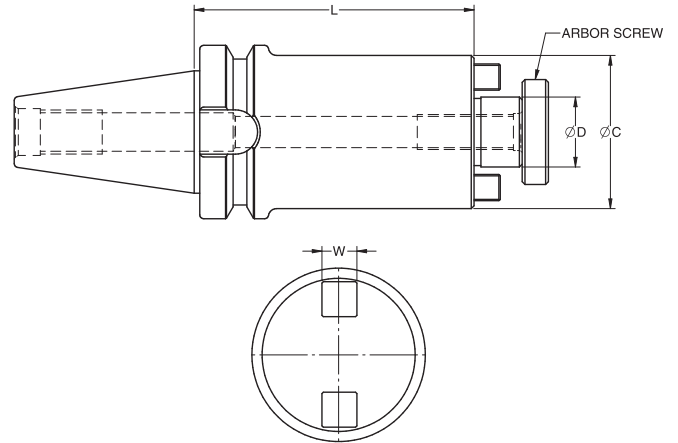
- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0002
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	Collet Size	"D" Range (mm)	"D1" (mm)	"L" (mm)	"J"	Coolant Style
<b>BT30</b>	87210014	BT30-CHE 11-70	ER11	3 - 7	19	70	M6x1	AD Thru
	87210020	BT30-CHE 11-100	ER11	3 - 7	19	100	M6x1	AD Thru
	87210024	BT30-CHE 11-120	ER11	3 - 7	19	120	M6x1	AD Thru
	87210114	BT30-CHE 16-70	ER16	3 - 10	28	70	M10X1.5	AD Thru
	87210120	BT30-CHE 16-100	ER16	3 - 10	28	100	M10X1.5	AD Thru
	87210124	BT30-CHE 16-120	ER16	3 - 10	28	120	M10X1.5	AD Thru
	87210214	BT30-CHE 20-70	ER20	3 - 13	34	70	M12X1.75	AD Thru
	87210220	BT30-CHE 20-100	ER20	3 - 13	34	100	M12X1.75	AD Thru
	87210227	BT30-CHE 20-135	ER20	3 - 13	34	135	M12X1.75	AD Thru
	87210314	BT30-CHE 25-70	ER25	3 - 16	42	70	M16X2.0	AD Thru
	87210320	BT30-CHE 25-100	ER25	3 - 16	42	100	M16X2.0	AD Thru
	87210327	BT30-CHE 25-135	ER25	3 - 16	42	135	M16X2.0	AD Thru
	87210414	BT30-CHE 32-70	ER32	3 - 20	50	70	M18X1.5	AD Thru
<b>BT40</b>	87212014	BT40-CHE 11-70	ER11	3 - 7	19	70	M6x1	AD Thru
	87212020	BT40-CHE 11-100	ER11	3 - 7	19	100	M6x1	AD Thru
	87212026	BT40-CHE 11-130	ER11	3 - 7	19	130	M6x1	AD Thru
	87212114	BT40-CHE 16-70	ER16	3 - 10	28	70	M10X1.5	AD Thru
	87212120	BT40-CHE 16-100	ER16	3 - 10	28	100	M10X1.5	AD Thru
	87212126	BT40-CHE 16-130	ER16	3 - 10	28	130	M10X1.5	AD Thru
	87212214	BT40-CHE 20-70	ER20	3 - 13	34	70	M12X1.75	AD Thru
	87212220	BT40-CHE 20-100	ER20	3 - 13	34	100	M12X1.75	AD Thru
	87212230	BT40-CHE 20-150	ER20	3 - 13	34	150	M16X2.0	AD Thru
	87212314	BT40-CHE 25-70	ER25	3 - 16	42	135	M16X2.0	AD Thru
	87212320	BT40-CHE 25-100	ER25	3 - 16	42	100	M16X2.0	AD Thru
	87212330	BT40-CHE 25-150	ER25	3 - 16	42	150	M16X2.0	AD Thru
	87212414	BT40-CHE 32-70	ER32	3 - 20	50	70	M18X1.5	AD Thru
	87212420	BT40-CHE 32-100	ER32	3 - 20	50	100	M18X1.5	AD Thru
	87212430	BT40-CHE 32-150	ER32	3 - 20	50	150	M18X1.5	AD Thru
	87212516	BT40-CHE 40-80	ER40	4 - 26	63	80	M22X1.5	AD Thru
	87212524	BT40-CHE 40-120	ER40	4 - 26	63	150	M22X1.5	AD Thru

ER Collets **on page 142**  
 ER Nut Wrenches **on page 156**  
 Retention knobs **on page 152**

# BT Holders

## BT Shell Mill Holder (MAS 403)



### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0004"
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	"D"	"L"	"C"	"H"	"W"	Coolant Style	Ret. Screw
BT30 Inch	81105006	BT30-SMH .500-1.13	0.500	1.13	1.34	0.56	0.250	AD THRU	1/4-28
	81107506	BT30-SMH .750-1.18	0.750	1.18	1.94	0.69	0.312	AD THRU	3/8-24
	81101009	BT30-SMH 1.000-1.77	1.000	1.77	2.19	0.69	0.375	AD THRU	1/2-20
BT30 Metric	81101606	BT30-SMH 16-30	16	30	34	15	8	AD THRU	M8X1.25
	81102209	BT30-SMH 22-45	22	45	45	18	10	AD THRU	M10X30
BT40 Inch	81125009	BT40-SMH .500-1.77	0.500	1.77	1.75	0.56	0.250	AD THRU	1/4-28
	81125020	BT40-SMH .500-4.00	0.500	4.00	1.75	0.56	0.250	AD THRU	1/4-28
	81127509	BT40-SMH .750-1.77	0.750	1.77	1.75	0.69	0.312	AD THRU	3/8-24
	81127520	BT40-SMH .750-4.00	0.750	4.00	1.75	0.69	0.312	AD THRU	3/8-24
	81127530	BT40-SMH .750-6.00	0.750	1.77	1.75	0.69	0.312	AD THRU	3/8-24
	81121009	BT40-SMH 1.000-1.77	1.000	1.77	2.19	0.69	0.375	AD THRU	1/2-20
	81121020	BT40-SMH 1.000-4.00	1.000	4.00	2.19	0.69	0.375	AD THRU	1/2-20
	81121030	BT40-SMH 1.000-6.00	1.000	6.00	2.19	0.69	0.375	AD THRU	1/2-20
	81121212	BT40-SMH 1.250-2.36	1.250	2.36	2.75	0.69	0.500	AD THRU	5/8-18
	81121225	BT40-SMH 1.250-5.00	1.250	5.00	2.75	0.69	0.500	AD THRU	5/8-18
BT40 Metric	80121512	BT40-SMH 1.500-2.36	1.500	2.36	3.38	0.69	0.625	AD THRU	3/4-16
	80121525	BT40-SMH 1.500-5.00	1.500	5.00	3.38	0.94	0.625	AD THRU	3/4-16
	81121612	BT40-SMH 16-60	16	60	34	15	8	AD THRU	M8X1.25
	81122209	BT40-SMH 22-45	22	45	45	18	10	AD THRU	M10X30
	81122218	BT40-SMH 22-90	22	60	45	18	10	AD THRU	M10X30
	81122712	BT40-SMH 27-60	27	60	70	20	12	AD THRU	M12X35
	81122718	BT40-SMH 27-90	27	90	70	20	12	AD THRU	M12X35
	81123212	BT40-SMH 32-60	32	60	85	22	14	AD THRU	M16X35
	81123215	BT40-SMH 32-75	32	75	85	22	14	AD THRU	M16X35

**NOTE:**

ALL Shell Mill Holders are supplied with coolant through the center up to the arbor screw hole.

Retention knobs **on page 152**

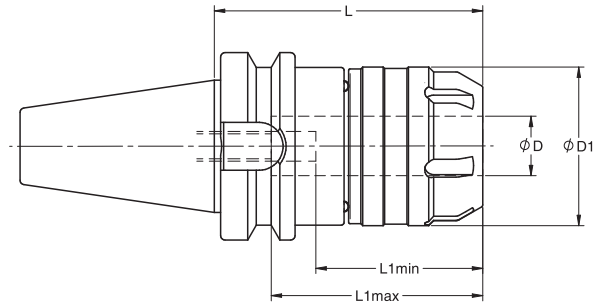
Non-Coolant and Coolant Arbor Screws **on page 155**

Arbor Screw Wrenches **on page 158**



# BT Holders

## BT AccuMill™ Milling Chuck (MAS 403)



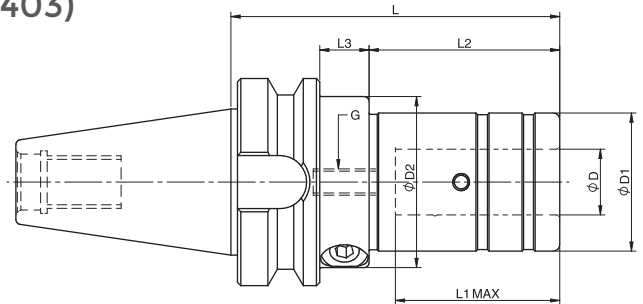
### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0002"
- Taper shank ground to AT3 accuracy (or better)
- Bore tolerance: H6

	Catalog Number	Description	Collet Size	Collet Capacity Range	"D"	"D1"	"L"	"L1" Min/Max	Coolant Style
BT30 Inch	97102816	BT30-MMC .750-3.15	0.750	.125 - .625	0.750	2.09	3.15	2.50/2.75	AD Thru
	97122816	BT40-MMC .750-3.15	0.750	.125 - .625	0.750	2.09	3.15	2.50/2.75	AD Thru
BT40 Inch	97122824	BT40-MMC .750-4.72	0.750	.125 - .625	0.750	2.09	4.72	2.50/2.75	AD Thru
	97122218	BT40-MMC 1.250-3.54	1.250	.125 - 1.00	1.000	2.64	3.54	3.09/3.34	AD Thru
	97122224	BT40-MMC 1.250-4.72	1.250	.125 - 1.00	1.000	2.64	4.72	3.09/3.34	AD Thru
BT40 Metric	97122016	BT40-MMC 20-80	20	3 - 16	20	53	80	63/70	AD Thru
	97122024	BT40-MMC 20-120	20	3 - 16	20	53	120	63/70	AD Thru
	97123218	BT40-MMC 32-90	32	3 - 25	32	67	90	78/85	AD Thru
	97123224	BT40-MMC 32-120	32	3 - 25	32	67	120	78/85	AD Thru

AccuMill™ Collets on page 150  
 AccuMill™ Collet Nut wrenches on page 154  
 Retention knobs on page 152

## BT AccuClamp™ Hydraulic Chuck (MAS 403)



### FEATURES

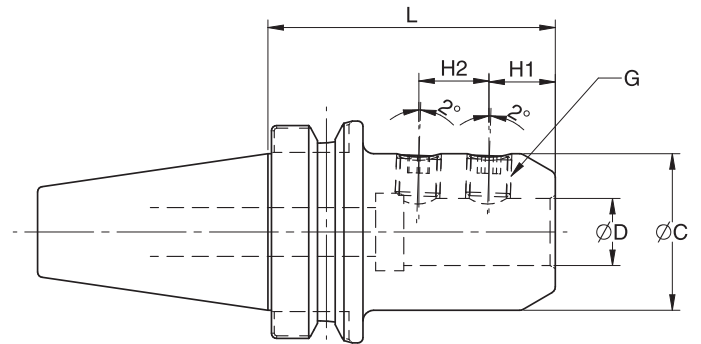
- Balanced to G2.5 @ 25,000 RPM
- T.I.R. < 0.0002"
- Taper shank ground to AT3 accuracy (or better)
- Bore tolerance: H6

	Catalog Number	Description	"D" (mm)	"D1"	"L"	"L1" MAX	"L2"	"L3"	"C"	Coolant Style
BT30 Metric	68102020	BT30/HCS 20-100	20	1.65	3.94	2.05	2.28	-	M8X1	AD Thru
BT40 Metric	68122020	BT40/HCS 20-100	20	1.65	3.94	2.05	2.24	0.63	M8X1	AD Thru
	68123223	BT40/HCS 32-115	32	2.36	4.53	2.44	2.87	0.63	M8X1	AD Thru
BT30 inch	68102820	BT30/HCS 0.75-4.00	0.75	1.65	4.00	2.05	2.28	-	M8X1	AD Thru
BT40 Inch	68122820	BT40/HCS 0.75-4.00	0.75	1.65	4.00	2.05	2.28	0.63	M8X1	AD Thru
	68122223	BT40/HCS 1.25-4.52	1.25	2.36	4.52	2.44	2.87	0.63	M8X1	AD Thru

AccuClamp™ Torque wrenches on page 158  
 AccuClamp™ Reduction Sleeves on page 150  
 Retention knobs on page 152

# BTP AccuPlus™ Face Contact Holders

## BTP30 Face Contact End Mill Holder (1835 E)



### FEATURES

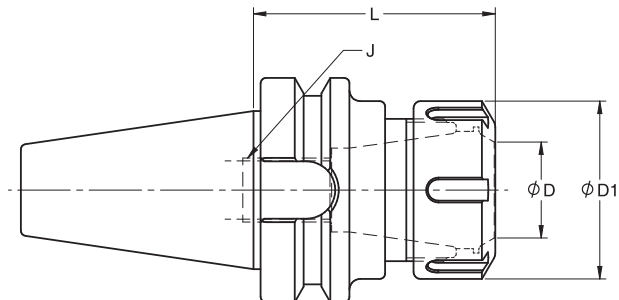
- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0004"
- Bore Tolerance: H6
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	"D"	"C"	"L"	"G"	"H1"	"H2"	Coolant Style
<b>BTP30 Inch</b>	851060713	BTP30-EMH .125-2.50	0.125	0.50	2.50	10-32	0.21	-	AD Thru
	851060913	BTP30-EMH .187-2.50	0.187	0.69	2.50	10-32	0.56	-	AD Thru
	851061113	BTP30-EMH .250-2.50	0.250	0.69	2.50	1/4"-28	0.56	-	AD Thru
	851062613	BTP30-EMH .375-2.50	0.375	1.00	2.50	3/8"-24	0.75	-	AD Thru
	851061513	BTP30-EMH .500-2.50	0.500	1.75	2.50	7/16"-20	0.88	-	AD Thru
	851061713	BTP30-EMH .625-2.50	0.625	1.75	2.50	9/16"-18	0.94	-	AD Thru
	851062816	BTP30-EMH .750-3.00	0.750	1.75	3.00	5/8"-18	1.00	-	AD Thru
<b>BTP30 Metric</b>	851060612	BTP30-EMH 6-60	6	25	60	M6	18	-	AD Thru
	851060812	BTP30-EMH 8-60	8	28	60	M8	18	-	AD Thru
	851061012	BTP30-EMH 10-60	10	35	60	M10	20	-	AD Thru
	851061212	BTP30-EMH 12-60	12	42	60	M12	22.5	-	AD Thru
	851061612	BTP30-EMH 16-60	16	48	60	M14	24	-	AD Thru
	851062012	BTP30-EMH 20-60	20	52	60	M16	25	-	AD Thru

Retention knobs on page 152

# BTP AccuPlus™ Face Contact Holders

## BTP Face Contact ER Collet Chuck



### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- Taper shank ground to AT3 accuracy (or better)
- T.I.R. < 0.0002"

	Catalog Number	Description	Collet Size	"D" Range (mm)	"D1" (mm)	"L" (mm)	"J" Adj. Screw	Coolant Style
<b>BTP30</b>	872106020	BTP30-CHE 11-100	ER11	3 --7	19	100	M6X1	AD Thru
	872106112	BTP30-CHE 16-60	ER16	3 -- 10	28	60	M10X1.5	AD Thru
	872106120	BTP30-CHE 16-100	ER16	3 -- 10	28	100	M10X1.5	AD Thru
	872106212	BTP30-CHE 20-60	ER20	3 --13	34	60	M12X1.75	AD Thru
	872106221	BTP30-CHE 20-105	ER20	3 --13	34	105	M12X1.75	AD Thru
	872106312	BTP30-CHE 25-60	ER25	3 -- 16	42	60	M16X2.0	AD Thru
	872106412	BTP30-CHE 32-60	ER32	3 -- 20	50	60	M18X1.5	AD Thru
	872106420	BTP30-CHE 32-100	ER32	3 -- 20	50	100	M18X1.5	AD Thru
<b>BTP40</b>	872108020	BTP40-CHE 11-100	ER11	3 --7	19	100	M6X1	AD Thru
	872108114	BTP40-CHE 16-70	ER16	3 -- 10	28	70	M10X1.5	AD Thru
	872108120	BTP40-CHE 16-100	ER16	3 -- 10	28	100	M10X1.5	AD Thru
	872108214	BTP40-CHE 20-70	ER20	3 --13	34	70	M12X1.75	AD Thru
	872108220	BTP40-CHE 20-120	ER20	3 --13	34	120	M12X1.75	AD Thru
	872108314	BTP40-CHE 25-70	ER25	3 -- 16	42	135	M16X2.0	AD Thru
	872108320	BTP40-CHE 25-120	ER25	3 -- 16	42	120	M16X2.0	AD Thru
	872108414	BTP40-CHE 32-70	ER32	3 -- 20	50	70	M18X1.5	AD Thru
	872108420	BTP40-CHE 32-120	ER32	3 -- 20	50	120	M18X1.5	AD Thru
	872108416	BTP40-CHE 40-80	ER40	4 -- 26	63	80	M22X1.5	AD Thru
872108420	BTP40-CHE 40-120	ER40	4 -- 26	63	150	M22X1.5	AD Thru	

ER Collets **on page 142**  
 ER Nut Wrenches **on page 156**  
 Retention knobs **on page 152**

# BTP AccuPlus™ Face Contact Holders

## BTP Face Contact Shell Mill Holders

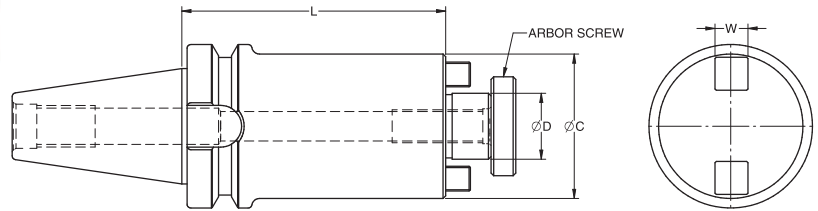


FIG.1

### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- < 0.0002"
- AD coolant thru the spindle
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	"D"	"L"	"C"	"H"	"W"	Coolant Style	Ret. Screw
<b>BTP30 Inch</b>	811065011	BTP30-SMH .500-2.00	0.500	2.00	1.34	0.56	0.250	AD Thru	1/4-28
	811067511	BTP30-SMH .750-2.00	0.750	2.00	1.94	0.69	0.312	AD Thru	3/8-24
	811061011	BTP30-SMH 1.000-2.00	1.000	2.00	2.19	0.69	0.375	AD Thru	1/2-20
	811061606	BTP30-SMH 16-30	16	30	34	15	8	AD Thru	M8X1.25
	811062209	BTP30-SMH 22-45	22	45	45	18	10	AD Thru	M10X30
<b>BTP40 Inch</b>	811085011	BTP40-SMH .500-2.00	0.500	2.00	1.34	0.56	0.250	AD Thru	1/4-28
	811085021	BTP40-SMH .500-4.00	0.500	4.00	1.34	0.56	0.250	AD Thru	1/4-28
	811087511	BTP40-SMH .750-2.00	0.750	2.00	1.94	0.69	0.312	AD Thru	3/8-24
	811087521	BTP40-SMH .750-4.00	0.750	4.00	1.94	0.69	0.312	AD Thru	3/8-24
	811081011	BTP40-SMH 1.000-2.00	1.000	2.00	2.19	0.69	0.375	AD Thru	1/2-20
	811081021	BTP40-SMH 1.000-4.00	1.000	4.00	2.19	0.69	0.375	AD Thru	1/2-20
	811081211	BTP40-SMH 1.250-2.00	1.250	2.00	2.75	0.69	0.500	AD Thru	5/8-18
	811081226	BTP40-SMH 1.250-5.00	1.250	5.00	2.75	0.69	0.500	AD Thru	5/8-18
	811081511	BTP40-SMH 1.500-2.00	1.500	2.00	3.38	0.94	0.625	AD Thru	3/4-16
811081526	BTP40-SMH 1.500-5.00	1.500	5.00	3.38	0.94	0.625	AD Thru	3/4-16	
<b>BTP40 Metric</b>	811081612	BTP40-SMH 16-60	16	60	34	15	8	AD Thru	M8X1.25
	811082209	BTP40-SMH 22-45	22	45	45	18	10	AD Thru	M10X30
	811082218	BTP40-SMH 22-90	22	60	45	18	10	AD Thru	M10X30
	811082712	BTP40-SMH 27-60	27	60	70	20	12	AD Thru	M12X35
	811082718	BTP40-SMH 27-90	27	90	70	20	12	AD Thru	M12X35
	811083212	BTP40-SMH 32-60	32	60	85	22	14	AD Thru	M16X35
	811083215	BTP40-SMH 32-75	32	75	85	22	14	AD Thru	M16X35

**NOTE:**

ALL Shell Mill Holders are supplied with coolant through the center up to the arbor screw hole.

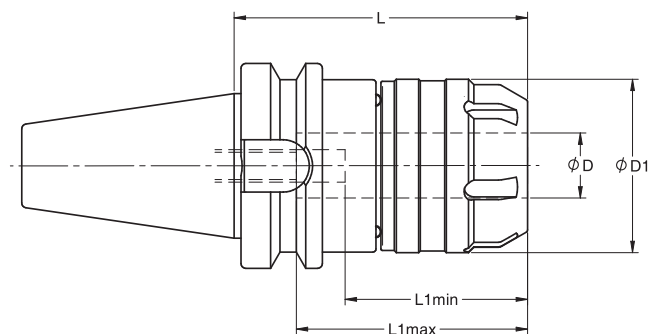
Retention knobs **on page 152**

Non-Coolant and Coolant Arbor Screws **on page 155**

Arbor Screw Wrenches **on page 158**

# BTP AccuPlus™ Face Contact Holders

## BTP Face Contact AccuMill™ Multi-Milling Chucks



### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0002"
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	Collet Size	Capacity Range	"D"	"D1"	"L"	"L1" Min.	"L1" Max.	Coolant Style
<b>BTP30 Inch</b>	971062816	BTP30-MMC .750-3.15	0.750	.125-.625	0.750	2.09	3.15	1.96	2.75	AD Thru

	Catalog Number	Description	Collet Size	Capacity Range	"D"	"D1"	"L"	"L1" Min.	"L1" Max.	Coolant Style
<b>BTP40 Inch</b>	971082816	BTP40-MMC .750-3.15	0.750	.125-.625	0.750	2.09	3.15	1.96	2.75	AD Thru
	971082824	BTP40-MMC .750-4.72	0.750	.125-.625	0.750	2.09	4.72	1.96	2.75	AD Thru
	971082218	BTP40-MMC 1.250-3.54	1.250	.125-1.000	1.000	2.91	3.54	2.36	2.75	AD Thru
	971082224	BTP40-MMC 1.250-4.72	1.250	.125-1.000	1.000	2.91	4.72	2.36	2.75	AD Thru
<b>BTP40 Metric</b>	971082016	BTP40 -MMC- 20-80	20	3--16	20	53	80	50	70	AD Thru
	971082024	BTP40 -MMC- 20-120	20	3--16	20	53	120	50	70	AD Thru
	971083218	BTP40 -MMC- 32-90	32	3--25	32	74	90	60	75	AD Thru
	971083224	BTP40 -MMC- 32-120	32	3--25	32	74	120	60	75	AD Thru

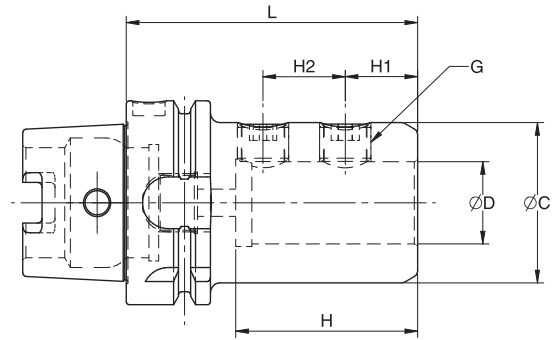
AccuMill™ Collets **on page 150**  
 AccuMill™ Collet Nut wrenches **on page 154**  
 Retention knobs **on page 152**

# HSK Holders

## HSK End Mill Holder (DIN 6499 AND DIN 1835/B) - Inch ID



MODEL:-SL/HSK  
(DIN-69893 A+C  
(THRU. COOLANT))



### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0004"

- Bore tolerance: H6

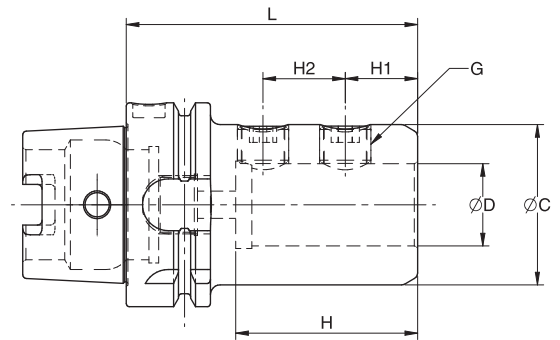
	Catalog Number	Description	"D" (inch)	"L" (inch)	"C" (inch)	"H" (inch)	"H1" (inch)	"H2" (inch)	"C" (inch)	Coolant Style
HSK32A Inch ID	84711112	HSK32A-EMH .250-2.36	0.250	2.36	0.690	0.870	0.56	-	1/4"-28	AD Thru
	84711312	HSK32A-EMH .312-2.36	0.312	2.36	1.00	1.06	0.75	-	1/4"-28	AD Thru
	84712613	HSK32A-EMH .375-2.56	0.375	2.56	1.250	1.490	0.75	-	3/8"-24	AD Thru
	84711515	HSK32A-EMH .500-2.95	0.500	2.95	1.250	1.730	0.75	-	7/16"-20	AD Thru
	84711715	HSK32A-EMH .625-2.95	0.625	2.95	1.750	1.890	0.94	-	9/16"-18	AD Thru
HSK40A Inch ID	84721112	HSK40A-EMH .250-2.36	0.250	2.36	0.690	0.870	0.56	-	1/4"-28	AD Thru
	84721312	HSK40A-EMH .312-2.36	0.312	2.36	1.000	1.060	0.75	-	1/4"-28	AD Thru
	84722613	HSK40A-EMH .375-2.56	0.375	2.56	1.250	1.490	0.75	-	3/8"-24	AD Thru
	84721514	HSK40A-EMH .500-2.76	0.500	2.76	1.250	1.730	0.75	-	7/16"-20	AD Thru
	84721716	HSK40A-EMH .625-3.15	0.625	3.15	1.750	1.890	0.94	-	9/16"-18	AD Thru
84722816	HSK40A-EMH .750-3.15	0.750	3.15	1.750	2.010	1.00	-	5/8"-18	AD Thru	
HSK50A Inch ID	84731113	HSK50A-EMH .250-2.56	0.250	2.56	0.690	0.870	0.56	-	1/4"-28	AD Thru
	84731313	HSK50A-EMH .312-2.56	0.312	2.56	1.000	1.060	0.75	-	1/4"-28	AD Thru
	84732613	HSK50A-EMH .375-2.56	0.375	2.56	1.250	1.490	0.75	-	3/8"-24	AD Thru
	84731516	HSK50A-EMH .500-3.15	0.500	3.15	1.250	1.730	0.75	-	7/16"-20	AD Thru
	84731716	HSK50A-EMH .625-3.15	0.625	3.15	1.750	1.890	0.94	-	9/16"-18	AD Thru
	84732816	HSK50A-EMH .750-3.15	0.750	3.15	1.750	2.010	1.00	-	5/8"-18	AD Thru
	84732121	HSK50A-EMH 1.000-4.13	1.000	4.13	2.000	3.000	1.12	1.00	3/4"-16	AD Thru
HSK63A Inch ID	84741113	HSK63A-EMH .250-2.56	0.250	2.56	0.690	0.870	0.56	-	1/4"-28	AD Thru
	84741313	HSK63A-EMH .312-2.56	0.312	2.56	1.000	1.060	0.75	-	1/4"-28	AD Thru
	84742613	HSK63A-EMH .375-2.56	0.375	2.56	1.000	1.490	0.75	-	3/8"-24	AD Thru
	84741516	HSK63A-EMH .500-3.15	0.500	3.15	1.750	1.730	0.75	-	7/16"-20	AD Thru
	84741716	HSK63A-EMH .625-3.15	0.625	3.15	1.620	1.890	0.94	-	9/16"-18	AD Thru
	84742816	HSK63A-EMH .750-3.15	0.750	3.15	1.750	2.010	1.00	-	5/8"-18	AD Thru
	84742122	HSK63A-EMH 1.000-4.33	1.000	4.33	1.950	3.000	1.12	1.00	3/4"-16	AD Thru
84742322	HSK63A-EMH 1.250-4.33	1.250	4.33	2.500	3.000	1.12	1.00	3/4"-16	AD Thru	
HSK100A Inch ID	84761118	HSK100A-EMH .250-3.54	0.250	3.54	0.690	0.870	0.56	-	1/4"-28	AD Thru
	84761318	HSK100A-EMH .312-3.54	0.312	3.54	1.000	1.060	0.75	-	1/4"-28	AD Thru
	84762618	HSK100A-EMH .375-3.54	0.375	3.54	1.000	1.490	0.75	-	3/8"-24	AD Thru
	84761520	HSK100A-EMH .500-3.94	0.500	3.94	1.380	1.730	0.75	-	7/16"-20	AD Thru
	84761720	HSK100A-EMH .625-3.94	0.625	3.94	1.620	1.890	0.94	-	9/16"-18	AD Thru
	84762822	HSK100A-EMH .750-4.33	0.750	4.33	1.750	2.010	1.00	-	5/8"-18	AD Thru
	84762124	HSK100A-EMH 1.000-4.72	1.000	4.72	2.250	3.000	1.12	1.00	3/4"-16	AD Thru
	84762224	HSK100A-EMH 1.250-4.72	1.250	4.72	2.500	3.000	1.12	1.00	3/4"-16	AD Thru
	84762324	HSK100A-EMH 1.500-4.72	1.500	4.72	2.750	3.150	1.12	1.00	3/4"-16	AD Thru

Coolant tubes on page 153

Coolant Tube Wrenches on page 157

# HSK Holders

## HSK End Mill Holder (DIN 6499 AND DIN 1835/B) - Metric ID



MODEL:-SL/HSK (DIN-69893 A+C)  
(THRU. COOLANT)

### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0004"
- Bore tolerance: H6

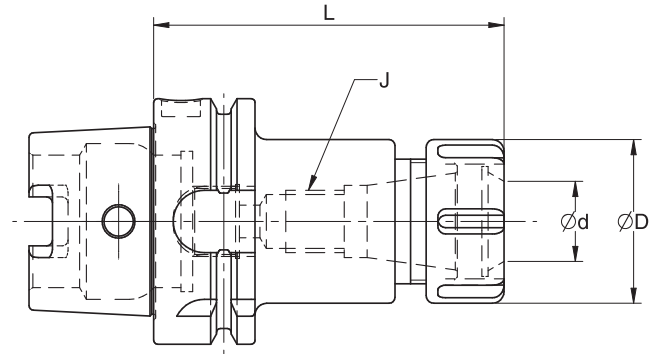
	Catalog Number	Description	"D" (mm)	"L" (mm)	"C" (mm)	"H" (mm)	"H1" (mm)	"H2" (mm)	"G" (mm)	Coolant Style
<b>HSK63A Metric ID</b>	84740613	HSK63A-EMH 6-65	6	65	25	36	18	-	M6	AD Thru
	84740813	HSK63A-EMH 8-65	8	65	28	36	18	-	M8	AD Thru
	84741013	HSK63A-EMH 10-65	10	65	35	40	20	-	M10	AD Thru
	84741216	HSK63A-EMH 12-80	12	80	42	45	22.50	-	M12	AD Thru
	84741416	HSK63A-EMH 14-80	14	80	44	45	22.50	-	M12	AD Thru
	84741616	HSK63A-EMH 16-80	16	80	48	48	24	-	M14	AD Thru
	84741816	HSK63A-EMH 18-80	18	80	50	48	24	-	M14	AD Thru
	84742016	HSK63A-EMH 20-80	20	80	52	50	25	-	M16	AD Thru
	84742522	HSK63A-EMH 25-110	25	110	65	56	24	25	M18	AD Thru
	84743222	HSK63A-EMH 32-110	32	110	72	60	24	28	M20	AD Thru
<b>HSK100A Metric ID</b>	84760618	HSK100A-EMH 6-90	6	90	25	36	18	-	M6	AD Thru
	84760818	HSK100A-EMH 8-90	8	90	28	36	18	-	M8	AD Thru
	84761018	HSK100A-EMH 10-90	10	90	35	40	20	-	M10	AD Thru
	84761220	HSK100A-EMH 12-100	12	100	42	45	22.50	-	M12	AD Thru
	84761420	HSK100A-EMH 14-100	14	100	44	45	22.50	-	M12	AD Thru
	84761620	HSK100A-EMH 16-100	16	100	48	48	24	-	M14	AD Thru
	84761820	HSK100A-EMH 18-100	18	100	50	48	24	-	M14	AD Thru
	84762022	HSK100A-EMH 20-110	20	110	52	50	25	-	M16	AD Thru
	84762524	HSK100A-EMH 25-120	25	120	65	56	24	25	M18	AD Thru
	84763224	HSK100A-EMH 32-120	32	120	72	60	24	28	M20	AD Thru
	84763424	HSK100A-EMH 40-120	40	120	80	36	30	32	M20	AD Thru

Coolant tubes [on page 153](#)

Coolant Tube Wrenches [on page 157](#)

# HSK Holders

## HSK-A ER Collet Chucks (DIN 69893 A+C)



### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0002"

- AD coolant thru the spindle

	Catalog Number	Description	Collet Size	"d" Range (inch)	"D" (inch)	"L" (inch)	"J" Adj. Screw	Coolant Style
<b>HSK32A</b>	87271113	HSK32A-CHE 16-2.56	ER16	.118 - .393	1.102	2.56	M10X1.5	AD Thru
	87271314	HSK32A-CHE 25-2.76	ER25	.118 - .629	1.653	2.76	M16X2.0	AD Thru
<b>HSK40A</b>	87272114	HSK40A-CHE 16-2.76	ER16	.118 - .393	1.102	2.76	M10X1.5	AD Thru
	87272316	HSK40A-CHE 25-3.15	ER25	.118 - .629	1.653	3.15	M16X2	AD Thru
	87272420	HSK40A-CHE 32-3.94	ER32	.118 - .787	1.968	3.94	M18X1.5	AD Thru
<b>HSK50A</b>	87273116	HSK50A-CHE 16-3.15	ER16	.118 - .393	1.102	3.15	M10X1.5	AD Thru
	87273319	HSK50A-CHE 25-3.74	ER25	.118 - .629	1.653	3.74	M16X2	AD Thru
	87273420	HSK50A-CHE 32-3.94	ER32	.118 - .787	1.968	3.94	M18X1.5	AD Thru
<b>HSK63A</b>	87274118	HSK63A-CHE 16-3.54	ER16	.118 - .393	1.102	3.15	M10X1.5	AD Thru
	87274318	HSK63A-CHE 25-3.54	ER25	.118 - .629	1.653	3.74	M16X2	AD Thru
	87274420	HSK63A-CHE 32-3.94	ER32	.118 - .787	1.968	3.94	M18X1.5	AD Thru
	87274524	HSK63A-CHE 40-4.72	ER40	.157 - 1.023	2.480	4.72	M22X1.5	AD Thru
<b>HSK100A</b>	87276420	HSK100A-CHE 32-3.94	ER32	.118 - .787	1.968	3.94	M18X1.5	AD Thru
	87276524	HSK100A-CHE 40-4.72	ER40	.157 - 1.023	2.480	4.72	M22X1.5	AD Thru
	87276726	HSK100A-CHE 50-5.12	ER50	.393 - 1.338	3.070	5.12	M22X1.5	AD Thru

ER Collets [on page 142](#)

ER Nut Wrenches [on page 156](#)

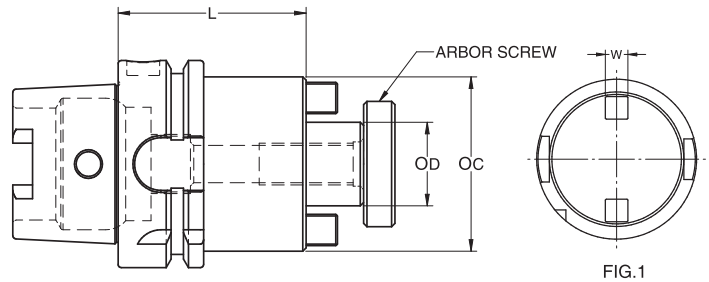
Coolant tubes [on page 153](#)

Coolant Tube Wrenches [on page 157](#)



# HSK Holders

## HSK-A Shell Mill Holder (DIN 69893 A+C)



### FEATURES

• Balanced to G6.3 @ 20,000 RPM

• TIR < 0.0003"

	Catalog Number	Description	Pilot Size "D"	"L" (inch)	"C" (inch)	"W" (inch)	Arbor Screw	Coolant Style
<b>HSK40A</b>	81725009	HSK40A-SMH 0.500-1.77	0.500	1.77	1.75	0.250	1/4-28	AD Thru
	81727510	HSK40A-SMH 0.750-2.00	0.750	2.00	1.75	0.312	3/8-24	AD Thru
	81721010	HSK40A-SMH 1.000-2.00	1.000	2.00	2.19	0.375	1/2-20	AD Thru
<b>HSK50A</b>	81735009	HSK50A-SMH 0.500-1.77	0.500	1.77	1.75	0.250	1/4-28	AD Thru
	81737510	HSK50A-SMH 0.750-2.00	0.750	2.00	1.75	0.312	3/8-24	AD Thru
	81731011	HSK50A-SMH 1.000-2.25	1.000	2.25	2.19	0.375	1/2-20	AD Thru
<b>HSK63A</b>	81745010	HSK63A-SMH 0.500-2.00	0.500	2.00	1.75	0.250	1/4-28	AD Thru
	81747510	HSK63A-SMH 0.750-2.00	0.750	2.00	1.75	0.312	3/8-24	AD Thru
	81741011	HSK63A-SMH 1.000-2.25	1.000	2.25	2.19	0.375	1/2-20	AD Thru
	81741211	HSK63A-SMH 1.250-2.25	1.250	2.25	2.75	0.500	5/8-18	AD Thru
	81741511	HSK63A-SMH 1.500-2.25	1.500	2.25	3.62	0.625	3/4-16	AD Thru
<b>HSK100A</b>	81761011	HSK100A-SMH 1.000-2.25	1.000	2.25	2.75	0.375	1/2-20	AD Thru
	81761213	HSK100A-SMH 1.250-2.50	1.250	2.50	2.75	0.500	5/8-18	AD Thru
	81761513	HSK100A-SMH 1.500-2.50	1.500	2.50	3.94	0.625	3/4-16	AD Thru
	81762013	HSK100A-SMH 2.000-2.50	2.000	2.50	4.44	0.750	1 - 14	AD Thru
	81762513	HSK100A-SMH 2.500-2.50	2.500	2.50	4.88	1.000	1 - 14	AD Thru

**NOTE:**

ALL Shell Mill Holders are supplied with coolant through the center up to the arbor screw hole.

Non-Coolant and Coolant Arbor Screws **on page 155**

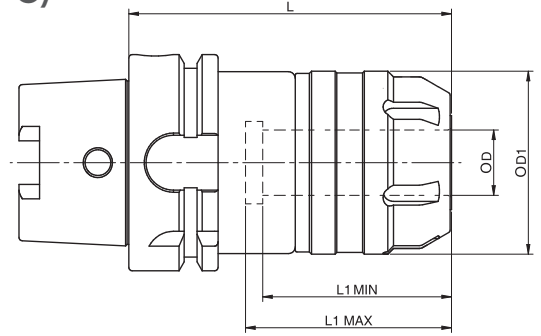
Arbor Screw Wrenches **on page 158**

Coolant tubes **on page 153**

Coolant Tube Wrenches **on page 157**

# HSK Holders

## HSK-A AccuMill™ Milling Chuck (DIN 69893 A+C)



**FEATURES**

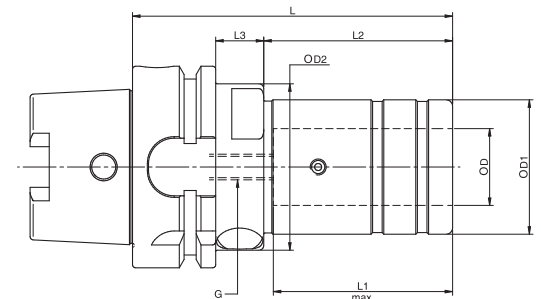
- Balanced to G6.3 @ 20,000 RPM
- Bore tolerance: H6
- T.I.R. < 0.0002"

	Catalog Number	Description	Collet Size	Collet Capacity Range	"D" (inch)	"D1" (inch)	"L" (inch)	"L1" Min/Max	Coolant Style
<b>HSK63A</b>	97742821	HSK63A-MMC .750-4.13	MC75	.125 - .625	0.750	2.09	4.13	2.50/2.75	AD Thru
	97742824	HSK63A-MMC .750-4.72	MC75	.125 - .625	0.750	2.09	4.72	2.50/2.75	AD Thru
	97742225	HSK63A-MMC 1.250-4.92	MC125	.125 - 1.00	1.250	2.64	4.92	3.09/3.34	AD Thru
<b>HSK100A</b>	97762824	HSK100A-MMC .750-4.75	MC75	.125 - .625	0.750	2.09	4.75	2.50/2.75	AD Thru
	97762228	HSK100A-MMC 1.250-5.50	MC125	.125 - 1.00	1.250	2.64	5.50	3.09/3.34	AD Thru

AccuMill™ Collets [on page 150](#)  
 AccuMill™ Collet Nut wrenches [on page 154](#)

Coolant tubes [on page 153](#)  
 Coolant Tube Wrenches [on page 157](#)

## HSK-A AccuClamp™ Hydraulic Chuck (DIN 69893 A+C)



**FEATURES**

- Balanced to G2.5 @ 25,000 RPM
- Bore tolerance: H6
- T.I.R. < 0.0002"

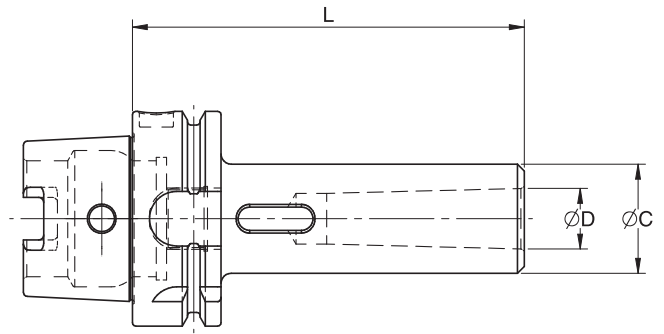
	Catalog Number	Description	"D" (inch)	"D1" (inch)	"L" (inch)	"L1" (inch)	"L2" (inch)	"L3" (inch)	"G" (inch)	Coolant Style
<b>HSK50A</b>	68732620	HSK50A/HCS0.375-4.00	0.375	1.18	4.00	1.57	2.28	-	M8X1	AD Thru
	68731520	HSK50A/HCS 0.500-4.00	0.500	1.65	4.00	1.78	2.28	-	M8X1	AD Thru
	68732823	HSK50A/HCS 0.750-4.52	0.750	2.36	4.52	2.20	2.28	0.63	M8X1	AD Thru
<b>HSK63A</b>	68742823	HSK63A/HCS 0.75-4.52	0.750	1.65	4.52	2.20	2.28	0.63	M8X1	AD Thru
	68742225	HSK63A/HCS 1.25-5.00	1.250	2.36	5.00	2.75	2.91	0.63	M8X1	AD Thru
<b>HSK100A</b>	68762823	HSK100A/HCS 0.75-4.50	0.750	1.65	4.50	2.20	2.28	0.63	M8X1	AD Thru
	68762225	HSK100A/HCS 1.25-5.00	1.250	2.36	5.00	3.18	2.87	0.63	M8X1	AD Thru

AccuClamp™ Torque wrenches [on page 158](#)  
 AccuClamp™ Reduction Sleeves [on page 150](#)

Coolant tubes [on page 153](#)  
 Coolant Tube Wrenches [on page 157](#)

# HSK Holders

## HSK-A Morse Taper Holders (DIN 69893 A+C)



### FEATURES

• < 0.0004"

	Catalog Number	Description	MT Socket	"D" (inch)	"L" (inch)	"C" (inch)	Coolant Style
<b>HSK40A</b>	88072119	HSK40A-MTA 1-3.74	1	0.475	3.74	0.984	N/A
	88072221	HSK40A-MTA 2-4.33	2	0.700	4.33	1.259	N/A
	88072327	HSK40A-MTA 3-5.31	3	0.937	5.31	1.574	N/A
<b>HSK50A</b>	88073119	HSK50A-MTA 1-3.74	1	0.475	3.74	0.984	N/A
	88073223	HSK50A-MTA 2-4.53	2	0.700	4.53	1.259	N/A
	88073327	HSK50A-MTA 3-5.31	3	0.937	5.31	1.574	N/A
<b>HSK63A</b>	88074119	HSK63A-MTA1-3.74	1	0.475	3.74	0.984	N/A
	88074223	HSK63A-MTA2-4.53	2	0.700	4.53	1.259	N/A
	88074327	HSK63A-MTA3-5.31	3	0.937	5.31	1.574	N/A
	88074432	HSK63A-MTA4-6.30	4	1.230	6.30	1.889	N/A
<b>HSK100A</b>	88076224	HSK100A-MTA 2-4.72	2	0.700	4.72	1.259	N/A
	88076330	HSK100A-MTA 3-5.91	3	0.937	5.91	1.574	N/A
	88076434	HSK100A-MTA 4-6.69	4	1.230	6.69	1.889	N/A
	88076540	HSK100A-MTA 5-7.87	5	1.747	7.87	2.480	N/A

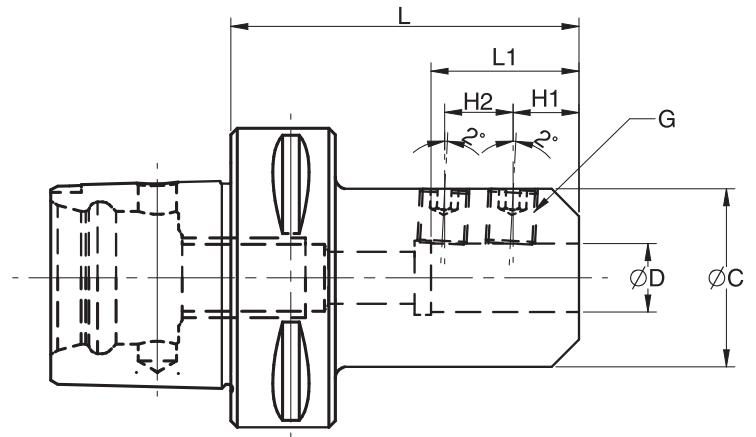
## Did you know?

Taken alone, manufacturing in the United States would be the ninth-largest economy in the world. With \$2.1 trillion in value added from manufacturing in 2014, only eight other nations (including the U.S.) would rank higher in terms of their gross domestic product.

[nam.org](http://nam.org)

# PTI Taper Holders

## PTI End Mill Holder (ISO 26623-1)



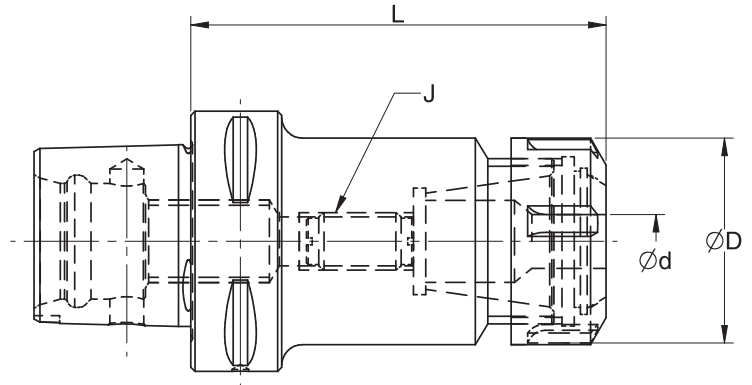
### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- Bore tolerance: H6
- T.I.R. < 0.0004"

	Catalog Number	Description	"D" (inch)	"L" (inch)	"L1" (inch)	"C" (inch)	"H1" (inch)	"H2" (inch)	"G"	Coolant Style
<b>PTI50 Shank</b>	85681115	PTI50-EMH 0.250-3.00	0.25	3	0.870	0.690	0.56	-	1/4"-28	AD THRU
	85681316	PTI50-EMH 0.312-3.15	0.312	3.15	1.060	1.000	0.75	-	1/4"-28	AD THRU
	85682616	PTI50-EMH 0.375-3.15	0.375	3.15	1.490	1.000	0.75	-	3/8"-24	AD THRU
	85681516	PTI50-EMH 0.500-3.15	0.5	3.15	1.730	1.750	0.75	-	7/16"-20	AD THRU
	85681716	PTI50-EMH 0.625-3.15	0.625	3.15	1.890	1.620	0.94	-	9/16"-18	AD THRU
	85682817	PTI50-EMH 0.750-3.35	0.75	3.35	2.010	1.750	1.00	-	5/8"-18	AD THRU
	85682118	PTI50-EMH 1.000-3.54	1	3.54	3.000	1.950	1.12	1.00	3/4"-16	AD THRU
	85682218	PTI50-EMH 1.250-3.54	1.25	3.54	3.000	2.500	1.12	1.00	3/4"-16	AD THRU
<b>PTI63 Shank</b>	85691115	PTI63-EMH 0.250-3.00	0.25	3	0.870	0.690	0.56	-	1/4"-28	AD THRU
	85691316	PTI63-EMH 0.312-3.15	0.312	3.15	1.060	1.000	0.75	-	1/4"-28	AD THRU
	85692616	PTI63-EMH 0.375-3.15	0.375	3.15	1.490	1.000	0.75	-	3/8"-24	AD THRU
	85691516	PTI63-EMH 0.500-3.15	0.5	3.15	1.730	1.750	0.75	-	7/16"-20	AD THRU
	85691716	PTI63-EMH 0.625-3.15	0.625	3.15	1.890	1.620	0.94	-	9/16"-18	AD THRU
	85692817	PTI63-EMH 0.750-3.35	0.75	3.35	2.010	1.750	1.00	-	5/8"-18	AD THRU
	85692118	PTI63-EMH 1.000-3.54	1	3.54	3.000	1.950	1.12	1.00	3/4"-16	AD THRU
	85692218	PTI63-EMH 1.250-3.54	1.25	3.54	3.000	2.500	1.12	1.00	3/4"-16	AD THRU
	85692319	PTI63-EMH 1.500-3.70	1.5	3.7	3.150	4.720	1.12	1.00	3/4"-16	AD THRU

# PTI Taper Holders

## PTI ER Collet Holder (ISO 26623-1)



### FEATURES

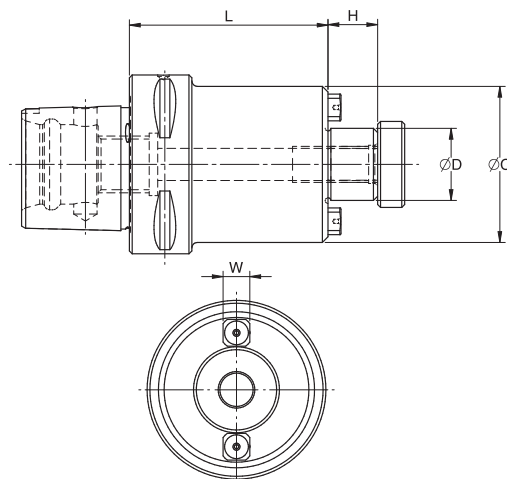
- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0004"

	Catalog Number	Description	Collet Size	"d" Range (inch)	"D"	"L"	"J" Adj. Screw	Coolant Style
<b>PTI63 SHANK</b>	87269012	PTI63-CHE 11-60	ER11	3 - 7	19	60	M6X1.00	AD Thru
	87269014	PTI63-CHE 11-70	ER11	3 - 7	19	70	M6X1.00	AD Thru
	87269020	PTI63-CHE 11-100	ER11	3 - 7	19	100	M6X1.00	AD Thru
	87269024	PTI63-CHE 11-120	ER11	3 - 7	19	120	M6X1.00	AD Thru
	87269112	PTI63-CHE 16-60	ER16	3 - 10	28	60	M10X1.5	AD Thru
	87269114	PTI63-CHE 16-70	ER16	3 - 10	28	70	M10X1.5	AD Thru
	87269120	PTI63-CHE 16-100	ER16	3 - 10	28	100	M10X1.5	AD Thru
	87269124	PTI63-CHE 16-120	ER16	3 - 10	28	120	M10X1.5	AD Thru
	87269212	PTI63-CHE 20-60	ER20	3 - 13	34	60	M12X1.75	AD Thru
	87269214	PTI63-CHE 20-70	ER20	3 - 13	34	70	M12X1.75	AD Thru
	87269220	PTI63-CHE 20-100	ER20	3 - 13	34	100	M12X1.75	AD Thru
	87269224	PTI63-CHE 20-120	ER20	3 - 13	34	120	M12X1.75	AD Thru
	87269227	PTI63-CHE 20-135	ER20	3 - 13	34	135	M12X1.75	AD Thru
	87269318	PTI63-CHE 25-90	ER25	3 - 16	42	90	M16X2.0	AD Thru
87269420	PTI63-CHE 32-100	ER32	3 - 20	50	100	M18X1.5	AD Thru	
87269524	PTI63-CHE 40-120	ER40	4 - 26	63	120	M22X1.5	AD Thru	
<b>PTI80 SHANK</b>	87270213	PTI80-CHE 20-65	ER20	3 - 13	34	65	M12X1.75	AD Thru
	87270314	PTI80-CHE 25-70	ER25	3 - 16	42	70	M16X2.0	AD Thru
	87270414	PTI80-CHE 32-70	ER32	3 - 20	50	70	M18X1.5	AD Thru
	87270420	PTI80-CHE 32-100	ER32	3 - 20	50	100	M18X1.5	AD Thru
	87270432	PTI80-CHE 32-160	ER32	3 - 20	50	160	M18X1.5	AD Thru
	87270446	PTI80-CHE 32-230	ER32	3 - 20	50	230	M18X1.5	AD Thru
	87270466	PTI80-CHE 32-330	ER32	3 - 20	50	330	M18X1.5	AD Thru
	87270514	PTI80-CHE 40-70	ER40	4 - 26	63	70	M22X1.5	AD Thru
	87270520	PTI80-CHE 40-100	ER40	4 - 26	63	100	M22X1.5	AD Thru
	87270524	PTI80-CHE 40-120	ER40	4 - 26	63	120	M22X1.5	AD Thru
87270532	PTI80-CHE 40-160	ER40	4 - 26	63	160	M22X1.5	AD Thru	

ER Collets on page 142  
ER Nut Wrenches on page 156

# PTI Taper Holders

## PTI Shell Mill Holder (ISO 26623-1)



### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- < 0.0004"

	Catalog Number	Description	"D"	"C"	"L"	"W"	"H"	Coolant Style
<b>PTI40 Shank</b>	81677505	PTI40-SMH .750-1.00	0.75	1.75	1	0.312	0.69	AD Thru
<b>PTI50 Shank</b>	81685009	PTI50-SMH .500-1.77	0.5	1.75	1.77	0.25	0.56	AD Thru
	81687505	PTI50-SMH .750-1.00	0.75	1.75	1	0.312	0.69	AD Thru
	81681008	PTI50-SMH 1.000-1.57	1	2.19	1.57	0.375	0.69	AD Thru
<b>PTI63 Shank</b>	81695009	PTI63-SMH .500-1.77	0.5	1.75	1.77	0.25	0.56	AD Thru
	81697505	PTI63-SMH .750-1.00	0.75	1.75	1	0.312	0.69	AD Thru
	81691010	PTI63-SMH 1.000-2.00	1	2.19	2	0.375	0.69	AD Thru
	81691210	PTI63-SMH 1.250-2.00	1.25	2.75	2	0.5	0.69	AD Thru
	81691510	PTI63-SMH 1.500-2.00	1.5	3.38	2	0.625	0.94	AD Thru

**NOTE:**

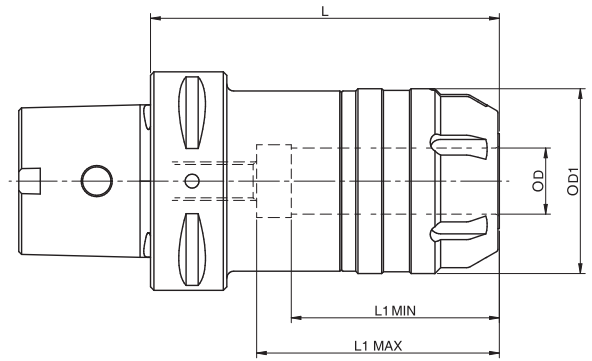
ALL Shell Mill Holders are supplied with coolant through the center up to the arbor screw hole.

Non-Coolant and Coolant Arbor Screws **on page 155**

Arbor Screw Wrenches **on page 158**

# PTI Taper Holders

## PTI AccuMill™ Milling Chuck (ISO 26623-1)



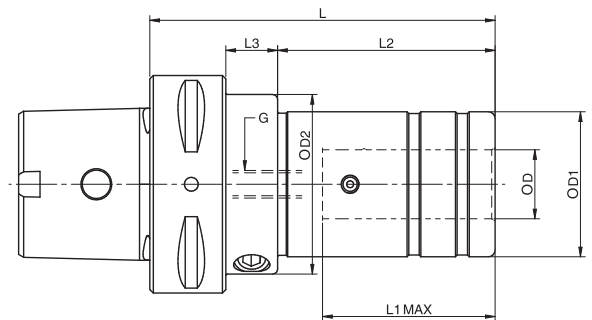
### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0004"

	Catalog Number	Description	Collet Size	Collet Capacity Range	"D" (mm)	"D1" (mm)	"L" (mm)	"L1" Min.	"L1" Max.	Coolant Style
<b>PTI50 Shank</b>	97682021	PTI50-MMC 20-105	MC20	3--16	20	53	105	63	70	AD Thru
	97682024	PTI50-MMC 20-120	MC20	3--16	20	53	120	63	70	AD Thru
	97683225	PTI50-MMC 32-125	MC32	3--25	32	67	125	78	85	AD Thru
<b>PTI63 Shank</b>	97692021	PTI63-MMC 20-105	MC20	3--16	20	53	105	63	70	AD Thru
	97692024	PTI63-MMC 20-120	MC20	3--16	20	53	120	63	70	AD Thru
	97693225	PTI63-MMC 32-125	MC32	3--25	32	67	125	78	85	AD Thru

AccuMill™ Collets on page 150  
 AccuMill™ Collet Nut wrenches on page 154

## PTI Hydraulic Chuck (ISO 26623-1)



### FEATURES

- Balanced to G2.5 @ 25,000 RPM
- Bore tolerance: H6
- T.I.R. < 0.0004"

	Catalog Number	Description	"D" (mm)	"D1" (mm)	"D2" (mm)	"L3"	"L"	"L1" Max.	"L2"	Coolant Style
<b>PTI50 Shank</b>	68682020	PTI50-HCS 20-100	20	42	52	16	100	52	56	AD Thru
	68682520	PTI50-HCS 25-100	25	52	60	16	100	52	56	AD Thru
	68683223	PTI50-HCS 32-115	32	60	60	16	115	62	70	AD Thru
<b>PTI63 Shank</b>	68692025	PTI63-HCS 20-125	20	42	60	16	125	52	56	AD Thru
	68692525	PTI63-HCS 25-125	25	52	60	16	125	52	56	AD Thru
	68693225	PTI63-HCS 32-125	32	60	60	16	125	62	70	AD Thru

AccuClamp™ Torque wrenches on page 158  
 AccuClamp™ Reduction Sleeves on page 150

# PTI Taper Holders

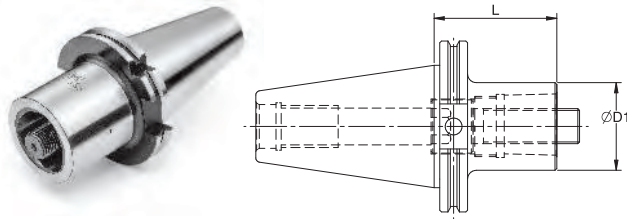
## PTI Extension Adapter (ISO 26623-2)

### FEATURES

- < 0.0002"
- Taper shank ground to AT3 accuracy (or better)

### CAT Shank

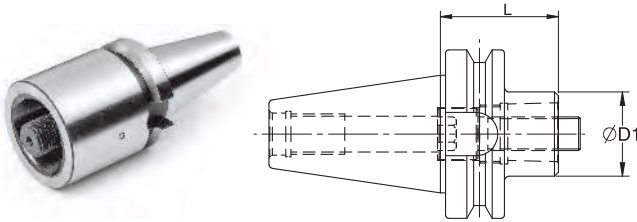
CAT (ANSI/ASME B5.50-1994) EA PTI(ISO 26623-2)  
Also available in Face Contact CATP Taper



Catalog Number	Description	Adaptor	Shank	"D1" (mm)	"L" (mm)
89246606	CAT40-PTI32-30	PTI32	CAT40	32	30
89246612	CAT40-PTI32-60	PTI32	CAT40	32	60
89266606	CAT50-PTI32-30	PTI32	CAT50	32	30
89266612	CAT50-PTI32-60	PTI32	CAT50	32	60
89246706	CAT40-PTI40-30	PTI40	CAT40	40	30
89246712	CAT40-PTI40-60	PTI40	CAT40	40	60
89266706	CAT50-PTI40-30	PTI40	CAT50	40	30
89266712	CAT50-PTI40-60	PTI40	CAT50	40	60
89246706	CAT40-PTI50-30	PTI50	CAT40	50	30
89246814	CAT40-PTI50-70	PTI50	CAT40	50	70
89266806	CAT50-PTI50-30	PTI50	CAT50	50	30
89266814	CAT50-PTI50-70	PTI50	CAT50	50	70
89246917	CAT40-PTI63-85	PTI63	CAT40	63	85
89266906	CAT50-PTI63-30	PTI63	CAT50	63	30
89266916	CAT50-PTI63-80	PTI63	CAT50	63	80
89267014	CAT50-PTI80-70	PTI80	CAT50	80	70
89267024	CAT50-PTI80-120	PTI80	CAT50	80	120

### BT Shank

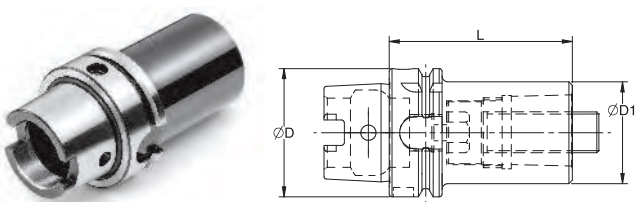
BT (MAS403) EA PTI(ISO 26623-2)  
Also available in Face Contact BTP Taper



Catalog Number	Description	Adaptor	Shank	"D1" (mm)	"L" (mm)
89106606	BT30-PTI32-30	PTI32	BT30	32	30
89106612	BT30-PTI32-60	PTI32	BT30	32	60
89126606	BT40-PTI32-30	PTI32	BT40	32	30
89126612	BT40-PTI32-60	PTI32	BT40	32	60
89126706	BT40-PTI40-30	PTI40	BT40	40	30
89126712	BT40-PTI40-60	PTI40	BT40	40	60
89126806	BT40-PTI50-30	PTI50	BT40	50	30
89126814	BT40-PTI50-70	PTI50	BT40	50	70
89126915	BT40-PTI63-75	PTI63	BT40	63	75

### HSK Shank

HSK EA PTI (ISO-26623-2)



Catalog Number	Description	Adaptor	Shank	"D1" (mm)	"L" (mm)
89746615	HSK63A-PTI32-75	PTI32	63	32	75
89766616	HSK100A-PTI32-80	PTI32	100	32	80
89746716	HSK63A-PTI40-80	PTI40	63	40	80
89766718	HSK100A-PTI40-90	PTI40	100	40	90
89746818	HSK63A-PTI50-90	PTI50	63	50	90
89766820	HSK100A-PTI50-100	PTI50	100	50	100
89766922	HSK100A-PTI63-110	PTI63	100	63	110
89767024	HSK100A-PTI80-120	PTI80	100	80	120

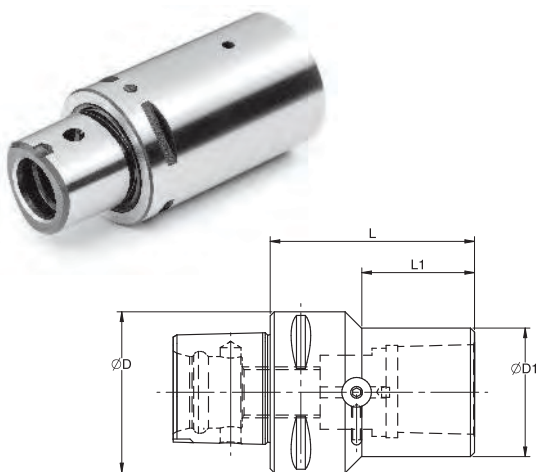
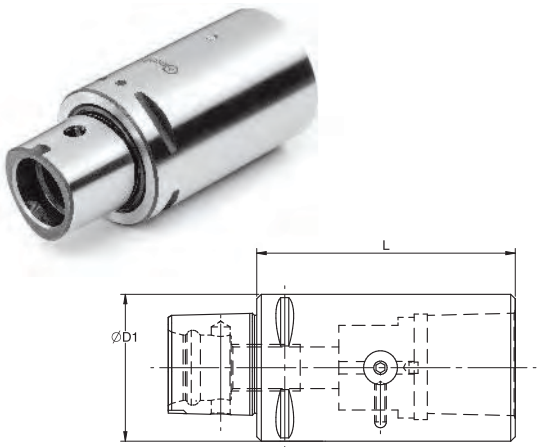
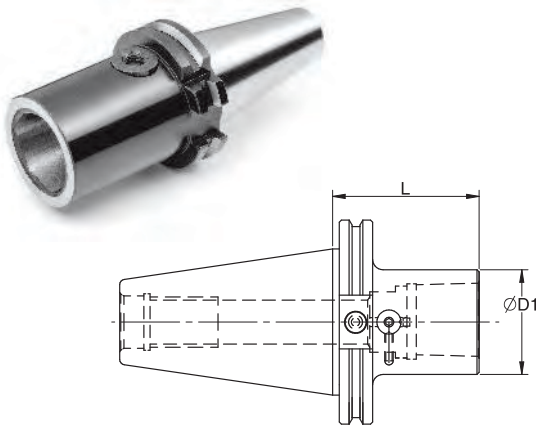
Coolant tubes on page 153

Coolant Tube Wrenches on page 157



# PTI Taper Holders

## PTI Extension Front Clamping



### FEATURES

- <math>< 0.0002''</math>
- Taper shank ground to AT3 accuracy (or better)

### BT/CAT Taper

Catalog Number	Description	Adaptor	Shank	"D1" (mm)	"L" (mm)
<b>BT Shank</b>					
89126816F	BT40-PTI50-FC 80	PIT50	BT40	50	90
89126820F	BT40-PTI50-FC 100	PTI50	BT40	50	100
<b>CAT Shank</b>					
89246816F	CAT40-PTI50-FC 80	PTI50	CAT40	50	80
89266816F	CAT50-PTI50-FC 80	PTI50	CAT50	50	80
89246918F	CAT40-PTI63-FC 90	PTI63	CAT40	63	90
89266921F	CAT50-PTI63-FC 105	PTI63	CAT50	63	105

### Front Clamping Extension Adaptor

Catalog Number	Description	Adaptor	Shank	"D1" (mm)	"L" (mm)
205515F	PTI50-PTI50-FC 75	PTI50	PTI50	50	75
206617F	PTI63-PTI63-FC 85	PTI63	PTI63	63	85
208820F	PTI80-PTI80-FC 100	PTI80	PTI80	80	100

### Front Clamping Reduction Adaptor

Catalog Number	Description	Adaptor	"D" (mm)	"D1" (mm)	"L" (mm)	"L1"
205515F	PTI63-PTI50-FCRA 80	PTI63	63	50	80	54
206617F	PTI80-PTI50-FCRA 80	PTI80	80	50	80	49
208820F	PTI80-PTI63-FCRA 90	PTI80	80	63	90	63

# PTI Taper Holders

## PTI Reduction Adaptor

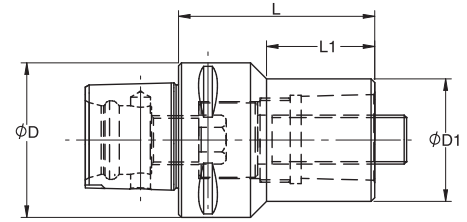


FIG.1

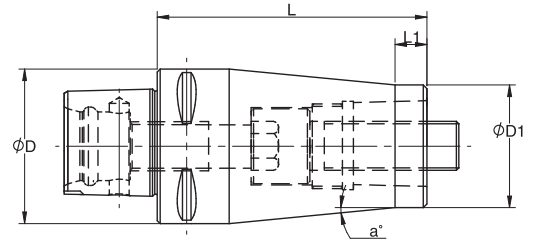


FIG.2

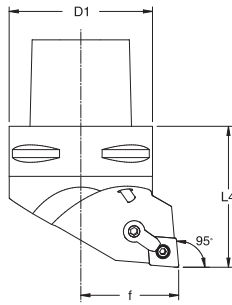
### FEATURES

• < 0.0004"

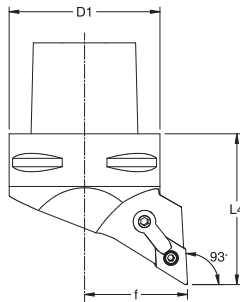
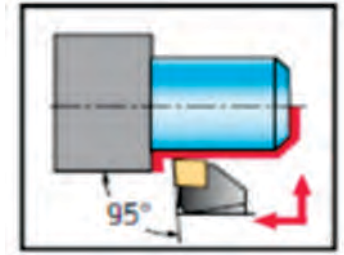
	Catalog Number	Description	Fig.	Adaptor	"D" (mm)	"D1" (mm)	"L" (mm)	"L1" (mm)	a°	Weight
PTI REDUCTION ADAPTOR	214311	PTI40-PTI32-RA 55	1	PTI32	40	32	55	31	-	0.5
	214314	PTI40-PTI32-RA 70	2	PTI32	40	32	70	12	6°	0.6
	215312	PTI50-PTI32-RA 60	1	PTI32	50	32	60	35	-	0.6
	215413	PTI50-PTI40-RA 65	1	PTI40	50	40	65	40	-	0.8
	215417	PTI50-PTI40-RA 85	2	PTI40	50	40	85	12	5.4°	1.1
	216314	PTI63-PTI32-RA 70	1	PTI32	63	32	70	39	-	1.1
	216416	PTI63-PTI40-RA 80	1	PTI40	63	40	80	51.5	-	1.2
	216516	PTI63-PTI50-RA 80	1	PTI50	63	50	80	51.5	-	1.5
	216522	PTI63-PTI50-RA 110	2	PTI50	63	50	110	12	4.9°	2.2
	218312	PTI80-PTI32-RA 60	1	PTI32	80	32	60	29.5	-	1.7
	218414	PTI80-PTI40-RA 70	1	PTI40	80	40	70	36.5	-	1.9
	218516	PTI80-PTI50-RA 80	1	PTI50	80	50	80	49.5	-	2.2
	218616	PTI80-PTI63-RA 80	1	PTI63	80	63	80	53	-	2.5
	218624	PTI80-PTI63-RA 120	2	PTI63	80	63	120	12	6.2°	4

# PTI Taper Holders

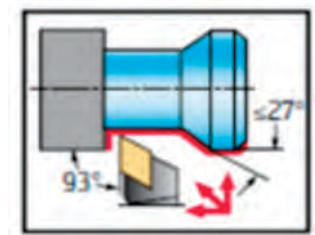
## PTI Indexable Static Turning Tools



\* MCLN STYLE FOR TURNING AND FACING



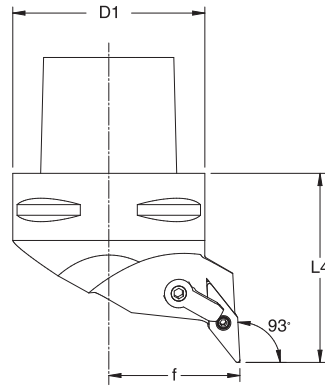
\* MDJN STYLE FOR TURNING, FACING, AND PROFILING



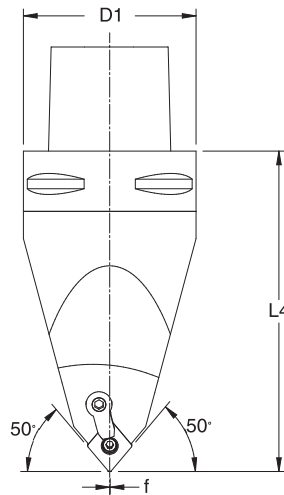
	Catalog Number	Description	Insert IC	L4	f	D1	Insert	Clamp	Seat	Clamp Screw	Lock Pin
MCLN	74691R45120413	PTI-63 MCLNR-45065-12	0.5	65	45	PTI63	CNxx 1204XX	CMC1204	SCN1204	CSCMC1204	LPSCN1204
	74691L45120413	PTI-63 MCLNL-45065-12	0.5	65	45	PTI63	CNxx 1204XX	CMC1204	SCN1204	CSCMC1204	LPSCN1204
	74691R45160613	PTI-63 MCLNR-45065-16	0.625	65	45	PTI63	CNxx 1606XX	CMC1606	SCN1606	CSCMC1606	LPSCN1606
	74691L45160613	PTI-63 MCLNL-45065-16	0.625	65	45	PTI63	CNxx 1606XX	CMC1606	SCN1606	CSCMC1606	LPSCN1606
	74691R45190613	PTI-63 MCLNR-45065-19	0.75	65	45	PTI63	CNxx 1906XX	CMC1906	SCN1906	CSCMC1906	LPSCN1906
	74691L45190613	PTI-63 MCLNL-45065-19	0.75	65	45	PTI63	CNxx 1906XX	CMC1906	SCN1906	CSCMC1906	LPSCN1906
	74701R55120416	PTI-80 MCLNR-55080-12	0.5	80	55	PTI80	CNxx 1204XX	CMC1204	SCN1204	CSCMC1204	LPSCN1204
	74701L55120416	PTI-80 MCLNL-55080-12	0.5	80	55	PTI80	CNxx 1204XX	CMC1204	SCN1204	CSCMC1204	LPSCN1204
	74701R55160616	PTI-80 MCLNR-55080-16	0.625	80	55	PTI80	CNxx 1606XX	CMC1606	SCN1606	CSCMC1606	LPSCN1606
	74701L55160616	PTI-80 MCLNL-55080-16	0.625	80	55	PTI80	CNxx 1606XX	CMC1606	SCN1606	CSCMC1606	LPSCN1606
	74701R55190616	PTI-80 MCLNR-55080-19	0.75	80	55	PTI80	CNxx 1906XX	CMC1906	SCN1906	CSCMC1906	LPSCN1906
	74701L55190616	PTI-80 MCLNL-55080-19	0.75	80	55	PTI80	CNxx 1906XX	CMC1906	SCN1906	CSCMC1906	LPSCN1906
MDJN	74692R45110413	PTI63-MDJNR-45065-11	0.375	65	45	PTI63	DNxx1104XX	CMD1104	SDN1104	CSCMD1104	LPSDN1104
	74692L45110413	PTI63-MDJNL-45065-11	0.375	65	45	PTI63	DNxx1104XX	CMD1104	SDN1104	CSCMD1104	LPSDN1104
	74692R45150613	PTI63-MDJNR-45065-15	0.5	65	45	PTI63	DNxx1506XX	CMD1506	SDN1506	CSCMD1506	LPSDN1506
	74692L45150613	PTI63-MDJNL-45065-15	0.5	65	45	PTI63	DNxx1506XX	CMD1506	SDN1506	CSCMD1506	LPSDN1506
	74692R55150616	PTI80-MDJNR-55080-15	0.625	80	55	PTI80	DNxx1506XX	CMD1506	SDN1506	CSCMD1506	LPSDN1506
	74692L55150616	PTI80-MDJNL-55080-15	0.625	80	55	PTI80	DNxx1506XX	CMD1506	SDN1506	CSCMD1506	LPSDN1506

# PTI Taper Holders

## PTI Indexable Static Turning Tools



\* MVJN STYLE FOR TURNING, FACING, AND PROFILING

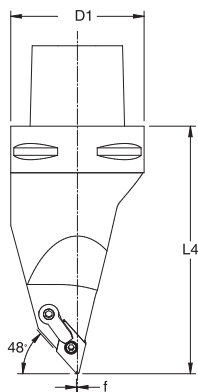


\* MCMN STYLE FOR TURNING, FACING AND PROFILING

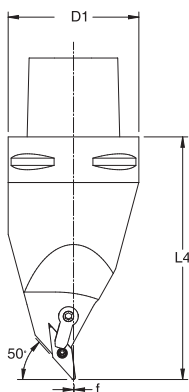
	Catalog Number	Description	Insert IC	L4	f	D1	Insert	Clamp	Seat	Clamp Screw	Lock Pin
<b>MVJN</b>	74693R45160413	PTI63-MVJNR-45065-16	0.5	65	45	PTI63	VNxx1604xx	CMV1604	SVN1604	CSCMV1604	LPSVN1604
	74693L45160413	PTI63-MVJNL-45065-16	0.5	65	45	PTI63	VNxx1604xx	CMV1604	SVN1604	CSCMV1604	LPSVN1604
	74703R55160416	PTI80-MVJNR-55080-16	0.5	80	55	PTI80	VNxx1604xx	CMV1604	SVN1604	CSCMV1604	LPSVN1604
	74703L55160416	PTI80-MVJNL-55080-16	0.5	80	55	PTI80	VNxx1604xx	CMV1604	SVN1604	CSCMV1604	LPSVN1604
<b>MCMN</b>	74684N00120421	PTI50-MCMNN-00105-12	12	105	0	PTI50	CNxx1204xx	CMC1204	SCN1204	CSCMC1204	LPSCN1204
	74694N00120418	PTI63-MCMNN-00090-12	12	90	0	PTI63	CNxx1204xx	CMC1204	SCN1204	CSCMC1204	LPSCN1204
	74694N00120423	PTI63-MCMNN-00115-12	12	115	0	PTI63	CNxx1204xx	CMC1204	SCN1204	CSCMC1204	LPSCN1204
	74694N00160618	PTI63-MCMNN-00090-16	16	90	0	PTI63	CNxx1606xx	CMC1606	SCN1606	CSCMC1606	LPSCN1606
	74694N00160630	PTI63-MCMNN-00150-16	16	150	0	PTI63	CNxx1606xx	CMC1606	SCN1606	CSCMC1606	LPSCN1606

# PTI Taper Holders

## PTI Indexable Static Turning Tools (Continued...)



**\* MDMN STYLE FOR TURNING, FACING AND PROFILING**

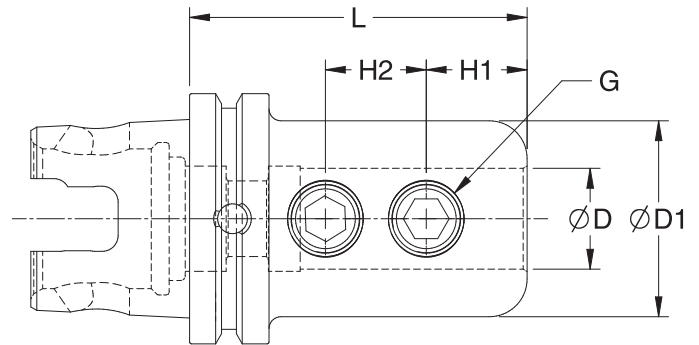


**\* MVMN STYLE FOR TURNING, FACING AND PROFILING**

	Catalog Number	Description	Insert IC	L4	f	D1	Insert	Clamp	Seat	Clamp Screw	Lock Pin
<b>MDMN</b>	74685N00150623	PTI50-MDMNN-00115-15	15	115	0	PTI50	DNxx-1506xx	CMD1506	SDN1506	CSCMD1506	LPSDN1506
	74695N00150626	PTI63-MDMNN-00130-15	15	130	0	PTI63	DNxx-1506xx	CMD1506	SDN1506	CSCMD1506	LPSDN1506
	74695N33150624	PTI63-MDMNL-33120-15	15	120	33	PTI63	DNxx-1506xx	CMD1506	SDN1506	CSCMD1506	LPSDN1506
	74695N00150632	PTI63-MDMNN-00160-15	15	160	0	PTI63	DNxx-1506xx	CMD1506	SDN1506	CSCMD1506	LPSDN1506
<b>MVMN</b>	74706N00160432	PTI80-MVMNN-00160-16	16	160	0	PTI80	VNxx-1604xx	CMV1604	SVN1604	CSCMV1604	LPSVN1604

# KTI Taper Holders

## KTI End Mill Holder (ISO26622-1)



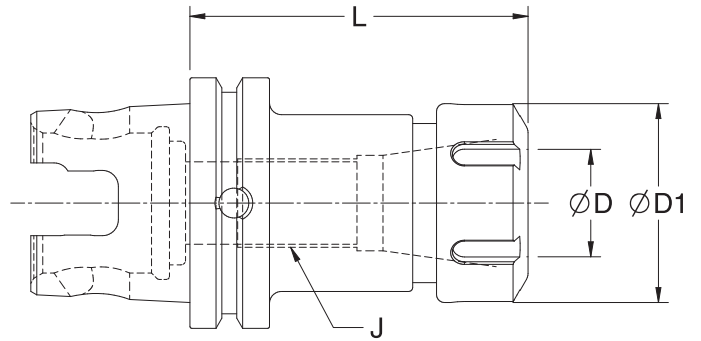
### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- Bore tolerance: H6
- T.I.R. < 0.0004"

	Catalog Number	Description	D	D1	L	H1	H2	G	Coolant Style
KTI 40 Shank	841412610	KTI40TS-EMH .375-1.97	0.375	1.00	1.97	0.75	-	3/8"-24	AD Thru
	841411511	KTI40TS-EMH .500-2.16	0.500	1.38	2.17	0.88	-	7/16"-20	AD Thru
	841411712	KTI40TS-EMH .625-2.36	0.625	1.63	2.36	0.94	-	9/16"-18	AD Thru
	841412813	KTI40TS-EMH .750-2.56	0.750	1.75	2.56	1.00	-	5/8"-18	AD Thru
KTI 50 Shank	841422610	KTI50TS-EMH .375-1.97	0.375	1.00	1.97	0.75	-	3/8"-24	AD Thru
	841421511	KTI50TS-EMH .500-2.16	0.500	1.38	2.17	0.88	-	7/16"-20	AD Thru
	841421712	KTI50TS-EMH .625-2.36	0.625	1.63	2.36	0.94	-	9/16"-18	AD Thru
	841422812	KTI50TS-EMH .750-2.36	0.750	1.75	2.36	1.00	-	5/8"-18	AD Thru
	841422117	KTI50TS-EMH 1.00-3.35	1.000	2.00	3.35	0.88	1.00	5/8"-18	AD Thru
	841422217	KTI50TS-EMH 1.25-3.35	1.250	2.50	3.35	1.00	1.00	3/4"-16	AD Thru
KTI 63 Shank	841502612	KTI63XMZ-EMH .375-2.36	0.375	1.00	2.36	0.75	-	3/8"-24	AD Thru
	841501512	KTI63XMZ-EMH .500-2.36	0.500	1.38	2.36	0.88	-	7/16"-20	AD Thru
	841501712	KTI63XMZ-EMH .625-2.36	0.625	1.63	2.36	0.94	-	9/16"-18	AD Thru
	841502812	KTI63XMZ-EMH .750-2.36	0.750	1.75	2.36	1.00	-	5/8"-18	AD Thru
	841502112	KTI63XMZ-EMH 1.00-3.35	1.000	2.00	3.35	0.88	1.00	5/8"-18	AD Thru
	841502117	KTI63XMZ-EMH 1.25-3.35	1.250	2.50	3.35	1.00	1.00	3/4"-16	AD Thru

# KTI Taper Holders

## KTI ER Collet Holder (ISO 26622-1)



### FEATURES

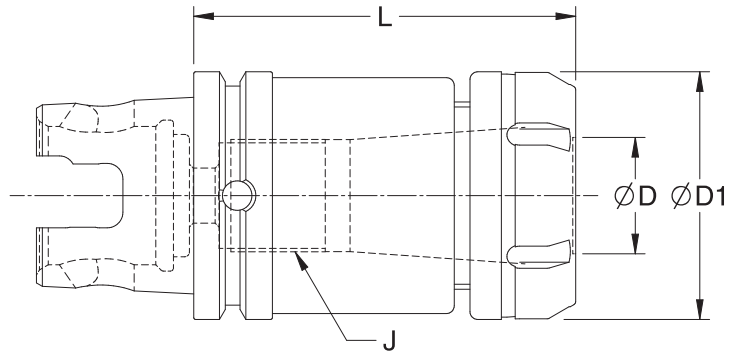
- Balanced to G6.3 @ 20,000 RPM
- AD coolant thru the spindle
- T.I.R. < 0.0002"

	Catalog Number	Description	Collet Size	D Range	D1 (inch)	L	J (inch)	L9
<b>KTI 40 Shank</b>	872141309	KTI40TS-CHE 25-1.77	ER25	.118-.275	1.653	1.77	11/16-16LH	AD Thru
	872141412	KTI40TS-CHE 32-2.36	ER32	.118-.787	1.969	2.36	7/8-16LH	AD Thru
<b>KTI 50 Shank</b>	872142310	KTI50TS-CHE 25-1.97	ER25	.118-.629	1.653	1.97	11/16-16LH	AD Thru
	872142412	KTI50TS-CHE 32-2.36	ER32	.118-.787	1.969	2.36	7/8-16LH	AD Thru
	872142514	KTI50TS-CHE 40-2.76	ER40	.157-1.023	2.48	2.76	1.1/8-16LH	AD Thru
<b>KTI 63 Shank</b>	8721500M12	KTI63XMZ-CHE 11M-2.36	ER11	.118-.275	0.63	2.36	5/16-24LH	AD Thru
	872150112	KTI63XMZ-CHE 16-2.36	ER16	.118-.393	1.10	2.36	7/16-16LH	AD Thru
	8721501M12	KTI63XMZ-CHE 16M-2.36	ER16	.118-.393	0.866	2.36	7/16-16LH	AD Thru
	872150212	KTI63XMZ-CHE 20-2.36	ER20	.118-.511	1.338	2.36	9/16-16LH	AD Thru
	872150312	KTI63XMZ-CHE 25-2.36	ER25	.118-.629	1.653	2.36	11/16-16LH	AD Thru
	872150418	KTI63XMZ-CHE 32-3.54	ER32	.118-.787	1.969	3.54	7/8-16LH	AD Thru
	872150518	KTI63XMZ-CHE 40-3.54	ER40	.157-1.023	2.48	3.54	1.1/8-16LH	AD Thru

ER Collets on page 142  
ER Nut Wrenches on page 156

# KTI Taper Holders

## KTI TG Collect Chuck (ISO 26622-1)

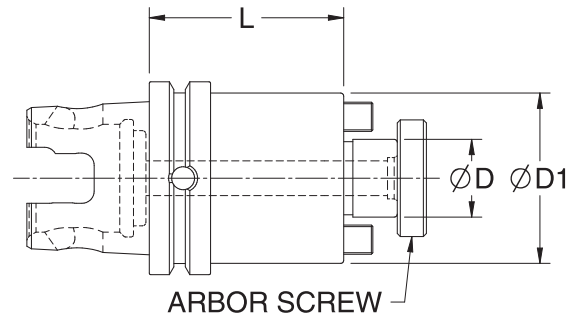
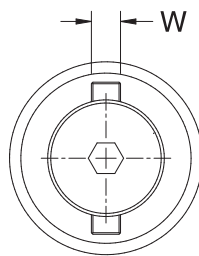


### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0002"

Catalog Number	Description	Collet Series	D Range	D1	L	J	Coolant Style
873150320	KTI63XMZTG100100Y	TG100	0.250-1.000	2.48	3.937	1.1/8-1.6 LH	AD Thru

## KTI Shell Mill Holder (ISO 26622-1)



### FEATURES

- Balanced to G6.3 @ 20,000 RPM
- T.I.R. < 0.0004"

	Catalog Number	Description	D	D1	L	W	Arbor Screw	Coolant Style
<b>KTI 40 Shank</b>	811415005	KTI40TS-SMH .500-1.024	0.500	1.44	1.024	0.250	¼-28	AD Thru
	811417505	KTI40TS-SMH .750-1.024	0.750	1.75	1.024	0.312	3/8-24	AD Thru
	811411006	KTI40TS-SMH 1.00-1.260	1.000	2.19	1.260	0.375	½-20	AD Thru
<b>KTI 63 Shank</b>	811505006	KTI63XMZ-SMH .500-1.25	0.500	1.44	1.25	0.250	¼-28	AD Thru
	811507506	KTI63XMZ-SMH .750-1.25	0.750	1.75	1.25	0.312	3/8-24	AD Thru
	811501013	KTI63XMZ-SMH 1.00-2.50	1.000	2.19	2.50	0.375	½-20	AD Thru
	811501213	KTI63XMZ-SMH 1.25-2.50	1.250	2.75	2.50	0.500	5/8-18	AD Thru

**NOTE:**

ALL Shell Mill Holders are supplied with coolant through the center up to the arbor screw hole.

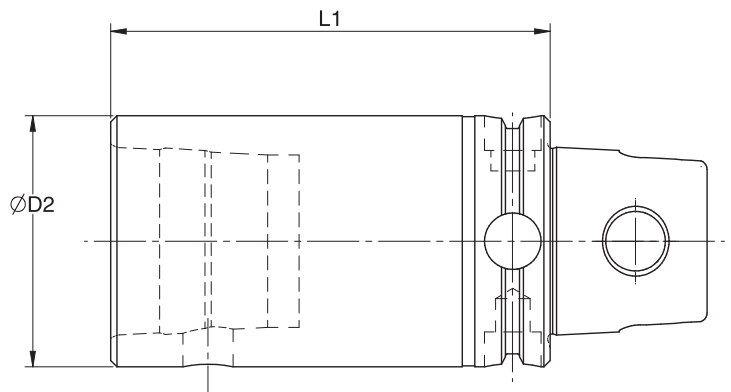
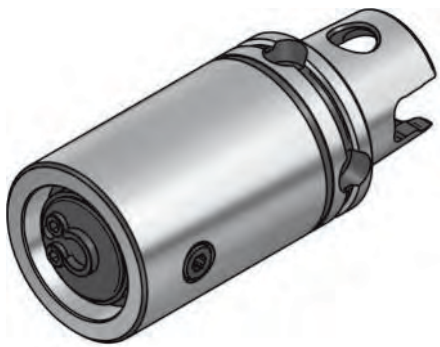
Non-Coolant and Coolant Arbor Screws on page 155

Arbor Screw Wrenches on page 158

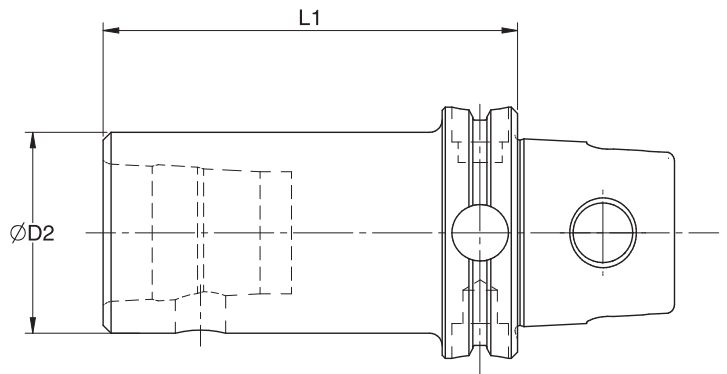
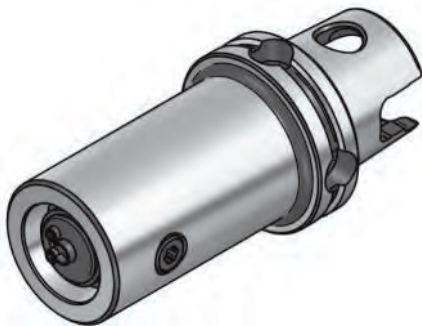


# KTI Taper Holders

## KTI Extension Front Clamping



Model Front Clamping Extension Adaptor



Model Front Clamping Reduction Adapter

### FEATURES

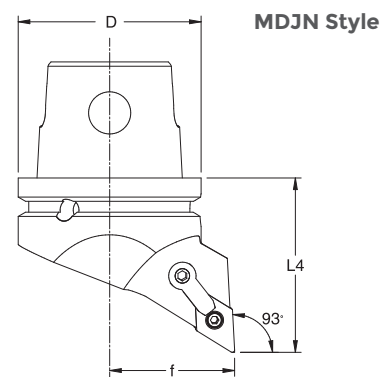
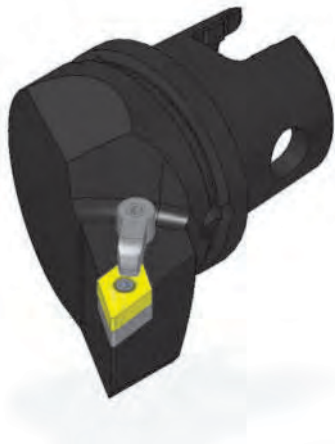
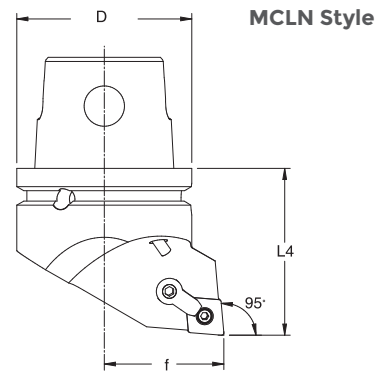
- T.I.R. < 0.0004"

	Catalog Number	Description	Adaptor	KTI-TS	"D2" (mm)	"L1" (mm)	Wrench
KTI Shank	8914114112	KTI40TS-EXT 40-60	KTI40	KTI40	40	60	6mm
	8914114116	KTI40TS-EXT 40-80	KTI40	KTI40	40	80	6mm

	Catalog Number	Description	Adaptor	KTI-TS	"D2" (mm)	"L1" (mm)	Wrench
KTI Shank	2114114014	KTI40TS-RED 32-70	KTI40TS	32	32	80	5mm

# KTI Taper Holders

## KTI Static Indexable Turning Tools (ISO 26622-1)

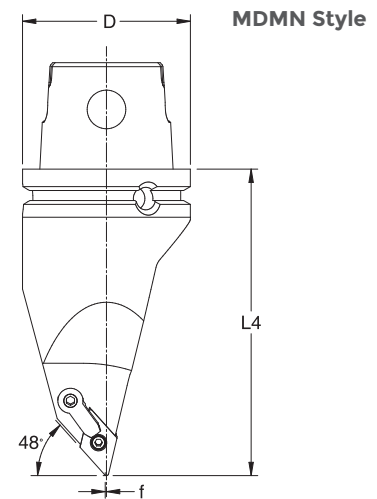
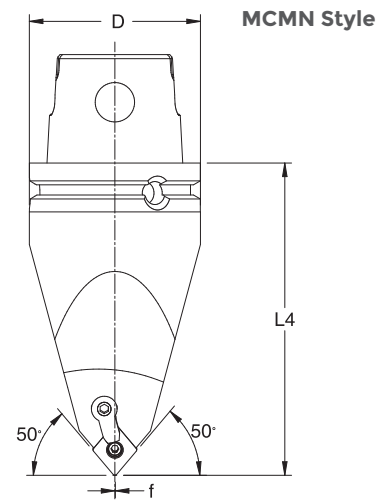


	Catalog Number	Description	L4	D	f	Insert	Clamp	Seat	Clamp Screw	Lock Pin
<b>MCLN Style</b>	741501R43120405	KTI63XMZ-MCLNR12Y	2.362	2.48	1.693	CNxx120408	CMC1204	SCN1204	CSCMC1204	LPSCN1204
	741501R43160605	KTI63XMZ-MCLNR16Y	2.362	2.48	1.693	CNxx160612	CMC1606	SCN1606	CSCMC1606	LPSCN1606
	741501L43120405	KTI63XMZ-MCLNLF12Y	2.362	2.48	1.693	CNxx120408	CMC1204	SCN1204	CSCMC1204	LPSCN1204

	Catalog Number	Description	L4	D	f	Insert	Clamp	Seat	Clamp Screw	Lock Pin
<b>MDJN Style</b>	741502R43150405	KTI63XMZ-MDJNR1504Y	2.362	2.48	1.693	DNxx150408	CMD1504	SDN1504	CSCMD1504	LPSDN1504
	741502L43150405	KTI63XMZ-MDJNLF1504Y	2.362	2.48	1.693	DNxx150408	CMD1504	SDN1504	CSCMD1504	LPSDN1504

# KTI Taper Holders

## KTI Static Indexable Turning Tools (ISO 26622-1) (Continued)

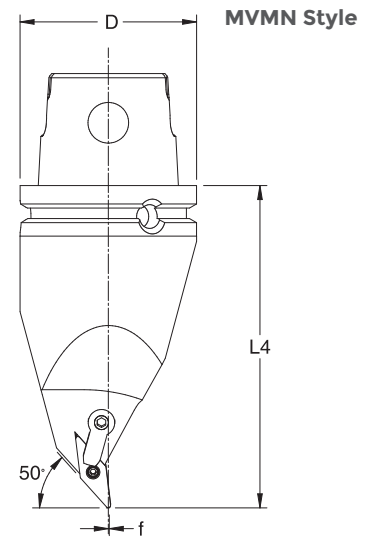


	Catalog Number	Description	L4	D	f	Insert	Clamp	Seat	Clamp Screw	Lock Pin
<b>MCMN Style</b>	741504N120423	KTI63XMZ-MCMNMF12155Y	4.528	2.48	0	CNxx120408	CMC1204	SCN1204	CSCMS1204	LPSCN1204

	Catalog Number	Description	L4	D	f	Insert	Clamp	Seat	Clamp Screw	Lock Pin
<b>MDMN Style</b>	741505R00150423	KTI63XMZ-MDMNR1504115Y	4.528	2.48	0	DNxx150408	CMD1504	SDN1504	CSCMD1504	LPSDN1504
	741505R00150623	KTI63XMZ-MDMNR1506115Y	4.528	2.48	0	DNxx150608	CMD1506	SDN1506	CSCMD1506	LPSDN1506
	741505L00150423	KTI63XMZ-MDMNLF1504115Y	4.528	2.48	0	DNxx150408	CMD1504	SDN1504	CSCMD1504	LPSDN1504
	741505L00150623	KTI63XMZ-MDMNLF1506115Y	4.528	2.48	0	DNxx150608	CMD1506	SDN1506	CSCMD1506	LPSDN1506

# KTI Taper Holders

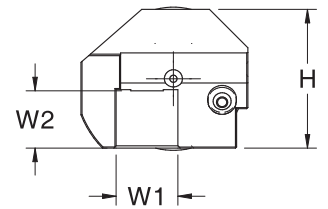
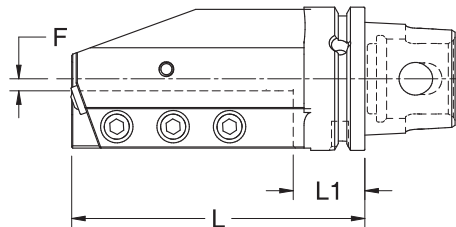
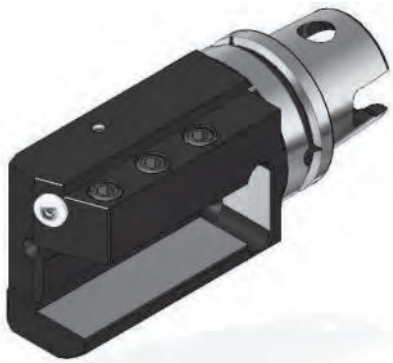
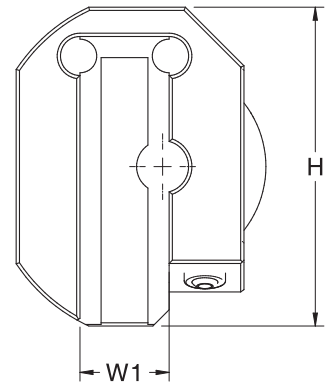
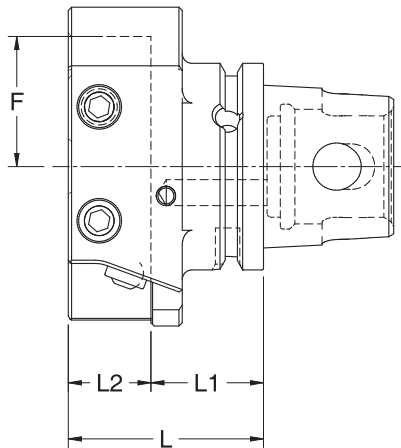
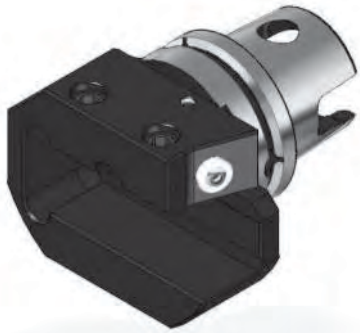
## KTI Static Indexable Turning Tools (ISO 26622-1) (Continued)



	Catalog Number	Description	L4	D	f	Insert	Clamp	Seat	Clamp Screw	Lock Pin
<b>MVMN Style</b>	741506R00160423	KTI63XMZ-MVMNR16Y	4.528	2.48	0	VNxx160408	CMV1604	SVN1604	CSCMV1604	LPSVN1604
	741506L00160423	KTI63XMZ-MVMNLF16Y	4.528	2.48	0	VNxx160408	CMV1604	SVN1604	CSCMV1604	LPSVN1604

# KTI Taper Holders

## KTI Square Shank Holder (ISO 26622-1)



	Catalog Number	Description	L1	L	F	W1	W2	H
<b>ETA Style</b>	73150R2112	KTI63XMZ-ETAR16Y	1.388	2.388	-1.539	1.000	-	3.839
	73150L2112	KTI63XMZ-ETALF16Y	1.388	2.388	-1.539	1.000	-	3.839
<b>STA Style Metric</b>	72150L102020	KTI63XMZ-STALF2020Y	25	100	10	20	20	62
	72150L132526	KTI63XMZ-STALF2525Y	25	130	13	25	25	70
	72150R102020	KTI63XMZ-STAR2020Y	25	100	10	20	20	60
	72150R132526	KTI63XMZ-STAR2525Y	25	130	13	25	25	72
<b>STA Style Inch</b>	72150L102820	KTI63XMZ-STALF12Y	0.921	3.937	0.378	0.750	0.750	2.421
	72150L132126	KTI63XMZ-STALF16Y	0.906	5.118	0.522	1.000	1.000	2.762
	72150R102820	KTI63XMZ-STAR12Y	0.921	3.937	0.378	0.750	0.750	2.421
	72150R132126	KTI63XMZ-STAR16Y	0.906	5.118	0.522	1.000	1.000	2.762

# AccuGrip™ Shrink Fit Technology Offering

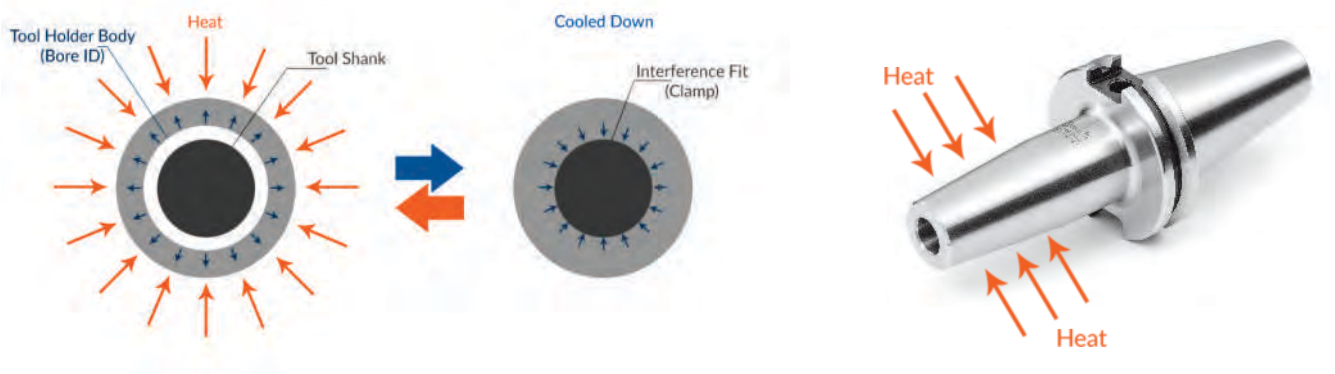
## The Premise of Shrink Fit Technology

Heat shrinking of metal has been around for many decades and is not new to manufacturing processes. In 1992 the beginning of the development of shrink fit technology with regards to metalworking cutting tools was start and then patented several years later. This tool-clamping technology was recently implemented with quick-change tool holders used in everyday machining operations and part processing. It is a cylindrical clamping design using no mechanical clamping systems and relying strictly on physical geometric surface contact to create the accuracy and gripping strength for a very effective high-speed machining system.

The shrink fit process starts by simply applying a heat source (induction heating is most accurate and most controllable) to precisely heat the material of the tool clamping holder to allow the ID bore to open. This bore is slightly smaller (microns) than the shank of the cutting tool. By opening the bore of the tool clamping holder, the plane of the tools shank can slide into the bore replacing the plane of the bore ID surface. This “dimensional interference” between tool shank and tool clamping bore ID creates an extremely tight connection once the tool assembly cools back to room temperature. Gripping force on cutting tool shank after shrink process is completed will exceed 10,000 lbs. of force for excellent tool shank grip and minimize tool slippage.

Once the tool clamping holder shrinks back to its “normal size” – the memory of the steel allows the material to return its original dimensional size (as long as the tool clamping material and area is not over heated causing the metallurgical construction of the steel to change and “lose” its memory). Since the tool shank and the tool clamping bore are in the same dimensional plane, this interference “fit” becomes the physical clamping system, holding the cutting tool shank 360° around the tool shank. This clamping force is equally distributed around the shank and up and down the bore between the tool shank and bore surface.

Since the tool clamping bore surface expands and contracts back to its original dimensional position after the heating and cooling cycle and the heat temperature never exceeds the elastic range of the tool clamping holder material, thousands of “shrink cycles” can be performed without mechanical wear or physical damage being done to the clamping system.



# AccuGrip™ Shrink Fit Technology Offering

## Shrink Fit Tooling Advantages

- Assembly creates single mono-block tool system that is more accurate in TIR cylindrically than other tool clamping systems known.
- Clamping forces are greater than mechanical systems using collets, hydraulic pressure, or even “press-fit” interference technology.
- Lowest TIR runout of any tool clamping system and allows 360° surface contact between tool shank and tool holder bore.
- Excellent tool clamping system for high-speed machining due to the excellent symmetrical design of the holder and no mechanical parts to change initial balanced weight.
- Slim and short tool holder profiles are achievable since there is no need for moveable parts to clamp the cutting shank.

Shrink fit technology enables machining applications and processes at greater speeds, higher feed rates while providing improved surface finish. Its high balance design and great TIR accuracy allow extended cutting tool life as well as improved machine spindle life.

## Increasing Tool Life

Two main reasons for using a shrink fit tool holder are to increase tool life and to improve circular rotation of a tool. Typical industry observations have been that there is a 10% loss of tool life for every 0.0001" of T.I.R (Total Indicator Runout) in a machining application. In some applications, shrink fit tool holders deliver 4 to 7 times the tool life of other tool holding technologies. Shrink fit tool holders also center the rotating tool more accurately which balances the cutting forces on the tool. This translates into lower machining vibrations with better tool centerline positions often measured in microns.

## Shrink Fit Holders Advantages

Improvements in tool life, cutting ability and surface finish mean less wear and tear on the tool holder (Taper Fretting), and machine spindle bearings. This is due to the tool holder's greater clamping power compared to other tool holding methods and superior overall rigidity. Additionally, these holders have a maximum T.I.R. of 0.0001" (25.4µM), and are balanced to 25,000 RPM.

## Tool holder designs

Slim design usually incorporates a 3° clearance angle on the exterior of the shrink holder body. With a thinner body wall, this tool design is excellent for close work piece machining where tool holder and work piece clearance are critical.

Well balanced design and maintains balance even after insertion of most cutting tools due to no mechanical parts to change balance.

Standard design holders feature a 4.5° tool body angle for most efficient shrink rates and maximum tool shank rigidity for most applications.

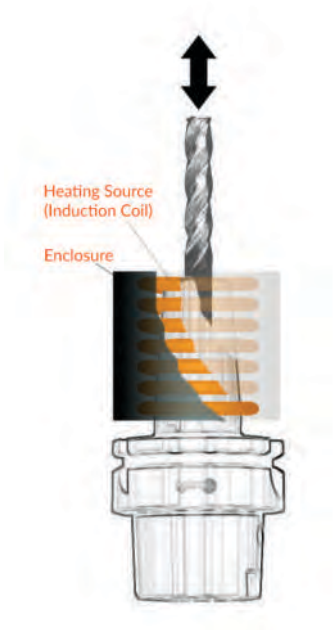
Heavy-duty designs offer a thick tool body wall for maximum tool shank gripping strength and most rigid, vibration dampening effectiveness.

# AccuGrip™ Shrink Fit Technology Offering

## Shrink Fit Heat-Activated Systems

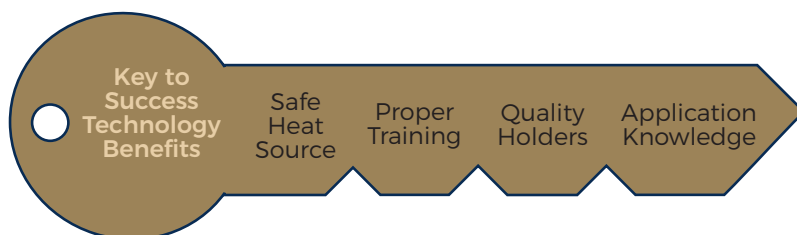
There have been multiple types of heating systems to create the required heat temperature to open the shrink fit bore to allow the cutting tool shank to slide into it. Open flames, hot sand, hot air, and induction coils. When considering a heating and cooling system for your shrink fit tools, operator safety, accurate heat control in temperature and time, and simplicity and efficiency are key concerns. Induction coils and solution cooling are two for the most efficient and most accurate method of heating and cooling shrink fit tool holders.

Induction coil systems offer shorter cycle times, less cooling downtime, and localize heating. Integrated with a cooling system using air or solution make it simple and safe tool clamping system.



## What this means to our customers

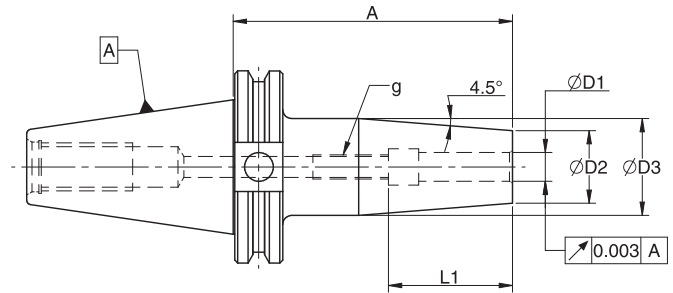
Utilizing shrink fit tool holders in your machining processes, you have a higher confidence in our "lights out" machining processes which translates into predictable tool life, production levels and shorter delivery schedules. You can also produce parts with greater positional machined accuracy.





# AccuGrip™ Shrink Fit Technology Offering

## CAT40 AccuGrip™ Shrink Fit Holders – Standard DIN Length



### FEATURES

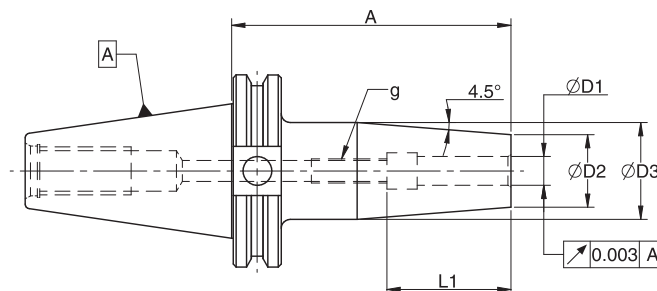
- Balanced to G2.5 @25,000 RPM
- T.I.R. < 0.00012" / 0.003μ
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	D1	A	D2	D3	L1	g	Coolant Style
CAT40 Inch	94240719	CAT40-SF .125-3.74	0.125	3.74	0.59	0.78	0.79	-	AD Thru
	94240919	CAT40-SF .187-3.74	0.187	3.74	0.59	0.78	0.79	-	AD Thru
	94241119	CAT40-SF .250-3.74	0.250	3.74	0.83	1.06	1.42	M5	AD Thru
	94241319	CAT40-SF .312-3.74	0.312	3.74	0.83	1.06	1.42	M5	AD Thru
	94242619	CAT40-SF .375-3.74	0.375	3.74	0.95	1.26	1.65	M8X1	AD Thru
	94241519	CAT40-SF .500-3.74	0.500	3.74	1.06	1.34	1.85	M10X1	AD Thru
	94241719	CAT40-SF .625-3.74	0.625	3.74	1.06	1.34	1.97	M12X1	AD Thru
	94242819	CAT40-SF .750-3.74	0.750	3.74	1.30	1.65	2.05	M16X1	AD Thru
	94242120	CAT40-SF 1.000-3.94	1.000	3.94	1.73	2.09	2.44	M16X1	AD Thru
94242220	CAT40-SF 1.250-3.94	1.250	3.94	1.73	2.09	2.44	M16X1	AD Thru	
CAT40 Metric	94240319	CAT40-SF 3-95	3	95	15	20	20	-	AD Thru
	94240419	CAT40-SF 4-95	4	95	15	20	20	-	AD Thru
	94240519	CAT40-SF 5-95	5	95	15	20	20	-	AD Thru
	94240619	CAT40-SF 6-95	6	95	21	27	36	M5	AD Thru
	94240819	CAT40-SF 8-95	8	95	21	27	36	M6	AD Thru
	94241019	CAT40-SF 10-95	10	95	24	32	42	M8X1	AD Thru
	94241219	CAT40-SF 12-95	12	95	24	32	47	M10X1	AD Thru
	94241419	CAT40-SF 14-95	14	95	27	34	47	M10X1	AD Thru
	94241619	CAT40-SF 16-95	16	95	27	34	50	M12X1	AD Thru
	94241819	CAT40-SF 18-95	18	95	33	42	50	M12X1	AD Thru
	94242019	CAT40-SF 20-95	20	95	33	42	52	M16X1	AD Thru
	94242520	CAT40-SF 25-100	25	100	44	53	58	M16X1	AD Thru
	94243220	CAT40-SF 32-100	32	100	44	53	62	M16X1	AD Thru

Retention knobs on page 152

# AccuGrip™ Shrink Fit Technology Offering

## CAT40 AccuGrip™ Shrink Fit Holders – Long DIN Length



### FEATURES

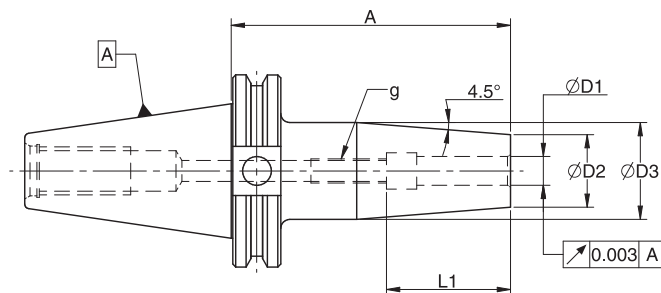
- Balanced to G2.5 @25,000 RPM
- T.I.R. < 0.00012" / 0.003μ
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	D1	A	D2	D3	L1	g	Coolant Style
CAT40 Inch	94240724	CAT40-SF .125-4.72	0.125	4.72	0.59	0.78	0.79	-	AD Thru
	94240924	CAT40-SF .187-4.72	0.187	4.72	0.59	0.78	0.79	-	AD Thru
	94241124	CAT40-SF .250-4.72	0.250	4.72	0.83	1.06	1.42	M5	AD Thru
	94241324	CAT40-SF .312-4.72	0.312	4.72	0.83	1.06	1.42	M5	AD Thru
	94242624	CAT40-SF .375-4.72	0.375	4.72	0.95	1.26	1.65	M8X1	AD Thru
	94241524	CAT40-SF .500-4.72	0.500	4.72	1.06	1.34	1.85	M10X1	AD Thru
	94241724	CAT40-SF .625-4.72	0.625	4.72	1.06	1.34	1.97	M12X1	AD Thru
	94242824	CAT40-SF .750-4.72	0.750	4.72	1.30	1.65	2.05	M16X1	AD Thru
	94242124	CAT40-SF 1.000-4.72	1.000	4.72	1.73	2.09	2.44	M16X1	AD Thru
94242224	CAT40-SF 1.250-4.72	1.250	4.72	1.73	2.09	2.44	M16X1	AD Thru	
CAT40 Metric	94240324	CAT40-SF 3-120	3	120	15	20	20	-	AD Thru
	94240424	CAT40-SF 4-120	4	120	15	20	20	-	AD Thru
	94240524	CAT40-SF 5-120	5	120	15	20	20	-	AD Thru
	94240624	CAT40-SF 6-120	6	120	21	27	36	M5	AD Thru
	94240824	CAT40-SF 8-120	8	120	21	27	36	M6	AD Thru
	94241024	CAT40-SF 10-120	10	120	24	32	42	M8X1	AD Thru
	94241224	CAT40-SF 12-120	12	120	24	32	47	M10X1	AD Thru
	94241424	CAT40-SF 14-120	14	120	27	34	47	M10X1	AD Thru
	94241624	CAT40-SF 16-120	16	120	27	34	50	M12X1	AD Thru
	94241824	CAT40-SF 18-120	18	120	33	42	50	M12X1	AD Thru
	94242024	CAT40-SF 20-120	20	120	33	42	52	M16X1	AD Thru
	94242524	CAT40-SF 25-120	25	120	44	53	58	M16X1	AD Thru
	94243224	CAT40-SF 32-120	32	120	44	53	62	M16X1	AD Thru

Retention knobs on page 152

# AccuGrip™ Shrink Fit Technology Offering

## CAT40 AccuGrip™ Shrink Fit Holders – X-Long DIN Length



### FEATURES

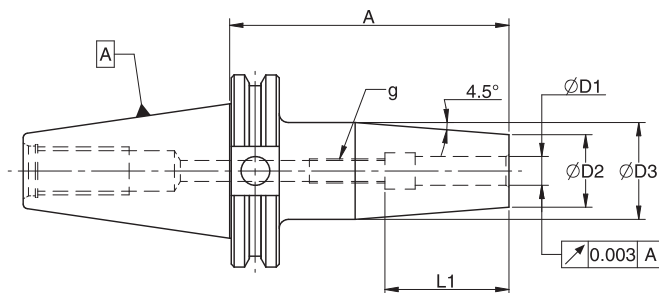
- Balanced to G2.5 @25,000 RPM
- T.I.R. < 0.00012" / 0.003μ
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	D1	A	D2	D3	L1	g	Coolant Style
CAT40 Inch	94240732	CAT40-SF .125-6.30	0.125	6.30	0.59	0.78	0.79	-	AD Thru
	94240932	CAT40-SF .187-6.30	0.187	6.30	0.59	0.78	0.79	-	AD Thru
	94241132	CAT40-SF .250-6.30	0.250	6.30	0.83	1.06	1.42	M5	AD Thru
	94241332	CAT40-SF .312-6.30	0.312	6.30	0.83	1.06	1.42	M5	AD Thru
	94242632	CAT40-SF .375-6.30	0.375	6.30	0.95	1.26	1.65	M8X1	AD Thru
	94241532	CAT40-SF .500-6.30	0.500	6.30	1.06	1.34	1.85	M10X1	AD Thru
	94241732	CAT40-SF .625-6.30	0.625	6.30	1.06	1.34	1.97	M12X1	AD Thru
	94242832	CAT40-SF .750-6.30	0.750	6.30	1.30	1.65	2.05	M16X1	AD Thru
	94242132	CAT40-SF 1.000-6.30	1.000	6.30	1.73	2.09	2.44	M16X1	AD Thru
94242232	CAT40-SF 1.250-6.30	1.250	6.30	1.73	2.09	2.44	M16X1	AD Thru	
CAT40 Metric	94240332	CAT40-SF 3-160	3	160	15	20	20	-	AD Thru
	94240432	CAT40-SF 4-160	4	160	15	20	20	-	AD Thru
	94240532	CAT40-SF 5-160	5	160	15	20	20	-	AD Thru
	94240632	CAT40-SF 6-160	6	160	21	27	36	M5	AD Thru
	94240832	CAT40-SF 8-160	8	160	21	27	36	M6	AD Thru
	94241032	CAT40-SF 10-160	10	160	24	32	42	M8X1	AD Thru
	94241232	CAT40-SF 12-160	12	160	24	32	47	M10X1	AD Thru
	94241432	CAT40-SF 14-160	14	160	27	34	47	M10X1	AD Thru
	94241632	CAT40-SF 16-160	16	160	27	34	50	M12X1	AD Thru
	94241832	CAT40-SF 18-160	18	160	33	42	50	M12X1	AD Thru
	94242032	CAT40-SF 20-160	20	160	33	42	52	M16X1	AD Thru
	94242532	CAT40-SF 25-160	25	160	44	53	58	M16X1	AD Thru
	94243232	CAT40-SF 32-160	32	160	44	53	62	M16X1	AD Thru

Retention knobs on page 152

# AccuGrip™ Shrink Fit Technology Offering

## CAT50 AccuGrip™ Shrink Fit Holders – Standard DIN Length



### FEATURES

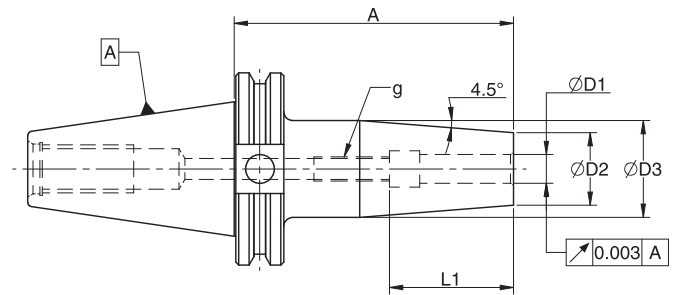
- Balanced to G2.5 @25,000 RPM
- T.I.R. < 0.00012" / 0.003μ
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	D1	A	D2	D3	L1	g	Coolant Style
CAT50 Inch	94261119	CAT50-SF .250-3.74	0.250	3.74	0.83	1.06	1.42	M5	AD Thru
	94262619	CAT50-SF .375-3.74	0.375	3.74	0.95	1.26	1.65	M8X1	AD Thru
	94261519	CAT50-SF .500-3.74	0.500	3.74	1.06	1.34	1.85	M10X1	AD Thru
	94261719	CAT50-SF .625-3.74	0.625	3.74	1.06	1.34	1.97	M12X1	AD Thru
	94262819	CAT50-SF .750-3.74	0.750	3.74	1.30	1.65	2.05	M16X1	AD Thru
	94262121	CAT50-SF 1.000-4.13	1.000	4.13	1.73	2.09	2.28	M16X1	AD Thru
	94262221	CAT50-SF 1.250-4.13	1.250	4.13	1.73	2.09	2.44	M16X1	AD Thru
CAT50 Metric	94260619	CAT50-SF 6-95	6	95	21	27	36	M5	AD Thru
	94260819	CAT50-SF 8-95	8	95	21	27	36	M6	AD Thru
	94261019	CAT50-SF 10-95	10	95	24	32	42	M8X1	AD Thru
	94261219	CAT50-SF 12-95	12	95	24	32	47	M10X1	AD Thru
	94261419	CAT50-SF 14-95	14	95	27	34	47	M10X1	AD Thru
	94261619	CAT50-SF 16-95	16	95	27	34	50	M12X1	AD Thru
	94261819	CAT50-SF 18-95	18	95	33	42	50	M12X1	AD Thru
	94262019	CAT50-SF 20-95	20	95	33	42	52	M16X1	AD Thru
	94262521	CAT50-SF 25-105	25	105	44	53	58	M16X1	AD Thru
	94263221	CAT50-SF 32-105	32	105	44	53	62	M16X1	AD Thru

Retention knobs on page 152

# AccuGrip™ Shrink Fit Technology Offering

## CAT50 AccuGrip™ Shrink Fit Holders - Long DIN Length



### FEATURES

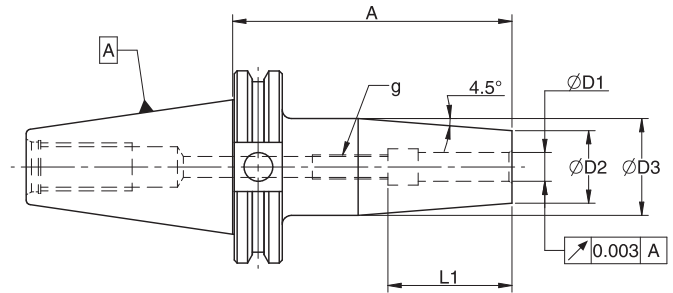
- Balanced to G2.5 @25,000 RPM
- T.I.R. < 0.00012" / 0.003μ
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	D1	A	D2	D3	L1	g	Coolant Style
CAT50 Inch	94261124	CAT50-SF .250-4.72	0.250	4.72	0.83	1.06	1.42	M5	AD Thru
	94262624	CAT50-SF .375-4.72	0.375	4.72	0.95	1.26	1.65	M8X1	AD Thru
	94261524	CAT50-SF .500-4.72	0.500	4.72	1.06	1.34	1.85	M10X1	AD Thru
	94261724	CAT50-SF .625-4.72	0.625	4.72	1.06	1.34	1.97	M12X1	AD Thru
	94262824	CAT50-SF .750-4.72	0.750	4.72	1.30	1.65	2.05	M16X1	AD Thru
	94262124	CAT50-SF 1.000-4.72	1.000	4.72	1.73	2.09	2.28	M16X1	AD Thru
	94262224	CAT50-SF 1.250-4.72	1.250	4.72	1.73	2.09	2.44	M16X1	AD Thru
CAT50 Metric	94260624	CAT50-SF 6-120	6	120	21	27	36	M5	AD Thru
	94260824	CAT50-SF 8-120	8	120	21	27	36	M6	AD Thru
	94261024	CAT50-SF 10-120	10	120	24	32	42	M8X1	AD Thru
	94261224	CAT50-SF 12-120	12	120	24	32	47	M10X1	AD Thru
	94261424	CAT50-SF 14-120	14	120	27	34	47	M10X1	AD Thru
	94261624	CAT50-SF 16-120	16	120	27	34	50	M12X1	AD Thru
	94261824	CAT50-SF 18-120	18	120	33	42	50	M12X1	AD Thru
	94262024	CAT50-SF 20-120	20	120	33	42	52	M16X1	AD Thru
	94262524	CAT50-SF 25-120	25	120	44	53	58	M16X1	AD Thru
	94263224	CAT50-SF 32-120	32	120	44	53	62	M16X1	AD Thru

Retention knobs on page 152

# AccuGrip™ Shrink Fit Technology Offering

## CAT50 AccuGrip™ Shrink Fit Holders - X-Long DIN Length



### FEATURES

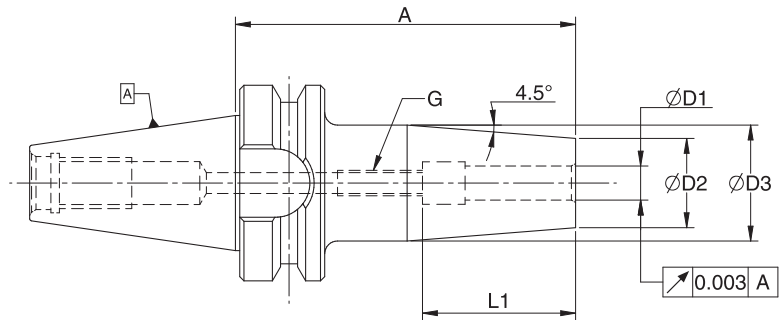
- Balanced to G2.5 @25,000 RPM
- T.I.R. < 0.00012" / 0.003μ
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	D1	A	D2	D3	L1	g	Coolant Style
CAT50 Inch	94261132	CAT50-SF .250-6.30	0.250	6.30	0.83	1.06	1.42	M5	AD Thru
	94262632	CAT50-SF .375-6.30	0.375	6.30	0.95	1.26	1.65	M8X1	AD Thru
	94261532	CAT50-SF .500-6.30	0.500	6.30	1.06	1.34	1.85	M10X1	AD Thru
	94261732	CAT50-SF .625-6.30	0.625	6.30	1.06	1.34	1.97	M12X1	AD Thru
	94262832	CAT50-SF .750-6.30	0.750	6.30	1.30	1.65	2.05	M16X1	AD Thru
	94262132	CAT50-SF 1.000-6.30	1.000	6.30	1.73	2.09	2.28	M16X1	AD Thru
	94262232	CAT50-SF 1.250-6.30	1.250	6.30	1.73	2.09	2.44	M16X1	AD Thru
CAT50 Metric	94260632	CAT50-SF 6-160	6	160	21	27	36	M5	AD Thru
	94260832	CAT50-SF 8-160	8	160	21	27	36	M6	AD Thru
	94261032	CAT50-SF 10-160	10	160	24	32	42	M8X1	AD Thru
	94261232	CAT50-SF 12-160	12	160	24	32	47	M10X1	AD Thru
	94261432	CAT50-SF 14-160	14	160	27	34	47	M10X1	AD Thru
	94261632	CAT50-SF 16-160	16	160	27	34	50	M12X1	AD Thru
	94261832	CAT50-SF 18-160	18	160	33	42	50	M12X1	AD Thru
	94262032	CAT50-SF 20-160	20	160	33	42	52	M16X1	AD Thru
	94262532	CAT50-SF 25-160	25	160	44	53	58	M16X1	AD Thru
	94263232	CAT50-SF 32-160	32	160	44	53	62	M16X1	AD Thru

Retention knobs on page 152

# AccuGrip™ Shrink Fit Technology Offering

## BT30 AccuGrip™ Shrink Fit Holders – Standard DIN Length



### FEATURES

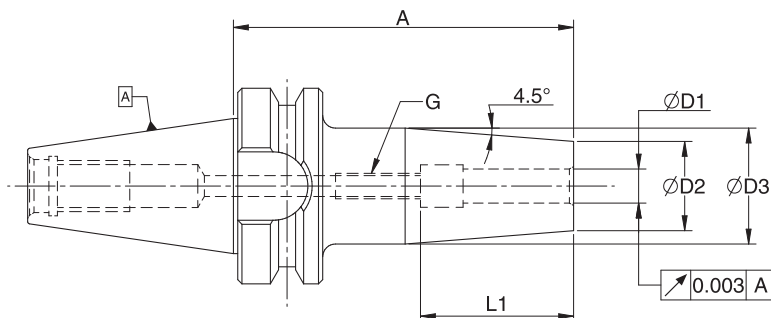
- Balanced to G2.5 @25,000 RPM
- T.I.R. < 0.00012" / 0.003μ
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	D1	A	D2	D3	L1	g	Coolant Style
<b>BT30 Inch</b>	94100716	BT30-SF .125-3.15	0.125	3.15	0.59	0.78	0.79	-	AD Thru
	94100916	BT30-SF .187-3.15	0.187	3.15	0.59	0.78	0.79	-	AD Thru
	94101116	BT30-SF .250-3.15	0.250	3.15	0.83	1.06	1.42	M5	AD Thru
	94102616	BT30-SF .375-3.15	0.375	3.15	0.95	1.26	1.65	M8X1	AD Thru
	94101516	BT30-SF .500-3.15	0.500	3.15	0.95	1.26	1.85	M10X1	AD Thru
	94101716	BT30-SF .625-3.15	0.625	3.15	1.06	1.34	1.97	M12X1	AD Thru
<b>BT30 Metric</b>	94100316	BT30-SF 3-80	3	80	15	20	20	-	AD Thru
	94100416	BT30-SF 4-80	4	80	15	20	20	-	AD Thru
	94100516	BT30-SF 5-80	5	80	15	20	20	-	AD Thru
	94100616	BT30-SF 6-80	6	80	21	27	36	M5	AD Thru
	94100816	BT30-SF 8-80	8	80	21	27	36	M6	AD Thru
	94101016	BT30-SF 10-80	10	80	24	32	42	M8X1	AD Thru
	94101216	BT30-SF 12-80	12	80	24	32	47	M10X1	AD Thru
	94101616	BT30-SF 16-80	16	80	27	34	50	M12X1	AD Thru
94102016	BT30-SF 20-80	20	80	33	42	52	M16X1	AD Thru	

Retention knobs on page 152

# AccuGrip™ Shrink Fit Technology Offering

## BT40 AccuGrip™ Shrink Fit Holders – Standard DIN Length



### FEATURES

- Balanced to G2.5 @25,000 RPM
- T.I.R. < 0.00012" / 0.003μ
- Taper shank ground to AT3 accuracy (or better)

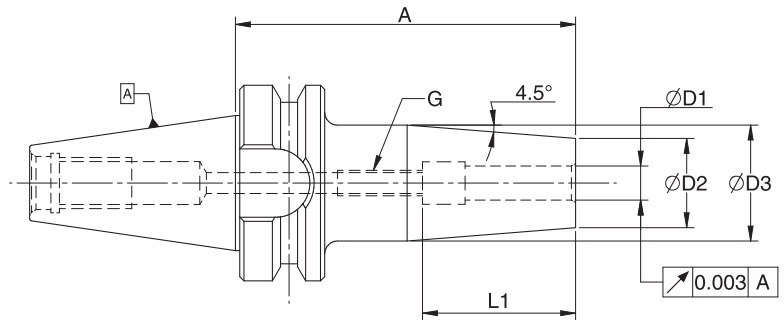
	Catalog Number	Description	D1	A	D2	D3	L1	g	Coolant Style
<b>BT40 Inch</b>	94120718	BT40-SF .125-3.54	0.125	3.54	0.59	0.78	0.79	-	AD Thru
	94120918	BT40-SF .187-3.54	0.187	3.54	0.59	0.78	0.79	-	AD Thru
	94121118	BT40-SF .250-3.54	0.250	3.54	0.83	1.06	1.42	M5	AD Thru
	94122618	BT40-SF .375-3.54	0.375	3.54	0.95	1.26	1.65	M8X1	AD Thru
	94121518	BT40-SF .500-3.54	0.500	3.54	1.06	1.34	1.85	M10X1	AD Thru
	94121718	BT40-SF .625-3.54	0.625	3.54	1.06	1.34	1.97	M12X1	AD Thru
	94122818	BT40-SF .750-3.54	0.750	3.54	1.30	1.65	2.05	M16X1	AD Thru
	94122120	BT40-SF 1.000-3.94	1.000	3.94	1.73	2.09	2.44	M16X1	AD Thru
94122220	BT40-SF 1.250-3.94	1.250	3.94	1.73	2.09	2.44	M16X1	AD Thru	
<b>BT40 Metric</b>	94120318	BT40-SF 3-90	3	90	15	20	20	-	AD Thru
	94120418	BT40-SF 4-90	4	90	15	20	20	-	AD Thru
	94120518	BT40-SF 5-90	5	90	15	20	20	-	AD Thru
	94120618	BT40-SF 6-90	6	90	21	27	36	M5	AD Thru
	94120818	BT40-SF 8-90	8	90	21	27	36	M6	AD Thru
	94121018	BT40-SF 10-90	10	90	24	32	42	M8X1	AD Thru
	94121218	BT40-SF 12-90	12	90	24	32	47	M10X1	AD Thru
	94121618	BT40-SF 16-90	16	90	27	34	50	M12X1	AD Thru
	94122018	BT40-SF 20-90	20	90	33	42	52	M16X1	AD Thru
	94122520	BT40-SF 25-100	25	100	44	53	58	M16X1	AD Thru
	94123220	BT40-SF 32-100	32	100	44	53	58	M16X1	AD Thru

Retention knobs on page 152



# AccuGrip™ Shrink Fit Technology Offering

## BT40 AccuGrip™ Shrink Fit Holders - Long DIN Length



### FEATURES

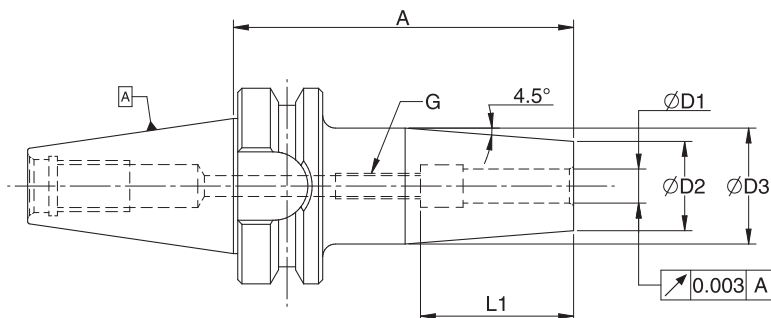
- Balanced to G2.5 @25,000 RPM
- T.I.R. < 0.00012" / 0.003μ
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	D1	A	D2	D3	L1	g	Coolant Style
<b>BT40 Inch</b>	94120724	BT40-SF .125-4.72	0.125	4.72	0.59	0.78	0.79	-	AD Thru
	94120924	BT40-SF .187-4.72	0.187	4.72	0.59	0.78	0.79	-	AD Thru
	94121124	BT40-SF .250-4.72	0.250	4.72	0.83	1.06	1.42	M5	AD Thru
	94122624	BT40-SF .375-4.72	0.375	4.72	0.95	1.26	1.65	M8X1	AD Thru
	94121524	BT40-SF .500-4.72	0.500	4.72	1.06	1.34	1.85	M10X1	AD Thru
	94121724	BT40-SF .625-4.72	0.625	4.72	1.06	1.34	1.97	M12X1	AD Thru
	94122824	BT40-SF .750-4.72	0.750	4.72	1.30	1.65	2.05	M16X1	AD Thru
	94122124	BT40-SF 1.000-4.72	1.000	4.72	1.73	2.09	2.44	M16X1	AD Thru
94122224	BT40-SF 1.250-4.72	1.250	4.72	1.73	2.09	2.44	M16X1	AD Thru	
<b>BT40 Metric</b>	94120324	BT40-SF 3-120	3	120	10	18	20	-	AD Thru
	94120424	BT40-SF 4-120	4	120	10	18	20	-	AD Thru
	94120524	BT40-SF 5-120	5	120	10	18	20	-	AD Thru
	94120624	BT40-SF 6-120	6	120	21	31	36	M5	AD Thru
	94120824	BT40-SF 8-120	8	120	21	31	36	M6	AD Thru
	94121024	BT40-SF 10-120	10	120	24	34	42	M8X1	AD Thru
	94121224	BT40-SF 12-120	12	120	24	34	47	M10X1	AD Thru
	94121624	BT40-SF 16-120	16	120	27	37	50	M12X1	AD Thru
	94122024	BT40-SF 20-120	20	120	33	43	52	M16X1	AD Thru
	94122524	BT40-SF 25-120	25	120	44	53	58	M16X1	AD Thru
	94123224	BT40-SF 32-120	32	120	44	53	58	M16X1	AD Thru

Retention knobs on page 152

# AccuGrip™ Shrink Fit Technology Offering

## BT40 AccuGrip™ Shrink Fit Holders - X-Long DIN Length



### FEATURES

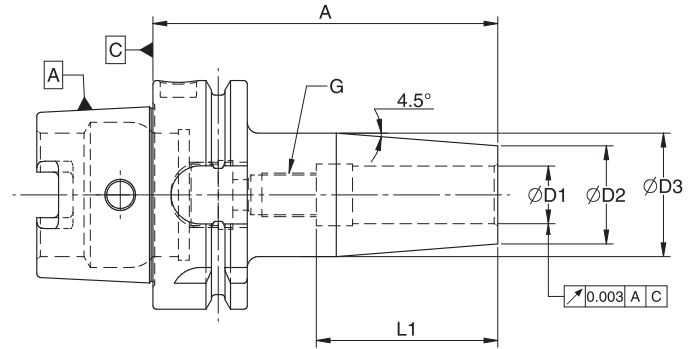
- Balanced to G2.5 @25,000 RPM
- Taper shank ground to AT3 accuracy (or better)
- T.I.R. < 0.00012" / 0.003µ

	Catalog Number	Description	D1	A	D2	D3	L1	g	Coolant Style
<b>BT40 Inch</b>	94120732	BT40-SF .125-6.30	0.125	6.30	0.59	0.78	0.79	-	AD Thru
	94120932	BT40-SF .187-6.30	0.187	6.30	0.59	0.78	0.79	-	AD Thru
	94121132	BT40-SF .250-6.30	0.250	6.30	0.83	1.06	1.42	M5	AD Thru
	94122632	BT40-SF .375-6.30	0.375	6.30	0.95	1.26	1.65	M8X1	AD Thru
	94121532	BT40-SF .500-6.30	0.500	6.30	1.06	1.34	1.85	M10X1	AD Thru
	94121732	BT40-SF .625-6.30	0.625	6.30	1.06	1.34	1.97	M12X1	AD Thru
	94122832	BT40-SF .750-6.30	0.750	6.30	1.30	1.65	2.05	M16X1	AD Thru
	94122132	BT40-SF 1.000-6.30	1.000	6.30	1.73	2.09	2.44	M16X1	AD Thru
	94122232	BT40-SF 1.250-6.30	1.250	6.30	1.73	2.09	2.44	M16X1	AD Thru
<b>BT40 Metric</b>	94120332	BT40-SF 3-160	3	160	15	20	20	-	AD Thru
	94120432	BT40-SF 4-160	4	160	15	20	20	-	AD Thru
	94120532	BT40-SF 5-160	5	160	15	20	20	-	AD Thru
	94120632	BT40-SF 6-160	6	160	21	31	36	M5	AD Thru
	94120832	BT40-SF 8-160	8	160	21	31	36	M6	AD Thru
	94121032	BT40-SF 10-160	10	160	24	34	42	M8X1	AD Thru
	94121232	BT40-SF 12-160	12	160	24	34	47	M10X1	AD Thru
	94121632	BT40-SF 16-160	16	160	27	37	50	M12X1	AD Thru
	94122032	BT40-SF 20-160	20	160	33	43	52	M16X1	AD Thru
	94122532	BT40-SF 25-160	25	160	44	53	58	M16X1	AD Thru
	94123232	BT40-SF 32-160	32	160	44	53	58	M16X1	AD Thru

Retention knobs on page 152

# AccuGrip™ Shrink Fit Technology Offering

## HSK63A AccuGrip™ Shrink Fit Holders – Standard DIN Length



### FEATURES

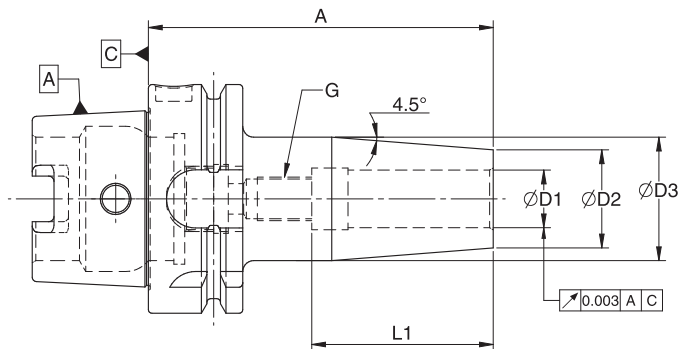
- Balanced to G2.5 @25,000 RPM
- T.I.R. < 0.00012" / 0.003μ

	Catalog Number	Description	D1	A	D2	D3	L1	g	Coolant Style
HSK63A Inch	94740716	HSK-63A-SF .125-3.15	0.125	3.15	0.59	0.78	0.79	-	AD Thru
	94740916	HSK-63A-SF .187-3.15	0.187	3.15	0.59	0.78	0.79	-	AD Thru
	94741116	HSK-63A-SF .250-3.15	0.250	3.15	0.83	1.06	1.42	M5	AD Thru
	94742617	HSK-63A-SF .375-3.34	0.375	3.34	0.95	1.26	1.65	M8X1	AD Thru
	94741518	HSK-63A-SF .500-3.54	0.500	3.54	1.06	1.34	1.85	M10X1	AD Thru
	94741719	HSK-63A-SF .625-3.74	0.625	3.74	1.06	1.34	1.97	M12X1	AD Thru
	94742820	HSK-63A-SF .750-3.94	0.750	3.94	1.30	1.65	2.05	M16X1	AD Thru
	94742124	HSK-63A-SF 1.000-4.72	1.000	4.72	1.73	2.09	2.44	M16X1	AD Thru
94742224	HSK-63A-SF 1.250-4.72	1.250	4.72	1.73	2.09	2.28	M16X1	AD Thru	
HSK63A Metric	94740316	HSK-63A-SF 3-80	3	80	15	20	20	-	AD Thru
	94740416	HSK-63A-SF 4-80	4	80	15	20	20	-	AD Thru
	94740516	HSK-63A-SF 5-80	5	80	15	20	20	-	AD Thru
	94740616	HSK-63A-SF 6-80	6	80	21	27	36	M5	AD Thru
	94740816	HSK-63A-SF 8-80	8	80	21	27	36	M6	AD Thru
	94741017	HSK-63A-SF 10-85	10	85	24	32	42	M8X1	AD Thru
	94741218	HSK-63A-SF 12-90	12	90	24	32	47	M10X1	AD Thru
	94741418	HSK-63A-SF 14-90	14	90	27	34	47	M10X1	AD Thru
	94741618	HSK-63A-SF 16-90	16	90	27	34	50	M12X1	AD Thru
	94741819	HSK-63A-SF 18-95	18	95	33	42	50	M12X1	AD Thru
	94742020	HSK-63A-SF 20-100	20	100	33	42	52	M16X1	AD Thru

Coolant tubes on page 153  
Coolant Tube Wrenches on page 157

# AccuGrip™ Shrink Fit Technology Offering

## HSK63A AccuGrip™ Shrink Fit Holders – Long DIN Length



### FEATURES

- Balanced to G2.5 @25,000 RPM
- T.I.R. < 0.00012" / 0.003μ

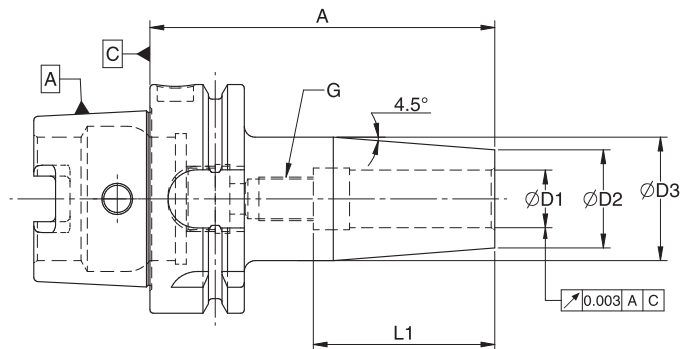
	Catalog Number	Description	D1	A	D2	D3	L1	g	Coolant Style
HSK63A Inch	94740724	HSK-63A-SF .125-4.72	0.125	4.72	0.59	0.78	0.79	-	AD Thru
	94740924	HSK-63A-SF .187-4.72	0.187	4.72	0.59	0.78	0.79	-	AD Thru
	94741124	HSK-63A-SF .250-4.72	0.250	4.72	0.83	1.06	1.42	M5	AD Thru
	94742624	HSK-63A-SF .375-4.72	0.375	4.72	0.95	1.26	1.65	M8X1	AD Thru
	94741524	HSK-63A-SF .500-4.72	0.500	4.72	1.06	1.34	1.85	M10X1	AD Thru
	94741724	HSK-63A-SF .625-4.72	0.625	4.72	1.06	1.34	1.97	M12X1	AD Thru
	94742824	HSK-63A-SF .750-4.72	0.750	4.72	1.30	1.65	2.05	M16X1	AD Thru
	94742124	HSK-63A-SF 1.000-4.72	1.000	4.72	1.73	2.09	2.44	M16X1	AD Thru
94742224	HSK-63A-SF 1.250-4.72	1.250	4.72	1.73	2.09	2.28	M16X1	AD Thru	
HSK63A Metric	94740324	HSK-63A-SF 3-120	3	120	15	20	20	-	AD Thru
	94740424	HSK-63A-SF 4-120	4	120	15	20	20	-	AD Thru
	94740524	HSK-63A-SF 5-120	5	120	15	20	20	-	AD Thru
	94740624	HSK-63A-SF 6-120	6	120	21	27	36	M5	AD Thru
	94740824	HSK-63A-SF 8-120	8	120	21	27	36	M6	AD Thru
	94741024	HSK-63A-SF 10-120	10	120	24	32	42	M8X1	AD Thru
	94741224	HSK-63A-SF 12-120	12	120	24	32	47	M10X1	AD Thru
	94741424	HSK-63A-SF 14-120	14	120	27	34	47	M10X1	AD Thru
	94741624	HSK-63A-SF 16-120	16	120	27	34	50	M12X1	AD Thru
	94741824	HSK-63A-SF 18-120	18	120	33	42	50	M12X1	AD Thru
	94742024	HSK-63A-SF 20-120	20	120	33	42	52	M16X1	AD Thru
	94742524	HSK-63A-SF 25-120	25	120	44	53	58	M16X1	AD Thru
	94743224	HSK-63A-SF 32-120	32	120	44	53	62	M16X1	AD Thru

Coolant tubes on page 153

Coolant Tube Wrenches on page 157

# AccuGrip™ Shrink Fit Technology Offering

## HSK63A AccuGrip™ Shrink Fit Holders - X-Long DIN Length



### FEATURES

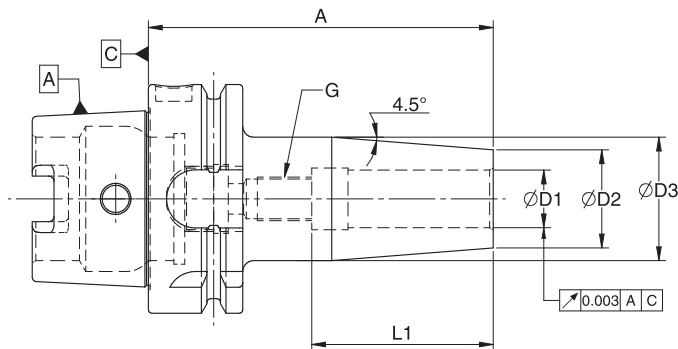
- Balanced to G2.5 @25,000 RPM
- T.I.R. < 0.00012" / 0.003μ

	Catalog Number	Description	D1	A	D2	D3	L1	g	Coolant Style
<b>HSK63A Inch</b>	94740732	HSK-63A-SF .125-6.30	0.125	6.30	0.59	0.78	0.79	-	AD Thru
	94740932	HSK-63A-SF .187-6.30	0.187	6.30	0.59	0.78	0.79	-	AD Thru
	94741132	HSK-63A-SF .250-6.30	0.250	6.30	0.83	1.06	1.42	M5	AD Thru
	94742632	HSK-63A-SF .375-6.30	0.375	6.30	0.95	1.26	1.65	M8X1	AD Thru
	94741532	HSK-63A-SF .500-6.30	0.500	6.30	1.06	1.34	1.85	M10X1	AD Thru
	94741732	HSK-63A-SF .625-6.30	0.625	6.30	1.06	1.34	1.97	M12X1	AD Thru
	94742832	HSK-63A-SF .750-6.30	0.750	6.30	1.30	1.65	2.05	M16X1	AD Thru
	94742132	HSK-63A-SF 1.000-6.30	1.000	6.30	1.73	2.09	2.44	M16X1	AD Thru
94742232	HSK-63A-SF 1.250-6.30	1.250	6.30	1.73	2.09	2.28	M16X1	AD Thru	
<b>HSK63A Metric</b>	94740332	HSK-63A-SF 3-160	3	160	15	20	20	-	AD Thru
	94740432	HSK-63A-SF 4-160	4	160	15	20	20	-	AD Thru
	94740532	HSK-63A-SF 5-160	5	160	15	20	20	-	AD Thru
	94740632	HSK-63A-SF 6-160	6	160	21	27	36	M5	AD Thru
	94740832	HSK-63A-SF 8-160	8	160	21	27	36	M6	AD Thru
	94741032	HSK-63A-SF 10-160	10	160	24	32	42	M8X1	AD Thru
	94741232	HSK-63A-SF 12-160	12	160	24	32	47	M10X1	AD Thru
	94741432	HSK-63A-SF 14-160	14	160	27	34	47	M10X1	AD Thru
	94741632	HSK-63A-SF 16-160	16	160	27	34	50	M12X1	AD Thru
	94741832	HSK-63A-SF 18-160	18	160	33	42	50	M12X1	AD Thru
	94742032	HSK-63A-SF 20-160	20	160	33	42	52	M16X1	AD Thru
	94742532	HSK-63A-SF 25-160	25	160	44	53	58	M16X1	AD Thru
	94743232	HSK-63A-SF 32-160	32	160	44	53	62	M16X1	AD Thru

Coolant tubes [on page 153](#)  
Coolant Tube Wrenches [on page 157](#)

# AccuGrip™ Shrink Fit Technology Offering

## HSK100A AccuGrip™ Shrink Fit Holders – Standard DIN Length



### FEATURES

- Balanced to G2.5 @25,000 RPM
- T.I.R. < 0.00012" / 0.003μ

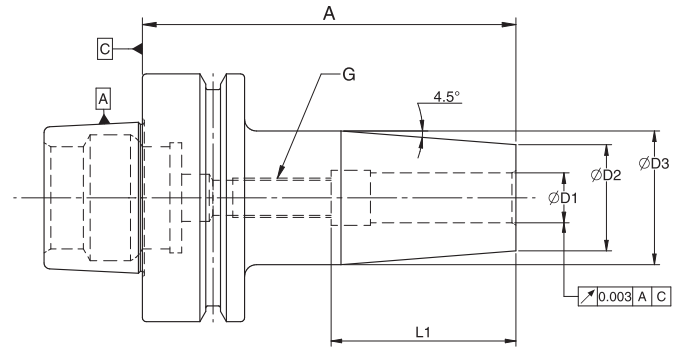
	Catalog Number	Description	D1	A	D2	D3	L1	g	Coolant Style
HSK100A Inch	94761117	HSK100A-SF .250-3.35	0.250	3.35	0.83	1.06	1.42	M5	AD Thru
	94762618	HSK100A-SF .375-3.54	0.375	3.54	0.94	1.26	1.65	M8X1	AD Thru
	94761519	HSK100A-SF .500-3.74	0.500	3.54	1.06	1.34	1.85	M10X1	AD Thru
	94761720	HSK100A-SF .625-3.94	0.625	3.94	1.06	1.34	1.97	M12X1	AD Thru
	94762821	HSK100A-SF .750-4.13	0.750	4.13	1.30	1.65	2.05	M16X1	AD Thru
	94762124	HSK100A-SF 1.000-4.72	1.000	4.72	1.73	2.09	2.28	M16X1	AD Thru
	94762224	HSK100A-SF 1.250-4.72	1.250	4.72	1.73	2.09	2.44	M16X1	AD Thru
HSK100A Metric	94760617	HSK100A-SF 6-85	6	85	21	27	36	M5	AD Thru
	94760817	HSK100A-SF 8-85	8	85	21	27	36	M6	AD Thru
	94761018	HSK100A-SF 10-90	10	90	24	32	42	M8X1	AD Thru
	94761219	HSK100A-SF 12-95	12	95	24	32	47	M10X1	AD Thru
	94761419	HSK100A-SF 14-95	14	95	27	34	47	M10X1	AD Thru
	94761620	HSK100A-SF 16-100	16	100	27	34	50	M12X1	AD Thru
	94761820	HSK100A-SF 18-100	18	100	33	42	50	M12X1	AD Thru
	94762021	HSK100A-SF 20-105	20	105	33	42	52	M16X1	AD Thru
	94762523	HSK100A-SF 25-115	25	115	44	53	58	M16X1	AD Thru
	94763224	HSK100A-SF 32-120	32	120	44	53	62	M16X1	AD Thru

Coolant tubes on page 153

Coolant Tube Wrenches on page 157

# AccuGrip™ Shrink Fit Technology Offering

## HSK63F AccuGrip™ Shrink Fit Holders – Standard DIN Length



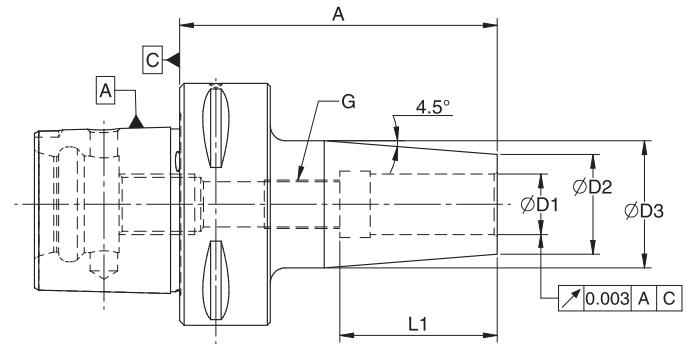
### FEATURES

- Balanced to G2.5 @25,000 RPM
- T.I.R. < 0.00012" / 0.003μ

	Catalog Number	Description	D1 inch	A inch	D2 inch	D3	L1	g	Coolant Style
<b>HSK63F Inch</b>	F94741118	HSK-63F-SF .250-3.54	0.250	3.54	0.83	1.06	1.42	M5	AD Thru
	F94742618	HSK-63F-SF .375-3.54	0.375	3.54	0.95	1.26	1.65	M8X1	AD Thru
	F94741519	HSK-63F-SF .500-3.74	0.500	3.74	1.06	1.34	1.85	M10X1	AD Thru
	F94741719	HSK-63F-SF .625-3.74	0.625	3.74	1.06	1.34	1.97	M12X1	AD Thru
	F94742820	HSK-63F-SF .750-3.94	0.750	3.94	1.30	1.65	2.05	M16X1	AD Thru
	F94742123	HSK-63F-SF 1.000-4.53	1.000	4.53	1.73	2.09	2.28	M16X1	AD Thru
	F94742224	HSK-63F-SF 1.250-4.72	1.250	4.72	1.73	2.09	2.44	M16X1	AD Thru

# AccuGrip™ Shrink Fit Technology Offering

## PTI AccuGrip™ Shrink Fit Holders – Standard DIN Length



### FEATURES

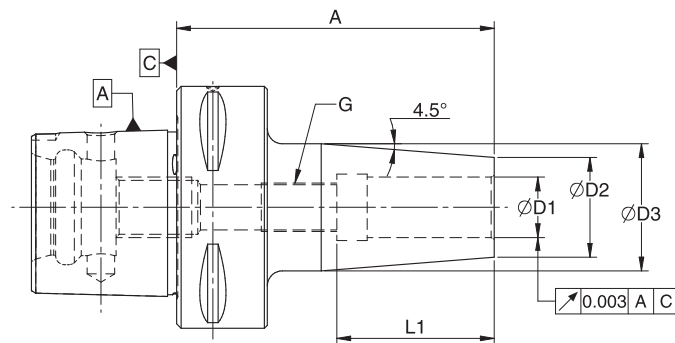
- Balanced to G2.5 @25,000 RPM
- T.I.R. < 0.00012" / 0.003μ

	Catalog Number	Description	D1 (mm)	A (mm)	D2 (mm)	D3 (mm)	L1 (mm)	g	Coolant Style
<b>PTI50 Metric</b>	94680316	PTI50-SF 3-75	3	75	15	20	20	-	AD Thru
	94680416	PTI50-SF 4-75	4	75	15	20	20	-	AD Thru
	94680516	PTI50-SF 5-75	5	75	15	20	25	-	AD Thru
	94680616	PTI50-SF 6-75	6	75	21	27	36	M5	AD Thru
	94680816	PTI50-SF 8-75	8	75	21	27	36	M6x1	AD Thru
	94681016	PTI50-SF 10-75	10	75	24	32	42	M8x1	AD Thru
	94681216	PTI50-SF 12-75	12	75	24	32	47	M10x1	AD Thru
<b>PTI63 Metric</b>	94690316	PTI63-SF 3-80	3	80	15	20	20	-	AD Thru
	94690416	PTI63-SF 4-80	4	80	15	20	20	-	AD Thru
	94690516	PTI63-SF 5-80	5	80	15	20	25	-	AD Thru
	94690616	PTI63-SF 6-80	6	80	21	27	36	M5	AD Thru
	94690816	PTI63-SF 8-80	8	80	21	27	36	M6x1	AD Thru
	94691017	PTI63-SF 10-85	10	80	24	32	42	M8x1	AD Thru
	94691217	PTI63-SF 12-85	12	80	24	32	47	M10x1	AD Thru
	94691618	PTI63-SF 16-90	16	85	27	42	50	M12x1	AD Thru
94692019	PTI63-SF 20-95	20	85	33	42	50	M16x1	AD Thru	
<b>PTI80 Metric</b>	94700618	PTI80-SF 6-90	6	80	21	27	36	M5	AD Thru
	94700818	PTI80-SF 8-90	8	80	21	27	36	M6x1	AD Thru
	94701018	PTI80-SF 10-90	10	80	24	32	42	M8x1	AD Thru
	94701219	PTI80-SF 12-95	12	80	24	32	47	M10x1	AD Thru
	94701619	PTI80-SF 16-95	16	85	27	42	50	M12x1	AD Thru
	94702019	PTI80-SF 20-95	20	85	33	42	50	M16x1	AD Thru



# AccuGrip™ Shrink Fit Technology Offering

## PTI AccuGrip™ Shrink Fit Holders – Standard DIN Length



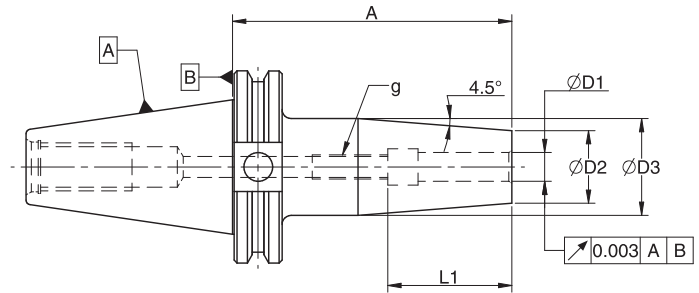
### FEATURES

- Balanced to G2.5 @25,000 RPM
- T.I.R. < 0.00012" / 0.003μ

	Catalog Number	Description	D1 (inch)	A (inch)	D2 (inch)	D3 (inch)	L1 (inch)	g	Coolant Style
PTI50 Inch	94680716	PTI50-SF .125-3.15	0.125	3.15	0.59	0.78	0.79	-	AD Thru
	94680916	PTI50-SF .187-3.15	0.187	3.15	0.59	0.78	0.79	-	AD Thru
	94681116	PTI50-SF .250-3.15	0.250	3.15	0.83	1.06	1.42	M5	AD Thru
	94682616	PTI50-SF .375-3.15	0.375	3.15	0.95	1.26	1.65	M8x1	AD Thru
	94681516	PTI50-SF .500-3.15	0.500	3.15	1.06	1.34	1.85	M10x1	AD Thru
	94682816	PTI50-SF .750-3.15	0.750	3.15	1.06	1.34	1.97	M12x1	AD Thru
	94682123	PTI50-SF 1.000-4.53	1.000	4.53	1.73	2.09	2.44	M16x1	AD Thru
PTI63 Inch	94690716	PTI63-SF .125-3.15	0.125	3.15	0.59	0.78	0.79	-	AD Thru
	94690916	PTI63-SF .187-3.15	0.187	3.15	0.59	0.78	0.79	-	AD Thru
	94691116	PTI63-SF .250-3.15	0.250	3.15	0.83	1.06	1.42	M5	AD Thru
	94692616	PTI63-SF .375-3.15	0.375	3.15	0.95	1.26	1.65	M8x1	AD Thru
	94691516	PTI63-SF .500-3.15	0.500	3.15	1.06	1.34	1.85	M10x1	AD Thru
	94691717	PTI63-SF .625-3.35	0.625	3.35	1.06	1.34	1.97	M12x1	AD Thru
	94692817	PTI63-SF .750-3.35	0.750	3.35	1.30	1.65	2.05	M16x1	AD Thru
	94692118	PTI63-SF 1.000-3.54	1.000	3.54	1.73	2.09	2.44	M16x1	AD Thru
94692219	PTI63-SF 1.250-3.74	1.250	3.74	1.73	2.09	2.28	M16x1	AD Thru	
PTI80 Inch	94701118	PTI80-SF .250-3.54	0.250	3.54	0.83	1.06	1.42	M5	AD Thru
	94702718	PTI80-SF .375-3.54	0.375	3.54	0.95	1.26	1.65	M8x1	AD Thru
	94701518	PTI80-SF .500-3.54	0.500	3.54	1.06	1.34	1.85	M10x1	AD Thru
	94701719	PTI80-SF .625-3.74	0.625	3.74	1.06	1.34	1.97	M12x1	AD Thru
	94702819	PTI80-SF .750-3.74	0.750	3.74	1.30	1.65	2.05	M16x1	AD Thru
	94702119	PTI80-SF 1.000-3.74	1.000	3.74	1.73	2.09	2.29	M16x1	AD Thru

# AccuGrip™ Shrink Fit Technology Offering

## AccuPlus™ CATP40 Face Contact AccuGrip™ Shrink Fit Holders



### FEATURES

- Balanced to G2.5 @25,000 RPM
- Taper shank ground to AT3 accuracy (or better)
- T.I.R. < 0.00012" / 0.003µ

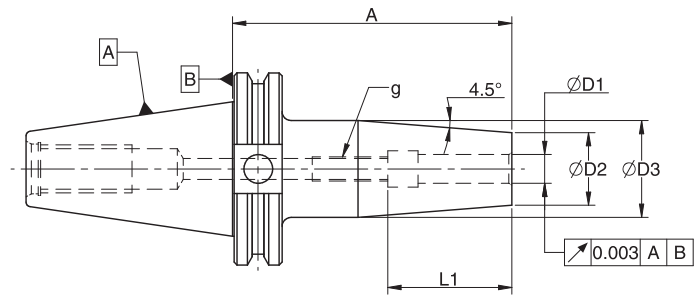
	Catalog Number	Description	D1 (inch)	A (inch)	D2 (inch)	D3 (inch)	L1 (inch)	g	Coolant Style
<b>CATP40 Inch</b>	941360719	CATP40-SF .125-3.74	0.125	3.74	0.59	0.78	0.79	-	AD Thru
	941360919	CATP40-SF .187-3.74	0.187	3.74	0.59	0.78	0.79	-	AD Thru
	941361119	CATP40-SF .250-3.74	0.250	3.74	0.83	1.06	1.42	M5	AD Thru
	941361319	CATP40-SF .312-3.74	0.312	3.74	0.83	1.06	1.42	M6x1	AD Thru
	941362619	CATP40-SF .375-3.74	0.375	3.74	0.95	1.26	1.65	M8x1	AD Thru
	941361519	CATP40-SF .500-3.74	0.500	3.74	1.06	1.34	1.85	M10x1	AD Thru
	941361719	CATP40-SF .625-3.74	0.625	3.74	1.06	1.34	1.97	M12x1	AD Thru
	941362819	CATP40-SF .750-3.74	0.750	3.74	1.30	1.65	2.05	M16x1	AD Thru
	941362120	CATP40-SF 1.000-3.94	1.000	3.94	1.73	2.09	2.44	M16x1	AD Thru
	941362220	CATP40-SF 1.250-3.94	1.250	3.94	1.73	2.09	2.44	M16x1	AD Thru

	Catalog Number	Description	D1 (mm)	A (mm)	D2 (mm)	D3 (mm)	L1 (mm)	g	Coolant Style
<b>CAT40 Metric</b>	941360319	CATP40-SF 3-95	3	95	15	20	20	-	AD Thru
	941360419	CATP40-SF 4-95	4	95	15	20	20	-	AD Thru
	941360519	CATP40-SF 5-95	5	95	15	20	20	-	AD Thru
	941360619	CATP40-SF 6-95	6	95	21	27	36	M5	AD Thru
	941360819	CATP40-SF 8-95	8	95	21	27	36	M6x1	AD Thru
	941361019	CATP40-SF 10-95	10	95	24	32	42	M8x1	AD Thru
	941361219	CATP40-SF 12-95	12	95	24	32	47	M10x1	AD Thru
	941361419	CATP40-SF 14-95	14	95	27	34	47	M10x1	AD Thru
	941361619	CATP40-SF 16-95	16	95	27	34	50	M12x1	AD Thru
	941361819	CATP40-SF 18-95	18	95	33	42	50	M12x1	AD Thru
	941362019	CATP40-SF 20-95	20	95	33	42	52	M16x1	AD Thru
	941362520	CATP40-SF 25-100	25	100	44	53	58	M16x1	AD Thru
	941363220	CATP40-SF 32-100	32	100	44	53	62	M16x1	AD Thru

Retention knobs on page 152

# AccuGrip™ Shrink Fit Technology Offering

## AccuPlus™ CATP50 Face Contact AccuGrip™ Shrink Fit Holders



### FEATURES

- Balanced to G2.5 @25,000 RPM
- Taper shank ground to AT3 accuracy (or better)
- T.I.R. < 0.00012" / 0.003µ

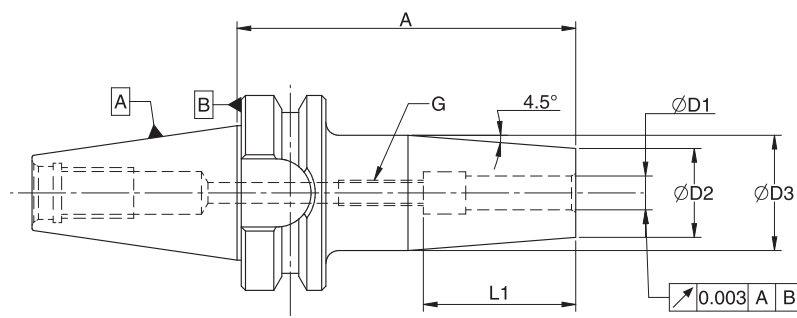
	Catalog Number	Description	D1 (inch)	A (inch)	D2 (inch)	D3 (inch)	L1 (inch)	g	Coolant Style
<b>CATP50 Inch</b>	941381119	CATP50-SF .250-3.74	0.250	3.74	0.83	1.06	1.42	M5	AD Thru
	941382619	CATP50-SF .375-3.74	0.375	3.74	0.95	1.26	1.65	M8x1	AD Thru
	941381519	CATP50-SF .500-3.74	0.500	3.74	1.06	1.34	1.85	M10x1	AD Thru
	941381719	CATP50-SF .625-3.74	0.625	3.74	1.06	1.34	1.97	M12x1	AD Thru
	941382819	CATP50-SF .750-3.74	0.750	3.74	1.30	1.65	2.05	M16x1	AD Thru
	941382121	CATP50-SF 1.000-4.13	1.000	4.13	1.73	2.09	2.44	M16x1	AD Thru
	941382221	CATP50-SF 1.250-4.13	1.250	4.13	1.73	2.09	2.44	M16x1	AD Thru

	Catalog Number	Description	D1 (mm)	A (mm)	D2 (mm)	D3 (mm)	L1 (mm)	g	Coolant Style
<b>CATP50 Metric</b>	941380619	CATP50-SF 6-95	6	95	21	27	36	M5	AD Thru
	941380819	CATP50-SF 8-95	8	95	21	27	36	M6x1	AD Thru
	941381019	CATP50-SF 10-95	10	95	24	32	42	M8x1	AD Thru
	941381219	CATP50-SF 12-95	12	95	24	32	47	M10x1	AD Thru
	941381419	CATP50-SF 14-95	14	95	27	34	47	M10x1	AD Thru
	941381619	CATP50-SF 16-95	16	95	27	34	50	M12x1	AD Thru
	941381819	CATP50-SF 18-95	18	95	33	42	50	M12x1	AD Thru
	941382019	CATP50-SF 20-95	20	95	33	42	52	M16x1	AD Thru
	941382521	CATP50-SF 25-105	25	105	44	53	58	M16x1	AD Thru
	941383221	CATP50-SF 32-105	32	105	44	53	62	M16x1	AD Thru

Retention knobs on page 152

# AccuGrip™ Shrink Fit Technology Offering

## AccuPlus™ BTP30 Face Contact AccuGrip™ Shrink Fit Holders



### FEATURES

- Balanced to G2.5 @25,000 RPM
- T.I.R. < 0.00012" / 0.003µ
- Bore Tolerance H6
- Taper shank ground to AT3 accuracy (or better)

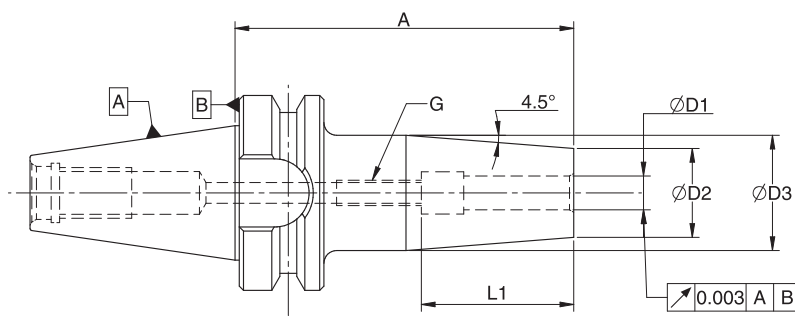
	Catalog Number	Description	D1 (inch)	A (inch)	D2 (inch)	D3	L1	g	Coolant Style
<b>BTP30 Inch</b>	941060716	BTP30-SF .125-3.15	0.125	3.15	0.59	0.78	0.79	-	AD Thru
	941060916	BTP30-SF .187-3.15	0.187	3.15	0.59	0.78	0.79	-	AD Thru
	941061116	BTP30-SF .250-3.15	0.250	3.15	0.83	1.06	1.42	M5	AD Thru
	941062616	BTP30-SF .375-3.15	0.375	3.15	0.95	1.26	1.65	M8x1	AD Thru
	941061516	BTP30-SF .500-3.15	0.500	3.15	1.06	1.34	1.85	M10x1	AD Thru
	941061716	BTP30-SF .625-3.15	0.625	3.15	1.06	1.34	1.97	M12x1	AD Thru

	Catalog Number	Description	D1 (mm)	A (mm)	D2 (mm)	D3	L1	g	Coolant Style
<b>BTP30 Metric</b>	941060316	BTP30-SF 3-80	3	80	15	20	20	-	AD Thru
	941060416	BTP30-SF 4-80	4	80	15	20	20	-	AD Thru
	941060516	BTP30-SF 5-80	5	80	15	20	20	-	AD Thru
	941060616	BTP30-SF 6-80	6	80	21	31	36	M5	AD Thru
	941060816	BTP30-SF 8-80	8	80	21	31	36	M6x1	AD Thru
	941061016	BTP30-SF 10-80	10	80	24	34	42	M8x1	AD Thru
	941061216	BTP30-SF 12-80	12	80	24	34	47	M10x1	AD Thru
	941061616	BTP30-SF 16-80	16	80	27	37	50	M12x1	AD Thru
	941062016	BTP30-SF 20-80	20	80	33	43	52	M16x1	AD Thru

Retention knobs on page 152

# AccuGrip™ Shrink Fit Technology Offering

## AccuPlus™ BTP40 Face Contact AccuGrip™ Shrink Fit Holders



### FEATURES

- Balanced to G2.5 @25,000 RPM
- Taper shank ground to AT3 accuracy (or better)
- T.I.R. < 0.00012" / 0.003µ

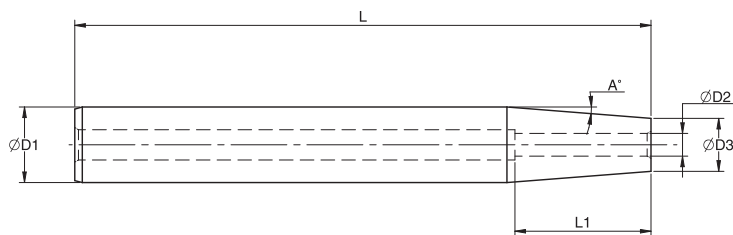
	Catalog Number	Description	D1 (inch)	A (inch)	D2 (inch)	D3	L1	g	Coolant Style
<b>BTP40 Inch</b>	941080718	BTP40-SF .125-3.54	0.125	3.54	0.59	0.78	0.79	-	AD Thru
	941080918	BTP40-SF .187-3.54	0.187	3.54	0.59	0.78	0.79	-	AD Thru
	941081118	BTP40-SF .250-3.54	0.250	3.54	0.83	1.06	1.42	M5	AD Thru
	941082618	BTP40-SF .375-3.54	0.375	3.54	0.95	1.26	1.65	M8x1	AD Thru
	941081518	BTP40-SF .500-3.54	0.500	3.54	1.06	1.34	1.85	M10x1	AD Thru
	941081718	BTP40-SF .625-3.54	0.625	3.54	1.06	1.34	1.97	M12x1	AD Thru
	941082818	BTP40-SF .750-3.54	0.750	3.54	1.30	1.65	2.05	M16x1	AD Thru
	941082120	BTP40-SF 1.000-3.94	1.000	3.94	1.73	2.09	2.44	M16x1	AD Thru
	941082220	BTP40-SF 1.250-3.94	1.250	3.94	1.73	2.09	2.44	M16x1	AD Thru

	Catalog Number	Description	D1 (mm)	A (mm)	D2 (mm)	D3	L1	g	Coolant Style
<b>BTP40 Metric</b>	941080318	BTP40-SF 3-90	3	80	15	20	20	-	AD Thru
	941080418	BTP40-SF 4-90	4	80	15	20	20	-	AD Thru
	941080518	BTP40-SF 5-90	5	80	15	20	20	-	AD Thru
	941080618	BTP40-SF 6-90	6	80	21	31	36	M5	AD Thru
	941080818	BTP40-SF 8-90	8	80	21	31	36	M6x1	AD Thru
	941081018	BTP40-SF 10-90	10	80	24	34	42	M8x1	AD Thru
	941081218	BTP40-SF 12-90	12	80	24	34	47	M10x1	AD Thru
	941081618	BTP40-SF 16-90	16	80	27	37	50	M12x1	AD Thru
	941082018	BTP40-SF 20-90	20	80	33	43	52	M16x1	AD Thru
	941082520	BTP40-SF 25-100	25	100	44	53	58	M16x1	AD Thru
	941083220	BTP40-SF 32-100	32	100	44	53	58	M16x1	AD Thru

Retention knobs on page 152

# AccuGrip™ Shrink Fit Technology Offering

## Straight Shank Extension AccuGrip™ Shrink Fit Holders



### FEATURES

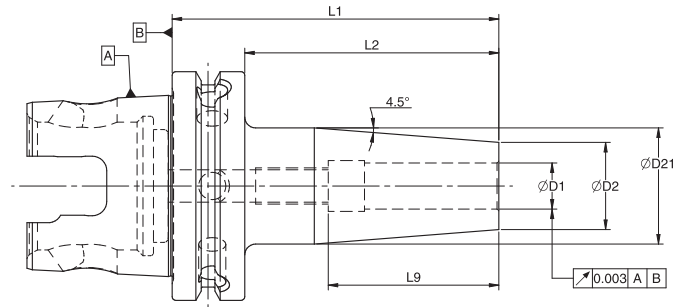
• T.I.R. <math>< 0.00012'' / 0.003\mu</math>

• Shank Tolerance H6

	Catalog Number	Description	D1 (inch)	D2 (inch)	D3 (inch)	L	L1	A
<b>STRAIGHT Shank</b>	94451121	SSH.750-SF.250-4.15	0.750	0.2500	0.472	4.15	1.417	3.0
	94451321	SSH.750-SF.3125-4.15	0.750	0.3125	0.551	4.15	1.417	3.0
	94452621	SSH.750-SF.375-4.15	0.750	0.3750	0.630	4.15	1.653	3.0
	94511521	SSH1.00-SF.500-4.15	1.000	0.5000	0.708	4.15	1.850	3.0
	94511141	SSH1.00-SF.250-8.00	1.000	0.2500	0.472	8.00	1.417	3.0
	94511341	SSH1.00-SF.3125-8.00	1.000	0.3125	0.551	8.00	1.417	3.0
	94512641	SSH1.00-SF.375-8.00	1.000	0.3750	0.630	8.00	1.653	3.0
	94511541	SSH1.00-SF.500-8.00	1.000	0.5000	0.708	8.00	1.850	3.0

# AccuGrip™ Shrink Fit Technology Offering

## AccuGrip KTI Shrink Fit Holders (ISO 26622-1)



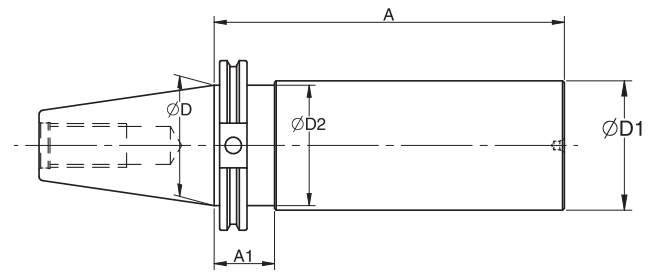
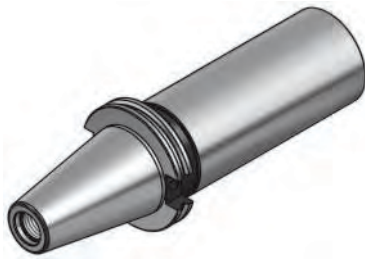
### FEATURES

- Balanced to G2.5 @25,000 RPM
- T.I.R. < 0.00012" / 0.003μ

	Catalog Number	Description	D1	D2	D21	L1	L2	L9	Coolant Style
Metric ID	941500416	KTI63XMZ-SF 4 x 80Y	4	15	20	80	60	20	AD Thru
	941500616	KTI63XMZ-SF 6 x 80Y	6	21	27	80	60	36	AD Thru
	941500816	KTI63XMZ-SF 8 x 80Y	8	21	27	80	60	36	AD Thru
	941501018	KTI63XMZ-SF 10 x 90Y	10	24	32	90	70	42	AD Thru
	941501218	KTI63XMZ-SF 12 x 90Y	12	24	32	90	70	47	AD Thru
	941501420	KTI63XMZ-SF 14 x 100Y	14	27	37	100	80	47	AD Thru
	941501620	KTI63XMZ-SF 16 x 100Y	16	27	37	100	80	50	AD Thru
	941501820	KTI63XMZ-SF 18 x 100Y	18	33	44	100	80	52	AD Thru
	941502020	KTI63XMZ-SF 20 x 100Y	20	33	44	100	80	52	AD Thru
941502524	KTI63XMZ-SF 25 x 120Y	25	44	53	120	100	56	AD Thru	
Inch ID	941501116	KTI63XMZ-SF 250 x 3.15Y	0.25	0.827	1.059	3.150	2.362	1.417	AD Thru
	941501316	KTI63XMZ-SF 312 x 3.15Y	0.312	0.827	1.059	3.150	2.362	1.417	AD Thru
	941502617	KTI63XMZ-SF 375 x 3.35Y	0.375	0.945	1.256	3.347	2.559	1.653	AD Thru
	941501518	KTI63XMZ-SF 500 x 3.54Y	0.50	0.945	1.256	3.543	2.775	1.850	AD Thru
	941501719	KTI63XMZ-SF 625 x 3.74Y	0.625	1.063	1.335	3.740	2.952	1.968	AD Thru
	941502820	KTI63XMZ-SF 750 x 3.94Y	0.75	1.299	1.650	3.937	3.149	2.047	AD Thru
	941502123	KTI63XMZ-SF 1.00 x 4.53Y	1.00	1.732	2.083	4.528	3.740	2.283	AD Thru
	941502224	KTI63XMZ-SF 1.25 x 4.72Y	1.25	1.732	2.083	4.724	3.936	2.440	AD Thru

# Blanks

## CAT Blanks (ANSI/ASME 5.50-1994)

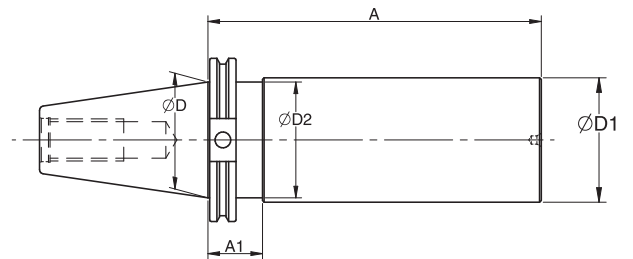
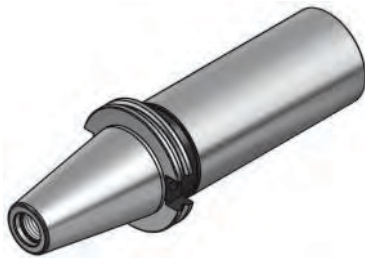


### FEATURES

- Shank Hardness 54-56 HRC
- Blank Hardness 28-32 HRC
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	"D" (mm)	"D1" (mm)	"A" (mm)	"A1" (mm)	"D2" (mm)
CAT40	0124040150	CAT40 Blank Dia. 40-150	44.45	40	150	--	--
	0124040200	CAT40 Blank Dia. 40-200	44.45	40	200	--	--
	0124063150	CAT40 Blank Dia. 63-150	44.45	63	150	35	44.45
	0124063200	CAT40 Blank Dia. 63-200	44.45	63	200	35	44.45
	0124090150	CAT40 Blank Dia. 90-150	44.45	90	150	35	44.45
	0124090200	CAT40 Blank Dia. 90-200	44.45	90	200	35	44.45
CAT50	0126075150	CAT50 Blank Dia. 75-150	69.85	75	150	35	69.85
	0126075250	CAT50 Blank Dia. 75-250	69.85	75	250	35	69.85
	0126100175	CAT50 Blank Dia. 100-175	69.85	100	175	35	69.85
	0126100300	CAT50 Blank Dia. 100-300	69.85	100	300	35	69.85
	0126120200	CAT50 Blank Dia. 120-200	69.85	120	200	35	69.85
	0126120300	CAT50 Blank Dia. 120-300	69.85	120	300	35	69.85

## CATP AccuPlus™ Face Contact Blank



### FEATURES

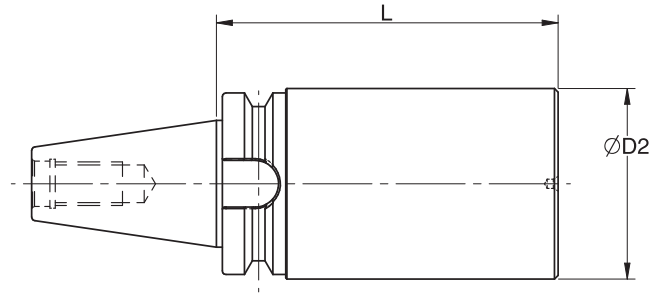
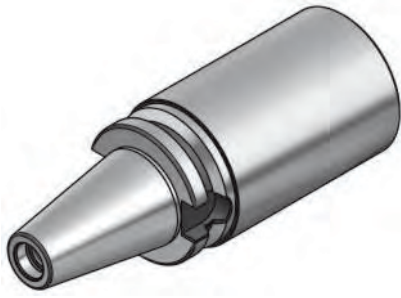
- Shank Hardness 54-56 HRC
- Blank Hardness 28-32 HRC
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	"D" (mm)	"D1" (mm)	"A" (mm)	"A1" (mm)	"D2" (mm)
CATP40	01136040150	CATP40 Blank Dia 40-150	44.45	40	150	--	--
	01136040200	CATP40 Blank Dia 40-200	44.45	40	200	--	--
	01136063150	CATP40 Blank Dia 63-150	44.45	63	150	35	44.45
	01136063200	CATP40 Blank Dia 63-200	44.45	63	200	35	44.45
	01136090150	CATP40 Blank Dia 90-150	44.45	90	150	35	44.45
	01136090200	CATP40 Blank Dia 90-200	44.45	90	200	35	44.45
CATP50	01136075150	CATP50 Blank Dia 75-150	69.85	75	150	35	69.85
	01138075250	CATP50 Blank Dia 75-250	69.85	75	250	35	69.85
	01138100175	CATP50 Blank Dia 100-175	69.85	100	175	35	69.85
	01138100300	CATP50 Blank Dia 100-300	69.85	100	300	35	69.85
	01138120200	CATP50 Blank Dia 120-200	69.85	120	200	35	69.85
	01138120300	CATP50 Blank Dia 120-300	69.85	120	300	35	69.85



# Blanks

## BT Blanks (MAS 403)

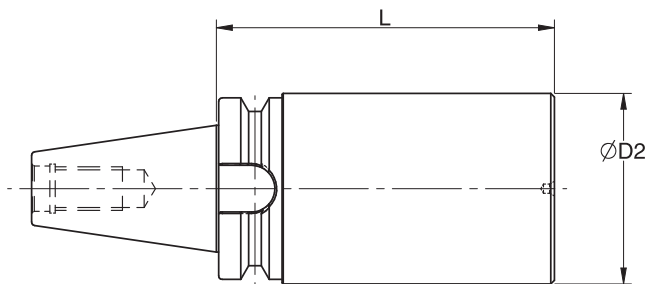
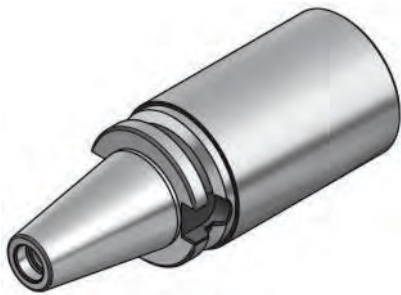


### FEATURES

- Shank Hardness 54-56 HRC
- Blank Hardness 28-32 HRC
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	"D2" (mm)	"L" (mm)
<b>BT30 Shank</b>	0110060200	BT30 Blank Dia. 60, GL 200	60	200
	0110060120	BT30 Blank Dia. 60, GL 120	60	120
<b>BT40 Shank</b>	0112063280	BT40 Blank Dia. 63-280	63	280
	0112063200	BT40 BLANK 63-200	63	200
	0112063120	BT40 BLANK 63-120	63	120
	0112104200	BT40 BLANK 104-200	104	200

## BTP AccuPlus™ Face Contact Blank Bars



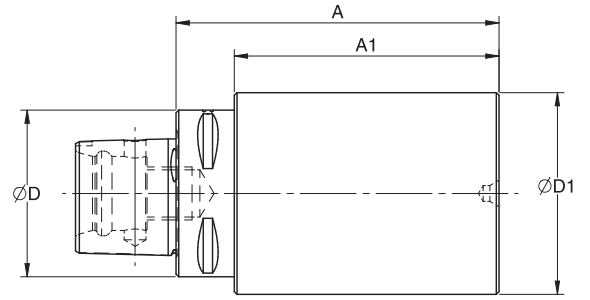
### FEATURES

- Shank Hardness 54-56 HRC
- Blank Hardness 28-32 HRC
- Taper shank ground to AT3 accuracy (or better)

	Catalog Number	Description	"D2" (mm)	"L" (mm)
<b>BTP40</b>	01108063280	BTP40 BLANK 63-280	63	280
	01108104200	BTP40 BLANK 104-200	104	200

# Blanks

## PTI Blanks (ISO 26623-1)



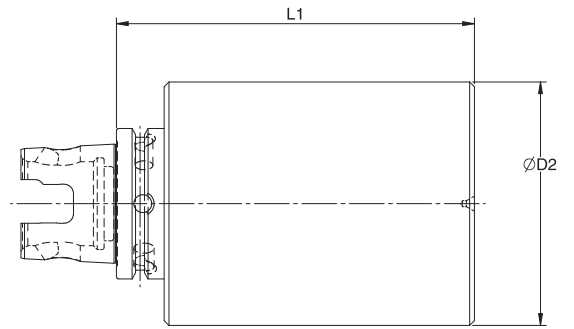
### FEATURES

- Shank Hardness 54-56 HRC
- Blank Hardness 28-32 HRC

	Catalog Number	Description	"D" (mm)	"D1" (mm)	"A" (mm)	"A1" (mm)
<b>PTI32</b>	0166032090	PTI32 Blank Dia. 32-90	32	32	90	-
	0166060090	PTI32 Blank Dia. 60-90	32	60	90	75
<b>PTI40</b>	0167040120	PTI40 Blank Dia. 40-120	40	40	120	-
	0167050180	PTI40 Blank Dia. 50-180	40	50	180	160
	0167080120	PTI40 Blank Dia. 80-120	40	80	120	100
	0167090150	PTI40 Blank Dia. 90-150	40	90	150	130
	0167120120	PTI40 Blank Dia. 120-120	40	120	120	100
<b>PTI50</b>	0168050150	PTI50 Blank Dia. 50-150	50	50	150	-
	0168050200	PTI50 Blank Dia. 50-200	50	50	200	-
	0168063180	PTI50 Blank Dia. 63-180	50	63	180	160
	0168090180	PTI50 Blank Dia. 90-180	50	90	180	160
	0168095150	PTI50 Blank Dia. 95-150	50	95	150	130
	0168120200	PTI50 Blank Dia. 120-200	50	120	200	180
	0168150150	PTI50 Blank Dia. 150-150	50	150	150	130
<b>PTI63</b>	0169063180	PTI63 Blank Dia. 63-180	63	63	180	-
	0169070200	PTI63 Blank Dia. 70-200	63	70	200	178
	0169090200	PTI63 Blank Dia. 90-200	63	90	200	178
	0169110120	PTI63 Blank Dia. 110-120	63	110	120	98
	0169120150	PTI63 Blank Dia. 120-150	63	120	150	128
	0169120180	PTI63 Blank Dia. 120-180	63	120	180	158
	0169180120	PTI63 Blank Dia. 180-120	63	180	120	98
	0169220120	PTI63 Blank Dia. 220-120	63	220	120	98
<b>PTI80</b>	0170080200	PTI80 Blank Dia. 80-200	80	80	200	-
	0170090200	PTI80 Blank Dia. 90-200	80	90	200	170
	0170100200	PTI80 Blank Dia. 100-200	80	100	200	170
	0170110250	PTI80 Blank Dia. 110-250	80	110	250	220
	0170145200	PTI80 Blank Dia. 145-200	80	145	200	170
	0170150200	PTI80 Blank Dia. 150-200	80	150	200	170
	0170160120	PTI80 Blank Dia. 160-120	80	160	120	90
	0170180120	PTI80 Blank Dia. 180-120	80	180	120	90
<b>PTI80X</b>	0157100100	PTI80x Blank Dia. 100-100	100	100	100	-
	0157100200	PTI80x Blank Dia. 100-200	100	100	200	-
	0157145200	PTI80x Blank Dia. 145-200	100	145	200	168
	0157150100	PTI80x Blank Dia. 150-100	100	150	100	68
	0157150200	PTI80x Blank Dia. 150-200	100	150	200	168
	0157160150	PTI80x Blank Dia. 160-150	100	160	150	118
	0157200100	PTI80x Blank Dia. 200-100	100	200	100	68
	0157100100	PTI80x Blank Dia. 100-100	100	100	100	-
0157100200	PTI80x Blank Dia. 100-200	100	100	200	-	

# Blanks

## KTI Blank Bars (ISO 26622-1)

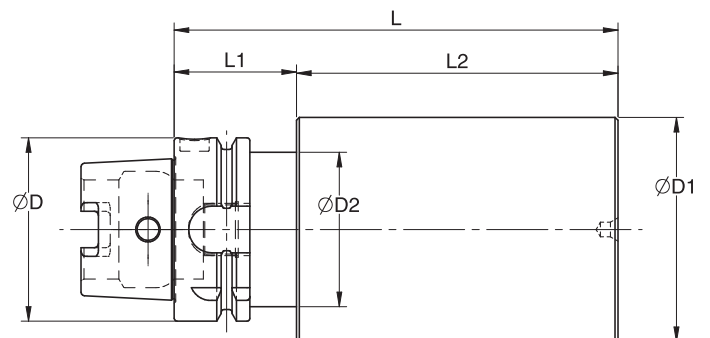


### FEATURES

- Shank Hardness 54-56 HRC
- Blank Hardness 28-32 HRC

	Catalog Number	Description	"D2" (mm)	"L" (mm)
KTI40	01143063052	KTI40TS-BLANK 63X52	63	52
	01143063125	KTI40TS-BLANK 63X125	63	125
	01143090052	KTI40TS-BLANK 90X52	90	52

## HSK Blanks (DIN 69893-1)



### FEATURES

- Shank Hardness 54-56 HRC
- Blank Hardness 28-32 HRC

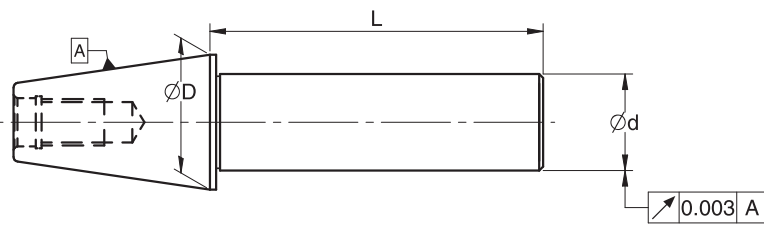
	Catalog Number	Description	"D" (mm)	"D1" (mm)	"D2" (mm)	"L" (mm)	"L1" (mm)	"L2" (mm)
HSK32	0171032090	HSK32 BLANK DIA 32-90	32	32	26	90	35	55
	0171060090	HSK32 BLANK DIA 60-90	32	60	26	90	35	55
HSK40	0172040120	HSK40 BLANK DIA 40-120	40	40	34	120	35	85
	0172040120	HSK40 BLANK DIA 80-120	40	80	34	120	35	85
HSK50	0173050100	HSK50 BLANK DIA 50-100	50	50	42	100	42	108
	0173050150	HSK50 BLANK DIA 95-150	50	95	42	150	42	108
HSK63	0174063180	HSK63 BLANK DIA 63-180	63	63	53	180	42	138
	0174120180	HSK63 BLANK DIA 120-180	63	120	53	180	42	138
HSK80	0175080120	HSK80 BLANK DIA 80-120	80	80	68	120	42	158
	0175145200	HSK80 BLANK DIA 145-200	80	145	68	200	42	158
HSK100	0179145200	HSK100 BLANK DIA 145-200	100	145	88	200	45	155

Coolant tubes [on page 153](#)  
Coolant Tube Wrenches [on page 157](#)

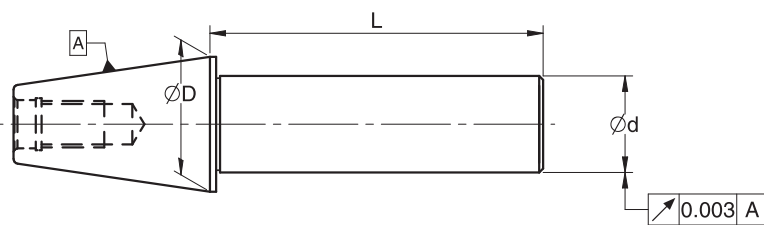
# Spindle Test Mandrel

## Spindle Test Mandrels (3 μm / .0001" TIR)

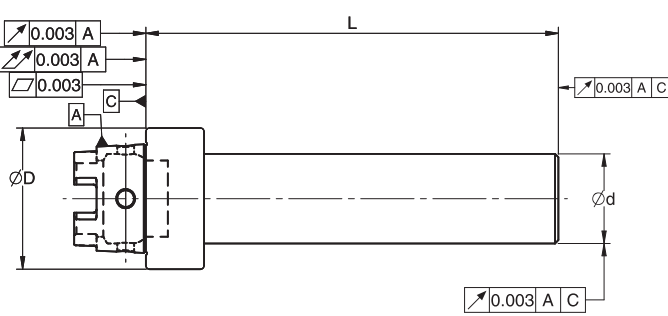
for spindle run-out checking and spindle and table alignment



	Catalog Number	Description	D	d (mm)	L (mm)
<b>Cat Shank (ANSI/ASME B5.50- 1994)</b>	02244060	CAT40 Test Mandrel Dia. 40-300	44.45	40	300
	02264070	CAT50 Test Mandrel Dia. 40-350	69.85	40	350



	Catalog Number	Description	D	d (mm)	L (mm)
<b>BT Shank (MAS 403)</b>	02102540	BT30 Test Mandrel Dia. 25-200	31.75	25	200
	02112540	BT35 Test Mandrel Dia. 25-200	38.10	25	200
	02124060	BT40 Test Mandrel Dia. 40-300	44.45	40	300
	02144070	BT50 Test Mandrel Dia. 40-350	69.85	40	350

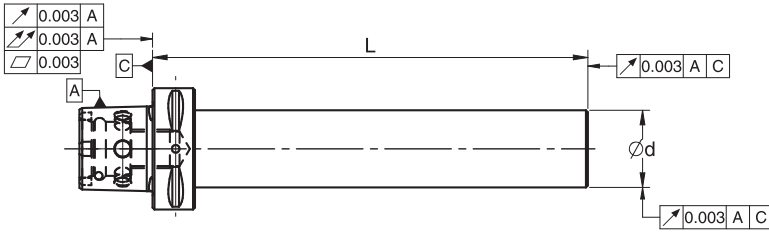


	Catalog Number	Description	D	d (mm)	L (mm)
<b>HSK Shank (DIN 69893A)</b>	02713240	HSK32A Test Mandrel Dia. 32-200	32	32	200
	02723240	HSK40A Test Mandrel Dia. 32-200	40	32	200
	02734050	HSK50A Test Mandrel Dia. 40-250	50	40	250
	02744070	HSK63A Test Mandrel Dia. 40-350	63	40	350
	02754070	HSK80A Test Mandrel Dia. 40-350	80	40	350
	02764076	HSK100A Test Mandrel Dia. 40-380	100	40	380
	02775080	HSK125A Test Mandrel Dia. 50-400	125	50	400

# Spindle Test Mandrel

## AccuLoc™ PTI Spindle Test Mandrel (3 μm / .0001" TIR)

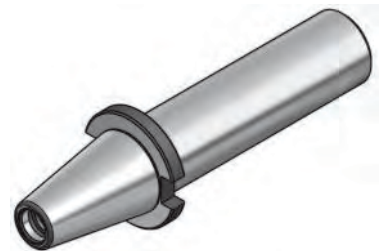
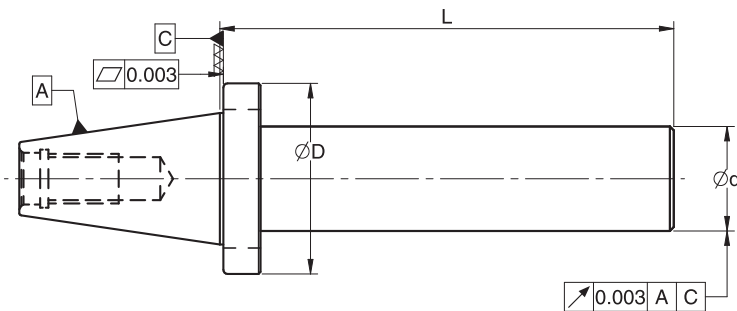
for spindle run-out checking and spindle and table alignment



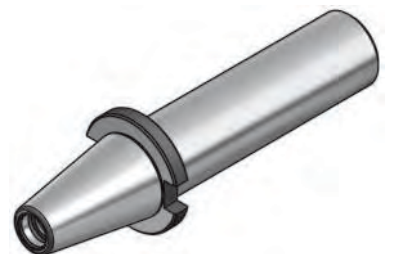
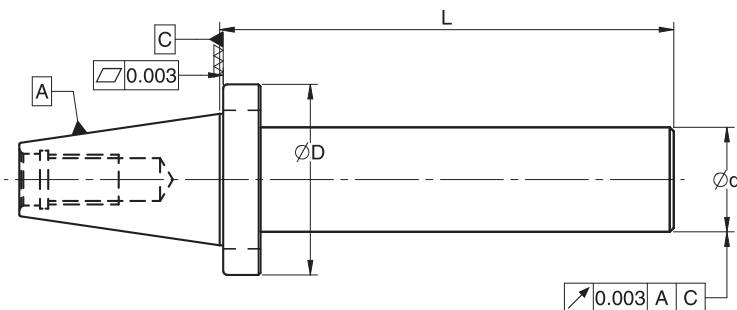
	Catalog Number	Description	D	d (mm)	L (mm)
<b>PTI Shank (ISO 26623-1)</b>	02662536	PTI32 Test Mandrel Dia. 25-180	32	25	180
	02672536	PTI40 Test Mandrel Dia. 25-180	40	25	180
	02683251	PTI50 Test Mandrel Dia. 32-255	50	32	255
	02694065	PTI63 Test Mandrel Dia. 40-325	63	40	325
	02704066	PTI80 Test Mandrel Dia. 40-330	80	40	330

## AccuPlus™ Steep Taper Face Contact Spindle Test Mandrel (3 μm / .0001" TIR)

for spindle run-out checking and spindle and table alignment



	Catalog Number	Description	D	d (mm)	L (mm)
<b>CATP Shank (ANSI/ASME B5.50 - 1994)</b>	021364060	CATP40 Test Mandrel Dia. 40-300	63.5	40	300
	021384070	CATP50 Test Mandrel Dia. 40-350	98.43	40	350



	Catalog Number	Description	D	d (mm)	L (mm)
<b>BTP Shank (MAS 403)</b>	021062540	BTP30 Test Mandrel Dia. 25-200	46	25	200
	021084060	BTP40 Test Mandrel Dia. 40-300	63	40	300
	021104070	BTP50 Test Mandrel Dia. 40-350	100	40	350

# Tapping Systems and Accessories

## Quick Change Tapping Systems for CNC Machine Tools

Accutek is a global provider of quick change tapping products for all CNC metalworking machine tools available. Our product offering includes tap holders, tap adapters, and tapping heads – both non-reversible and reversible styles. Today's tapping applications require multiple technologies to support the numerous metalworking applications requiring tapping and threading operations. The various machine tools, materials, and threaded-hole applications continue to demand innovative tooling designs to accurately produce the desired thread results, cutting tool life, and accurate thread sizes and profiles.

Following are examples of Accutek Tapping products designed to bring tapping technology to your hole-threading applications:

### Rigid Tapping Holders – QCK-IK

- For use where synchronized spindle feed is incorporated into the machine tool control software
- Basic Quick Change tap holding system
- Choices of various taper shanks including steep taper (CAT and MAS-BT), HSK, Polygon shank, and KTI shank.
- Choices of other various shanks for additional spindle connections: Morse Taper, Acme shank, Straight Shank, and TR shank.
- Coolant -thru up to 20 bar/300 psi

### Compensating Tapping Holders – QCLK

- Tension and Compression axial length compensating style allows for compensation between spindle speed/feed and tap pitch.
- Choices of various taper shanks including steep taper (CAT and MAS-BT), HSK, Polygon shank, and KTI shank.
- Choices of other various shanks for additional spindle connections: Morse Taper, Acme shank, Straight Shank, and TR shank.

### Compensating Tapping Holders – QCLC-IK (High Pressure Coolant)

- Tension and Compression axial length compensating style allows for compensation between spindle speed/feed and tap pitch.
- Choices of various taper shanks including steep taper (CAT and MAS-BT), HSK, Polygon shank, and KTI shank.
- Choices of other various shanks for additional spindle connections: Morse Taper, Acme shank, Straight Shank, and TR shank.
- Coolant -thru up to 50 bar/725 psi

### Compensating Tapping Holders with Radial Parallel Float – QCFLX

- Tension and Compression axial length compensation
- Radial Parallel float for cutting tool and hole alignment
- Choices of other various shanks for additional spindle connections: Morse Taper, Acme shank, Straight Shank, and TR shank.

# Tapping Systems and Accessories

## Tapping Chucks - Tension & Compression Style with High Pressure Coolant-Through - QCLC-IK



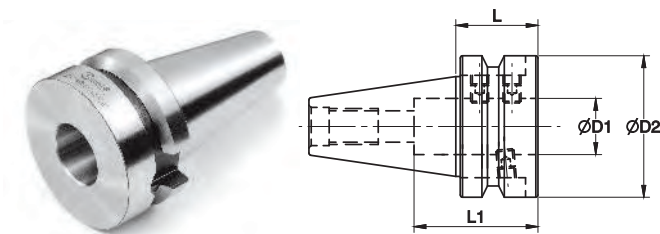
### Modular Shanks W/ Weldon And Whistle Flats

	Catalog Number	Description	Tap Size Range	Adaptor Size	Length Composition		"L" (inch)	"D" (inch)	"D2" (inch)
					Comp.	Expand.			
Metric Shank	C26331020	SSH25-QCLC-IK-115	#0-9/16	1	0.295	0.295	2.44	1.54	0.748
	C26332020	SSH25-QCLC-IK-220	1/4-7/8	2	0.492	0.492	3.86	2.36	1.220
	C26333030	SSH32-QCLC-IK-335	13/16-1-3/8	3	0.787	0.787	5.79	3.39	1.889
Inch Shank	C26511320	SSH1.00-QCLC-IK-115	#0-9/16	1	0.295	0.295	2.44	1.54	0.748
	C26512320	SSH1.00-QCLC-IK-220	1/4-7/8	2	0.492	0.492	3.86	2.36	1.220
	C26543320	SSH1.25-QCLC-IK-335	13/16-1-3/8	3	0.787	0.787	5.79	3.39	1.889

Tap Adapters on page 115-131  
Taper Shank Adapters below

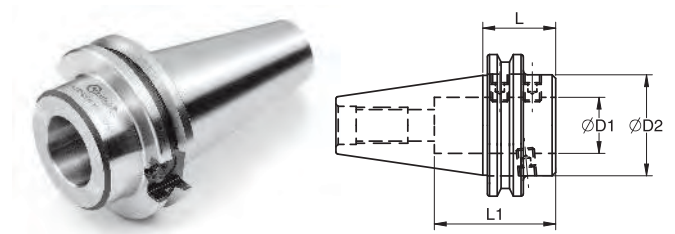
## Modular Shank Holders

For Use with Modular Shank Tap Holders



### BT (MAS 403)

Suitable For Central Coolant Flow



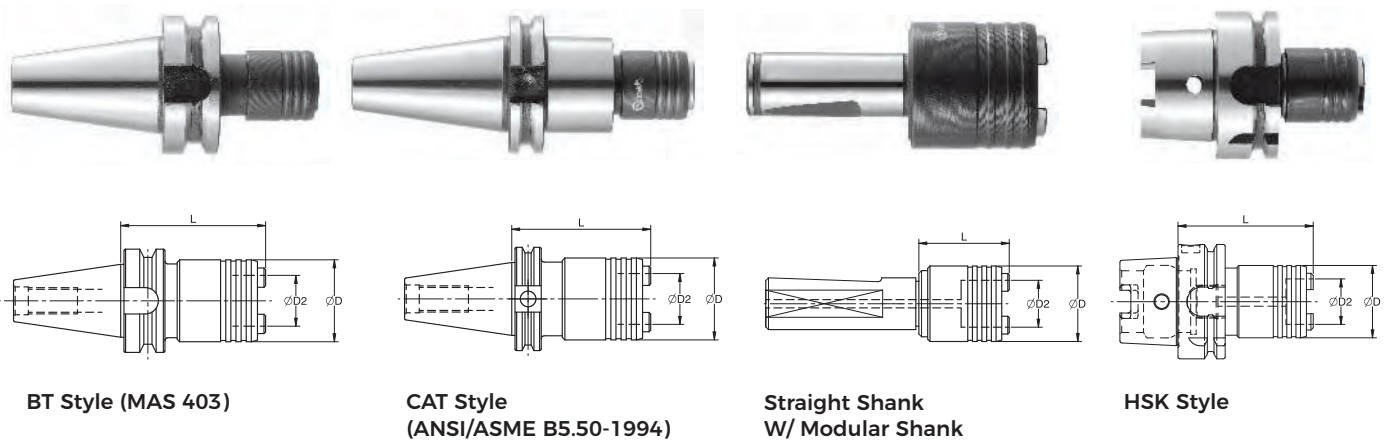
### CAT (ASNI-ASME B5.50-1994)

Suitable For Central Coolant Flow

	Catalog Number	Description	Use with Modular Shank	"D1"	"L"	"L1"	"D2"
Metric Bore	331225	BT40-MSH-25	MS25	25	54	35	63
	331432	BT50-MSH-32	MS32	32	61	35	69.9
	332425	CAT40-MSH-25	MS25	25	54	35	44.45
	332625	CAT50-MSH-25	MS25	25	54	35	69.9
	332632	CAT50-MSH-32	MS32	32	61	35	69.9
Inch Bore	331221	BT40-MSH-1.00-1.375	MS1.00	1.00	2.125	1.375	63
	331423	BT50-MSH-1.50-1.375	MS1.50	1.50	2.5	1.375	69.9
	332421	CAT40-MSH-1.00-1.375	MS1.00	1.00	2.125	1.375	44.45
	332621	CAT50-MSH-1.00-1.375	MS1.00	1.00	2.125	1.375	69.9
	332623	CAT50-MSH-1.50-1.375	MS1.50	1.50	2.500	1.375	69.9

# Tapping Systems and Accessories

## Tapping Chucks - Rigid Style with Coolant-Through - QCK-IK



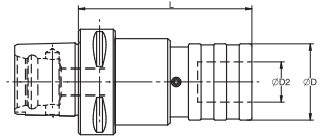
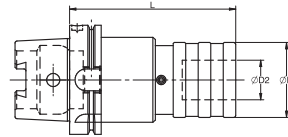
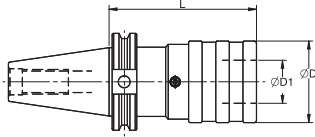
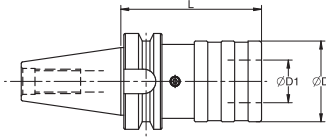
	Catalog Number	Description	Tap Size Range	Adaptor Size	"L" (inch)	"D" (inch)	"D2" (inch)
<b>BT Shank</b>	C13211010	BT30-QCK-IK 1	#0-9/16	1	2.640	1.25	0.748
	C13211020	BT40-QCK-IK 1	#0-9/16	1	2.834	1.25	0.748
	C13212020	BT40-QCK-IK 2	1/4-7/8	2	3.582	1.96	1.220
<b>Cat Shank</b>	C13221020	CAT40-QCK-IK 1	#0-9/16	1	2.64	1.25	0.748
	C13222020	CAT40-QCK-IK 2	1/4-7/8	2	3.15	1.96	1.220
	C13223020	CAT40-QCK-IK 3	13/16-1-3/8	3	4.33	2.83	1.889
	C13221040	CAT50-QCK-IK 1	#0-9/16	1	2.83	1.25	0.748
	C13222040	CAT50-QCK-IK 2	1/4-7/8	2	3.58	1.96	1.220
	C13223040	CAT50-QCK-IK 3	13/16-1-3/8	3	4.33	2.83	1.889
	C13224040	CAT50-QCK-IK 4	15/16-1-7/8	4	4.72	3.74	2.362
<b>HSK Shank</b>	C13271030	HSK50A-QCK-IK-1	#0-9/16	1	3.15	1.26	0.748
	C13272030	HSK50A-QCK-IK-2	1/4-7/8	2	3.94	1.97	1.220
	C13271040	HSK63A-QCK-IK-1	#0-9/16	1	3.35	1.26	0.748
	C13272040	HSK63A-QCK-IK-2	1/4-7/8	2	3.94	1.97	1.220
	C13271050	HSK80A-QCK-IK-1	#0-9/16	1	2.76	1.26	0.748
	C13272050	HSK80A-QCK-IK-2	1/4-7/8	2	3.64	1.97	1.220
	C13273050	HSK80A-QCK-IK-3	13/16-1-3/8	3	4.76	2.84	1.889
	C13271060	HSK100A-QCK-IK-1	#0-9/16	1	3.54	1.26	0.748
	C13272060	HSK100A-QCK-IK-2	1/4-7/8	2	4.33	1.97	1.220
C13273060	HSK100A-QCK-IK-3	13/16-1-3/8	3	5.91	2.84	1.889	
<b>Straight Shank Modular</b>	C13321100	SSH.750-QCK-IK-1	#0-9/16	1	1.574	1.41	0.748
	C13322100	SSH.750-QCK-IK-2	1/4-7/8	2	2.519	2.08	1.220
	C13321130	SSH1.00-QCK-IK-1	#0-9/16	1	2.834	1.41	0.748
	C13322130	SSH1.00-QCK-IK-2	1/4-7/8	2	2.519	2.08	1.220
	C13323130	SSH1.00-QCK-IK-3	13/16-1-3/8	3	3.818	3.07	1.889
	C13321140	SSH1.25-QCK-IK-1	#0-9/16	1	2.834	1.41	0.748
	C13322140	SSH1.25-QCK-IK-2	1/4-7/8	2	2.519	2.08	1.220
	C13323140	SSH1.25-QCK-IK-3	13/16-1-3/8	3	3.818	3.07	1.889
	C13321180	SSH1.50-QCK-IK-1	#0-9/16	1	2.834	1.41	0.748
	C13322180	SSH1.50-QCK-IK-2	1/4-7/8	2	2.519	2.08	1.220
	C13323180	SSH1.50-QCK-IK-3	13/16-1-3/8	3	3.818	3.07	1.889
	C13324180	SSH1.50-QCK-IK-4	15/16-1-7/8	4	4.251	3.77	2.360

Tap Adapters on page 115-131



# Tapping Systems and Accessories

## Tapping Chucks - Tension & Compression Style - Non-Coolant Through - QCLK



BT Style (MAS 403)

CAT Style  
(ANSI\_ASME B5.50-1994)

HSK Style

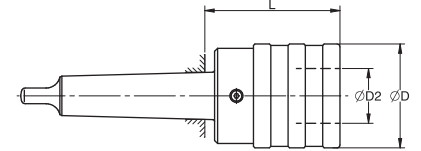
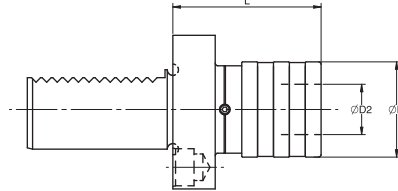
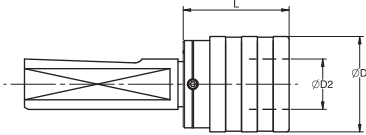
PTI - Polygon Taper Interface  
(ISO 26623-1)

	Catalog Number	Description	Tap Size Range	Adaptor Size	Length Composition		"L" (inch)	"D" (inch)	"D2" (inch)
					Comp.	Expand.			
CAT Shank	20221020	CAT40-QCLK-1	#0-9/16	1	0.295	0.295	2.97	1.42	0.748
	20222020	CAT40-QCLK-2	1/4-7/8	2	0.492	0.492	3.94	2.09	1.22
	20221040	CAT50-QCLK-1	#0-9/16	1	0.295	0.295	3.52	1.42	0.748
	20222040	CAT50-QCLK-2	1/4-7/8	2	0.492	0.492	4.04	2.09	1.22
	20223040	CAT50-QCLK-3	13/16-1-3/8	3	0.787	0.787	5.59	3.07	1.89
	20224040	CAT50-QCLK-4	1-1-7/8	4	0.886	0.886	6.52	3.78	2.36
BT Shank	20211010	BT30-QCLK 1	#0-9/16	1	0.295	0.295		1.42	0.748
	20211020	BT40-QCLK-1	#0-9/16	1	0.295	0.295	3.52	1.42	0.748
	20212020	BT40-QCLK-2	1/4-7/8	2	0.492	0.492	4.04	2.09	1.22
HSK Shank	26161030	HSK50A-QCLK-1	#0-9/16	1	0.295	0.295	4.10	1.417	0.748
	26162030	HSK50A-QCLK-2	1/4-7/8	2	0.492	0.492	5.51	2.086	1.22
	26161040	HSK63A-QCLK-1	#0-9/16	1	0.295	0.295	4.16	1.417	0.748
	26162040	HSK63A-QCLK-2	1/4-7/8	2	0.492	0.492	5.57	2.086	1.22
	26161050	HSK80A-QCLK-1	#0-9/16	1	0.295	0.295	4.36	1.417	0.748
	26162050	HSK80A-QCLK-2	1/4-7/8	2	0.492	0.492	5.77	2.086	1.22
	26163050	HSK80A-QCLK-3	13/16-1-3/8	3	0.787	0.787	8.39	3.07	1.889
	26161060	HSK100A-QCLK-1	#0-9/16	1	0.295	0.295	4.43	1.417	0.748
	26162060	HSK100A-QCLK-2	1/4-7/8	2	0.492	0.492	5.85	2.086	1.22
26163060	HSK100A-QCLK-3	13/16-1-3/8	3	0.787	0.787	8.46	3.07	1.889	
PTI Shank	20171660	PTI32-QCLK-1	#0-9/16	1	0.295	0.295	3.14	1.417	0.748
	20171680	PTI50-QCLK-1	#0-9/16	1	0.295	0.295	3.14	1.417	0.748
	20172680	PTI50-QCLK-2	1/4-7/8	2	0.492	0.492	4.53	2.086	1.22
	20171690	PTI63-QCLK-1	#0-9/16	1	0.295	0.295	3.54	1.417	0.748
	20172690	PTI63-QCLK-2	1/4-7/8	2	0.492	0.492	4.72	2.086	1.22
	20173690	PTI63-QCLK-3	13/16-1-3/8	3	0.787	0.787	6.69	3.07	1.889
	20171700	PTI80-QCLK-1	#0-9/16	1	0.295	0.295	3.35	1.417	0.748
	20172700	PTI80-QCLK-2	1/4-7/8	2	0.492	0.492	4.33	2.086	1.22
	20173700	PTI80-QCLK-3	13/16-1-3/8	3	0.787	0.787	6.30	3.07	1.889

Tap Adapters on page 115-131

# Tapping Systems and Accessories

## Tapping Chucks - Tension & Compression Style - Non-Coolant Through - QCLK (Continued)



**Straight Shank W/ Modular Shank**

**VDI Shank (VDI 3425/DIN 69880)**

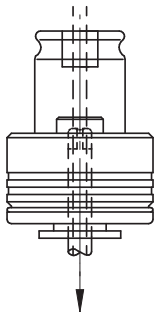
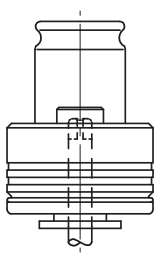
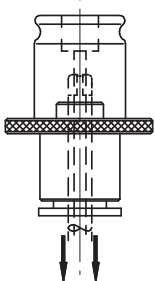
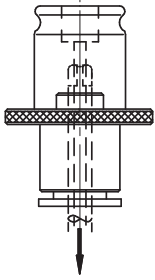
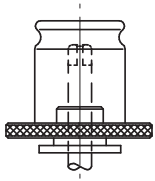
**Morse Taper Style**

	Catalog Number	Description	Tap Size Range	Adaptor Size	Length Composition		"L" (inch)	"D" (inch)	"D2" (inch)
					Comp.	Expand.			
<b>Straight Shank</b>	20321100	SSH25-QCLK-1	#0-9/16	1	0.295	0.295	3.35	1.417	0.748
	20322100	SSH25-QCLK-2	1/4-7/8	2	0.492	0.492	4.33	2.086	1.22
	20231140	SSH32-QCLK-1	#0-9/16	1	0.295	0.295	3.35	1.417	0.748
	20322140	SSH32-QCLK-2	1/4-7/8	2	0.492	0.492	4.33	2.086	1.22
	20323140	SSH32-QCLK-3	13/16-1-3/8	3	0.787	0.787	6.30	3.07	1.889
	20321510	SSH1.00-QCLK-1	#0-9/16	1	0.295	0.295	3.35	1.417	0.748
	20322510	SSH1.00-QCLK-2	1/4-7/8	2	0.492	0.492	4.33	2.086	1.22
	20321140	SSH1.25-QCLK-1	#0-9/16	1	0.295	0.295	3.35	1.417	0.748
	20322140	SSH1.25-QCLK-2	1/4-7/8	2	0.492	0.492	4.33	2.086	1.22
	20323140	SSH1.25-QCLK-3	13/16-1-3/8	3	0.787	0.787	6.30	3.07	1.889
	20323180	SSH1.50-QCLK-3	13/16-1-3/8	3	0.787	0.787	6.30	3.07	1.889
<b>VDI Shank</b>	20361000	VDI20-QCLK-1	#0-9/16	1	0.295	0.295	2.08	1.417	0.748
	20361010	VDI30-QCLK-1	#0-9/16	1	0.295	0.295	2.20	1.417	0.748
	20362010	VDI30-QCLK-2	1/4-7/8	2	0.492	0.492	3.03	2.086	1.22
	20361020	VDI40-QCLK-1	#0-9/16	1	0.295	0.295	2.20	1.417	0.748
	20362020	VDI40-QCLK-2	1/4-7/8	2	0.492	0.492	3.03	2.086	1.22
	20363020	VDI40-QCLK-3	13/16-1-3/8	3	0.787	0.787	4.85	3.07	1.889
	20361030	VDI50-QCLK-1	#0-9/16	1	0.295	0.295	2.20	1.417	0.748
	20362030	VDI50-QCLK-2	1/4-7/8	2	0.492	0.492	3.15	2.086	1.22
	20363030	VDI50-QCLK-3	13/16-1-3/8	3	0.787	0.787	4.30	3.07	1.889
	20364030	VDI50-QCLK-4	15/16 - 1-7/8	4	0.886	0.886	4.85	3.78	2.36
	20363040	VDI60-QCLK-3	13/16-1-3/8	3	0.787	0.787	4.30	3.07	1.889
20364040	VDI60-QCLK-4	15/16 - 1-7/8	4	0.886	0.886	4.75	3.78	2.36	
<b>Morse Taper</b>	20100020	MT2-QCLK-0	#0-1/4	0	0.255	0.255	1.77	1.03	0.512
	20101020	MT2-QCLK-1	#0-9/16	1	0.295	0.295	1.85	1.417	0.748
	20101030	MT3-QCLK-1	#0-9/16	1	0.295	0.295	1.85	1.417	0.748
	20102030	MT3-QCLK-2	1/4-7/8	2	0.492	0.492	2.79	2.086	1.22
	20102040	MT4-QCLK-2	1/4-7/8	2	0.492	0.492	2.83	2.086	1.22
	20103040	MT4-QCLK-3	13/16-1-3/8	3	0.787	0.787	4.13	3.07	1.889
	20103050	MT5-QCLK-3	13/16-1-3/8	3	0.787	0.787	4.15	3.07	1.889
	20104050	MT5-QCLK-4	15/16 - 1-7/8	4	0.886	0.886	4.58	3.78	2.36
	20105050	MT5-QCLK-5	1-1/16-2-3/4	5	1.181	1.181	7.18	5.12	3.07
	20104060	MT6-QCLK-4	15/16 - 1-7/8	4	0.886	0.886	4.66	3.78	2.36
	20105060	MT6-QCLK-5	1-1/16-2-3/4	5	1.181	1.181	6.47	5.12	3.07

Tap Adapters on page 115-131

# Tapping Systems and Accessories

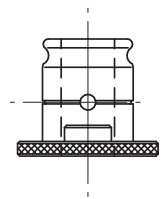
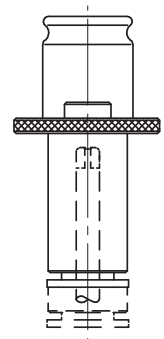
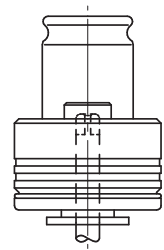
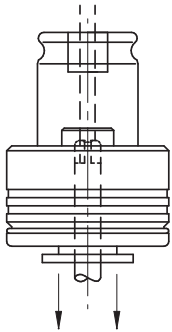
## Tap Adapter Guide



Style	Features	Coolant Style	Series Sizes	Inch Tap Range	NPT Tap Range	Metric Tap Range	Comments
QA	Quick Change	Non-Coolant	0 - 4	#0 - 1-3/8"	1/8" - 1"	3mm - 36mm	General Purpose - Use with Rigid or Tension/Compression style holders
QA-1K	Quick Change	Coolant Thru Tap	1 - 3	#0 - 1-3/8"	1/8" - 1"	3mm - 36mm	General Purpose - Use with Rigid or Tension/Compression style holders with taps that offer coolant thru tap
QA-K	Quick Change	Coolant Surround Tap	1 - 3	#0 - 1-3/8"	1/8" - 1"	3mm - 36mm	General Purpose - Use with Rigid or Tension/Compression style holders use with coolant thru holders where coolant surround the tap shank is desired.
QASB	Quick Change with Torque Control	Non-Coolant	0 - 5, 40	#0 - 2-3/4"	N/A	3mm - 36mm	General Purpose - Use with Tension/Compression style holders for through hole tapping or bottom tapping and in high nickel materials or material with Rc over 40 Rc
QASB-1K	Quick Change with Torque Control	Coolant Thru Tap	1 - 4	#0 - 1-3/8"	1/8" - 1"	3mm - 36mm	General Purpose - Use with Tension/Compression style holders for through hole tapping or bottom tapping and in high nickel materials or material with Rc over 40 Rc when using coolant through taps

# Tapping Systems and Accessories

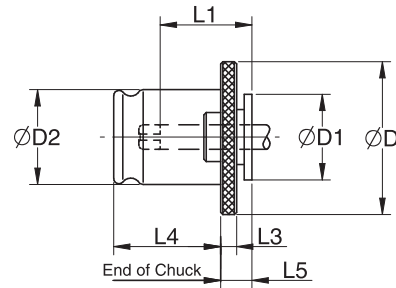
## Tap Adapter Guide



Style	Features	Coolant Style	Series Sizes	Inch Tap Range	NPT Tap Range	Metric Tap Range	Comments
QASB-K	Quick Change with Torque Control	Coolant Surround Tap	1 - 4	#0 - 1-3/8"	1/8" - 1"	3mm - 36mm	General Purpose - Use with Tension/Compression style holders for through hole tapping or bottom tapping and in high nickel materials or material with Rc over 40 Rc when coolant on the tap is desired but not coolant thru taps
QASPB	Quick Change with Torque Control for NPT Taps	Non-Coolant	2 - 5	N/A	1/8" - 3"	N/A	General Purpose - Use with Tension/Compression style holders for through hole tapping or bottom tapping and in high nickel materials or material with Rc over 40 Rc
QAN	Quick Change Extension with length adjustment	Non-Coolant	0 - 4	#0 - 1-3/8"	1/8" - 1"	3mm - 48mm	General Purpose - Use with Rigid or Tension/Compression style holders when additional piece part clearance and/or longer reach tapping applications are needed.
QRE	Quick Change Reducer	Coolant Thru	1 - 5	#0 - 1-3/8"	1/8" - 1"	3mm - 36mm	Use when you want to reduce tap adapter series within the current tap holder series in use.

# Tapping Systems and Accessories

## Tap Adapters QA Style - ANSI Shank Taps



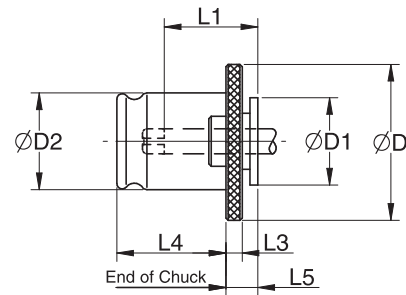
QA Style

Description	Tap Size Range		Dimension (mm/inch)						
	Inch	Metric	"D"	"D1"	"D2"	"L1"	"L3"	"L4"	"L5"
QA 0	#0-5/16"	M1-M10	0.866	0.512	0.512	0.590	0.157	0.768	0.275
QA 1	#0-9/16"	M3-M12	1.181	0.748	0.748	0.669	0.157	0.846	0.275
QA 2	1/4"-7/8"	M8-M20	1.889	1.181	1.181	1.181	0.196	1.378	0.433
QA 3	13/16"-1-3/8"	M13-M33	2.755	1.889	1.889	1.732	0.236	2.185	0.551
QA 4	15/16"-1-7/8"	M22-M48	3.622	2.362	2.362	2.795	0.511	2.480	1.653

	Tap Size Range		Shank Dia.	Shank Sq.	Catalog Number				
	Inch	Metric			QA0	QA1	QA2	QA3	QA4
Hands Taps - ANSI Shank	#0 - #6	M3	0.141	0.110	40000104	40100104	40200104		
	#8, 5/32"	M4	0.168	0.131	40000148	40100148	40200148		
	#10, 3/16"	M4.5, M5	0.194	0.152	40000187	40100187	40200187		
	#12, 7/32"		0.220	0.165	40000212	40100212	40200212		
	#14, 1/4"	M6, M6.5	0.255	0.191	40000266	40100266	40200266		
	1/4" Sm	M6, M6.5	0.185	0.138	40000173	40100173	40200173		
	5/16"	M7, M8	0.318	0.238	40000324	40100324	40200324		
	5/16" Sm	M7, M8	0.240	0.180	40000242	40100242	40200242		
	3/8"	M10	0.381	0.286		40100386	40200386		
	3/8" Sm	M10	0.275	0.206	40000274	40100274	40200274		
	7/16"		0.323	0.242		40100330	40200330		
	1/2"	M12, M12.5	0.367	0.275		40100366	40200366		
	9/16"	M14	0.429	0.322		40100402	40200402		
	5/8"	M16	0.480	0.360			40200435		
	11/16"	M18	0.542	0.406			40200460		
	3/4"		0.590	0.442			40200481		
	13/16"	M20	0.652	0.489			40200505	40300505	
	7/8"	M22	0.697	0.523			40200516	40300516	
	15/16"	M24	0.760	0.570				40300550	40400550
	1"	M25	0.800	0.600				40300564	40400564
1-1/8"		0.896	0.672				40300588	40400588	
1-1/4"	M30	1.021	0.766				40300625	40400625	
1-3/8"	M33	1.108	0.831				40300662	40400662	
Pipe Taps - ANSI Shank	1/8"NPT	SM. Shank	0.313	0.234	40000305	40100305	40200305		
	1/8"NPT	Lg. Shank	0.437	0.328		40100412	40200412		
	1/4"NPT		0.562	0.421		40100476	40200476		
	3/8"NPT		0.700	0.531		40100521	40200521	40300521	
	1/2"NPT		0.687	0.515		40100510	40200510	40300510	
	3/4"NPT		0.906	0.679				40300596	40400596
	1"NPT		1.125	0.843				40300669	40400669

# Tapping Systems and Accessories

## Tap Adapters QA Style - DIN Shank Taps



QA Style

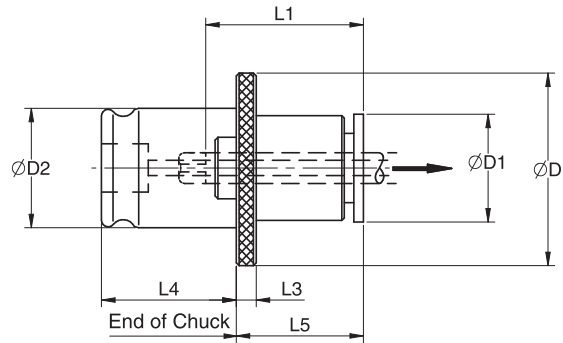
Description	Tap Size Range		Dimension (mm/inch)						
	Inch	Metric	"D"	"D1"	"D2"	"L1"	"L3"	"L4"	"L5"
QA 0	#0-5/16"	M1-M10	0.866	0.512	0.512	0.590	0.157	0.768	0.275
QA 1	#0-9/16"	M3-M12	1.181	0.748	0.748	0.669	0.157	0.846	0.275
QA 2	1/4"-7/8"	M8-M20	1.889	1.181	1.181	1.181	0.196	1.378	0.433
QA 3	13/16"-1-3/8"	M13-M33	2.755	1.889	1.889	1.732	0.236	2.185	0.551
QA 4	15/16"-1-7/8"	M22-M48	3.622	2.362	2.362	2.795	0.511	2.480	1.653

	Size (Metric)		Shank Dia.	Shank Sq.	Catalog Number						
	DIN 371	DIN 376			QA0	QA1	QA2	QA3	QA4		
Hands Taps - ANSI Shank	M3		0.138	0.106	40000091						
	M4		0.177	0.134	40000151	40100151	40200151				
	M5		0.236	0.193	40000232	40100232	40200232				
	M6		0.236	0.193	40000232	40100232	40200232				
	M7		0.276	0.217		40100274	40200274				
	M8		0.315	0.244	40000310	40100310	40200310				
	M10	M8		0.236	0.193	40000232	40100232	40200232			
		M10		0.394	0.315	40000389	40100389	40200389			
	M10	M10		0.276	0.217	40000274	40100274	40200274			
		M12		0.354	0.276		40100348	40200348			
	M14			0.433	0.354			40200408	40300408		
		M16		0.472	0.354			40200430	40300430		
	M18			0.551	0.433			40200465	40300465		
		M20		0.630	0.472			40200491	40300491		
	M22			0.709	0.571				40300531	40400531	
		M24		0.709	0.571				40300531	40400531	
	M27			0.787	0.630				40300556	40400556	
		M30		0.866	0.709				40300578	40400578	
	M33			0.984	0.787				40300615	40400615	
		M36		1.102	0.866					40400645	
M39			1.260	0.945					40400698		
	M42		1.260	0.945					40400698		
M45			1.417	1.142					40400734		
	M48		1.417	1.142					40400734		

# Tapping Systems and Accessories

## Tap Adapters QA/IK Style - Inch Shank Taps

With Coolant Through the Tap Flow



QA/IK Style

Description	Tap Size Range		Dimension (mm/inch)						
	Inch	Metric	"D"	"D1"	"D2"	"L1"	"L3"	"L4"	"L5"
QA-IK 1	#0-9/16"	M3-M12	1.181	0.748	0.748	0.669	0.157	0.846	0.680
QA-IK 2	1/4"-7/8"	M8-M20	1.890	1.181	1.220	1.181	0.196	1.378	1.230
QA-IK 3	13/16"-1-3/8"	M14-M33	2.760	1.889	1.889	1.732	0.236	2.185	1.600

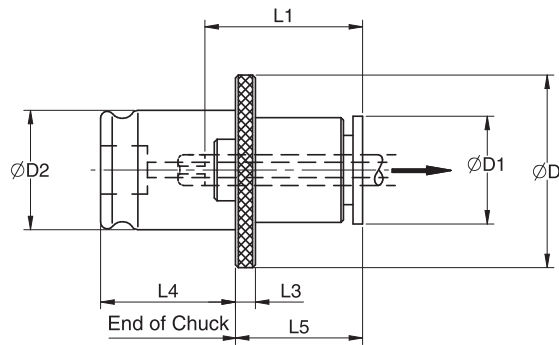
	Size		Shank Dia.	Shank Sq.	Catalog Number		
	Inch	Metric			QA/IK 1	QA/IK 2	QA/IK 3
<b>Hand Taps - ANSI Shank</b>	#0 - #6	M3	0.141	0.110	A40100104	A40200104	
	#8	M4	0.168	0.131	A40100168	A40200168	
	#10	M4.5, M5	0.194	0.152	A40100187	A40200187	
	#12		0.220	0.165	A40100212	A40200212	
	1/4"	M6, M6.5	0.255	0.191	A40100266	A40200266	
	1/4" Sm	M6, M6.5	0.185	0.138	A40100173	A40200173	
	5/16"	M7, M8	0.318	0.238	A40100324	A40200324	
	5/16" Sm	M7, M8	0.240	0.180	A40100242	A40200242	
	3/8"	M10	0.381	0.286	A40100386	A40200386	
	3/8" Sm	M10	0.275	0.206	A40100274	A40200274	
	7/16"		0.323	0.242	A40100330	A40200330	
	1/2"	M12, M12.5	0.367	0.275	A40100366	A40200366	
	9/16"	M14	0.429	0.322	A40100402	A40200402	
	5/8"	M16	0.480	0.360		A40200435	
	11/16"	M18	0.542	0.406		A40200460	
	3/4"		0.590	0.442		A40200481	
	13/16"	M20	0.652	0.489		A40200505	A40300505
	7/8"	M22	0.697	0.523		A40200516	A40300516
	15/16"	M24	0.760	0.570			A40300550
	1"	M25	0.800	0.600			A40300564
1-1/8"		0.896	0.672			A40300588	
1-1/4"	M30	1.021	0.766			A40300625	
1-3/8"	M33	1.108	0.831			A40300662	

	Size		Shank Dia.	Shank Sq.	Catalog Number		
	Inch NPT				QA/IK 1	QA/IK 2	QA/IK 3
<b>Pipe Taps - ANSI Shank</b>	1/8"NPT	SM. Shank	0.313	0.234	A40100305		
	1/8"NPT	Lg. Shank	0.437	0.328	A40100412	A40200412	
	1/4"NPT		0.562	0.421		A40200476	
	3/8"NPT		0.700	0.531		A40200521	A40300521
	1/2"NPT		0.687	0.515		A40200510	A40300510
	3/4"NPT		0.906	0.679			A40300596
	1"NPT		1.125	0.843			A40300669

# Tapping Systems and Accessories

## Tap Adapters QA/IK Style - Metric Shank Taps

With Coolant Through the Tap Flow



QA/IK Style

	Size (Metric)		Shank Dia.	Shank Sq.	Catalog Number			
	DIN 371	DIN 376			QA/IK 1	QA/IK 2	QA/IK 3	
Hands Taps - ANSI Shank	M3		0.138	0.106	A40100091			
	M4		0.177	0.134	A40100151	A40200151		
	M5		0.236	0.193	A40100232	A40200232		
	M6		0.236	0.193	A40100232	A40200232		
	M7		0.276	0.217	A40100274	A40200274		
	M8		0.315	0.244	A40100310	A40200310		
	M10		M8	0.236	0.193	A40100232	A40200232	
			M10	0.394	0.315	A40100389	A40200389	
			M10	0.276	0.217	A40100274	A40200274	
			M12	0.354	0.276	A40100348	A40200348	
			M14	0.433	0.354	A40100408	A40200408	A40300408
			M16	0.472	0.354		A40200430	A40300430
			M18	0.551	0.433		A40200465	A40300465
			M20	0.630	0.472		A40200491	A40300491
			M22	0.709	0.571			A40300531
			M24	0.709	0.571			A40300531
			M27	0.787	0.630			A40300556
		M30	0.866	0.709			A40300578	
		M33	0.984	0.787			A40300615	
		M36	1.102	0.866			A40300645	

## Did you know?

Over the past 25 years, U.S.-manufactured goods exports have **quadrupled**. In 1990, for example, U.S. manufacturers exported \$329.5 billion in goods. By 2000, that number had more than doubled to \$708.0 billion. In 2014, it reached an all-time high, for the fifth consecutive year, of \$1.403 trillion, despite slowing global growth.

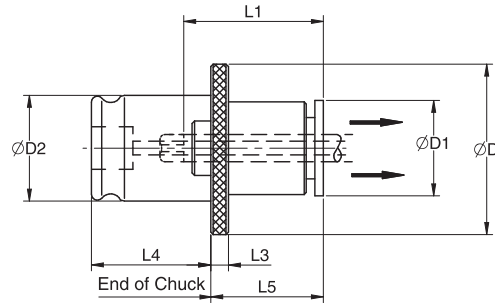
U.S. Commerce Department via. [nam.org](http://nam.org)



# Tapping Systems and Accessories

## Tap Adapters QA/K Style - Inch Shank Taps

With Coolant Surround the Tap Flow



QA/K Style

Description	Tap Size Range		Dimension (mm/inch)						
	Inch	Metric	"D"	"D1"	"D2"	"L1"	"L3"	"L4"	"L5"
QA/K 1	#0-9/16"	M3-M12	1.181	0.748	0.748	0.669	0.157	0.846	0.275
QA/K 2	1/4"-7/8"	M8-M20	1.890	1.181	1.220	1.181	0.196	1.378	0.433
QA/K 3	13/16"-1-3/8"	M14-M33	2.760	1.889	1.889	1.732	0.236	2.185	0.551

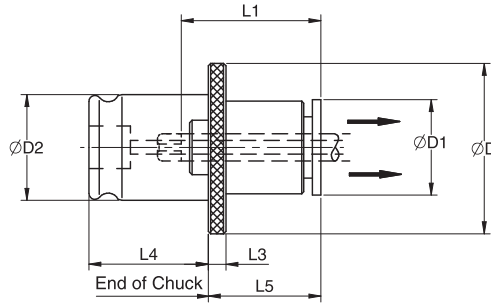
	Size		Shank Dia.	Shank Sq.	Catalog Number		
	Inch	Metric			QA/K 1	QA/K 2	QA/K 3
<b>Hands Taps - ANSI Shank</b>	#0 - #6	M3	0.141	0.110	B40100104	B40200104	
	#8	M4	0.168	0.131	B40100148	B40200148	
	#10	M4.5, M5	0.194	0.152	B40100187	B40200187	
	#12		0.220	0.165	B40100212	B40200212	
	1/4"	M6, M6.5	0.255	0.191	B40100266	B40200266	
	1/4" Sm	M6, M6.5	0.185	0.138	B40100173	B40200173	
	5/16"	M7, M8	0.318	0.238	B40100324	B40200324	
	5/16" Sm	M7, M8	0.240	0.180	B40100242	B40200242	
	3/8"	M10	0.381	0.286	B40100386	B40200386	
	3/8" Sm	M10	0.275	0.206	B40100274	B40200274	
	7/16"		0.323	0.242	B40100330	B40200330	
	1/2"	M12, M12.5	0.367	0.275	B40100366	B40200366	
	9/16"	M14	0.429	0.322	B40100402	B40200402	
	5/8"	M16	0.480	0.360		B40200435	
	11/16"	M18	0.542	0.406		B40200460	
	3/4"		0.590	0.442		B40200481	
	13/16"	M20	0.652	0.489		B40200505	B40300505
	7/8"	M22	0.697	0.523		B40200516	B40300516
	15/16"	M24	0.760	0.570			B40300550
	1"	M25	0.800	0.600			B40300564
1-1/8"		0.896	0.672			B40300588	
1-1/4"	M30	1.021	0.766			B40300625	
1-3/8"	M33	1.108	0.831			B40300662	

	Size		Shank Dia.	Shank Sq.	Catalog Number		
	Inch NPT				QA/K 1	QA/K 2	QA/K 3
<b>Pipe Taps - ANSI Shank</b>	1/8"NPT	SM. Shank	0.313	0.234	B40100305		
	1/8"NPT	Lg. Shank	0.437	0.328	B40100412	B40200412	
	1/4"NPT		0.562	0.421		B40200476	
	3/8"NPT		0.700	0.531		B40200521	B40300521
	1/2"NPT		0.687	0.515		B40200510	B40300510
	3/4"NPT		0.906	0.679			B40300596
	1"NPT		1.125	0.843			B40300669

# Tapping Systems and Accessories

## Tap Adapters QA/K Style - Metric Shank Taps

With Coolant Surround the Tap Flow



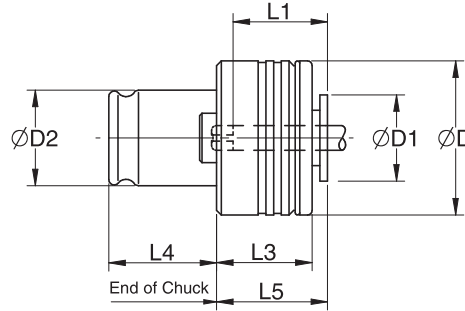
QA/K Style

	Size (Metric)		Shank Dia.	Shank Sq.	Catalog Number			
	DIN 371	DIN 376			QA/K 1	QA/K 2	QA/K 3	
Hands Taps - DIN Shank	M3		0.138	0.106	B40100091			
	M4		0.177	0.134	B40100151	B40200151		
	M5		0.236	0.193	B40100232	B40200232		
	M6		0.236	0.193	B40100232	B40200232		
	M7		0.276	0.217	B40100274	B40200274		
	M8		0.315	0.244	B40100310	B40200310		
		M8		0.236	0.193	B40100232	B40200232	
	M10		0.394	0.315	B40100389	B40200389		
		M10		0.276	0.217	B40100274	B40200274	
		M12		0.354	0.276	B40100348	B40200348	
		M14		0.433	0.354	B40100408	B40200408	B40300408
		M16		0.472	0.354		B40200430	B40300430
		M18		0.551	0.433		B40200465	B40300465
		M20		0.630	0.472		B40200491	B40300491
		M22		0.709	0.571			B40300531
		M24		0.709	0.571			B40300531
		M27		0.787	0.630			B40300556
	M30		0.866	0.709			B40300578	
	M33		0.984	0.787			B40300615	
	M36		1.102	0.866			B40300645	

# Tapping Systems and Accessories

## Tap Adapters QASB Style - Inch Shank Taps

Without Coolant and with Safety Clutch



### QASB Style

Description	Tap Size Range		Dimension (mm/inch)						
	Inch	Metric	"D"	"D1"	"D2"	"L1"	"L3"	"L4"	"L5"
QASB 1	#0-9/16"	M3-M12	1.259	0.748	0.748	0.669	0.984	0.846	0.984
QASB 2	1/4"-7/8"	M8-M20	1.968	1.181	1.220	1.181	1.220	1.377	1.338
QASB 3	13/16"-1-3/8"	M14-M33	2.834	1.889	1.889	1.732	1.614	2.185	1.771
QASB-4	15/16"-1-7/8"	M22-M48	3.740	2.362	2.362	2.795	2.401	2.480	2.677

	Size		Shank Dia.	Shank Sq.	Catalog Number			
	Inch	Metric			QASB-1	QASB-2	QASB-3	QASB-4
<b>Hand Taps - ANSI Shank</b>	#0 - #6	M3	0.141	0.110	41100104	41200104		
	#8	M4	0.168	0.131	41100168	41200168		
	#10	M4.5, M5	0.194	0.152	41100187	41200187		
	#12		0.220	0.165	41100212	41200212		
	1/4"	M6, M6.5	0.255	0.191	41100266	41200266		
	5/16"	M7, M8	0.318	0.238	41100324	41200324		
	5/16" Sm	M7, M8	0.185	0.138	41100242	41200242		
	3/8"	M10	0.381	0.286	41100386	41200386		
	3/8" Sm	M10	0.240	0.180	41100274	41200274		
	7/16"		0.323	0.242	41100330	41200330		
	1/2"	M12, M12.5	0.367	0.275	41100366	41200366		
	9/16"	M14	0.429	0.322	41100402	41200402		
	5/8"	M16	0.480	0.360		41200435		
	11/16"	M18	0.542	0.406		41200460		
	3/4"		0.590	0.442		41200481		
	13/16"	M20	0.652	0.489		41200505	41300505	
	7/8"	M22	0.697	0.523		41200516	41300516	
	15/16"	M24	0.760	0.570			41300550	41400550
	1"	M25	0.800	0.600			41300564	41400564
	1-1/8"		0.896	0.672			41300588	41400588
1-1/4"	M30	1.021	0.766			41300625	41400625	
1-3/8"	M33	1.108	0.831			41300662	41400662	

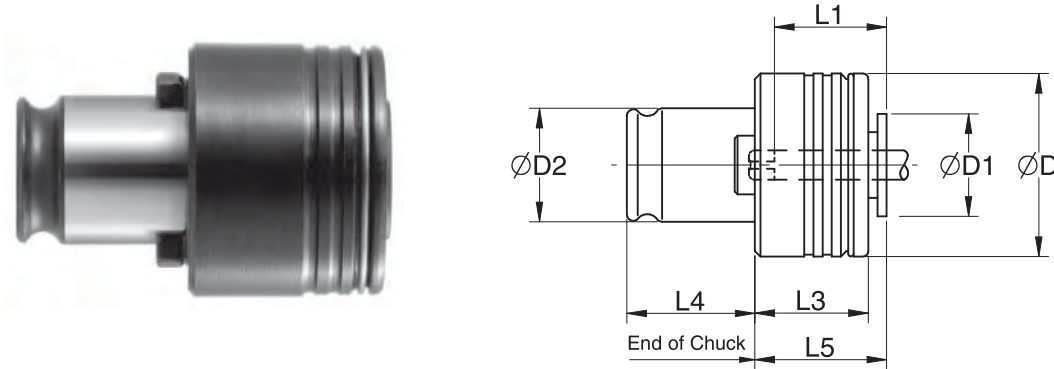
	Size		Shank Dia.	Shank Sq.	Catalog Number		
	Inch NPT				QASB-1	QASB-2	QASB-3
<b>Pipe Taps - ANSI Shank</b>	1/8"NPT	SM. Shank	0.313	0.234	41100305		
	1/8"NPT	Lg. Shank	0.437	0.328	41100412	41200412	
	1/4"NPT		0.562	0.421		41200476	
	3/8"NPT		0.700	0.531		41200521	41300521
	1/2"NPT		0.687	0.515		41200510	41300510
	3/4"NPT		0.906	0.679			41300596
	1"NPT		1.125	0.843			41300669

CWA Style Pin Wrench on page 132

# Tapping Systems and Accessories

## Tap Adapters QASB Style - Metric Shank Taps

Without Coolant and with Safety Clutch



**QASB Style**

Description	Tap Size Range		Dimension (mm/inch)						
	Inch	Metric	"D"	"D1"	"D2"	"L1"	"L3"	"L4"	"L5"
QASB 1	#0-9/16"	M3-M12	1.259	0.748	0.748	0.669	0.984	0.846	0.984
QASB 2	1/4"-7/8"	M8-M20	1.968	1.181	1.220	1.181	1.220	1.377	1.338
QASB 3	13/16"-1-3/8"	M14-M33	2.834	1.889	1.889	1.732	1.614	2.185	1.771
QASB-4	15/16"-1-7/8"	M22-M48	3.740	2.362	2.362	2.795	2.401	2.480	2.677

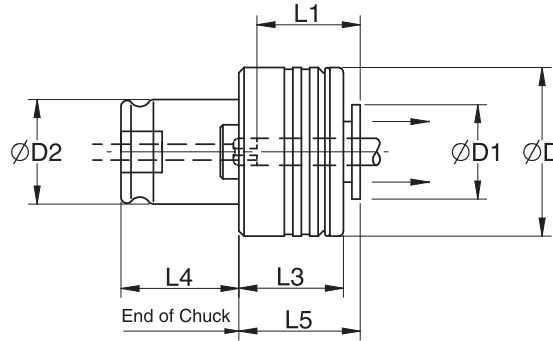
Size (Metric)		Shank Dia.	Shank Sq.	Catalog Number			
DIN 371	DIN 376			QASB-1	QASB-2	QASB-3	QASB-4
M3		0.138	0.106	41100091			
M4		0.177	0.134	41100151	41200151		
M5		0.236	0.193	41100232	41200232		
M6		0.236	0.193	41100232	41200232		
M7		0.276	0.217	41100274	41200274		
M8		0.315	0.244	41100310	41200310		
	M8	0.236	0.193	41100232	41200232		
M10		0.394	0.315	41100389	41200389		
	M10	0.276	0.217	41100274	41200274		
	M12	0.354	0.276		41200348		
	M14	0.433	0.354		41200408	41300408	
	M16	0.472	0.354		41200430	41300430	
	M18	0.551	0.433		41200465	41300465	
	M20	0.630	0.472		41200491	41300491	
	M22	0.709	0.571			41300531	41400531
	M24	0.709	0.571			41300531	41400531
	M27	0.787	0.630			41300556	41400556
	M30	0.866	0.709			41300578	41400578
	M33	0.984	0.787			41300615	41400615
	M36	1.102	0.866			41300645	41400645

GWA Style Pin Wrench on page 132

# Tapping Systems and Accessories

## Tap Adapters QASB-K Style - Inch Shank Taps

With Surround Coolant Flow and Safety Clutch



### QASB/K Style

Description	Tap Size Range		Dimension (mm/inch)						
	Inch	Metric	"D"	"D1"	"D2"	"L1"	"L3"	"L4"	"L5"
QASB-K 1	#0-9/16"	M3-M12	1.259	0.748	0.748	0.669	0.984	0.846	0.984
QASB-K 2	1/4"-7/8"	M8-M20	1.968	1.181	1.220	1.181	1.220	1.377	1.338
QASB-K 3	13/16"-1-3/8"	M14-M33	2.834	1.889	1.889	1.732	1.614	2.185	1.771
QASB-K 4	15/16"-1-7/8"	M22-M48	3.740	2.362	2.362	2.795	2.401	2.480	2.677

	Size		Shank Dia.	Shank Sq.	Catalog Number			
	Inch	Metric			QASB-K 1	QASB-K 2	QASB-K 3	QASB-K 4
<b>Hand Taps - ANSI Shank</b>	#0 - #6	M3	0.141	0.110	B41100104	B41200104		
	#8	M4	0.168	0.131	B41100168	B41200168		
	#10	M4.5, M5	0.194	0.152	B41100187	B41200187		
	#12		0.220	0.165	B41100212	B41200212		
	1/4"	M6, M6.5	0.255	0.191	B41100266	B41200266		
	5/16"	M7, M8	0.318	0.238	B41100324	B41200324		
	5/16" Sm	M7, M8	0.185	0.138	B41100242	B41200242		
	3/8"	M10	0.381	0.286	B41100386	B41200386		
	3/8" Sm	M10	0.240	0.180	B41100274	B41200274		
	7/16"		0.323	0.242	B41100330	B41200330		
	1/2"	M12, M12.5	0.367	0.275	B41100366	B41200366		
	9/16"	M14	0.429	0.322	B41100402	B41200402		
	5/8"	M16	0.480	0.360		B41200435		
	11/16"	M18	0.542	0.406		B41200460		
	3/4"		0.590	0.442		B41200481		
	13/16"	M20	0.652	0.489		B41200505	B41300505	
	7/8"	M22	0.697	0.523		B41200516	B41300516	
	15/16"	M24	0.760	0.570			B41300550	B41400550
	1"	M25	0.800	0.600			B41300564	B41400564
	1-1/8"		0.896	0.672			B41300588	B41400588
1-1/4"	M30	1.021	0.766			B41300625	B41400625	
1-3/8"	M33	1.108	0.831			B41300662	B41400662	

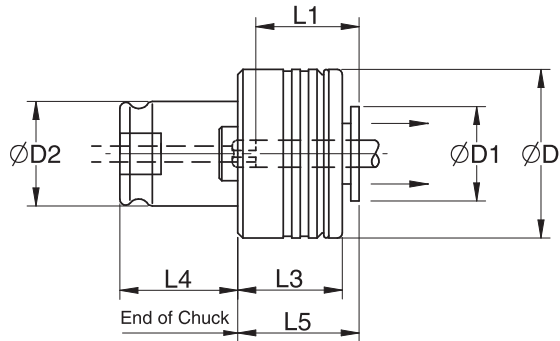
	Size		Shank Dia.	Shank Sq.	Catalog Number		
	Inch NPT				QASB/K 1	QASB/K 2	QASB/K 3
<b>Pipe Taps - ANSI Shank</b>	1/8"NPT	SM. Shank	0.313	0.234	B41100305		
	1/8"NPT	Lg. Shank	0.437	0.328	B41100412	B41200412	
	1/4"NPT		0.562	0.421		B41200476	
	3/8"NPT		0.700	0.531		B41200521	B41300521
	1/2"NPT		0.687	0.515		B41200510	B41300510
	3/4"NPT		0.906	0.679			B41300596
	1"NPT		1.125	0.843			B41300669

GWA Style Pin Wrench on page 132

# Tapping Systems and Accessories

## Tap Adapters QASB-K Style- Metric Shank Taps

With Surround Coolant Flow and Safety Clutch



**QASB/K Style**

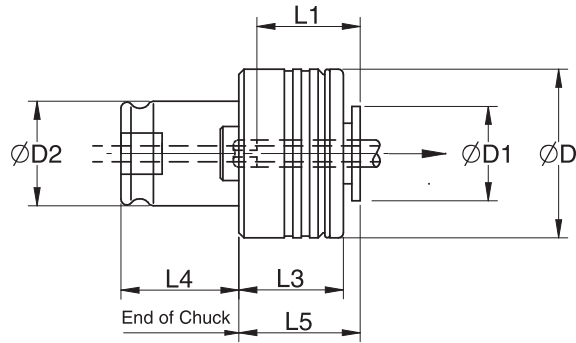
	Size (Metric)		Shank Dia.	Shank Sq.	Catalog Number				
	DIN 371	DIN 376			QASB-K 1	QASB-K 2	QASB-K 3	QASB-K 4	
<b>Hands Taps - DIN Shank</b>	M3		0.138	0.106	B41100091				
	M4		0.177	0.134	B41100151	B41200151			
	M5		0.236	0.193	B41100232	B41200232			
	M6		0.236	0.193	B41100232	B41200232			
	M7		0.276	0.217	B41100274	B41200274			
	M8		0.315	0.244	B41100310	B41200310			
	M10	M8	0.236	0.193	B41100232	B41200232			
			0.394	0.315	B41100389	B41200389			
		M10	M10	0.276	0.217	B41100274	B41200274		
			M12	0.354	0.276		B41200348		
			M14	0.433	0.354		B41200408	B41300408	
			M16	0.472	0.354		B41200430	B41300430	
			M18	0.551	0.433		B41200465	B41300465	
			M20	0.630	0.472		B41200491	B41300491	
			M22	0.709	0.571			B41300531	B41400531
			M24	0.709	0.571			B41300531	B41400531
	M27	0.787	0.630			B41300556	B41400556		
	M30	0.866	0.709			B41300578	B41400578		
	M33	0.984	0.787			B41300615	B41400615		
	M36	1.102	0.866			B41300645	B41400645		

GWA Style Pin Wrench on page 132

# Tapping Systems and Accessories

## Tap Adapters QASB-IK Style - Inch Shank Taps

With Coolant Flow and Safety Clutch



### QASB-IK Style

Description	Tap Size Range		Dimension (mm/inch)						
	Inch	Metric	"D"	"D1"	"D2"	"L1"	"L3"	"L4"	"L5"
QASB-IK 1	#0-9/16"	M3-M12	1.259	0.748	0.748	0.669	0.984	0.846	0.984
QASB-IK 2	1/4"-7/8"	M8-M20	1.968	1.181	1.220	1.181	1.220	1.377	1.338
QASB-IK 3	13/16"-1-3/8"	M14-M33	2.834	1.889	1.889	1.732	1.614	2.185	1.771
QASB-IK 4	15/16"-1-7/8"	M22-M48	2.760	3.740	2.362	2.795	2.401	2.480	2.677

	Size		Shank Dia.	Shank Sq.	Catalog Number		
	Inch	Metric			QASB/IK 1	QASB/IK 2	QASB/IK 3
<b>Hands Taps - ANSI Shank</b>	#0 - #6	M3	0.141	0.110	A41100104	A41200104	
	#8	M4	0.168	0.131	A41100168	A41200168	
	#10	M4.5, M5	0.194	0.152	A41100187	A41200187	
	#12		0.220	0.165	A41100212	A41200212	
	1/4"	M6, M6.5	0.255	0.191	A41100266	A41200266	
	1/4" Sm	M6, M6.5	0.185	0.138	A41100173	A41200173	
	5/16"	M7, M8	0.318	0.238	A41100310	A41200310	
	5/16" Sm	M7, M8	0.240	0.180	A41100242	A41200242	
	3/8"	M10	0.381	0.286	A41100386	A41200386	
	3/8" Sm	M10	0.275	0.206	A41100274	A41200274	
	7/16"		0.323	0.242	A41100330	A41200330	
	1/2"	M12, M12.5	0.367	0.275	A41100366	A41200366	
	9/16"	M14	0.429	0.322	A41100402	A41200402	
	5/8"	M16	0.480	0.360		A41200435	
	11/16"	M18	0.542	0.406		A41200460	
	3/4"		0.590	0.442		A41200481	
	13/16"	M20	0.652	0.489		A41200505	A41300505
	7/8"	M22	0.697	0.523		A41200516	A41300516
	15/16"	M24	0.760	0.570			A41300550
	1"	M25	0.800	0.600			A41300564
1-1/8"		0.896	0.672			A41300588	
1-1/4"	M30	1.021	0.766			A41300625	
1-3/8"	M33	1.108	0.831			A41300662	

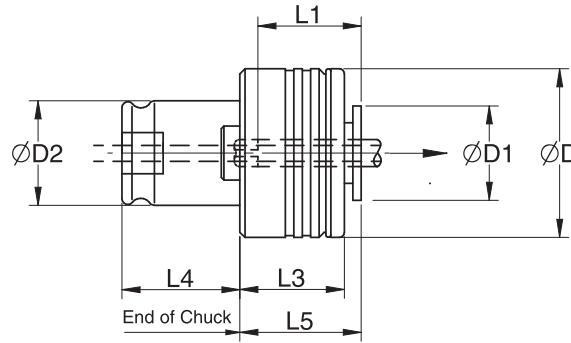
	Size		Shank Dia.	Shank Sq.	Catalog Number		
	Inch NPT				QASB/IK 1	QASB/IK 2	QASB/IK 3
<b>Pipe Taps - ANSI Shank</b>	1/8"NPT	SM. Shank	0.313	0.234	A41100305		
	1/8"NPT	Lg. Shank	0.437	0.328	A41100412	A41200412	
	1/4"NPT		0.562	0.421		A41200476	
	3/8"NPT		0.700	0.531		A41200521	
	1/2"NPT		0.687	0.515		A41200510	A41300510
	3/4"NPT		0.906	0.679			A41300596
	1"NPT		1.125	0.843			A41300669

GWA Style Pin Wrench on page 132

# Tapping Systems and Accessories

## Tap Adapters QASB-IK Style - Metric Shank Taps

With Coolant Flow and Safety Clutch



### QASB-IK Style

	Size (Metric)		Shank Dia.	Shank Sq.	Catalog Number				
	DIN 371	DIN 376			QASB-IK 1	QASB-IK 2	QASB-IK 3	QASB-IK 4	
<b>Hands Taps - DIN Shank</b>	M3		0.138	0.106	A41100091				
	M4		0.177	0.134	A41100151	A41200151			
	M5		0.236	0.193	A41100232	A41200232			
	M6		0.236	0.193	A41100232	A41200232			
	M7		0.276	0.217	A41100274	A41200274			
	M8		0.315	0.244	A41100310	A41200310			
	M10	M8	0.236	0.193	A41100232	A41200232			
			0.394	0.315	A41100389	A41200389			
		M10	M10	0.276	0.217	A41100274	A41200274		
			M12	0.354	0.276	A41100348	A41200348		
			M14	0.433	0.354		A41200408	A41300408	
			M16	0.472	0.354		A41200430	A41300430	
			M18	0.551	0.433		A41200465	A41300465	
			M20	0.630	0.472		A41200491	A41300491	
			M22	0.709	0.571			A41300531	A41400531
			M24	0.709	0.571			A41300531	A41400531
	M27	0.787	0.630			A41300556	A41400556		
	M30	0.866	0.709			A41300578	A41400578		
	M33	0.984	0.787			A41300615	A41400615		
	M36	1.102	0.866				A41400645		

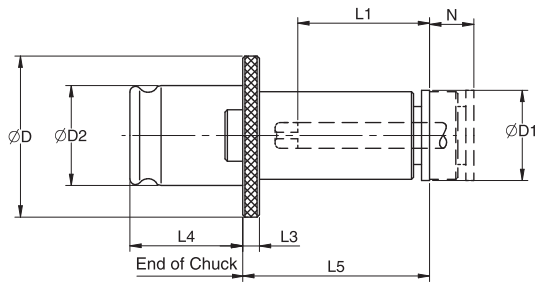
GWA Style Pin Wrench on page 132



# Tapping Systems and Accessories

## Tap Adapters QAN Style - Inch Shank Taps

With Length Adjust



**QAN Style**

Description	Tap Size Range		Dimension (mm/inch)							
	Inch	Metric	"N"	"D"	"D1"	"D2"	"L1"	"L3"	"L4"	"L5"
QAN 0	#0-5/16"	M1-M10	0.32	0.87	0.512	0.512	0.59	0.157	0.767	1.141
QAN 1	#0-9/16"	M3-M12	0.39	1.181	0.748	0.748	0.669	0.157	0.846	1.338
QAN 2	1/4"-7/8"	M8-M20	0.59	1.889	1.181	1.220	1.181	0.196	1.377	2.362
QAN 3	13/16"-1-3/8"	M13-M33	0.984	2.755	1.889	1.889	1.732	0.236	2.185	3.267
QAN 4	15/16"-1-7/8"	M22-M48	1.574	3.622	2.362	2.362	2.795	0.520	2.480	5.390

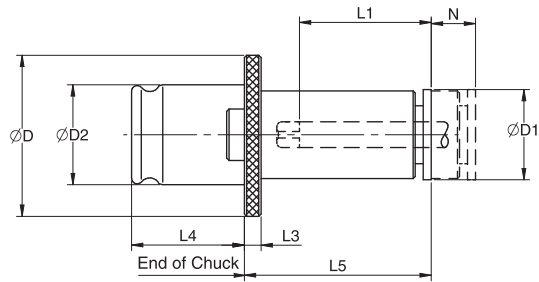
	Size		Shank Dia.	Shank Sq.	Catalog Number				
	Inch	Metric			QAN 0	QAN 1	QAN 2	QAN 3	QAN 4
<b>Hands Taps - DIN Shank</b>	#0 - #6	M3	0.141	0.110	48000104	48100104	48200104		
	#8, 5/32"	M4	0.168	0.131	48000148	48100148	48200148		
	#10, 3/16"	M4.5, M5	0.194	0.152	48000187	48100187	48200187		
	#12, 7/32"		0.220	0.165	48000212	48100212	48200212		
	1/4", #14	M6, M6.5	0.255	0.191	48000266	48100266	48200266		
	1/4" Sm	M6, M6.5	0.185	0.138	48000173	48100173	48200173		
	5/16"	M7, M8	0.318	0.238	48000324	48100324	48200324		
	5/16" Sm	M7, M8	0.240	0.180	48000242	48100242	48200242		
	3/8"	M10	0.381	0.286	48000386	48100386	48200386		
	3/8" Sm	M10	0.275	0.206	48000274	48100274	48200274		
	7/16"		0.323	0.242	48000330	48100330	48200330		
	1/2"	M12, M12.5	0.367	0.275	48000366	48100366	48200366		
	9/16"	M14	0.429	0.322	48000402	48100402	48200402		
	5/8"	M16	0.480	0.360			48200435		
	11/16"	M18	0.542	0.406			48200460		
	3/4"		0.590	0.442			48200481		
	13/16"	M20	0.652	0.489			48200505	48300505	
	7/8"	M22	0.697	0.523			48200516	48300516	
	15/16"	M24	0.760	0.570				48300550	48400550
	1"	M25	0.800	0.600				48300564	48400564
1-1/8"		0.896	0.672				48300588	48400588	
1-1/4"	M30	1.021	0.766				48300625	48400625	
1-3/8"	M33	1.108	0.831				48300662	48400662	

	Size		Shank Dia.	Shank Sq.	Catalog Number				
	Inch	Metric			QAN 0	QAN 1	QAN 2	QAN 3	QAN 4
<b>Pipe Taps - ANSI Shank</b>	1/8"NPT	SM. Shank	0.313	0.234	48000305	48100305	48200305		
	1/8"NPT	Lg. Shank	0.437	0.328	48000412	48100412	48200412		
	1/4"NPT		0.562	0.421		48100460	48200460		
	3/8"NPT		0.700	0.531		48100521	48200521	48300521	
	1/2"NPT		0.687	0.515		48100510	48200510	48300510	
	3/4"NPT		0.906	0.679					48400596
	1"NPT		1.125	0.843					48400669

# Tapping Systems and Accessories

## Tap Adapters QAN Style - Metric Shank Taps

With Length Adjust



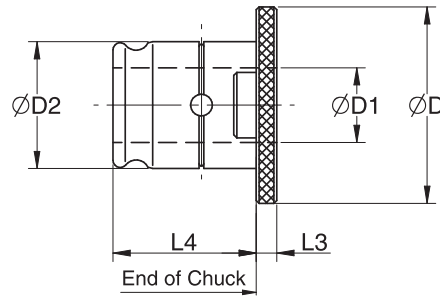
**QAN Style**

	Size		Shank Dia.	Shank Sq.	Catalog Number					
	Inch	Metric			QAN 0	QAN 1	QAN 2	QAN 3	QAN 4	
<b>Hands Taps – DIN Shank</b>		M3	0.138	0.106	48000091					
		M4	0.177	0.134	48000151	48100151	48200151			
		M5	0.236	0.193	48000232	48100232	48200232			
		M6	0.236	0.193	48000232	48100232	48200232			
		M7		0.276	0.217		48100274	48200274		
		M8		0.315	0.244	48000310	48100310	48200310		
			M8	0.236	0.193	48000232	48100232	48200232		
		M10		0.394	0.315	48000389	48100389	48200389		
			M10	0.276	0.217	48000274	48100274	48200274		
			M12	0.354	0.276		48100348	48200348		
			M14	0.433	0.354			48200408	48300408	
			M16	0.472	0.354			48200430	48300430	
			M18	0.551	0.433			48200465	48300465	
			M20	0.630	0.472			48200491	48300491	
			M22	0.709	0.571				48300531	48400531
			M24	0.709	0.571				48300531	48400531
			M27	0.787	0.630				48300556	48400556
			M30	0.866	0.709				48300578	48400578
		M33	0.984	0.787				48300615	48400615	
		M36	1.102	0.866					48400645	
		M39	1.260	0.945					48400698	
		M42	1.260	0.945					48400698	
		M45	1.417	1.142					48400734	
		M48	1.417	1.142					48400734	

# Tapping Systems and Accessories

## Tap Adapter QRE Style

For Reduction from Larger Tap Adapter to Smaller Tap Adapter



QRE Style

Catalog Number	Description	Suitable for Chuck Size	Adapter Size	Dimension (mm/inch)				
				"D"	"D1"	"D2"	"L3"	"L4"
66100000	QRE 1/0	1	0	1.181	0.51	0.74	0.15	0.84
66200000	QRE 2/0	2	0	1.889	0.51	1.22	0.19	1.37
66200100	QRE 2/1	2	1	1.889	0.74	0.122	0.19	1.37
66300100	QRE 3/1	3	1	2.755	0.74	1.88	0.23	2.18
66300200	QRE 3/2	3	2	2.755	1.22	1.88	0.23	2.18
66400200	QRE 4/2	4	2	3.622	1.22	2.36	0.51	2.48
66400300	QRE 4/3	4	3	3.622	1.88	2.36	0.51	2.48
66500300	QRE 5/3	5	3	4.488	1.88	3.07	0.51	3.62
66500400	QRE 5/4	5	4	4.488	2.36	3.07	0.51	3.62

## Did you know?

Manufacturers in the United States perform more than three-quarters of all private-sector research and development (R&D) in the nation, driving more innovation than any other sector. R&D in the manufacturing sector has risen from \$126.2 billion in 2000 to \$229.9 billion in 2014. In the most recent data, pharmaceuticals accounted for nearly one-third of all manufacturing R&D, spending \$74.9 billion in 2014. Aerospace, chemicals, computers, electronics and motor vehicles and parts were also significant contributors to R&D spending in that year.

[nam.org](http://nam.org)

# Tapping Systems and Accessories

## GWA Style Pin Wrench



For turning the threaded ring of Torque style adapters.

Adaptor Size	GWA Size	Catalog Number
0	GWA-0	912000
1	GWA-1	912100
2	GWA-2	912200
3	GWA-3	912300
4	GWA-4	912400
5	GWA-5	912500

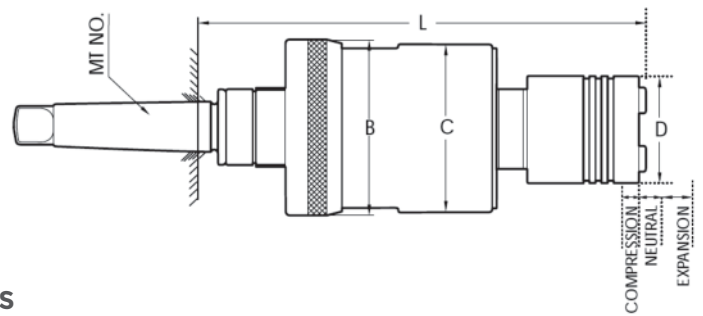
## Tap Adapter Sets



	Catalog Number	Description	Adapter Size	Tap Sizes Included
<b>Rigid Adapters (QA)</b>	S40100010	QA1 Tap Adapter 10pc set	1	0-6, 8, 10, 12, 14 & ¼", 5/16", LS 3/8", 7/16", ½", 9/16"
	TS40100010-1	QA1 Tap Adapter 10pc set with 1" T/C Tapping Chuck (QCLK-1)		
	RS40100010-1	QA1 Tap Adapter 10pc set with 1" Rigid Tapping Chuck (QCK-1)		
	S40200013	QA2 Tap Adapter 13pc set	2	S401, TS401, RS 401 sets
	TS40200013-1	QA2 Tap Adapter 13pc set with 1" T/C Tapping Chuck (QCLK-2)		
	RS40200013-1	QA2 Tap Adapter 13pc set with 1" Rigid Tapping Chuck (QCK-1)		
	S40200018	QA2 Tap Adapter 18pc set	2	0-6, 8, 10, 12, 14 & ¼", 5/16", LS 3/8", 7/16", ½", 9/16", 5/8", 11/16", ¾", 13/16", 7/8", ¼" Pipe, 3/8" Pipe, ½" Pipe
	S40300009	QA3 Tap Adapter 9pc set	3	13/16", 7/8", 15/16", 1", 1-1/8", 1-1/4", 1-3/8", ¾" Pipe, 1" Pipe
	TS40300009-1.5	QA3 Tap Adapter 9pc set with 1.5" T/C Tapping Chuck (QCLK-3)		
RS40300009-1.5	QA3 Tap Adapter 9pc set with 1.5" Rigid Tapping Chuck (QCLK-3)			
<b>Adapters with Clutch (QASB)</b>	S41100010	QASB1 Torque Style Tap Adapter 10pc Set	1	0-6, 8, 10, 12, 14 & ¼", 5/16", LS 3/8", 7/16", ½", 9/16"
	TS41100010-1	QASB1 Torque Style Tap Adapter 10pc Set with 1" T/C Tapping Chuck		
	S41200012	QASB2 Torque Style Tap Adapter 12pc Set	2	0-6, 8, 10, 12, 14 & ¼", 5/16", LS 3/8", 7/16", ½", 9/16", 1/8" SS Pipe, 1/8" LS Pipe
	TS41200012-1	QASB2 Torque Style Tap Adapter 12pc Set with 1" T/C Tapping Chuck		

# Tapping Systems and Accessories

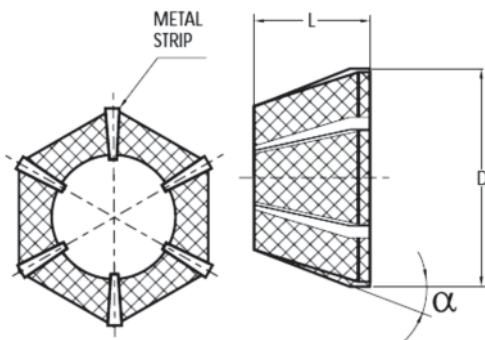
## HR & HRF Reversible Tapping Attachments



### FEATURES

- Usable on every vertical drilling machine or machines with rotating non-reversing spindles
- Right or left-hand tapping
- Axial float ensures smooth tapping and better thread profile
- Planetary gear reversing mechanism transmits smooth positive reverse to the tap for retraction at 75% faster speed than it enters
- HR series used with rubber collets. HRF used with QC adapters

	Catalog Number	Size	Capacity (mm)	Collet (Tap Shank $\phi$ mm)		Tap Adapter	Shank (female)	Standard Arbor
				Standard	Optional			
HR	61133130	HR 1 Reversing Tapping Rubber-Flex Collet Head with JT33 Female socket	1.4 - 7 (1/16" - 1/4")	S-161 (2.5 - 4.5) S-171 (4.5 - 6.5)	S-151 (1 - 2.5)		JT33	JT33/MT 1 JT33/MT 2
	61206234	HR 2 Reversing Tapping Rubber-Flex Collet Head with JT6 Female Socket	3 - 12 (1/8" - 1/2")	S-212 (3.5 - 6.5) S-222 (6.5 - 10)	S-232 (2 - 4.5)		JT6	JT6/MT2 JT6/MT3
	61320336	HR 3 Reversing Tapping Rubber-Flex Collet Head with JT3 Female Socket	8 - 20 (5/16" - 3/4")	S-413 (4.5 - 10) S-453 (10 - 16)	S-433 (2.8 - 7)		M20 P2.5 JT3	M20/MT3 M20/MT4 JT3/MT3
	61420340	HR 4 Reversing Tapping Rubber-Flex Collet Head with JT4 Female Socket	14 - 30 (9/16" - 1-1/8")	S-613 (9 - 16) S-623 (16 - 23)			M20 P2.5 JT4	M20/MT4 M20/MT5 JT4/MT4
HRF	62133134	HRF 1 Reversing Tapping Quick Change Adapter Head with JT33 Female Socket	1.4 - 7 (1/16" - 1/4")			QA-0	JT33	JT33/MT 1 JT33/MT 2
	62206236	HRF 2 Reversing Tapping Quick Change Adapter Head with JT6 Female Socket	3 - 12 (1/8" - 1/2")			QA-1	JT6	JT6/MT2 JT6/MT3
	62320338	HRF 3 Reversing Tapping Quick Change Adapter Head with JT3 female Socket	8 - 20 (5/16" - 3/4")			QA-40	M20 P2.5 JT3	M20/MT3 M20/MT4 JT3/MT3
	62420340	HRF 4 Reversing Tapping Quick Change Adapter Head with JT4 Female Socket	14 - 30 (9/16" - 1-1/8")			QA-3	M20 P2.5 JT4	M20/MT4 M20/MT5 JT4/MT4



Rubber Collets for HR Tapping Heads							
Catalog Number	Capacity (inch)	Capacity (mm)	Jacob Number	$\phi D$	L	$\alpha^\circ$	# of Strips
S-151	0.047-0.094"	1.0 - 2.5	-	0.590	0.472	13°	3
S-161	0.094-0.177"	2.5 - 4.5	J116	0.590	0.472	13°	6
S-171	0.177-0.256"	4.5 - 6.5	J117	0.590	0.472	13°	8
S-212	0.139-0.257"	3.5 - 6.5	J421	0.885	0.511	20°	6
S-222	0.253-0.383"	6.5 - 10	J422	0.885	0.511	20°	6
S-232	0.090-0.180"	2.0 - 4.5	J423	0.885	0.511	20°	6
S-413	0.176-0.383"	4.5 - 10.0	J441	1.200	0.629	22° 30'	6
S-433	0.110-0.280"	2.8 - 7.0	J443	1.200	0.629	22° 30'	4
S-453	0.393-0.590"	10.0-16.0	J445	1.200	0.629	22° 30'	6
S-613	0.354-0.630"	9.0 - 16.0	J461	1.848	0.748	25°	9
S-623	0.630-0.905"	16.0 - 23.0	J462	1.848	0.748	25°	9

# Tapping Systems and Accessories

## AccuTap™ ERT/E ER

ER Tapping Collet with Quick Change feature and Axial Compensation



### Features of AccuTap™ System:

✓ **High Quality**

Made using ISO 9001-2008 quality process standards

✓ **Compact**

Same quality that an ER collet and a QA tap adapter have but now designed into a sole product for use in small places (Swiss machining), Short gauge length confinements (Swiss machining), and shorter overall gauge length of tool assembly for high rigidity. Excellent for minimal clearance applications and machines with limited tooling clearances.

✓ **Interchangeable**

Can be used in any ER collet holder that conforms to ER DIN 6499/ISO 15488 standard  
Can be used in ER 16 through ER40 collet chucks

✓ **Robust Design**

Features quality tempered spring for proper tension based on each individual tap size. Compensates for machine feed and tap pitch variances. Designed for high torque drive which ensures the same accuracy as the tap itself. Positive drive of tap using square internal to design of collet.

✓ **Cost Reduction Product**

Consolidate tooling setups with less tapping system products required. Quick change front-end design allows for tap changes without removing collet nut and collet for tap replacement. Simply depress tap button and tap is released for new tap to be inserted back into the collet.

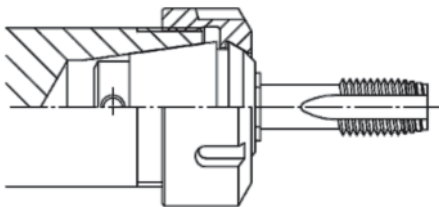
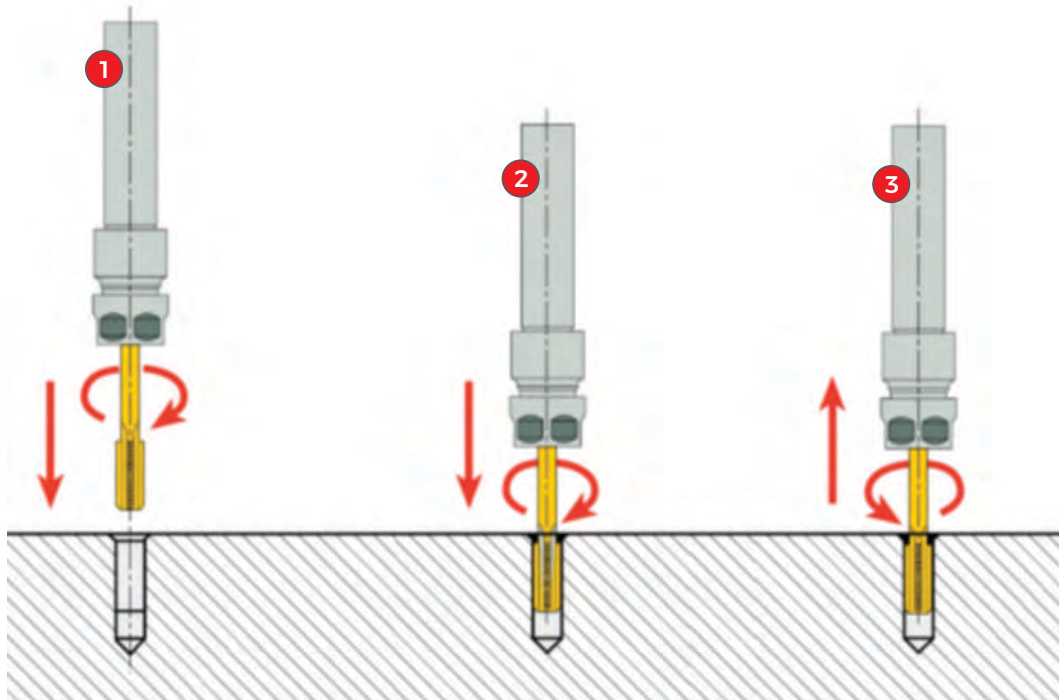
### Applications of AccuTap™ System:

- Axial float with tension control for CNC milling and turning machines with reversible spindles and where rigid tapping is desired.
- Blind hole and through hole rapping applications

# Tapping Systems and Accessories

Simple to use and program:

- 1 Enter feed rate according to thread pitch (or 1-2% lower). Set spindle to starting point with 0.08 clearance.
- 2 Start spindle forward with right hand rotation until reaching desired depth.
- 3 Stop feed and rotation and reverse to starting point.



**AccuTap™ ERT/E Tapping collets with axial compensation** are a cost-effective tool holding option when producing threads in a piece part using a metal cutting tap. 100% thread profile from first thread to last thread. Increased tap life due to cutting action of tap is not compromised between programming and machining “micro-errors”.

## Directions for Proper Use:

For tapping cycle, program the tap feed rate at 95% of the tap thread pitch value. This will allow 20%-25% of the tension compensation stroke to be used when the spindle rotation and spindle feed movement are simultaneously reversed.

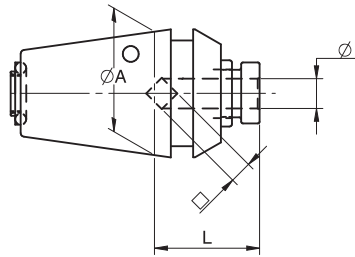
On the reverse feed, program tap feed rate at 100% of the tap thread pitch value to allow the tension compensation to let the tap cut the exact thread pitch profile that the tap is ground to for all threads through the entire tapped hole. The tension stroke varies based on collet size and tap size. The tension spring is designed for each individual tap shank size to allow for proper tension compensation of each tap.

AccuTap™ ERT/E can be used at high RPM machining however some balance compensation may be required for inertia difference between spindle and feed movement.

Coolant through can be used if a maximum of 15 Bar or 200 psi coolant pressure is not exceeded. Exceeding this limit may cause coolant pressure to move tap in an axial position.

# Tapping Systems and Accessories

## ERT/E ER Quick Change Tap Collets with Square Drive and Axial Compensation



Model	Tension	A (mm)	L (mm)
ERT/E-16	7.00mm	16	21
ERT/E-20	7.50mm	20	24
ERT/E-25	8.00mm	25	24
ERT/E-32	10.00mm	32	27.5
ERT/E-40	12.00mm	40	34.5

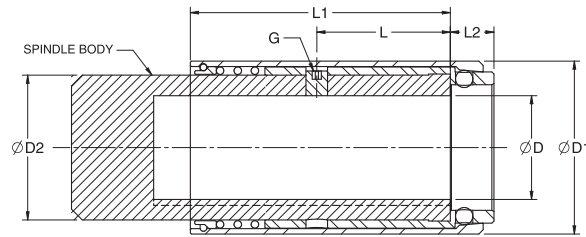
	Shank (inch)	Square (inch)	Tap Size	ERT/E-16	ERT/E-20	ERT/E-25	ERT/E-32	ERT/E-40
Inch size (ANSI Shanks and Squares)	0.141	0.110	#0-#6	E95510104	E95520104	E95530104	E95540104	E95550104
	0.168	0.131	#8	E95510148	E95520148	E95530148	E95540148	E95550148
	0.194	0.152	#10, 3/16	E95510187	E95520187	E95530187	E95540187	E95550187
	0.220	0.165	#12		E95520212	E95530212	E95540212	E95550212
	0.255	0.191	1/4"		E95520266	E95530266	E95540266	E95550266
	0.318	0.238	5/16"			E95530324	E95540324	E95550324
	0.381	0.286	3/8"			E95530386	E95540386	E95550386
	0.323	0.242	7/16"			E95530330	E95540330	E95550330
	0.367	0.275	1/2"			E95530366	E95540366	E95550366
	0.429	0.322	9/16"				E95540402	E95550402
	0.480	0.360	5/8"				E95540435	E95550435
	0.542	0.406	11/16"				---	E95550460
	0.590	0.442	3/4"				---	E95550481
	0.437	0.328	1/8" NPT			---	E95540412	E95550412
	0.429	0.322	1/4" NPT				E95540402	E95550402
	0.542	0.406	3/8" NPT					E95550460
	Shank (mm)	Square (mm)	Tap Size	ERT/E-16	ERT/E-20	ERT/E-25	ERT/E-32	ERT/E-40
Metric sizes (DIN Shanks and Squares)	2.80	2.1	M5 DIN 376	E95510038	E95520038	E95530038	E95540038	E95550038
	3.50	2.7	M3 DIN 371	E95510091	E95520091	E95530091	E95540091	E95550091
	4.00	3.0	M3.5 DIN 371	E95510121	E95520121	E95530121	E95540121	E95550121
	6.00	4.9	M5 DIN 371	E95510232	E95520232	E95530232	E95540232	E95550232
	4.50	3.4	M4 DIN 371	E95510151	E95520151	E95530151	E95540151	E95550151
	6.00	4.5	M6 DIN 371	E95510229	E95520229	E95530229	E95540229	E95550229
	6.00	4.5	M8 DIN 376		E95520229	E95530229	E95540229	E95550229
	7.00	5.5	M10 DIN 376		E95520274	E95530274	E95540274	E95550274
	8.00	6.2	M8 DIN 371			E95530310	E95540310	E95550310
	9.00	7.0	M12			E95530348	E95540348	E95550348
	10.00	8.0	M10 DIN 371				E95540389	E95550389
	11.00	9.0	M14				E95540408	E95550408
	12.00	9.0	M16				E95540430	E95550430
	14.00	11.0	M18					E95550465
16.00	12.0	M20					E95550491	

	Catalog Number	Description	Collet Size	Accommodates Tap Size Range
Inch Taps	E9551-SET	ERTE-16 SET (3pcs.)	ER16	#0 - #10
	E9552-SET	ERTE-20 SET (5pcs.)	ER20	#0 - 1/4"
	E9553-SET	ERTE-25 SET (9pcs.)	ER25	#0 - 7/16", 1/8NPT
	E9554-SET	ERTE-32 SET (15pcs.)	ER32	#0-3/4, 1/8NPT-1/4NPT
	E9555-SET	ERTE-40 SET (16pcs.)	ER40	#0-3/4, 1/8NPT-3/8NPT
Metric Taps	E9551M-SET	ERTE-16M SET (5pcs.)	ER16	M3-M6
	E9552M-SET	ERTE-20M SET (7pcs.)	ER20	M3-M10
	E9553M-SET	ERTE-25M SET (9pcs.)	ER25	M3-M12
	E9554M-SET	ERTE-32M SET (12pcs.)	ER32	M3-M16
	E9555M-SET	ERTE-40M SET (14pcs.)	ER40	M3-M20



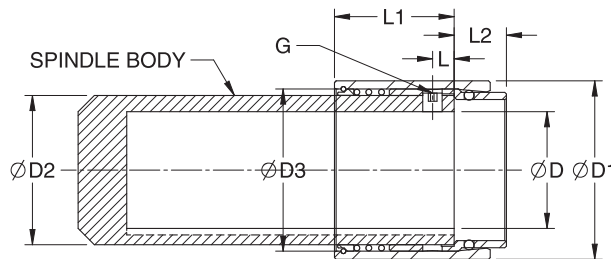
# Tapping Systems and Accessories

## Attachable Quick Change Chucks QSB Style - Over the Spindle Design



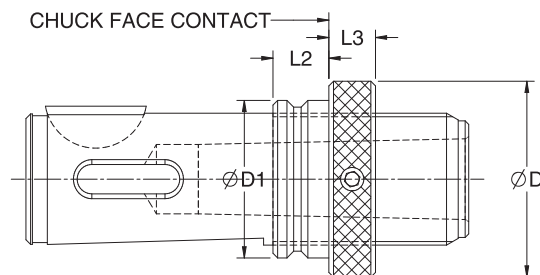
**QSB Style**

Catalog Number	Description	Suitable SSM Nut	Suitable Adj.	Dimension (mm/inch)						
				D1	D	D2	L	L1	L2	G
350600	QSB 0.625	0.620	0.625	1.180	0.625	0.980	1.340	2.56	0.375	M6
350700	QSB 0.750	0.750	0.750	1.495	0.750	1.260	0.134	2.64	0.433	M6
351200	QSB 1.000	1.000	1.000	1.770	1.000	1.460	1.496	2.99	0.470	M8
351400	QSB 1.062	1.062	1.062	1.890	1.062	1.570	1.496	3.07	0.470	M8
351700	QSB 1.375	1.375	1.375	2.360	1.375	1.970	1.771	3.86	0.630	M8
351800	QSB 1.875	1.875	1.875	3.150	1.875	2.640	2.244	4.84	0.790	M10



**QSBV Style**

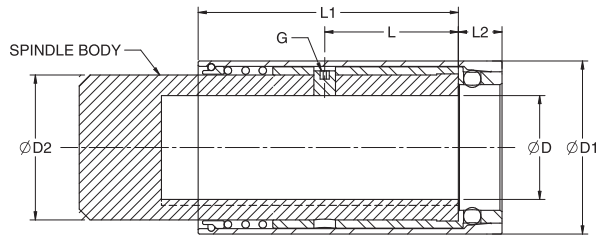
Catalog Number	Description	Suitable SSM Nut	Suitable Adj.	Dimension (mm/inch)							
				D1	D	D2	D3	L	L1	L2	G
360600	QSBV 0.625	0.620	0.625	1.06	0.625	0.980	0.866	1.18	0.375	0.187	M5
360700	QSBV 0.750	0.750	0.750	1.34	0.750	1.260	1.100	1.18	0.433	0.187	M5
361200	QSBV 1.000	1.000	1.000	1.61	1.000	1.460	1.360	1.26	0.470	0.250	M6
361400	QSBV 1.062	1.062	1.062	1.73	1.062	1.570	1.456	1.26	0.470	0.250	M6
361700	QSBV 1.375	1.375	1.375	2.16	1.375	1.970	1.810	1.54	0.630	0.250	M6
361800	QSBV 1.875	1.875	1.875	2.87	1.875	2.640	2.400	2.01	0.790	0.312	M8



Catalog Number	Description	Suitable SSM Nut	Suitable Adj.	Dimension (inch)			
				D	D1	L2	L3
S03060	SSM 0.625	0.625	0.625	1.02	0.783	0.375	0.35
S03070	SSM 0.750	0.750	0.750	1.30	1.000	0.430	0.35
S03120	SSM 1.000	1.000	1.000	1.57	1.256	0.470	0.39
S03140	SSM 1.062	1.062	1.062	1.65	1.334	0.470	0.39
S03170	SSM 1.375	1.375	1.375	2.13	1.708	0.630	0.39
S03180	SSM 1.875	1.875	1.875	2.83	2.280	0.790	0.55

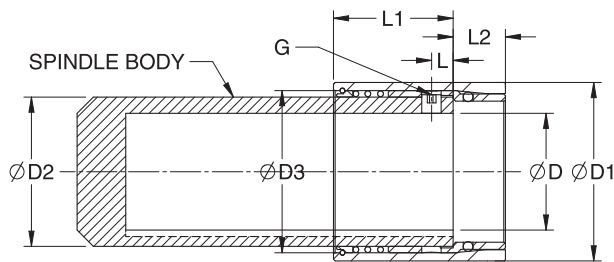
# Tapping Systems and Accessories

## Attachable Quick Change Chucks QSB Style - Over the Spindle Design



### QSB Style

Catalog Number	Description	Suitable SSM Nut	Suitable Adj.	Dimension (inch)						
				D1	D	D2	L	L1	L2	G
370600	QSB 0.625	0.620	0.625	1.180	0.625	0.980	1.338	2.640	0.375	M6
370700	QSB 0.750	0.750	0.750	1.495	0.750	1.260	1.338	2.830	0.433	M6
371200	QSB 1.000	1.000	1.000	1.770	1.000	1.460	1.496	3.110	0.472	M8
371400	QSB 1.062	1.062	1.062	1.890	1.062	1.570	1.496	3.190	0.472	M8
371700	QSB 1.375	1.375	1.375	2.360	1.375	1.970	1.770	3.940	0.630	M8
371800	QSB 1.875	1.875	1.875	3.150	1.875	2.640	2.244	5.000	0.787	M10



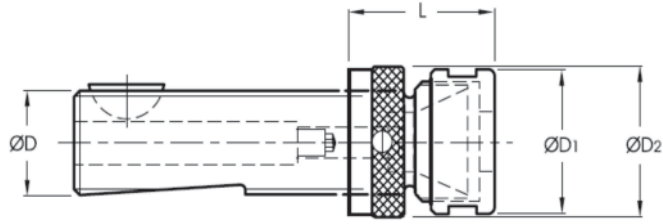
### QSBVA Style

Catalog Number	Description	Suitable SSM Nut	Suitable Adj.	Dimension (inch)							
				D1	D	D2	D3	L	L1	L2	G
370600	QSBVA 0.625	0.620	0.625	1.06	0.625	0.98	0.187	0.87	1.180	0.375	M5
370700	QSBVA 0.750	0.750	0.750	1.34	0.750	1.26	0.187	1.10	1.180	0.433	M5
371200	QSBVA 1.000	1.000	1.000	1.61	1.000	1.46	0.250	1.36	1.250	0.472	M6
371400	QSBVA 1.062	1.062	1.062	1.73	1.062	1.57	0.250	1.46	1.260	0.472	M6
371700	QSBVA 1.375	1.375	1.375	2.17	1.375	1.97	0.250	1.81	1.535	0.630	M6
371800	QSBVA 1.875	1.875	1.875	2.87	1.875	2.64	0.312	2.40	2.000	0.787	M8

# Tapping Systems and Accessories

## Adjustable Rubber Collet Chucks ARH Style

Acme Threaded Shank



**ARH Style**

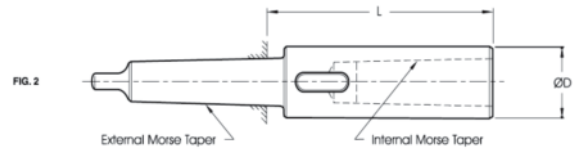
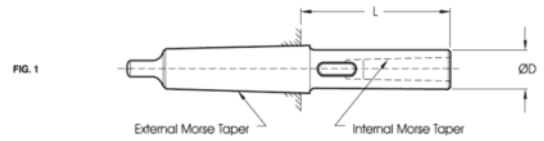
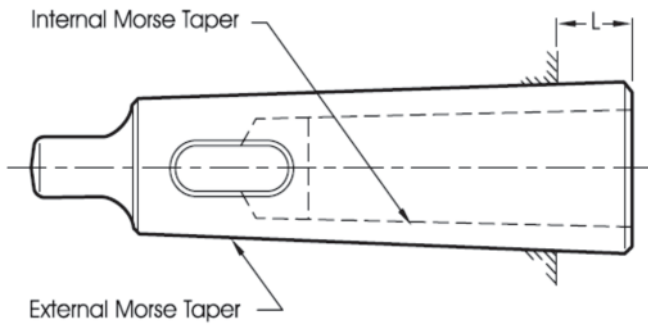
Catalog Number	Description	Suitable Standard Collet	Clamping Capacity	Dimensions (inch)				
				D	D1	D2	L (min)	L (max)
340610	ARH .625	S151	.047 - .094	0.625	0.79	1.00	1.38	2.48
		S161	.094 - .180					
		S171	.180 - .257					
340720	ARH .750	S232	.090 - .180	0.750	1.14	1.25	1.57	2.68
		S212	.139 - .257					
		S222	.257 - .383					
341230	ARH 1.000	S433	.110 - .280	1.000	1.54	1.5	1.57	2.76
		S413	.180 - .383					
		S453	.383 - .630					
341430	ARH 1.062	S433	.110 - .280	1.062	1.54	1.56	1.57	2.76
		S413	.180 - .383					
		S453	.383 - .630					
341730	ARH 1.375	S433	.110 - .280	1.375	1.54	1.88	1.77	3.19
		S413	.180 - .383					
		S453	.383 - .630					
341830	ARH 1.875	S433	.110 - .280	1.875	1.54	2.62	1.97	3.82
		S413	.180 - .383					
		S453	.383 - .630					

Rubber Collet on page 133

# Hardware and Accessories

## Morse Taper Sockets and Extensions

RS And ES Styles



### ES Style

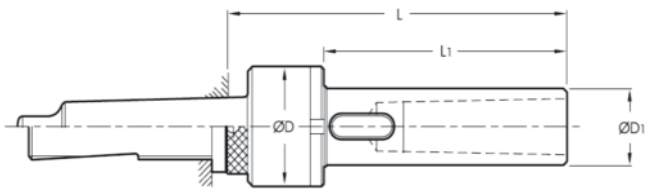
Catalog Number	Description	Morse Taper		L
		External	Internal	
212100	RS 21	2	1	0.670
213100	RS 31	3	1	0.200
213200	RS 32	3	2	0.710
214100	RS 41	4	1	0.260
214200	RS 42	4	2	0.260
214300	RS 43	4	3	0.890
215100	RS 51	5	1	0.260
215200	RS 52	5	2	0.260
215300	RS 53	5	3	0.260
215400	RS 54	5	4	0.850
216100	RS 61	6	1	0.315
216200	RS 62	6	2	0.315
216300	RS 63	6	3	0.315
216400	RS 64	6	4	0.315
216500	RS 65	6	5	0.315

Catalog Number	Description	Morse Taper		Fig #	D	L
		External	Internal			
201100	ES 11	1	1	2	0.79	3.27
201200	ES 12	1	2	2	1.18	3.86
202100	ES 21	2	1	2	1.18	3.34
202200	ES 22	2	2	2	0.79	3.94
202300	ES 23	2	3	2	1.42	4.76
203100	ES 31	3	1	1	0.79	3.19
203200	ES 32	3	2	2	1.18	3.94
203300	ES 33	3	3	2	1.42	4.76
203400	ES 34	3	4	2	1.89	5.83
204100	ES 41	4	1	1	0.79	3.25
204200	ES 42	4	2	1	1.18	3.84
204300	ES 43	4	3	2	1.42	4.82
204400	ES 44	4	4	2	1.89	5.81
204500	ES 45	4	5	2	2.48	7.18
205100	ES 51	5	1	1	0.79	3.25
205200	ES 52	5	2	1	1.18	3.83
205300	ES 53	5	3	1	1.42	4.67
205400	ES 54	5	4	2	1.89	5.90
205500	ES 55	5	5	2	2.48	7.30
206100	ES 61	5	1	1	0.79	3.30
206200	ES 62	6	2	1	1.18	3.90
206300	ES 63	6	3	1	1.42	4.72
206400	ES 64	6	4	1	1.89	5.71
206500	ES 65	6	5	1	2.48	7.10

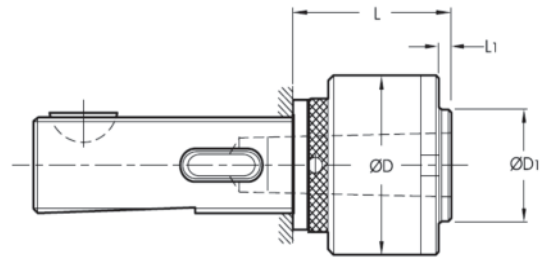
# Hardware and Accessories

## Floating Holder Chucks

FH & FHK Styles



**FH Style**



**FHK Style**

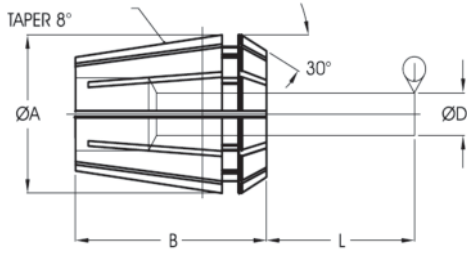
Catalog Number	Description	Morse Taper	Female Morse Taper	Float	D	D1	L	L1
77101010	FH1	1	1	0.02	1.26	0.63	4.17	2.85
77101020		2						
77102020	FH2	2	2	0.02	1.57	0.95	5.00	3.41
77102030		3					4.92	
77103030	FH3	3	3	0.04	1.97	1.26	5.96	4.27
77103040		4					6.02	
77104040	FH4	4	4	0.06	2.64	1.65	7.44	5.28
77104050		5						
77105050	FH5	5	5	0.06	3.46	2.28	9.13	6.52
77105060		6					9.19	

Catalog Number	Description	Shank Size	Morse Taper	Float	D	D1	L	L1
77401070	FH1	.625-16	1	0.02	1.26	0.63	4.39	2.85
77401090		.750-12						
77401140		1.062-12						
77402090	FH2	.750-12	2	0.02	1.57	0.95	5.41	3.41
77402140		1.062-12						
77403140	FH3	1.062-12	3	0.04	1.97	1.26	6.18	4.27
77403170		1.375-12					6.25	
77404170	FH4	1.375-12	4	0.06	2.64	1.65	7.66	5.28
77404180		1.875-12					7.78	

Catalog Number	Description	Shank Size	Morse Taper	Float	D	D1	L	L1
78401090	FHK1	.750-12	1	0.02	1.57	0.71	1.92	0.200
78401120		1.00-12						
78401140		1.062-12						
78401170		1.375-12						
78402120	FHK2	1.00-12	2	0.02	1.97	1.02	2.56	0.906
78402140		1.062-12		0.04			1.89	
78402170		1.375-12		0.04			1.97	
78403170	FHK3	1.375-12	3	0.04	2.64	1.65	2.48	0.200
78403180		1.875-12					2.64	
78404180	FHK4	1.875-12	4	0.06	2.64	1.65	2.83	0.315

# Hardware and Accessories

## ER Collets- Standard, High Precision, and Sealed Collets - Inch and Metric ID Sizes



Collet Dimensions		
ER Size	A	B
8	0.335	0.531
11	0.452	0.710
16	0.669	1.060
20	0.826	1.220
25	1.023	1.380
32	1.299	1.570
40	1.614	1.810

Collet Accuracy				
L Range	D Range	Standard	Premium	DIN 6499
0.60	.120-.235	0.0004	0.0002	0.0006
1.00	.236-.393	0.0004	0.0002	0.0006
1.50	.393-.708	0.0004	0.0002	0.0006
2.00	.708-1.023	0.0004	0.0002	0.0006
2.25	1.023-1.340			0.0010



Standard ER Collet



Rubber-Sealed Coolant Collet  
500 PSI



Steel-Sealed Coolant Collet  
1000 PSI

## Operating Instructions

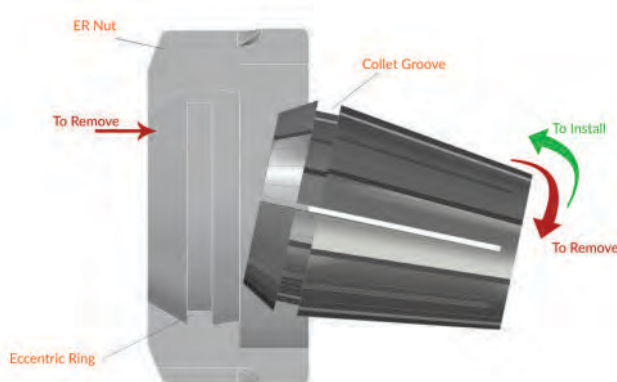
DIN 6499 - ISO 15488

### Assembly Instructions

The ER Collet must first be inserted into the ER Nut before it can be put onto the Collet Chuck. Never insert the collet into the chuck and then attempt to tighten the nut over - this will damage the assembly. Make note of the high point of the eccentric ring (indicated by a "E" mark on the face of the Nut) and insert the collet such that the groove fits over the ring. Push the collet into position (you will hear a click) as per the illustration on the left. Now it is safe to thread the Nut and Collet assembly into the collet chuck.

### Disassembly Instructions

Remove the Nut and Collet assembly from the collet chuck and follow the instructions in reverse of the assembly steps. Press on the face of the collet (see red arrows) and push the collet down until the collet removes from the nut.



### Please Note!

Correct assembly is critical for maintaining concentricity (TIR accuracy) of the collet - improper assembly may result in damage to the clamping nut.

Never clamp oversized tool shanks!

Example: Never use a 11mm-10mm collet for a tool shank diameter of 11.2mm. Use the next size larger collet 11.5mm-11mm. All Accutek ER collets have .5mm collapse range.

For the best gripping strength and collet TIR accuracy, ensure that the full length of the cutting tool shank is inserted in the collet ID bore. If full insertion is not possible, make sure at least 2/3 of the shank is inserted into the ID bore. Improper tool shank insertion will permanently deform the collet and will result in poor collet TIR/runout.

# Hardware and Accessories

## ER Collets- Standard, High Precision, and Sealed Collets - Inch and Metric ID Sizes

ID Size	ER8		ER11			ER16			ER20		
	Standard	Premium	Standard	Premium	Sealed	Standard	Premium	Sealed	Standard	Premium	Sealed
1mm	95226010	95226010HP	95220010	95220010HP		95221010	95221010HP				
1.5mm	95226015	95226015HP	95220015	95220015HP		95221015	95221015HP				
1/16"	95226159	95226159HP	95220159	95220159HP		95221159	95221159HP		95222159	95222159HP	
5/64"	95226198	95226198HP	95220198	95220198HP		95221198	95221198HP		95222198	95222198HP	
2mm	95226020	95226020HP	95220020	95220020HP		95221020	95221020HP		95222020	95222020HP	
3/32"	95226238	95226238HP	95220238	95220238HP		95221238	95221238HP		95222238	95222238HP	
2.5mm	95226025	95226025HP	95220025	95220025HP		95221025	95221025HP		95222025	95222025HP	
7/64"	95226278	95226278HP	95220278	95220278HP		95221278	95221278HP		95222278	95222278HP	
3mm	95226030	95226030HP	95220030	95220030HP	95220030RK	95221030	95221030HP	95221030RK	95222030	95222030HP	95222030RK
1/8"	95226318	95226318HP	95220318	95220318HP	95220318RK	95221318	95221318HP	95221318RK	95222318	95222318HP	95222318RK
3.5mm	95226035	95226035HP	95220035	95220035HP	95220035RK	95221035	95221035HP	95221035RK	95222035	95222035HP	95222035RK
9/64"	95226357	95226357HP	95220357	95220357HP	95220357RK	95221357	95221357HP	95221357RK	95222357	95222357HP	95222357RK
5/32"	95226397	95226397HP	95220397	95220397HP	95220397RK	95221397	95221397HP	95221397RK	95222397	95222397HP	95222397RK
4mm	95226040	95226040HP	95220040	95220040HP	95220040RK	95221040	95221040HP	95221040RK	95222040	95222040HP	95222040RK
11/64"	95226437	95226437HP	95220437	95220437HP	95220437RK	95221437	95221437HP	95221437RK	95222437	95222437HP	95222437RK
4.5mm	95226045	95226045HP	95220045	95220045HP	95220045RK	95221045	95221045HP	95221045RK	95222045	95222045HP	95222045RK
3/16"	95226476	95226476HP	95220476	95220476HP	95220476RK	95221476	95221476HP	95221476RK	95222476	95222476HP	95222476RK
5mm	95226050	95226050HP	95220050	95220050HP	95220050RK	95221050	95221050HP	95221050RK	95222050	95222050HP	95222050RK
13/64"			95220516	95220516HP	95220516RK	95221516	95221516HP	95221516RK	95222516	95222516HP	95222516RK
5.5mm			95220555	95220555HP	95220555RK	95221055	95221055HP	95221055RK	95222055	95222055HP	95222055RK
7/32"			95220556	95220556HP	95220556RK	95221556	95221556HP	95221556RK	95222556	95222556HP	95222556RK
15/64"			95220595	95220595HP	95220595RK	95221595	95221595HP	95221595RK	95222595	95222595HP	95222595RK
6mm			95220600	95220600HP	95220600RK	95221060	95221060HP	95221060RK	95222060	95222060HP	95222060RK
1/4"			95220635	95220635HP	95220635RK	95221635	95221635HP	95221635RK	95222635	95222635HP	95222635RK
6.5mm			95220665	95220665HP	95220665RK	95221065	95221065HP	95221065RK	95222065	95222065HP	95222065RK
17/64"			95220675	95220675HP	95220675RK	95221675	95221675HP	95221675RK	95222675	95222675HP	95222675RK
7mm			95220070	95220070HP		95221070	95221070HP	95221070RK	95222070	95222070HP	95222070RK
9/32"						95221714	95221714HP	95221714RK	95222714	95222714HP	95222714RK
7.5mm						95221075	95221075HP	95221075RK	95222075	95222075HP	95222075RK
19/64"						95221754	95221754HP	95221754RK	95222754	95222754HP	95222754RK
5/16"						95221794	95221794HP	95221794RK	95222794	95222794HP	95222794RK
8mm						95221080	95221080HP	95221080RK	95222080	95222080HP	95222080RK
21/64"						95221833	95221833HP	95221833RK	95222833	95222833HP	95222833RK
8.5mm						95221085	95221085HP	95221085RK	95222085	95222085HP	95222085RK
11/32"						95221873	95221873HP	95221873RK	95222873	95222873HP	95222873RK
9mm						95221090	95221090HP	95221090RK	95222090	95222090HP	95222090RK
23/64"						95221913	95221913HP	95221913RK	95222913	95222913HP	95222913RK
9.5mm						95221095	95221095HP	95221095RK	95222095	95222095HP	95222095RK
3/8"						95221953	95221953HP	95221953RK	95222953	95222953HP	95222953RK
25/64"						95221992	95221992HP	95221992RK	95222992	95222992HP	95222992RK
10mm						95221100	95221100HP	95221100RK	95222100	95222100HP	95222100RK
13/32"									95222102	95222102HP	95222102RK
10.5mm									95222105	95222105HP	95222105RK
27/64"									95222107	95222107HP	95222107RK
11mm									95222110	95222110HP	95222110RK
7/16"									95222111	95222111HP	95222111RK
11.5mm									95222115	95222115P	95222115RK
29/64"									95222116	95222116HP	95222116RK
15/32"									95222119	95222119HP	95222119RK
12mm									95222120	95222120HP	95222120RK
31/64"									95222123	95222123HP	95222123RK
12.5mm									95222125	95222125HP	95222125RK
1/2"									95222127	95222127HP	95222127RK
13mm									95222130	95222130HP	95222130RK

# Hardware and Accessories

## ER Collets- Standard, High Precision, and Sealed Collets - Inch and Metric ID Sizes

ID Size	ER25			ER32			ER40		
	Standard	Premium	Sealed	Standard	Premium	Sealed	Standard	Premium	Sealed
2mm	95223020	95223020HP							
3/32"	95223238	95223238HP							
2.5mm	95223025	95223025HP							
7/64"	95223278	95223278HP							
3mm	95223030	95223030HP	95223030RK	95224030	95224030HP	95224030RK			
1/8"	95223318	95223318HP	95223318RK	95224318	95224318HP	95224318RK	95225318	95225318HP	95225318RK
3.5mm	95223035	95223035HP	95223035RK	95224035	95224035HP	95224035RK	95225035	95225035HP	95225035RK
9/64"	95223357	95223357HP	95223357RK	95224357	95224357HP	95224357RK	95225357	95225357HP	95225357RK
5/32"	95223397	95223397HP	95223397RK	95224397	95224397HP	95224397RK	95225397	95225397HP	95225397RK
4mm	95223040	95223040HP	95223040RK	95224040	95224040HP	95224040RK	95225040	95225040HP	95225040RK
11/64"	95223437	95223437HP	95223437RK	95224437	95224437HP	95224437RK	95225437	95225437HP	95225437RK
4.5mm	95223045	95223045HP	95223045RK	95224045	95224045HP	95224045RK	95225045	95225045HP	95225045RK
3/16"	95223476	95223476HP	95223476RK	95224476	95224476HP	95224476RK	95225476	95225476HP	95225476RK
5mm	95223050	95223050HP	95223050RK	95224050	95224050HP	95224050RK	95225050	95225050HP	95225050RK
13/64"	95223516	95223516HP	95223516RK	95224516	95224516HP	95224516RK	95225516	95225516HP	95225516RK
5.5mm	95223055	95223055HP	95223055RK	95224055	95224055HP	95224055RK	95225055	95225055HP	95225055RK
7/32"	95223556	95223556HP	95223556RK	95224556	95224556HP	95224556RK	95225556	95225556HP	95225556RK
15/64"	95223595	95223595HP	95223595RK	95224595	95224595HP	95224595RK	95225595	95225595HP	95225595RK
6mm	95223060	95223060HP	95223060RK	95224060	95224060HP	95224060RK	95225060	95225060HP	95225060RK
1/4"	95223635	95223635HP	95223635RK	95224635	95224635HP	95224635RK	95225635	95225635HP	95225635RK
6.5mm	95223065	95223065HP	95223065RK	95224065	95224065HP	95224065RK	95225065	95225065HP	95225065RK
17/64"	95223675	95223675HP	95223675RK	95224675	95224675HP	95224675RK	95225675	95225675HP	95225675RK
7mm	95223070	95223070HP	95223070RK	95224070	95224070HP	95224070RK	95225070	95225070HP	95225070RK
9/32"	95223714	95223714HP	95223714RK	95224714	95224714HP	95224714RK	95225714	95225714HP	95225714RK
7.5mm	95223075	95223075HP	95223075RK	95224075	95224075HP	95224075RK	95225075	95225075HP	95225075RK
19/64"	95223754	95223754HP	95223754RK	95224754	95224754HP	95224754RK	95225754	95225754HP	95225754RK
5/16"	95223794	95223794HP	95223794RK	95224794	95224794HP	95224794RK	95225794	95225794HP	95225794RK
8mm	95223080	95223080HP	95223080RK	95224080	95224080HP	95224080RK	95225080	95225080HP	95225080RK
21/64"	95223833	95223833HP	95223833RK	95224833	95224833HP	95224833RK	95225833	95225833HP	95225833RK
8.5mm	95223085	95223085HP	95223085RK	95224085	95224085HP	95224085RK	95225085	95225085HP	95225085RK
11/32"	95223873	95223873HP	95223873RK	95224873	95224873HP	95224873RK	95225873	95225873HP	95225873RK
9mm	95223090	95223090HP	95223090RK	95224090	95224090HP	95224090RK	95225090	95225090HP	95225090RK
23/64"	95223913	95223913HP	95223913RK	95224913	95224913HP	95224913RK	95225913	95225913HP	95225913RK
9.5mm	95223095	95223095HP	95223095RK	95224095	95224095HP	95224095RK	95225095	95225095HP	95225095RK
3/8"	95223953	95223953HP	95223953RK	95224953	95224953HP	95224953RK	95225953	95225953HP	95225953RK
25/64"	95223992	95223992HP	95223992RK	95224992	95224992HP	95224992RK	95225992	95225992HP	95225992RK
10mm	95223100	95223100HP	95223100RK	95224100	95224100HP	95224100RK	95225100	95225100HP	95225100RK
13/32"	95223102	95223102HP	95223102RK	95224102	95224102HP	95224102RK	95225102	95225102HP	95225102RK
10.5mm	95223105	95223105HP	95223105RK	95224105	95224105HP	95224105RK	95225105	95225105HP	95225105RK
27/64"	95223107	95223107HP	95223107RK	95224107	95224107HP	95224107RK	95225107	95225107HP	95225107RK
11mm	95223110	95223110HP	95223110RK	95224110	95224110HP	95224110RK	95225110	95225110HP	95225110RK
7/16"	95223111	95223111HP	95223111RK	95224111	95224111HP	95224111RK	95225111	95225111HP	95225111RK
11.5mm	95223115	95223115HP	95223115RK	95224115	95224115HP	95224115RK	95225115	95225115HP	95225115RK
29/64"	95223116	95223116HP	95223116RK	95224116	95224116HP	95224116RK	95225116	95225116HP	95225116RK
15/32"	95223119	95223119HP	95223119RK	95224119	95224119HP	95224119RK	95225119	95225119HP	95225119RK
12mm	95223120	95223120HP	95223120RK	95224120	95224120HP	95224120RK	95225120	95225120HP	95225120RK
31/64"	95223123	95223123HP	95223123RK	95224123	95224123HP	95224123RK	95225123	95225123HP	95225123RK
12.5mm	95223125	95223125HP	95223125RK	95224125	95224125HP	95224125RK	95225125	95225125HP	95225125RK
1/2"	95223127	95223127HP	95223127RK	95224127	95224127HP	95224127RK	95225127	95225127HP	95225127RK
13mm	95223130	95223130HP	95223130RK	95224130	95224130HP	95224130RK	95225130	95225130HP	95225130RK
33/64"	95223131	95223131HP	95223131RK	95224131	95224131HP	95224131RK	95225131	95225131HP	95225131RK
17/32"	95223134	95223134HP	95223134RK	95224134	95224134HP	95224134RK	95225134	95225134HP	95225134RK
13.5mm	95223135	95223135HP	95223135RK	95224135	95224135HP	95224135RK	95225135	95225135HP	95225135RK
35/64"	95223138	95223138HP	95223138RK	95224138	95224138HP	95224138RK	95225138	95225138HP	95225138RK
14mm	95223140	95223140HP	95223140RK	95224140	95224140HP	95224140RK	95225140	95225140HP	95225140RK
9/16"	95223142	95223142HP	95223142RK	95224142	95224142HP	95224142RK	95225142	95225142HP	95225142RK
14.5mm	95223145	95223145HP	95223145RK	95224145	95224145HP	95224145RK	95225145	95225145HP	95225145RK
37/64"	95223146	95223146HP	95223146RK	95224146	95224146HP	95224146RK	95225146	95225146HP	95225146RK
15mm	95223150	95223150HP	95223150RK	95224150	95224150HP	95224150RK	95225150	95225150HP	95225150RK
19/32"	95223151	95223151HP	95223151RK	95224151	95224151HP	95224151RK	95225151	95225151HP	95225151RK
39/64"	95223154	95223154HP	95223154RK	95224154	95224154HP	95224154RK	95225154	95225154HP	95225154RK
15.5mm	95223155	95223155HP	95223155RK	95224155	95224155HP	95224155RK	95225155	95225155HP	95225155RK
5/8"	95223158	95223158HP	95223158RK	95224158	95224158HP	95224158RK	95225158	95225158HP	95225158RK
16mm	95223160	95223160HP	95223160RK	95224160	95224160HP	95224160RK	95225160	95225160HP	95225160RK



# Hardware and Accessories

## ER Collets- Standard, High Precision, and Sealed Collets - Inch and Metric ID Sizes

ID Size	ER32			ER40		
	Standard	Premium	Sealed	Standard	Premium	Sealed
41/64"	95224162	95224162HP	95224162RK	95225162	95225162HP	95225162RK
16.5mm	95224165	95224165HP	95224165RK	95225165	95225165HP	95225165RK
21/32"	95224166	95224166HP	95224166RK	95225166	95225166HP	95225166RK
17mm	95224170	95224170HP	95224170RK	95225170	95225170HP	95225170RK
43/64"	95224171	95224171HP	95224171RK	95225171	95225171HP	95225171RK
11/16"	95224174	95224174HP	95224174RK	95225174	95225174HP	95225174RK
17.5mm	95224175	95224175HP	95224175RK	95225175	95225175HP	95225175RK
45/64"	95224178	95224178HP	95224178RK	95225178	95225178HP	95225178RK
18mm	95224180	95224180HP	95224180RK	95225180	95225180HP	95225180RK
23/64"	95224182	95224182HP	95224182RK	95225182	95225182HP	95225182RK
18.5mm	95224185	95224185HP	95224185RK	95225185	95225185HP	95225185RK
47/64"	95224186	95224186HP	95224186RK	95225186	95225186HP	95225186RK
19mm	95224190	95224190HP	95224190RK	95225190	95225190HP	95225190RK
3/4"	95224191	95224191HP	95224191RK	95225191	95225191HP	95225191RK
49/64"	95224194	95224194HP	95224194RK	95225194	95225194HP	95225194RK
19.5mm	95224195	95224195HP	95224195RK	95225195	95225195HP	95225195RK
25/32"	95224198	95224198HP	95224198RK	95225198	95225198HP	95225198RK
20mm	95224200	95224200HP	95224200RK	95225200	95225200HP	95225200RK
51/64"				95225202	95225202HP	95225202RK
20.5mm				95225205	95225205HP	95225205RK
13/16"				95225206	95225206HP	95225206RK
21mm				95225210	95225210HP	95225210RK
53/64"				95225211	95225211HP	95225211RK
27/32"				95225214	95225214HP	95225214RK
21.5mm				95225215	95225215HP	95225215RK
55/64"				95225218	95225218HP	95225218RK
22mm				95225220	95225220HP	95225220RK
7/8"mm				95225222	95225222HP	95225222RK
22.5mm				95225225	95225225HP	95225225RK
57/64"				95225226	95225226HP	95225226RK
23mm				95225230	95225230HP	95225230RK
29/32"				95225231	95225231HP	95225231RK
59/64"				95225234	95225234HP	95225234RK
23.5mm				95225235	95225235HP	95225235RK
15/16"				95225238	95225238HP	95225238RK
24mm				95225240	95225240HP	95225240RK
61/64"				95225242	95225242HP	95225242RK
24.5mm				95225245	95225245HP	95225245RK
31/32"				95225246	95225246HP	95225246RK
25mm				95225250	95225250HP	95225250RK
63/64"				95225251	95225251HP	95225251RK
1.0"				95225254	95225254HP	95225254RK
25.5mm				95225255	95225255HP	95225255RK
26mm				95225260	95225260HP	95225260RK

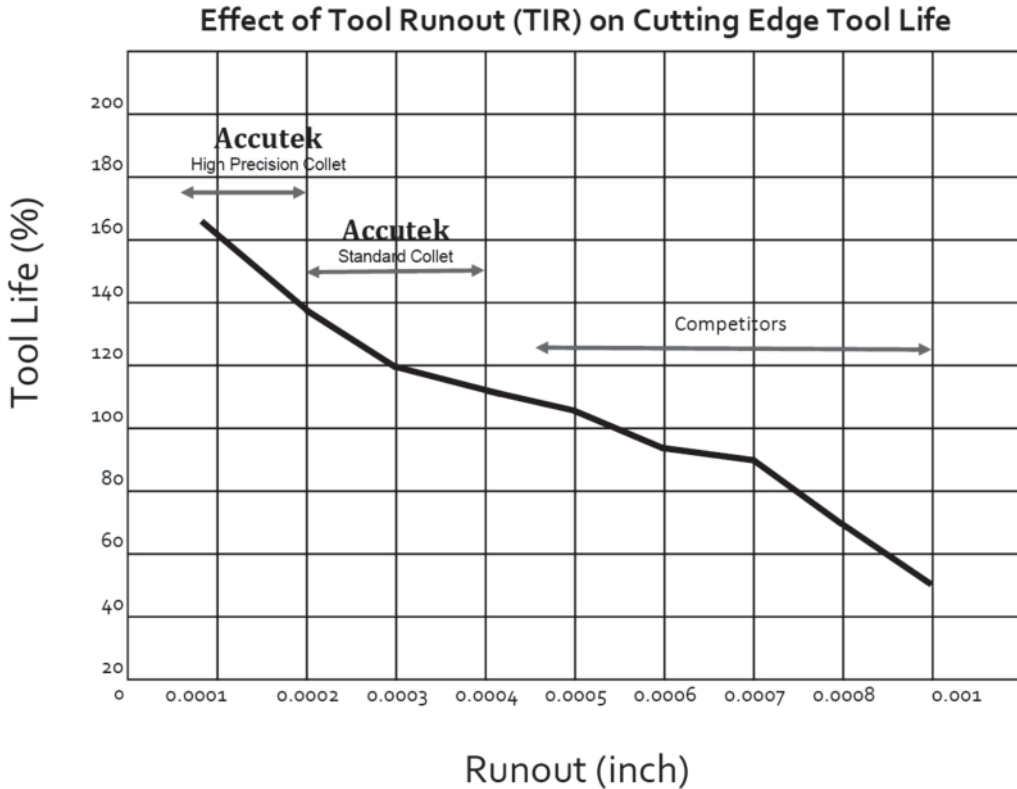
# Hardware and Accessories

## ER Collet Sets



	Catalog Number	Collet Size	Number of Collets	Collets Included	Fits Shank Sizes
<b>Inch ID Sets</b>	95226000	ER08	9	.062-.187	.042-.187
	95220000	ER11	7	.062-.250	.062-.250
	95220001	ER11	13	.062-.250	.062-.250
	95221000	ER16	11	.093-.375	.062-.375
	95222000	ER20	15	.156-.500	.125-.500
	95223000	ER25	18	.156-.625	.125-.625
	95224000	ER32	21	.218-.750	.187-.750
	95225000	ER40	15	.125-1.00	.125-1.00
<b>Metric ID Sets</b>	95226009	ER08	9	1mm-5mm	.5mm-5mm
	95220009	ER11	13	1mm-7mm	.5mm-7mm
	95221009	ER16	10	1mm-10mm	.5mm-10mm
	95222009	ER20	12	2mm-13mm	1.0mm-13mm
	95223009	ER25	15	2mm-16mm	1.0mm-16mm
	95224009	ER32	18	3mm-20mm	2mm-20mm
	95225009	ER40	23	4mm-26mm	3mm-26mm

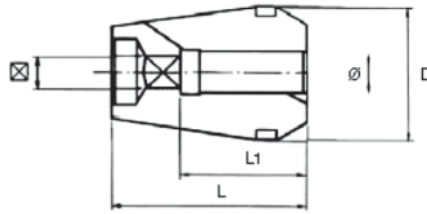
Note: High Precision (HP) and Rubber Sealed (RK) Sets available



# Hardware and Accessories

## ER-T Collets – Inch Tap Collets for Rigid Tapping – DIN6499/ISO15488

Tap Collets are sized for tap shank diameter and tap shank square



Collet Series	D	L
ER16	16mm	27.5mm
ER20	20mm	31.5mm
ER25	25mm	34.0mm
ER32	32mm	40.0mm
ER40	40mm	46.0mm

ANSI Standard Taps								
Tap Size	Shank Size	Square size	ERT1	ER16	ER20	ER25	ER32	Er40
#0-#6	0.141	0.110	95530112	95531112	95532112	95533112	95534112	95535112
#8	0.168	0.131	95530147	95531147	95532147	95533147	95534147	95535147
#10	0.194	0.152	95530180	95531180	95532180	95533180	95534180	95535180
#12	0.220	0.165	95530218	95531218	95532218	95533218	95534218	95535218
1/4"	0.255	0.101		95531262	95532262	95533262	95534262	95535262
5/16"	0.318	0.238		95531324	95532324	95533324	95534324	95535324
3/8"	0.381	0.296			95532385	95533385	95534385	95535385
7/16"	0.323	0.242			95532330	95533330	95534330	95535330
1/2"	0.367	0.275			95532366	95533366	95534366	95535366
9/16"	0.429	0.322				95533402	95534402	95535402
5/8"	0.480	0.380				95533435	95534435	95535435
11/16"	0.542	0.408					95534460	95535460
3/4"	0.590	0.442					95534481	95535481
13/16"	0.652	0.499					95534652	95535652
7/8"	0.697	0.523						95535697
15/16"	0.760	0.570						95535760
1.0"	0.800	0.600						95535800
1/8"NPT	0.313	0.234			95532306	95533306	95534306	95535306
1/8" NPT	0.438	0.329				95533412	95534412	95535412
1/4" NPT	0.563	0.421					95534476	95535476
3/8" NPT	0.700	0.531						95535521

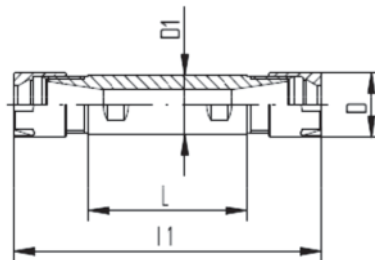
## Hardware and Accessories

### ER-T Collets - Metric Tap Collets for Rigid Tapping- DIN6499/ISO15488

Tap Collets are sized for tap shank diameter and tap shank square

ANSI Standard Taps								
Tap Size	Shank Size	Square Size	ER11	ER16	ER20	ER25	ER32	ER40
M3 (DIN371)	3.5	2.7	95530091	95531091	95532091	95533091	95534091	95535091
M3.5 (DIN371)	4.0	3.0	95530121	95531121	95532121	95533121	95534121	95535121
M6 (DIN376)	4.5	3.4	95530151	95531151	95532151	95533151	95534151	95535151
M6 (DIN371)	6.0	4.5	95530310	95531310	95532310	95533310	95534310	95535310
M8 (DIN376)	6.0	4.9	95530232	95531232	95532232	95533232	95534232	95535232
M10 (DIN376)	7.0	5.5	95530274	95531274	95532274	95533274	95534274	95535274
M8 (DIN371)	8.0	6.2		95531310	95532310	95533310	95534310	95535310
M12 (DIN376)	9.0	7.0		95531348	95532348	95533348	95534348	95535348
M10 (DIN371)	10.0	8.0		95531389	95532389	95533389	95534389	95535389
M14 (DIN376)	11.0	9.0			95532408	95533408	95534408	95535408
M16 (DIN376)	12.0	9.0			95532430	95533430	95534430	95535430
M18 (DIN376)	14.0	11.0				95533465	95534465	95535465
M20 (DIN376)	16.0	12.0				95533491	95534491	95535491
M22/M24 (DIN376)	18.0	14.5					95534531	95535531
M27 (DIN376)	20.0	16.0					95534556	95535556
M30 (DIN376)	22.0	18.0					95534578	95535578
M33 (DIN376)	25.0	20.0					95534615	95535615

### Straight Shank - Double-end for Swiss Machine Tools



Catalog Number	Description	Machine Brand	ER Collet	"J" (mm)	D1	L	L1	D
872430M0M18	SSH-DE 16-CHE 11M-50mm	Star	ER11	-	16mm	1.969	3.543	0.630
872450M0M16	SSH-DE 0.750-CHE 11M-40mm	Citizen	ER11	-	0.750	1.575	3.150	0.630
872450M0M22	SSH-DE 0.750-CHE 11M-70mm	Citizen	ER11	-	0.750	2.756	4.331	0.630
872450M0M26	SSH-DE 0.750-CHE 11M-90mm	Citizen	ER11	-	0.750	3.543	5.118	0.630
872460M0M14	SSH-DE 20-CHE 11M-30mm	Tsugami	ER11	-	20mm	1.181	2.756	0.630
872460M0M28	SSH-DE 20-CHE 11M-50mm	Tsugami	ER11	-	0.750	1.969	3.543	0.630
872451M1M21	SSH-DE.750-CHE 16M-55mm	Citizen	ER16	-	0.750	2.165	4.213	0.866
872461M1M21	SSH-DE 20-CHE 16M-55mm	Tsugami	ER16	-	20mm	2.165	4.213	0.866
872471M1M22	SSH-DE 22-CHE 16M-55mm	Star,Tsugami	ER16	-	22mm	2.165	4.370	0.866
872471M1M26	SSH-DE 22-CHE 16M-75mm	Star, Tsugami	ER16	-	22mm	2.953	5.157	0.866
872501M1M24	SSH-DE25-CHE 16M-62mm	Tornos	ER16	-	25mm	2.441	4.646	0.866
872511M1M24	SSH-DE 1.00-CHE 16M-62mm	Miyano	ER16	-	1.000	2.441	4.646	0.866
872552M2M22	SSH-DE 32-CHE 20M-55mm	Various	ER20	-	32mm	2.165	4.370	1.102
872552M2M26	SSH-DE 32-CHE 20M-75mm	Various	ER20	-	32mm	2.953	5.157	1.102

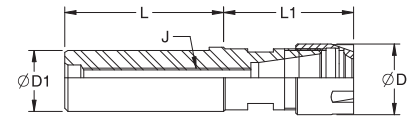
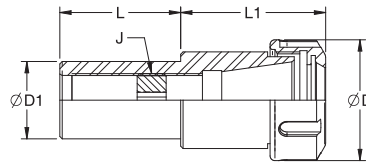
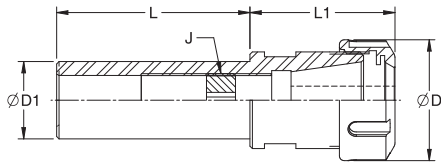
ER Collets on page 142

ER Nut Wrenches on page 156

# Hardware and Accessories

## Straight Shank

ER Collet Holder



### SSH STYLE

Extensions for use in Standard ER Chucks

### SSH-NC STYLE

For use in Lathes and Multi-Spindle Mach

### SSH-SW STYLE

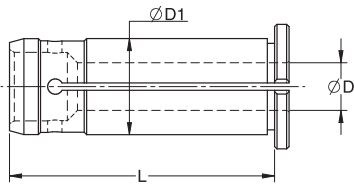
For use in Swiss Style machines

Catalog Number	Description	Machine Brand	ER Collet	"J" (mm)	D1	L	L1	D
872420M12	SSH-SW .625-CHE 11M-2.28	Star	ER11	M8	0.625	1.811	0.472	0.630
872420M32	SSH-SW .625-CHE 11M-6.30	Star	ER11	M8	0.625	5.827	0.472	0.630
872450M27	SSH-SW .750-CHE 11M-5.32	Citizen	ER11	M8	0.750	4.843	0.472	0.630
872421M13	SSH-SW .625-CHE 16M-2.48	Star	ER16	M8	0.625	1.378	1.102	0.866
872451M13	SSH-SW .750-CHE 16M-2.60	Citizen	ER16	M12	0.750	1.870	0.728	0.866
872451M16	SSH-SW .750-CHE 16M-3.07	Citizen	ER16	M12	0.750	2.343	0.728	0.866
872451M20	SSH-SW .750-CHE 16M-3.86	Citizen	ER16	M12	0.750	3.130	0.728	0.866
872451M30	SSH-SW .750-CHE 16M-5.83	Citizen	ER16	M12	0.750	5.098	0.728	0.866
872451M34	SSH-SW .750-CHE 16M-6.61	Citizen	ER16	M12	0.750	5.886	0.728	0.866
872461M16	SSH-SW 20-CHE 16M-3.07	Tsugami	ER16	M12	20mm	2.343	0.728	0.866
572461M20	SSH-SW 20-CHE 16M-3.86	Tsugami	ER16	M12	20mm	3.130	0.728	0.866
872461M30	SSH-SW 20-CHE 16M-5.83	Tsugami	ER16	M12	20mm	5.098	0.728	0.866
872461M34	SSH-SW 20-CHE 16M-6.61	Tsugami	ER16	M12	20mm	5.886	0.728	0.866
872501M19	SSH-SW 25-CHE 16M-3.66	Tornos	ER16	M12	25mm	2.933	0.728	0.866
872511M19	SSH-SW 1.00-CHE 16M-3.66	Citizen, Miyano	ER16	M12	1.000	2.933	0.728	0.866
872511M21	SSH-SW 1.00-CHE 16M-4.06	Citizen, Miyano	ER16	M12	1.000	3.327	0.728	0.866
872511M26	SSH-SW 1.00-CHE 16M-5.04	Citizen, Miyano	ER16	M12	1.000	4.311	0.728	0.866
872502M26	SSH-SW 25-CHE 20M-5.04	Tornos	ER20	M12	25mm	4.291	0.748	1.102
872502M36	SSH-SW 25-CHE 20M-7.17	Tornos	ER20	M14	25mm	6.417	0.748	1.102
872512M26	SSH-SW 1.00-CHE 20M-5.04	Citizen, Miyano	ER20	M14	1.000	4.291	0.748	1.102
872512M34	SSH-SW 1.00-CHE 20M-6.64	Citizen, Miyano	ER20	M14	1.000	5.886	0.748	0.866
872503M24	SSH-SW 25-CHE 25M-4.80	Tornos	ER25	M14	25mm	2.953	1.850	1.378
872503M36	SSH-SW 25-CHE 25M-7.126	Tornos	ER25	M14	25mm	5.709	1.417	1.378
872553M20	SSH-SW 32-CHE 25M-3.94	Various	ER25	M18	32mm	3.150	0.787	1.378
87241014	SSH .500-CHE 11M-2.75		ER11	M6	0.500	2.000	0.75	0.630
872410M28	SSH .500-CHE 11M-5.50		ER11	M6	0.500	3.50	2.00	0.630
872411M28	SSH .500-CHE 16M-5.50		ER16	M6	0.500	3.50	2.00	0.866
87242112	SSH .625-CHE 16-2.36		ER16	M6	0.625	1.00	1.36	1.102
87242120	SSH .625-CHE 20-4.00		ER20	M6	0.625	2.00	2.00	1.340
87245320	SSH .750-CHE 25-4.00		ER25	M12	0.750	2.00	2.00	1.340
87245218	SSH .750-CHE 20-3.62		ER20	M12	1.000	2.360	1.26	1.340
87251220	SSH 1.00-CHE 20-4.00		ER20	M14	1.000	1.00	3.00	1.340
87251231	SSH 1.00-CHE 20-6.00		ER20	M14	1.000	3.00	3.00	1.340
87251410	SSH 1.00-CHE 32-2.00		ER32	M14	1.000	1.00	1.00	1.970
87251510	SSH 1.00-CHE 40-2.00		ER40	M14	1.000	1.00	1.00	2.480
87254423	SSH 1.25-CHE 32-4.45		ER32	M18x1.5	1.250	2.360	2.09	1.970
87254318	ST-NC1.25-CHE 25-3.62		ER25	M18X1.5	1.250	2.360	1.26	1.650
87254420	ST-NC1.25-CHE 32-3.86		ER32	M22X1.5	1.250	2.360	1.50	1.650
87259423	ST-NC1.50-CHE 32-4.45		ER32	M22X1.5	1.500	3.150	1.30	1.970
87259529	ST-NC1.50-CHE 40-5.72		ER40	M22X1.5	1.500	2.950	2.17	2.480

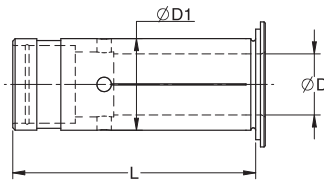
ER Collets on page 142  
ER Nut Wrenches on page 156

# Hardware and Accessories

## Reduction Collets for AccuMill™ Multi Milling Chucks and AccuClamp Hydraulic™ Chucks



COLLET FOR ACCUMILL MULTI MILLING CHUCKS  
MODEL - MC



COLLET FOR ACCUCLAMP HYDRAULIC CHUCKS  
MODEL - HCC

Series	D1	L
MC20	0.787	2.00
MC32	1.260	2.38
MC75	0.750	2.00
MC125	1.250	2.38

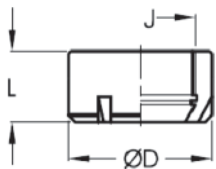
Catalog Number	Description	ØD	Catalog Number	Description	ØD	Catalog Number	Description	ØD	Catalog Number	Description	ØD
95420030	MC20-03	3.000	95432030	MC32-03	3.000	95428030	MC75-03	3.000	95422030	MC125-03	3.000
954C20030	HCC20-03	3.000	954C32030	HCC32-03	3.000	954C28030	HCC75-03	3.000	954C22030	HCC125-03	3.000
95420125	MC20-125	0.125	95432125	MC32-125	0.125	95428125	MC75-125	0.125	95422125	MC125-125	0.125
954C20125	HCC20-125	0.125	954C32125	HCC32-125	0.125	954C28125	HCC75-125	0.125	954C22125	HCC125-125	0.125
95420040	MC20-04	4.000	95432040	MC32-04	4.000	95428040	MC75-04	4.000	95422040	MC125-04	4.000
954C20040	HCC20-04	4.000	954C32040	HCC32-04	4.000	954C28040	HCC75-04	4.000	954C22040	HCC125-04	4.000
95420187	MC20-187	0.187	95432187	MC32-187	0.187	95428187	MC75-187	0.187	95422187	MC125-187	0.187
954C20187	HCC20-187	0.187	954C32187	HCC32-187	0.187	954C28187	HCC75-187	0.187	954C22187	HCC125-187	0.187
95420050	MC20-05	5.000	95432050	MC32-05	5.000	95428050	MC75-05	5.000	95422050	MC125-05	5.000
954C20050	HCC20-05	5.000	954C32050	HCC32-05	5.000	954C28050	HCC75-05	5.000	954C22050	HCC125-05	5.000
95420060	MC20-06	6.000	95432060	MC32-06	6.000	95428060	MC75-06	6.000	95422060	MC125-06	6.000
954C20060	HCC20-06	6.000	954C32060	HCC32-06	6.000	954C28060	HCC75-06	6.000	954C22060	HCC125-06	6.000
95420250	MC20-250	0.250	95432250	MC32-250	0.250	95428250	MC75-250	0.250	95422250	MC125-250	0.250
954C20250	HCC20-250	0.250	954C32250	HCC32-250	0.250	954C28250	HCC75-250	0.250	954C22250	HCC125-250	0.250
95420070	MC20-07	7.000	95432070	MC32-07	7.000	95428070	MC75-07	7.000	95422070	MC125-07	7.000
954C20070	HCC20-07	7.000	954C32070	HCC32-07	7.000	954C28070	HCC75-07	7.000	954C22070	HCC125-07	7.000
95420312	MC20-312	0.312	95432312	MC32-312	0.312	95428312	MC75-312	0.312	95422312	MC125-312	0.312
954C20312	HCC20-312	0.312	954C32312	HCC32-312	0.312	954C28312	HCC75-312	0.312	954C22312	HCC125-312	0.312
95420080	MC20-08	8.000	95432080	MC32-08	8.000	95428080	MC75-08	8.000	95422080	MC125-08	8.000
954C20080	HCC20-08	8.000	954C32080	HCC32-08	8.000	954C28080	HCC75-08	8.000	954C22080	HCC125-08	8.000
95420090	MC20-09	9.000	95432090	MC32-09	9.000	95428090	MC75-09	9.000	95422090	MC125-09	9.000
954C20090	HCC20-09	9.000	954C32090	HCC32-09	9.000	954C28090	HCC75-09	9.000	954C22090	HCC125-09	9.000
95420375	MC20-375	0.375	95432375	MC32-375	0.375	95428375	MC75-375	0.375	95422375	MC125-375	0.375
954C20375	HCC20-375	0.375	954C32375	HCC32-375	0.375	954C28375	HCC75-375	0.375	954C22375	HCC125-375	0.375
95420394	MC20-10	10.000	95432394	MC32-10	10.000	95428100	MC75-10	10.000	95422394	MC125-10	10.000
954C20394	HCC20-10	10.000	954C32394	HCC32-10	10.000	954C28100	HCC75-10	10.000	954C22394	HCC125-10	10.000
95420110	MC20-11	11.000	95432110	MC32-11	11.000	95428110	MC75-11	11.000	95422110	MC125-11	11.000
954C20110	HCC20-11	11.000	954C32110	HCC32-11	11.000	954C28110	HCC75-11	11.000	954C22110	HCC125-11	11.000
95420437	MC20-437	0.437	95432437	MC32-437	0.437	95428437	MC75-437	0.437	95422437	MC125-437	0.437
954C20437	HCC20-437	0.437	954C32437	HCC32-437	0.437	954C28437	HCC75-437	0.437	954C22437	HCC125-437	0.437
954200120	MC20-12	12.000	95432120	MC32-12	12.000	95428120	MC75-12	12.000	95422120	MC12-12	12.000
954C20120	HCC20-12	12.000	954C32120	HCC32-12	12.000	954C28120	HCC75-12	12.000	954C22120	HCC125-12	12.000
95420500	MC20-500	0.500	95432500	MC32-500	0.500	95428500	MC75-500	0.500	95422500	MC125-500	0.500
954C20500	HCC20-500	0.500	954C32500	HCC32-500	0.500	954C28500	HCC75-500	0.500	954C22500	HCC125-500	0.500
95420130	MC20-13	13.000	95432130	MC32-13	13.000	95428130	MC75-13	13.000	95422130	MC125-13	13.000
954C20130	HCC20-13	13.000	954C32130	HCC32-13	13.000	954C28130	HCC75-13	13.000	954C22130	HCC125-13	13.000
95420140	MC20-14	14.000	95432140	MC32-14	14.000	95428140	MC75-14	14.000	95422140	MC125-14	14.000
954C20140	HCC20-14	14.000	954C32140	HCC32-14	14.000	954C28140	HCC75-14	14.000	954C22140	HCC125-14	14.000
95420562	MC20-562	0.562	95432562	MC32-562	0.562	95428562	MC75-562	0.562	95422562	MC125-562	0.562
954C20562	HCC20-562	0.562	954C32562	HCC32-562	0.562	954C28562	HCC75-562	0.562	954C22562	HCC125-562	0.562
95420150	MC20-15	15.000	95432150	MC32-15	15.000	95428150	MC75-15	15.000	95422150	MC125-15	15.000
954C20150	HCC20-15	15.000	954C32150	HCC32-15	15.000	954C28150	HCC75-15	15.000	954C22150	HCC125-15	15.000
95420625	MC20-625	0.625	95432625	MC32-625	0.625	95428625	MC75-625	0.625	95422625	MC125-625	0.625
954C20625	HCC20-625	0.625	954C32625	HCC32-625	0.625	954C28625	HCC75-625	0.625	954C22625	HCC125-625	0.625
95420160	MC20-16	16.000	95432160	MC32-16	16.000	95428160	MC75-16	16.000	95422160	MC125-16	16.000
954C20160	HCC20-16	16.000	954C32160	HCC32-16	16.000	954C28160	HCC75-16	16.000	954C22160	HCC125-16	16.000

# Hardware and Accessories

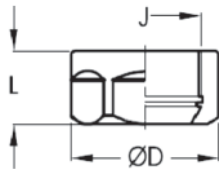
## Reduction Collets for AccuMill™ Multi Milling Chucks and AccuClamp Hydraulic™ Chucks

Catalog Number	Description	ØD	Catalog Number	Description	ØD	Catalog Number	Description	ØD	Catalog Number	Description	ØD
			95432170	MC32-17	17.000				95422170	MC125-17	17.000
			954C32170	HCC32-17	17.000				954C22170	HCC125-17	17.000
			95432180	MC32-18	18.000				95422180	MC125-18	18.000
			954C32180	HCC32-18	18.000				954C22180	HCC125-18	18.000
			95432190	MC32-19	19.000				95422190	MC125-19	19.000
			954C32190	HCC32-19	19.000				954C22190	HCC125-19	19.000
			95432750	MC32-750	0.750				95422750	MC125-750	0.750
			954C32750	HCC32-750	0.750				954C22750	HCC125-750	0.750
			95432200	MC32-20	20.000				95422200	MC125-20	20.000
			954C32200	HCC32-20	20.000				954C22200	HCC125-20	20.000
			95432210	MC32-21	21.000				95422210	MC125-21	21.000
			954C32210	HCC32-21	21.000				954C22210	HCC125-21	21.000
			95432220	MC32-22	22.000				95422220	MC125-22	22.000
			954C32220	HCC32-22	22.000				954C22220	HCC125-22	22.000
			95432875	MC32-875	0.875				95422875	MC125-875	0.875
			954C32875	HCC32-875	0.875				954C22875	HCC125-875	0.875
			95432230	MC32-23	23.000				95422230	MC125-23	23.000
			954C32230	HCC32-23	23.000				954C22230	HCC125-23	23.000
			95432240	MC32-24	24.000				95422240	MC125-24	24.000
			954C32240	HCC32-24	24.000				954C22240	HCC125-24	24.000
			95432984	MC32-25	25.000				95422984	MC125-25	25.000
			954C32984	HCC32-25	25.000				954C22984	HCC125-25	25.000
			95432100	MC32-1000	1.000				95422100	MC125-1000	1.000
			954C32100	HCC32-1000	1.000				954C22100	HCC125-1000	1.000

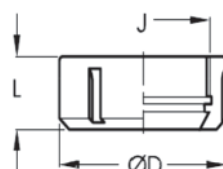
### ER Collet Nuts



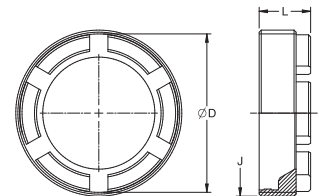
ER 8M/11M/16M/20M



ER 11/16/20



ER 25/32/40

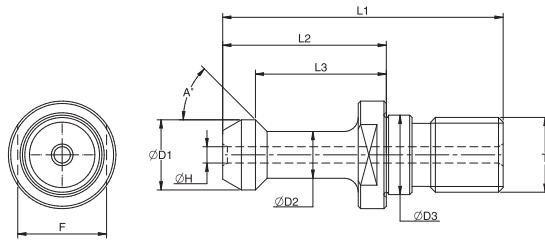


ERZ 16/20/25/32/40

Catalog Number	Collet Size and Type	"D" (mm)	"L" (mm)	"J" (mm)
87921081	ER8M	12	11	M10x0.75
87921111	ER11M	16	10.8	M13x0.75
87921110	ER11	19	11.3	M14X0.75
87921161	ER16M	22	18	M19X1.0
87921160	ER16	28	17	M22X1.50
87921201	ER20M	28	19	M24X1.0
87921200	ER20	34	19	M25X1.5
87921250	ER25M	35	20	M30X1.0
87921250	ER25	42	20	M32X1.5
87921320	ER32	50	22	M40X1.5
87921400	ER40	63	25	M50X1.5
879Z21160	ER16Z	24	11.5	M24X1
879Z21200	ER20Z	28	12	M28x1.5
879Z21250	ER25Z	32	12.5	M32X1.5
879Z21320	ER32Z	40	12.4	M40X1.5
879Z21400	ER40Z	50	14.5	M50X1.5

# Hardware and Accessories

## Retention Knobs



**Note :** It is very important that you verify all retention knob dimensions prior to ordering. Many machine tools vary their retention knobs by serial knobs. Verification is required to ensure pull back force provides proper tool taper contact and holding strength.

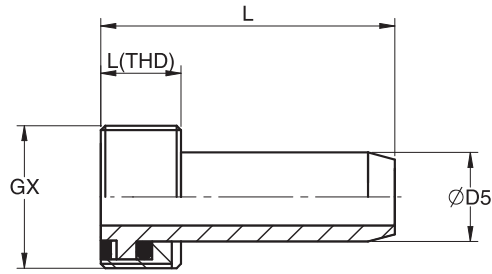
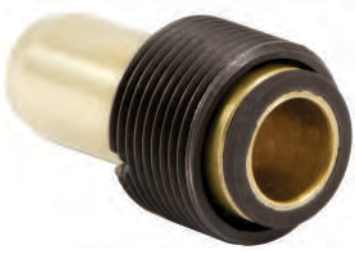
Catalog Number	Machine Brand	Spindle Taper	Coolant Hole	"A" Angle	D1 Head	D2 Neck	D3 Pilot	L1 OAL	L2 Proj.	L3 Pull Length	"H" Coolant Hole	"F" Flats	"T" Thread Size
9610600105	Brother	BT30	N	60	0.433	0.276	0.492	1.683	0.906	0.709	N	13mm	M12
9610600105C	Brother	BT30	Y	60	0.433	0.276	0.492	1.683	0.906	0.709	0.078	13mm	M12
9624450706	Daewoo	CAT40	N	45	0.591	0.394	0.641	2.25	1.266	0.990	N	19mm	5/8-11
9612750206C	Doosan	BT40	Y	75	0.748	0.551	0.669	2.13	1.142	0.906	0.236	19mm	M16
9624750705C	Doosan	CAT40	Y	75	0.748	0.551	0.641	2.01	1.024	0.787	0.236	19mm	5/8-11
9610450105	Fanuc	BT30	N	45	0.433	0.276	0.492	1.68	0.906	0.709	N	13mm	M12
9610450105C	Fanuc	BT30	Y	45	0.433	0.276	0.492	1.68	0.906	0.709	0.110	13mm	M12
9610450105	Haas	BT30	N	45	0.433	0.276	0.492	1.68	0.906	0.709	N	13mm	M12
9610450105C	Haas	BT30	Y	45	0.433	0.276	0.492	1.68	0.906	0.709	0.110	13mm	M12
9612450107	Haas	BT40	N	45	0.591	0.394	0.669	2.36	1.378	1.102	N	19mm	M16
9612450107C	Haas	BT40	Y	45	0.591	0.394	0.669	2.36	1.378	1.102	0.192	19mm	M16
9624450706	Haas	CAT40	N	45	0.591	0.394	0.641	2.25	1.266	0.990	N	19mm	5/8-11
9624450706C	Haas	CAT40	Y	45	0.591	0.394	0.641	2.25	1.266	0.990	0.200	19mm	5/8-11
9626450909	Haas	CAT50	N	45	0.906	0.669	1.031	3.354	1.780	1.386	N	30mm	1"-8
9626450909C	Haas	CAT50	Y	45	0.906	0.669	1.031	3.35	1.780	1.386	0.312	30mm	1"-8
9612450207	Hurco	BT40	N	45	0.591	0.394	0.669	2.36	1.378	1.102	N	19mm	M16
9624450706	Hurco	CAT40	N	45	0.740	0.490	0.641	1.62	0.640	0.440	N	0.750	5/8-11
9626450905	Hurco	CAT50	N	45	1.140	0.820	1.031	2.30	1.000	0.700	N	1.250	1"-8
9612450207	Kitamura	BT40	N	45	0.591	0.394	0.669	2.36	1.378	1.102	N	19mm	M16
9624450706	Kitamura	CAT40	N	45	0.591	0.394	0.641	2.25	1.266	0.990	N	19mm	5/8-11
9626450909C	Kitamura	CAT50	Y	45	0.906	0.669	1.031	3.354	1.780	1.386	0.312	30mm	1"-8
9612750206C	Makino	BT40	Y	75	0.748	0.551	0.669	2.13	1.142	0.906	0.236	19mm	M16
9624750705C	Makino	CAT40	Y	75	0.748	0.551	0.641	2.01	1.024	0.787	0.236	19mm	5/8-11
9626450905	Makino	CAT50	N	45	1.140	0.820	1.031	2.30	1.000	0.700	N	1.250	1"-8
9610600105	Matsuura	BT30	N	60	0.433	0.276	0.492	1.700	0.906	0.709	N	13mm	M12
9612750206C	Matsuura	BT40	Y	75	0.748	0.551	0.669	2.13	1.142	0.906	0.236	19mm	M16
9624750705C	Matsuura	CAT40	Y	75	0.748	0.551	0.641	2.01	1.024	0.787	0.236	19mm	5/8-11
9626600909	Matsuura	CAT50	N	60	0.906	0.669	1.024	3.25	1.772	1.378	N	30mm	1"-8
9612450205C	Mazak	BT40	Y	45	0.740	0.490	0.669	1.74	0.752	0.552	0.276	19mm	M16
9624450703	Mazak	CAT40	N	45	0.740	0.490	0.641	1.62	0.640	0.440	N	0.750	5/8-11
9624450703C	Mazak	CAT40	Y	45	0.740	0.490	0.641	1.62	0.640	0.440	0.276	0.750	5/8-11
9626450909C	Mazak	CAT50	Y	45	0.906	0.669	1.031	3.354	1.780	1.386	0.312	30mm	1"-8
9610600105	DMG-Mori	BT30	N	60	0.433	0.276	0.492	1.683	0.906	0.709	N	13mm	M12
9612900207	DMG-Mori	BT40	N	90	0.591	0.394	0.669	2.36	1.378	1.102	N	19mm	M16
9624900706	DMG-Mori	CAT40	N	90	0.591	0.394	0.641	2.24	1.260	0.984	N	17mm	5/8-11
9626900909	DMG-Mori	CAT50	N	90	0.906	0.669	1.031	3.354	1.780	1.386	N	30mm	1"-8
96103450105	OKK	BT30	N	45	0.433	0.276	0.492	1.68	0.906	0.709	N	13mm	M12
9612450207	OKK	BT40	N	45	0.591	0.394	0.669	2.36	1.378	1.102	N	19mm	M16
9612900207	OKK	BT40	N	90	0.591	0.394	0.669	2.36	1.378	1.102	N	19mm	M16
9624450706	OKK	CAT40	N	45	0.591	0.394	0.641	2.25	1.266	0.990	N	19mm	5/8-11
9624900706	OKK	CAT40	N	90	0.591	0.394	0.641	2.24	1.260	0.984	N	17mm	5/8-11
9626900909	OKK	CAT50	N	90	0.906	0.669	1.031	3.354	1.780	1.386	N	30mm	1"-8
9626450909C	OKK	CAT50	Y	45	0.906	0.669	1.031	3.354	1.780	1.386	0.312	30mm	1"-8
9610600105	Okuma	BT30	N	60	0.433	0.276	0.492	1.700	0.906	0.709	N	13mm	M12
9612450207	Okuma	BT40	N	45	0.591	0.394	0.669	2.36	1.378	1.102	N	19mm	M16
9612600207	Okuma	BT40	N	60	0.591	0.394	0.669	2.36	1.378	1.102	N	19mm	M16
9624450703C	Okuma	CAT40	Y	45	0.740	0.490	0.621	1.62	0.640	0.440	0.157	0.750	5/8-11
9624450703	Okuma	CAT40	N	45	0.740	0.490	0.621	1.62	0.640	0.440	N	0.750	5/8-11
9626900909	Okuma	CAT50	N	90	0.906	0.669	1.031	3.354	1.780	1.386	N	30mm	1"-8
9626600909C	Okuma	CAT50	Y	60	0.906	0.669	1.031	3.354	1.780	1.386	0.236	30mm	1"-8



# Hardware and Accessories

## HSK Coolant Tubes

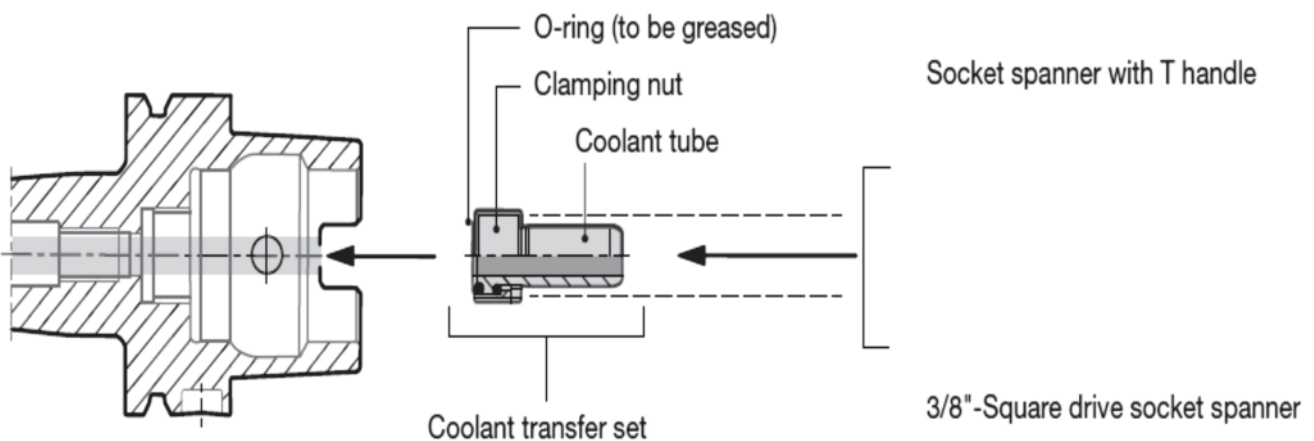
For HSK Holders 40 - 125 Tapers



Catalog Number	Description	"GX" (mm)	"L" (mm)	"D5" (mm)	Torque for holder Assembly Nm/In Lbs.
9697110C	HSK32 Tube	M10x1	26.70	6	7Nm/
9697212C	HSK40 Tube	M12x1	29.5	8	11Nm/
9697316C	HSK50 Tube	M16x1	33.20	10	15Nm/
9697418C	HSK63 Tube	M18x1	36.60	12	20Nm/
9697520C	HSK80 Tube	M20x1.5	40.10	14	25Nm/
9697624C	HSK100 Tube	M24x1.5	44.2	16	30Nm/
9697730C	HSK125 Tube	M30x1.5	48.0	18	35Nm/

### Assembly instructions for the Coolant Tube internal taper shank of HSK holders

- 1) Shank must be clean of all machining debris
- 2) Add lubricant (light grease) to O-Ring before assembly
- 3) Completely insert the Coolant tube centrally in HSK
- 4) Screw in the coolant tube using the proper installation wrench
- 5) Check the coolant tube for radial movement - should be none
- 6) Check the coolant tube for axial movement - should be none



## Hardware and Accessories

### Length Adjustment Screws for ER Collet Chucks

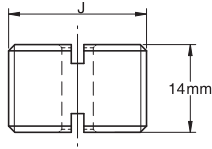


FIG-1

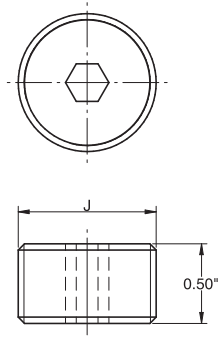


FIG-2

Catalog Number	"J"	Fig.
87922081	M8X1.25	1
87922111	M10X1.50	1
87922110	M12X1.75	1
87922161	M12X1.75	1
87922160	M16X2.00	1
87922201	M18X1.50	1
87922200	M22X1.50	1
87922250	M28X1.50	1

Catalog Number	Description	ER Collet Chuck Size	"J"	Fig.
87922794	ER11 - .250	ER11	5/16"-24 LH	2
87922437	ER16 - .437	ER16	7/16"-16 LH	2
87922563	ER20 - .562	ER20	9/16"-16 LH	2
87922688	ER25 - .687	ER25	11/16"-16 LH	2
87922875	ER32 - .875	ER32	7/8"-16 LH	2
87922112	ER40 - 1.125	ER40	1-1/8"-16 LH	2

### "Y" Spanner Wrenches for AccuMill™ Multi-Milling Chucks

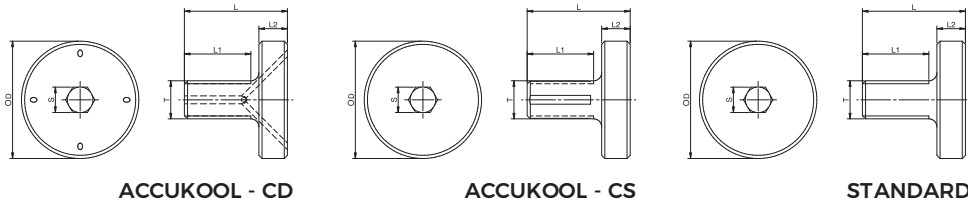


Catalog Number	Description	Milling Chuck Size	"L" (mm)
87922320	MMC 75 Spanner	20mm/.750	250
87922400	MMC 125 Spanner	32mm/1.250	287

# Hardware and Accessories

## Shell Mill Arbor Screws

For use with Shell Mill holders – Standard and AccuKool™ style

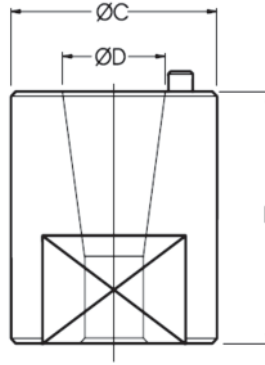


	Catalog Number	Description	Style	Cutter Pilot Size	D	L	I1	I2	T	Key
Inch	9615006	SMLS-050	Standard	0.50	0.625	0.84	0.50	0.34	1/4"-28	3/16"
	9617507	SMLS-075	Standard	0.75	0.875	1.80	1.40	0.37	3/8"-24	1/4"
	9617507CS	SMLS-CS-075	AccuKool	0.75	0.875	1.80	1.40	0.37	3/8"-24	1/4"
	9617507CD	SMLS-CD-075	AccuKool	0.75	0.875	1.80	1.40	0.37	3/8"-24	1/4"
	9611008	SMLS-100	Standard	1.00	1.187	1.40	0.81	0.37	1/2"-20	5/16"
	9611008CS	SMLS-CS-100	AccuKool	1.00	1.187	1.40	0.81	0.37	1/2"-20	5/16"
	9611008CD	SMLS-CD-100	AccuKool	1.00	1.187	1.40	0.81	0.37	1/2"-20	5/16"
	96112509	SMLS-125	Standard	1.25	1.500	1.44	0.94	0.50	5/8"-18	5/16"
	9611209CS	SMLS-CS-125	AccuKool	1.25	1.500	1.44	0.94	0.50	5/8"-18	5/16"
	9611209CD	SMLS-CD-125	AccoKool	1.25	1.500	1.44	0.94	0.50	5/8"-18	5/16"
	9611510	SMLS-150	Standard	1.50	1.875	1.63	1.13	0.50	3/4"-16	3/8"
	9611510CS	SMLS-CS-150	AccuKool	1.50	1.875	1.63	1.13	0.50	3/4"-16	3/8"
	9611510CD	SMLS-CD-150	AccuKOOL	1.50	1.875	1.63	1.13	0.50	3/4"-16	3/8"
	9612011	SMLS-200	Standard	2.00	2.500	1.81	1.31	0.50	1"-14	1/2"
	9612011CS	SML-CS-200	AccuKool	2.00	2.500	1.81	1.31	0.50	1"-14	1/2"
	9612011CD	SMLS-CD-200	AccuKool	2.00	2.500	1.81	1.31	0.50	1"-14	1/2"
9612511	SMLS-250	AccuKool	2.50	3.100	2	1.5	0.50	1"-14	9/16"	
9612511CS	SMLS-CS-250	AccoKool	2.50	3.100	2	1.5	0.50	1"-14	9/16"	
9612511CD	SMSL-CD-250	AccuKool	2.50	3.100	2	1.5	0.50	1"-14	9/16"	
Metric	9611601	SMLS-16M	Standard	16mm	13mm	33mm	25mm	8mm	M8X1.25	6mm
	9612202	SMLS-22M	Standard	22mm	16mm	35mm	25mm	10mm	M10X1.5	8mm
	9612202CS	SMLS-CS-22M	AccuKool	22mm	28mm	25mm	18mm	7mm	M10X1.5	8mm
	9612202CD	SMLS-CD-22M	AccuKool	22mm	28mm	25mm	18mm	7mm	M10X1.5	8mm
	9612703	SMLS-27M	Standard	27mm	18mm	47mm	35mm	12mm	M12X1.75	10mm
	9612703CS	SMLS-CS-27M	AccuKool	27mm	35mm	30mm	22mm	8mm	M12X1.75	10mm
	9612703CD	SMLS-CD-27M	AccuKool	27mm	35mm	30mm	22mm	8mm	M12X1.75	10mm
	9613204	SMLS-32M	Standard	32mm	24mm	51mm	35mm	16mm	M16X2.00	14mm
	9613204CS	SMLS-CS-32M	AccuKool	32mm	42mm	35mm	26mm	9mm	M16X2.00	14mm
	9613204CD	SMLS-CD-32M	AccuKool	32mm	42mm	35mm	26mm	9mm	M16X2.00	14mm
	9614005	SMLS-40M	Standard	40mm	30mm	55mm	35mm	20mm	M20X2.5	17mm
9614005CS	SMLS-CS-40M	AccuKool	40mm	52mm	45mm	30mm	15mm	M20X2.5	17mm	
9614005CD	SMLS-CD-40M	AccuKool	40mm	52mm	40mm	30mm	15mm	M20X2.5	17mm	

# Hardware and Accessories

## Tool Shank Holding Fixtures

For tool setup



Catalog Number	Description	"D" (mm)	"C" (mm)	"L" (mm)
952030	HF 30 Taper	31.75	70	75
952040	HF 40 Taper	44.45	75	100
952050	HF 50 Taper	69.85	100	135

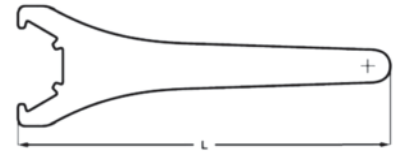
## ER Nut Wrenches



ER 8M/11M/16M/20M



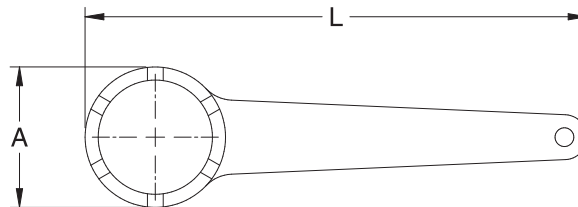
ER 11/16/20



ER 25/32/40

Catalog Number	Description	Collet Size and Type	A (mm)	L (mm)
87922081	ER8M-Spanner	ER8M	13.0	75
87922111	ER11M-Spanner	ER11M	16.8	90
87922110	ER11-C-Spanner	ER11	32.0	95
87922161	ER16M-Spanner	ER16M	22.5	110
87922160	ER16-C-Spanner	ER16	42.0	140
87922201	ER20M-Spanner	ER20M	29.0	120
87922200	ER20-C-Spanner	ER20	60.0	135
87922250	ER25-Y-Spanner	ER25	-	205
87922320	ER32-Y-Spanner	ER32	-	250
87922400	ER40-Y-Spanner	ER40	-	287

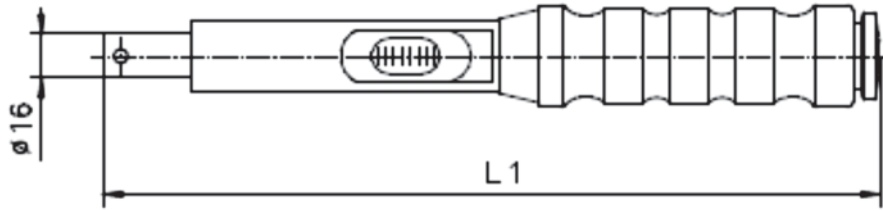
## ERZ Nut Spanner



Catalog Number	Description	"D" (mm)	"C" (mm)	"L" (mm)
87922160Z	ERZ16 Spanner	ERZ16	22	97
87922200Z	ERZ20 Spanner	ERZ20	25.5	97
87922250Z	ERZ25 Spanner	ERZ25	30	134
87922320Z	ERZ32 Spanner	ERZ32	37.5	134
87922400Z	ERZ40 Spanner	ERZ40	47	150

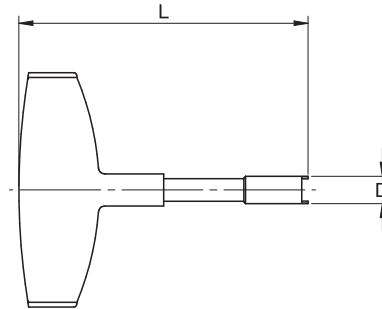
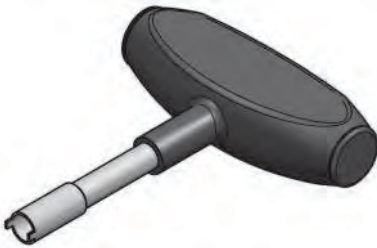
# Hardware and Accessories

## ER Torque Wrench Handles



Catalog Number	Description	ER Collet Size	Range		L1 (mm)
			Nm	Ft.-lbs.	
99010811	Mini-Torque	ER8/ER11	5--50	3.7--37	335
99011620	Small Torque	ER16/ER20	5--50	5.9-44	300
99012532	Medium Torque	ER25/ER32	20-100	14.8-73.8	340
99014050	Large Torque	ER40/ER50	60-300	44.3-221	545

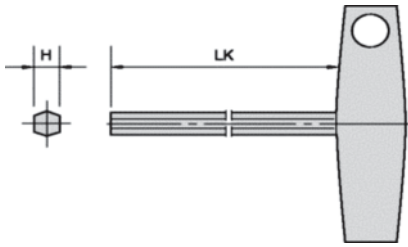
## HSK Coolant Tube Wrenches



Catalog Number	Description	HSK Taper Size	D (mm)	L (mm)
CTS7110C	HSKA/E 32 CTW	HSKA/E 32	8.50	120
CTS7212C	HSKA/E 40 CTW	HSKA/E 40	10.50	120
CTS7316C	HSKA/E 50 CTW	HSKA/E 50	14.50	120
CTS7418C	HSKA/E 63 CTW	HSKA/E 63	16.50	120
CTS7520C	HSKA/E 80 CTW	HSKA/E 80	18.50	130
CTS7624C	HSKA/E 100 CTW	HSKA/E 100	22.5	130
CTS7730C	HSKA/E 125 CTW	HSKA/E 125	ON REQUEST	ON REQUEST

# Hardware and Accessories

## T-Handle Hex Wrenches



## Hex Bit Wrenches



Extended Style



Standard Length Style

Catalog Number	Description	Drive Style	"H" (mm)	"LK" (mm)
990200M3	T-Hex 3mm	Hex	3mm	
990200M4	T-Hex 4mm	Hex	4mm	
990200M5	T-Hex 5mm	Hex	5mm	
99020125	T-Hex 125	Hex	1/8"	
99020187	T-Hex 187	Hex	3/16"	
99020250	T-Hex 250	Hex	1/4"	
99020375	T-Hex 375	Hex	3/8"	
99020500	T-Hex 500	Hex	1/2"	
99020625	T-Hex 625	Hex	5/8"	
99020750	T-Hex 750	Hex	3/4"	
990200T6	T-Hex T6	Torx	T6	
990200T7	T-Hex T7	Torx	T7	
990200T8	T-Hex T8	Torx	T8	
990200T9	T-Hex T9	Torx	T9	
99020T10	T-Hex T10	Torx	T10	
99020T15	T-Hex T15	Torx	T15	
99020T27	T-Hex T27	Torx	T27	
Sets				
99020000	T-Hex Set	Hex		
99020001	T-Torx Set	Torx		

Catalog Number	Description	Style	Hex Socket	"L" (mm)
99023000	Hex Handle Std	Extended	0.250	
99024000	Hex Handle Ext	Standard	0.250	

## Torque Wrench for AccuClamp™ Hydraulic



Catalog Number	Description	Range	
		Nm	Ft.-lbs.
87924H20	HCS-0.75 / 20	5.5	4.00
87924H32	HCS-1.250 / 32	6.0	4.34

## Hex Bits for Hex Wrenches – Torx and Hex sizes



Catalog Number	Description	Bit Hex Size	Bit Drive Size	Bit Length
9902100M2	Hex Bit 2.5 mm	0.250	2.5mm	25mm
9902100M3	Hex Bit 3.0 mm	0.250	3.0mm	25mm
9902100M4	Hex Bit 4.0 mm	0.250	4.0mm	25mm
9902100M5	Hex Bit 5.0 mm	0.250	5.0mm	25mm
9902100T6	Hex Bit T6	0.250	T6	25mm
9902100T7	Hex Bit T7	0.250	T7	25mm
9902100T8	Hex Bit T8	0.250	T8	25mm
9902100T9	Hex Bit T9	0.250	T9	25mm
990210T10	Hex Bit T10	0.250	T10	25mm
990210T15	Hex Bit T15	0.250	T15	25mm
990210T20	Hex Bit T20	0.250	T20	25mm
990210T27	Hex Bit T27	0.250	T27	25mm

# Hardware and Accessories

## Spindle Taper Wipers

In today's environment of absolute precision, one of the biggest problems with accuracy is at the point of the tool coupling. The slightest ingress of dirt can give you run out, changes in length and general problems with repeatability. To combat this, all Spindles should be cleaned daily with taper cleaners. Spindle and taper cleaning tools can be supplied for your specific machine and tool holder tapers.

**Robust construction with high oil and grease resistance.**

- Plastic injection molded core with fluted location for cleaning strips ensures accurate sizing and cleaning efficiency.
- Cleaning strips will maintain adhesion to the taper core due to inset location even under scrubbing action.
- Cleaning strips at well-spaced intervals to move quite large residual partials.



Sleep Taper Spindle and Morse Taper



HSK Taper Spindle



Catalog Number	Description
99150030	30 Taper Wipe
99150035	35 Taper Wipe
99150040	40 Taper Wipe
99150050	50 Taper Wipe

Catalog Number	Description
99120032	HSK32 Wipe
99120040	HSK40 Wipe
99120050	HSK50 Wipe
99120063	HSK63 Wipe
99120080	HSK80 Wipe
99120100	HSK100 Wipe
99120125	HSK125 Wipe



Catalog Number	Description
99150001	MT1 Wipe
99150002	MT2 Wipe
99150003	MT3 Wipe
99150004	MT4 Wipe
99150005	MT5 Wipe
99150006	MT6 Wipe



Catalog Number	Description
99130032	HSK32 Taper Wipe
99130040	HSK40 Taper Wipe
99130050	HSK50 Taper Wipe
99130063	HSK63 Taper Wipe
99130080	HSK80 Taper Wipe
99130100	HSK100 Taper Wipe
99130125	HSK125 Taper Wipe

# Hardware and Accessories

## Spindle Taper Wipers



Tool Handle and Blades comes as Standard Kit - Replacement blades are available

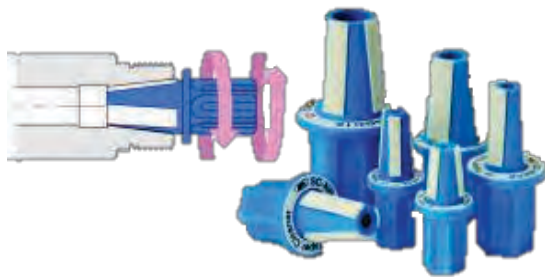


### Spindle-Mate Wipers

Catalog Number	Description	D
99300030	30 Taper SM	Tool Handle
99300035	35 Taper SM	Tool Handle
99300040	40 Taper SM	Tool Handle
99300050	50 Taper SM	Tool Handle
99310030	30 Taper RB	Extra Blades
99310035	35 Taper RB	Extra Blades
99310040	40 Taper RB	Extra Blades
99310050	50 Taper RB	Extra Blades

### Polygon Spindle-Wiper

Catalog Number	Description	D
99100030	PTI30 Wipe	PTI30 Wipe
99100040	PTI40 Wipe	PTI40 Wipe
99100050	PTI50 Wipe	PTI50 Wipe
99100063	PTI63 Wipe	PTI63 Wipe
99100080	PTI80 Wipe	PTI80 Wipe
99100100	PTI100 Wipe	PTI100 Wipe



### ER Collet Taper Wiper

Catalog Number	Description
99400020	ER20 Wipe
99400025	ER25 Wipe
99400032	ER32 Wipe
99400040	ER40 Wipe
99400050	ER50 Wipe



### Face Contact Tool Taper Wiper

Catalog Number	Description
99110030	BTP30 Taper Wipe
99110040	BTP40 Taper Wipe
99110050	BTP50 Taper Wipe
99140040	CATP40 Taper Wipe
99140050	CATP50 Taper Wipe

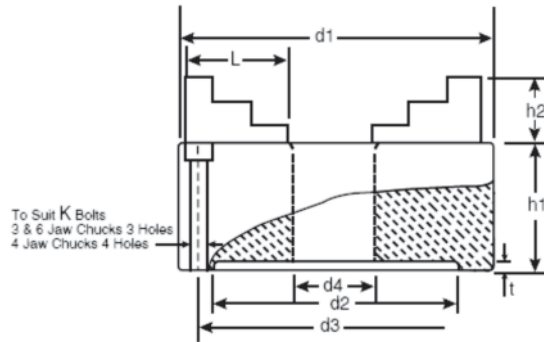


# Work holding

## SJ - Standard Jaw - Self Centering Chucks



SJ3



To Suit K Bolts  
3 & 6 Jaw Chucks 3 Holes  
4 Jaw Chucks 4 Holes

### FEATURES

- Parts interchangeable with Bison Chucks
- Body: SG Iron with jaw ways hardened and ground
- Jaws: Teeth are precision ground from both sides
- Scroll: Threads are precision ground from both sides. Hardness 40-45 Hrc
- Runout: Less than 0.0016" for chucks greater than 6" Dia.

Catalog Number	Description	Chuck Size d1 (mm/inch)	Jaw Style	d2 (mm)	d3 (mm)	d4 (mm)	h1 (mm)	h2 (mm)	K (mm)
B80SJ3	3" 3-jaw Self Centering Solid Jaw Scroll Chuck	80mm/3"	Solid	56	67	16	44	12	M6
B100SJ3	4" 3-jaw Self Centering Solid Jaw Scroll Chuck	100mm/4"	Solid	70	83	20	50	18	M8
B125SJ3	5" 3-jaw Self Centering Solid Jaw Scroll Chuck	125mm/5"	Solid	95	108	33	57	21	M8
B160SJ3	6" 3-jaw Self Centering Solid Jaw Scroll Chuck	160mm/6"	Solid	125	140	42	67	29	M10
B200SJ3	8" 3-jaw Self Centering Solid Jaw Scroll Chuck	200mm/8"	Solid	160	176	55	75	31	M10

## AD - AccuTru™- Self Centering Chucks



### FEATURES

- Body: Forged Steel body with jaw ways hardened and ground
- Jaws: Teeth are precision ground from both sides
- Scroll: Threads are precision ground from both sides
  - o Hardness 40-45 Hrc
- Parts interchangeable with Bison Chucks
- Runout: Less than 0.0016" for chucks greater than 6" Dia.

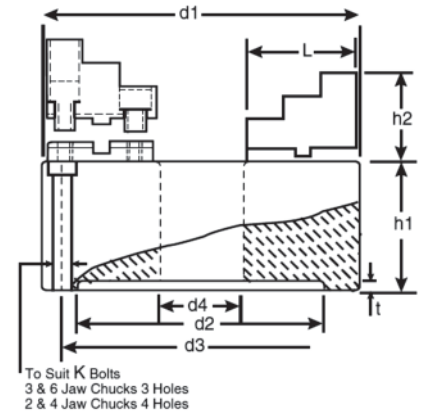
	Catalog Number	Description	Chuck Size d1 (mm/inch)	Jaw Style
<b>3 Jaw</b>	B125AD3S	5" Bison style; Adjustable - Set Tru; 3-jaw; Steel Body Chuck	125mm/5"	2pc Master/Top
	B160AD3S	6" Bison style; Adjustable - Set Tru; 3-jaw; Steel Body Chuck	160mm/6"	2pc Master/Top
	B200AD3S	8" Bison style; Adjustable - Set Tru; 3-jaw; Steel Body Chuck	200mm/8"	2pc Master/Top
	B250AD3S	10" Bison style; Adjustable - Set Tru; 3-jaw; Steel Body Chuck	250mm/10"	2pc Master/Top
	B315AD3S	12" Bison style; Adjustable - Set Tru; 3-jaw; Steel Body Chuck	315mm/12"	2pc Master/Top
	B400AD3S	15" Bison style; Adjustable - Set Tru; 3-jaw; Steel Body Chuck	400mm/15"	2pc Master/Top
<b>6 Jaw</b>	B160AD6S	6" Bison style; Adjustable - Set Tru; 6-jaw; Steel Body Chuck	125mm/5"	2pc Master/Top
	B200AD6S	8" Bison style; Adjustable - Set Tru; 6-jaw; Steel Body Chuck	160mm/6"	2pc Master/Top
	B250AD6S	10" Bison style; Adjustable - Set Tru; 6-jaw; Steel Body Chuck	200mm/8"	2pc Master/Top
	B315AD6S	12" Bison style; Adjustable - Set Tru; 6-jaw; Steel Body Chuck	250mm/10"	2pc Master/Top
	B400AD6S	15" Bison style; Adjustable - Set Tru; 6-jaw; Steel Body Chuck	315mm/12"	2pc Master/Top

# Work holding

## MTJ - Master & Top Jaw - Self Centering Chucks



MTJ3



### FEATURES

- Jaw ways hardened and ground
- Jaws: Teeth are precision ground from both sides
- Scroll: Threads are precision ground from both sides
  - o Hardness 40-45 Hrc
- Parts interchangeable with Bison Chucks
- Runout: Less than 0.0016" for chucks greater than 6" Dia.

	Catalog Number	Description	Chuck Size d1 (mm/inch)	Jaw Style	d2 (mm)	d3 (mm)	d4 (mm)	h1 (mm)	h2 (mm)	K (mm)
3 Jaw	B125MTJ3	5" 3-jaw Self Centering Master Jaw Scroll Chuck; Semi-Steel Body	125mm/5"	2pc Master/Top	95	108	33	57	37	M8
	B160MTJ3	6" 3-jaw Self Centering Master Jaw Scroll Chuck; Semi-Steel Body	160mm/6"	2pc Master/Top	125	140	42	67	44	M10
	B200MTJ3	8" 3-jaw Self Centering Master Jaw Scroll Chuck; Semi-Steel Body	200mm/8"	2pc Master/Top	160	176	55	75	52	M10
	B250MTJ3	10" 3-jaw Self Centering Master Jaw Scroll Chuck; Semi-Steel Body	250mm/10"	2pc Master/Top	200	224	76	85	61	M12
	B315MTJ3	12" 3-jaw Self Centering Master Jaw Scroll Chuck; Semi-Steel Body	315mm/12"	2pc Master/Top	260	286	107	87	63	M12
	B400MTJ3	15" 3-jaw Self Centering Master Jaw Scroll Chuck; Semi-Steel Body	400mm/15"	2pc Master/Top	330	362	150	110	77	M16
	B500MTJ3	20" 3-jaw Self Centering Master Jaw Scroll Chuck; Semi-Steel Body	500mm/20"	2pc Master/Top	420	458	200	120	65	M16
B630MTJ3	25" 3-jaw Self Centering Master Jaw Scroll Chuck; Semi-Steel Body	630mm/25"	2pc Master/Top	545	586	275	135	65	M16	
6 Jaw	B125MTJ6	5" 6-jaw Self Centering Master Jaw Scroll Chuck; Semi-Steel Body	125mm/5"	2pc Master/Top	95	108	33	57	37	M8
	B160MTJ6	6" 6-jaw Self Centering Master Jaw Scroll Chuck; Semi-Steel Body	160mm/6"	2pc Master/Top	125	140	42	67	44	M10
	B200MTJ6	8" 6-jaw Self Centering Master Jaw Scroll Chuck; Semi-Steel Body	200mm/8"	2pc Master/Top	160	176	55	75	52	M10
	B250MTJ6	10" 6-jaw Self Centering Master Jaw Scroll Chuck; Semi-Steel Body	250mm/10"	2pc Master/Top	200	224	76	85	61	M12
	B315MTJ6	12" 6-jaw Self Centering Master Jaw Scroll Chuck; Semi-Steel Body	315mm/12"	2pc Master/Top	260	286	107	87	63	M12
	B400MTJ6	15" 6-jaw Self Centering Master Jaw Scroll Chuck; Semi-Steel Body	400mm/15"	2pc Master/Top	330	362	150	110	77	M16
	B500MTJ6	20" 6-jaw Self Centering Master Jaw Scroll Chuck; Semi-Steel Body	500mm/20"	2pc Master/Top	420	458	200	120	65	M16
	B630MTJ6	25" 6-jaw Self Centering Master Jaw Scroll Chuck; Semi-Steel Body	630mm/25"	2pc Master/Top	545	586	275	135	65	M16

# Work holding

## DP - Dust Proof- Self Centering Chucks



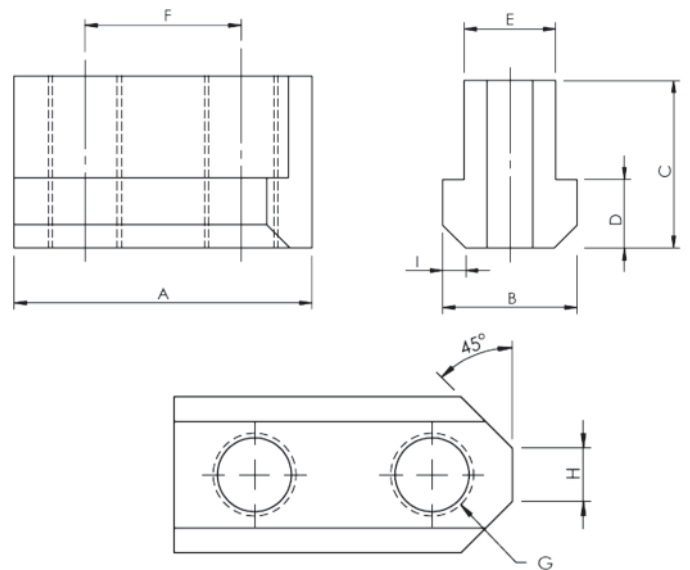
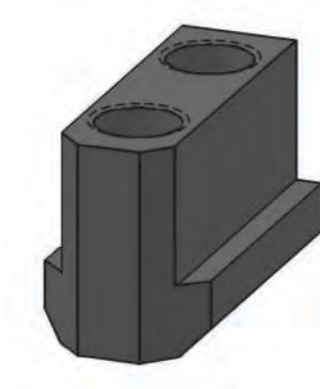
The Accutek Dust Proof Scroll Operated Self Centering Chuck is the result of continuous Research & Development by our team committed to solving work holding problems.

Our Dust Proof chucks have been developed for mass production workshops where dust causes periodic breakdowns in chucks, thus reducing productivity. This new design of scroll operated self-centering chuck has serrated base jaws mountable with reversible Top Hard Jaws or Top Soft Jaws (both Top Hard Jaws and Top Soft Jaws are standard accessories with the chuck). The serrated base jaws have a limited movement and are also sealed against any dust entry into the chuck. Therefore, the life of our Dust Proof Chucks is increased by 60% and the loss in productivity due to more frequent cleaning is reduced.

FEATURES	
• Body:	Semi-Steel body with jaw ways hardened and ground
• Jaws:	Teeth are precision ground from both sides
• Scroll:	Threads are precision ground from both sides. 40-45 HRC.

Catalog Number	Description	Chuck Size (mm/inch)	Jaw Style
160DP3	6" Dust Proof; Serrated jaw (2 piece type); 3 jaw; Plain Back; Semi-Steel Body	160mm/6"	2pc Master/Top
200DP3	8" Dust Proof; Serrated jaw (2 piece type); 3 jaw; Plain Back; Semi-Steel Body	200mm/8"	2pc Master/Top
250DP3	10" Dust Proof; Serrated jaw (2 piece type); 3 jaw; Plain Back; Semi-Steel Body	250mm/10"	2pc Master/Top
315DP3	12" Dust Proof; Serrated jaw (2 piece type); 3 jaw; Plain Back; Semi-Steel Body	315mm/12"	2pc Master/Top

## T-Nuts/Jaw Nuts

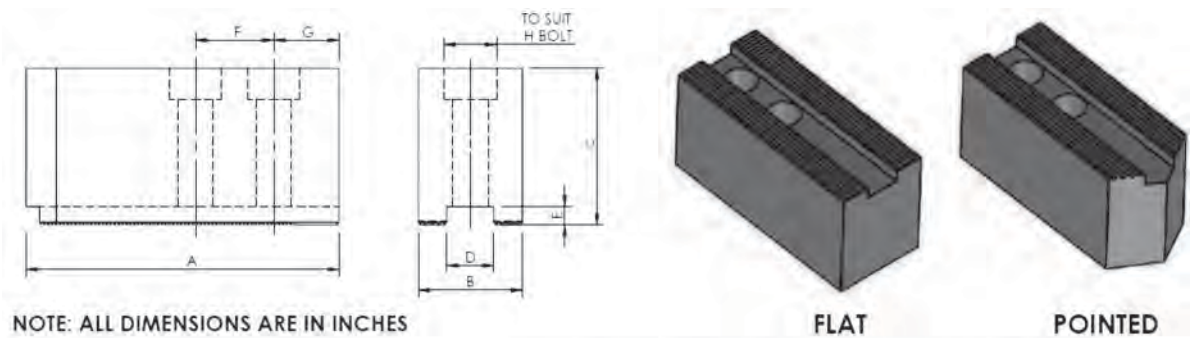


FEATURES	
• Made with	4140 mild steel, heat treated to 28-40 HRC

Catalog Number	Suitable for	Chuck Size (mm/inch)	All Dimensions in Inches								
			A	B	C	D	E	F	G	H	I
TN6T1	Matsumoto	160mm/6"	1.4398	0.6898	0.8701	0.2953	0.4717	0.7874	M10	0.256	0.098 x 45°
TN8T1	Kitagawa B-208	200mm/8"	1.8299	0.8098	0.8098	0.3346	0.5508	0.9843	M12	0.472	0.112 x 45°
TN8T2	Kitagawa, Matsumoto, Howa (H07MA-8, H015-8)	200mm/8"	1.8701	0.8000	1.0000	0.3346	0.5508	0.9843	M12	0.295	0.112 x 45°
TN10T1	Kitagawa, Matsumoto, Howa H01MA-10	250mm/10"	2.0496	0.8665	1.0000	0.3346	0.6299	1.1811	M12	0.295	0.112 x 45°
TN10T2	Kitagawa B-210	250mm/10"	2.0098	0.8898	0.8500	0.3346	0.6299	1.1811	M12	0.433	0.112 x 45°
TN12T1	Kitagawa, Matsumoto, Howa	315mm/12"	2.2500	1.0394	1.2996	0.5299	0.7087	1.1811	M14	0.354	0.177 x 45°
TN12T2	Kitagawa B-212	315mm/12"	2.1898	1.1598	1.0925	0.4528	0.8268	1.1811	M16	0.512	0.177 x 45°
TN15T1	Kitagawa B-215	400mm/15"	3.1496	1.3197	1.7898	0.6500	0.9449	1.6929	M20	0.472	0.196 x 45°

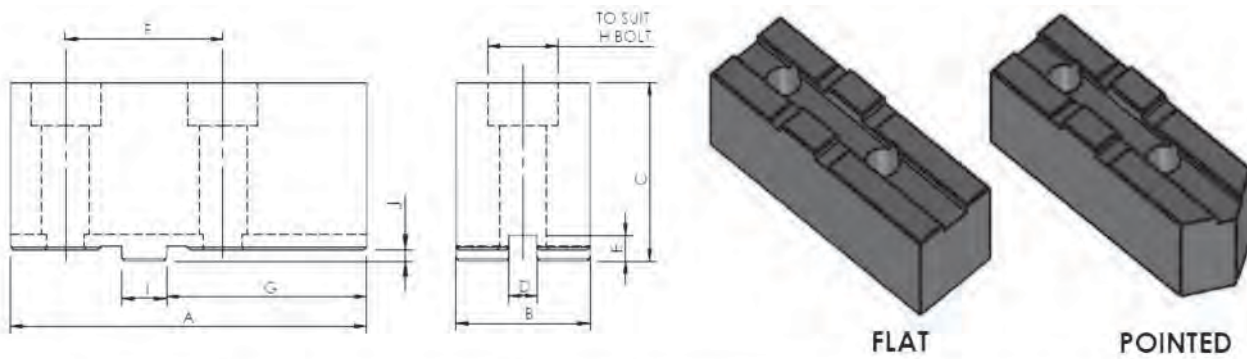
# Work holding

## Soft Jaws - Serrated (1.5 x 60°) and Tongue & Groove



NOTE: ALL DIMENSIONS ARE IN INCHES

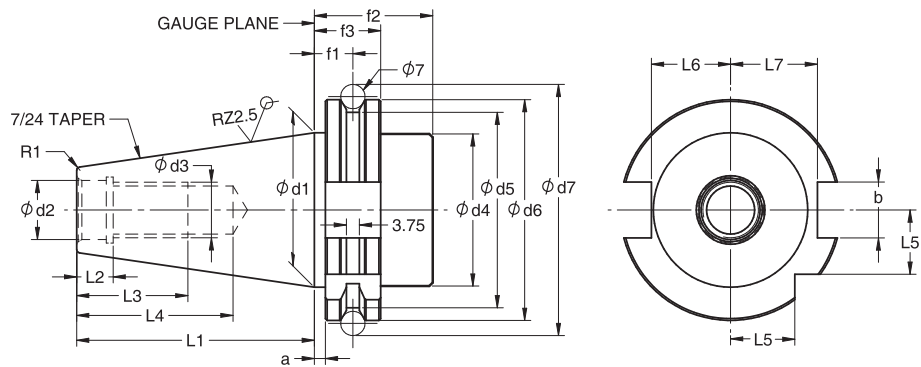
CHUCK SIZE (In Inches)	SUITABLE FOR CHUCK MAKE	PART NO.		A	B	C	D	E	F	G	H	Approx. Wt. PER PCS. in Lbs.
		POINTED	FLAT									
4	KITAGAWA	SP438T1	X	2	1	1.5	0.3937	0.1181	0.5508	0.4000	M8	0.661
5	KITAGAWA	SP538T1	X	2.5	1	1.5	0.3937	0.1576	0.7087	0.5000	M8	0.882
5	HOWA	SP538T2	X	2.5	1	1.5	0.3937	0.1575	0.7476	0.5000	M8	0.882
6	NIKKO, MATSUMOTO	SP638T2	X	3	1.25	1.5	0.4327	0.1969	0.9839	0.4331	M8	1.323
6	KITAGAWA	SP638T3	SF638T1	3	1.25	1.5	0.4717	0.1969	0.7866	0.4331	M10	1.323
6	KITAGAWA	SP675T2	SF675T1	3	1.25	3	0.4717	0.2362	0.7866	0.4331	M10	2.866
8	KITAGAWA, MATSUMOTO, HOWA	SP850T3	SF850T1	4	1.5	2	0.5508	0.1969	0.9839	1.0000	M12	3.086
8	HOWA	SP850T4	SF850T2	4	1.5	2	0.6299	0.1969	0.9839	1.0000	M12	3.086
8	KITAGAWA, MATSUMOTO, HOWA	SP8100T2	SF8100T1	4	1.5	4	0.5508	0.2559	0.9839	1.0000	M12	5.732
10	KITAGAWA, MATSUMOTO	SP1050T2	SF1050T1	4.5	1.5	2	0.6299	0.1969	1.1807	1.0000	M12	3.527
10	KITAGAWA, MATSUMOTO	SP10100T2	SF10100T1	4.5	1.5	4	0.6299	0.1969	1.1807	1.0000	M12	6.614
10	SEIKI	SP1050T3	X	4.5	1.5	2	0.6299	0.1969	1.2598	1.0000	M12	3.527
12	KITAGAWA, MATSUMOTO, HOWA	SP1250T3	X	5.5	2	2	0.7087	0.1969	1.1807	1.0000	M14	5.732
12	KITAGAWA, MATSUMOTO, HOWA	SP12100T2	SF12100T1	5.5	2	4	0.7087	0.1969	1.1807	1.0000	M14	11.905
12	KITAGAWA, MATSUMOTO, HOWA	SP1250T4	X	4.25	2	2	0.7087	0.1969	1.2598	0.7500	M14	4.409
12	B-12 KITAGAWA	SP1250T5	SF1250T2	5.5	2	2	0.8268	0.1969	1.1807	1.0000	M16	5.952
12	B-12 KITAGAWA	X	SF1250T1	5.5	2	2	0.7087	0.1969	1.2598	1.0000	M14	5.952



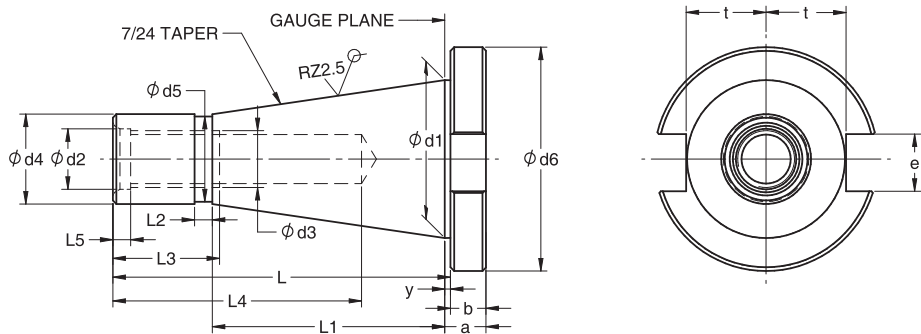
CHUCK SIZE (In Inches)	SUITABLE FOR CHUCK MAKE	PART NO.		A	B	C	D	E	F	G	H	I	J	Approx. Wt. PER PCS. in Lbs.
		POINTED	FLAT											
4	Bergman, Bison, Buck, Cushman, Huron, Rohm, Forkardt, Pratt Burned America SCA, S.P., W & S, Nobel & Yuasa	SPT438T2	SFT438T1	3	1.25	1.5	0.3130	0.2913	1.5000	1.5000	3/8"	0.5	0.1260	1.323
8		SPT850T2	SFT850T1	4	1.5	2	0.3130	0.2913	1.7697	2.2500	3/8"	0.5	0.1260	3.527
10		SPT1050T2	SFT1050T1	4.5	1.5	2	0.5000	0.2913	2.1248	2.2500	M12	0.75	0.1260	3.527
10		SPT10100T2	SFT10100T1	4.5	1.5	2	0.5000	0.2913	2.1248	2.2500	M12	0.75	0.1260	3.527
12		X	SFT1250T1	5.5	2	2	0.5000	0.2913	2.1197	3.1307	M12	0.75	0.1260	5.512
12		SPT1250T2	X	5.5	2	2	0.5000	0.2913	2.5000	3.1307	M12	0.75	0.1260	5.512
12		X	SFT12100T1	5.5	2	4	0.5000	0.2913	2.5000	3.1307	M12	0.75	0.1260	11.905

# Taper Shank Standards

## DIN 69871/DIN 2080 Shank Details



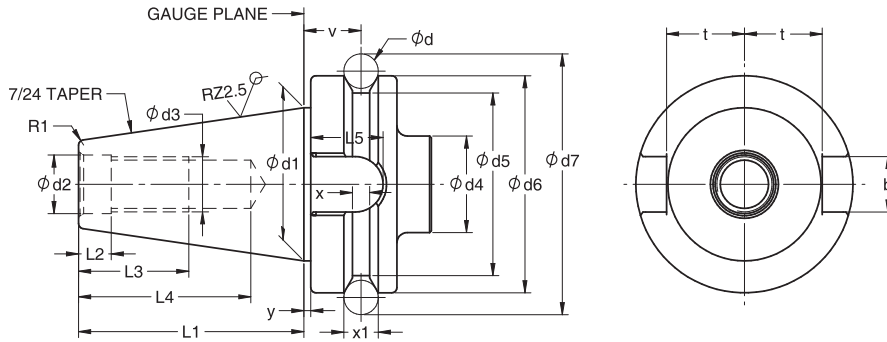
Designation	a ± 0.1	b H12	φd1	φd3	φd2 H7	φd7 ± 0.05	φd6 -0.1	φd5 -0.5	φd4 max	f1 ± 0.1
<b>SK30</b>	3.2	16.1	31.75	M12	13	59.3	50	44.3	45	11.1
<b>SK40</b>	3.2	16.1	44.45	M16	17	72.3	63.55	56.25	50	11.1
<b>SK50</b>	3.2	25.7	69.85	M24	25	107.25	97.50	91.25	80	11.1
Designation	f2 min	f3 -0.1	L1 -0.3	L2 +0.5	L3 min	L4 min	L5 -0.3	L6 -0.4	L7 -0.4	R1
<b>SK30</b>	35	19.1	47.8	5.5	24	33.5	15	16.4	19	0.6
<b>SK40</b>	35	19.1	68.4	8.2	32	42.5	18.5	22.8	25	1.2
<b>SK50</b>	35	19.1	101.75	11.5	47	61.5	30	35.5	37.7	2.5



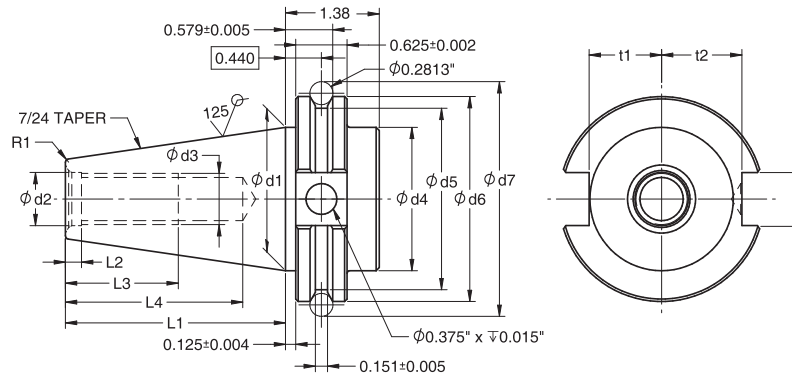
Designation	φd1 Basic	φd4 a10	φd5	L max	L1	L2	y ± 0.4	φd6 a10	a ± 0.1
<b>ISO30</b>	31.75	17.4	16.5	70	50	3	1.6	50	9.6
<b>ISO40</b>	44.45	25.3	24	95	67	5	1.6	63	11.6
<b>ISO50</b>	69.85	39.6	38	130	105	8	3.2	100/95	15.2
Designation	b	e H12	t max	φd3	φd2	L5	L3	L4 min	
<b>ISO30</b>	8	16.1	16.2	M12	12.5	3	24	50	
<b>ISO40</b>	10	16.1	22.5	M16	17	4.5	30	70	
<b>ISO50</b>	12	25.7	35.3	M24	25	6	45	90	

# Taper Shank Standards

## BT (MAS403) and CAT ANSI/ASME B5.50-1994 Shank Details



Designation	$\phi d1$	$L1 \pm 0.2$	R1 max	$L2 + 0.5$	$L3$ min	$L4$	$\phi d2$ H8	$\phi d3$	$t - 0.2$	$b$ H12
<b>BT30</b>	31.75	48.4	0.5	7.0	24	34	12.5	M12	16.3	16.1
<b>BT40</b>	44.45	65.4	1	9.0	30	43	17	M16	22.6	16.1
<b>BT50</b>	69.85	101.8	1	13.0	45	62	25	M24	35.4	25.7
Designation	$L5$ min	$\phi d4 - 0.5$	$\phi d5$	$\phi d6$ h8	$\phi d7$	$y \pm 0.4$	$\phi d$	$V - 0.1$	$x$	$X1 + 0.1$
<b>BT30</b>	17	32.00	38	46	56.144	2	8	13.6	4	8
<b>BT40</b>	21	44.70	53	63	75.679	2	10	16.6	5	10
<b>BT50</b>	31	70.10	85	100	119.019	3	15	23.2	7	15

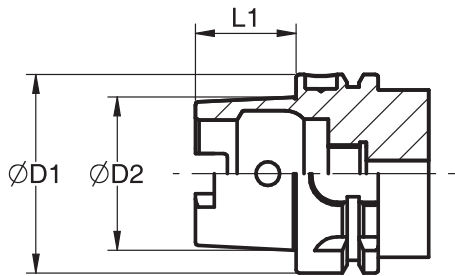


Designation	$\phi d1$ -0.005	$L1$ $\pm 0.005$	$L2$ $\pm 0.010$	$L3$ min.	$\phi d2$ +0.015	$d3$ UNC-2B	$\phi d4$ max.	$\phi d5$
<b>CAT30</b>	1.250	1.875	0.188	1.00	0.516	0.500-13	1.812	1.531
<b>CAT40</b>	1.750	2.687	0.188	1.12	0.641	0.625-11	2.50	2.219
<b>CAT50</b>	2.750	4.000	0.250	1.75	1.031	1.000-8	3.875	3.594
Designation	$\phi d6$	$\phi d7$ $\pm 0.002$	$t1$ -0.015	$t2$ -0.015	$b$ $\pm 0.015$	$R1$ $\pm 0.010$		
<b>CAT30</b>	1.812	2.176	0.640	0.735	0.645	0.020		
<b>CAT40</b>	2.500	2.863	0.890	0.985	0.645	0.040		
<b>CAT50</b>	3.875	4.238	1.390	1.485	1.020	0.040		

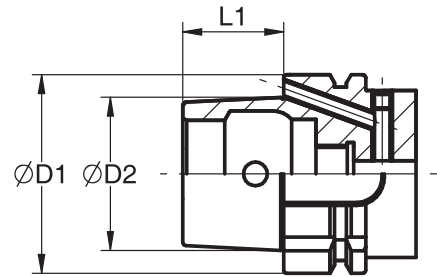
# Taper Shank Standards

## HSK Shank Details - A, C, E and F

**Shape A**

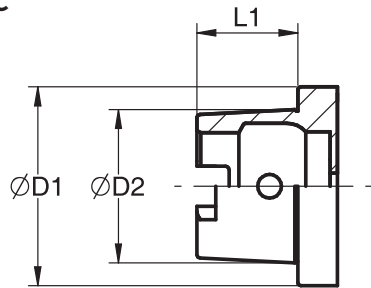


**Shape B**

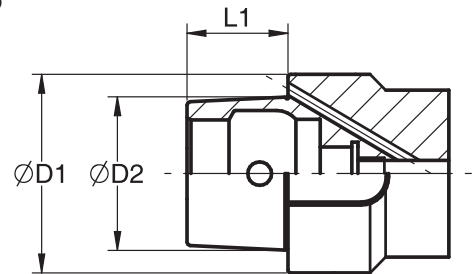


Hollow-shank taper for automatic tool changing with gripping and locating groove. Manual operation is possible through the access hole in the taper. Torque is transmitted both positively and non-positively.

**Shape C**

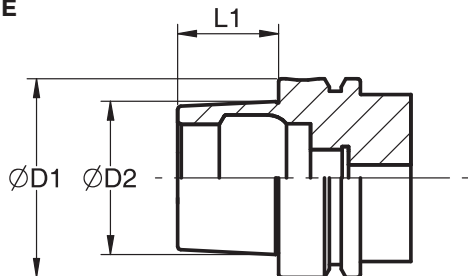


**Shape D**

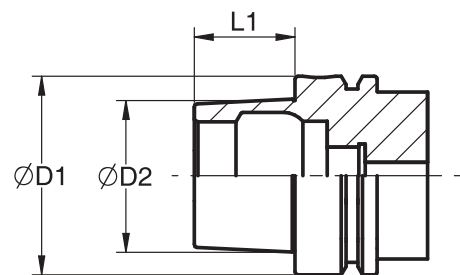


Hollow-shank taper for manual tool changing. operation is possible through the access hole in the taper. Torque is transmitted both positively and non-positively.

**Shape E**



**Shape F**



Hollow-shank taper for automatic tool changing (manual operation through access hole in taper not possible). Torque is transmitted non-positively.

HSK Shape A,C,E			HSK Shape B,D,F		
Nominal Size D1 (mm)	D2 (mm)	L1 (mm)	Nominal Size D1 (mm)	D2 (mm)	L1 (mm)
25	19	13	-	-	-
32	24	16	-	-	-
40	30	20	40	24	16
50	38	25	50	30	20
63	48	32	63	38	25
80	60	40	80	48	32
100	75	50	100	60	40

# Tap Standards ANSI / Metric

ANSI Shank							Metric Shank													
metric thread ANSI Shank	Tap #	fract. Dia.	inch shank Dia.	inch square	Dia (mm)	square (mm)	inch shank Dia.	inch square	Dia (mm)	square (mm)	DIN352 hand tap short	DIN353 inch	DIN371 strong shank	DIN376 DIN374 normal + fine	DIN2182 normal inch	DIN2183 out of range inch	ISO 529	JIS	JIS INCH	
M1.6	0		0.141	0.110	3.58	2.79	0.098	0.083	2.50	2.1	M1		M1	M3.5	1/16"	1/16"				
M1.8	1		0.141	0.110	3.58	2.79	0.098	0.083	2.50	2.1	M1.1		M1.1							
M2,M2.2	2		0.141	0.110	3.58	2.79	0.098	0.083	2.50	2.1	M1.2		M1.2							
M2.5	3		0.141	0.110	3.58	2.79	0.098	0.083	2.50	2.1	M1.4		M1.4							
	4		0.141	0.110	3.58	2.79	0.098	0.083	2.50	2.1	M1.6		M1.6							
M3,M3.15	5	1/8"	0.141	0.110	3.58	2.79	0.098	0.083	2.50	2.1	M1.8		M1.8							
M3.5	6		0.141	0.110	3.58	2.79	0.110	0.083	2.80	2.1	M2		M2	M4	3/32"	5/32"				
	7		0.168	0.130	4.26	3.3	0.110	0.083	2.80	2.1	M2.2		M2.2							
M4	8	5/32"	0.168	0.130	4.26	3.3	0.110	0.083	2.80	2.1	M2.5		M2.5							
	9		0.194	0.152	4.93	3.86	0.110	0.088	2.80	2.24								M2.5		
M5	10	3/16"	0.194	0.152	4.93	3.86	0.118	0.098	3	2.5								M2.5	#3	
	12	7/32"	0.220	0.165	5.59	4.19	0.124	0.098	3.15	2.5								#8		
M6,M6.3	14	1/4"	0.247	0.185	6.27	4.7	0.124	0.110	3.15	2.8								#4		
	16		0.273	0.205	6.93	5.2	0.138	0.106	3.5	2.7	M3		M3	M5	1/8"			#6		
	18		0.299	0.225	7.59	5.71	0.140	0.110	3.55	2.8								#6		
	20		0.325	0.244	8.25	6.2	0.157	0.118	4	3	M3.5		M3.5 #6		7/32"					
		5/32"	0.160	0.122	4.06	3.1	0.157	0.126	4	3.2								M3	#5, #6	
		3/16"	0.192	0.149	4.88	3.78	0.177	0.134	4.5	3.4	M4		M4	M6	5/32"	1/4"				
		7/32"	0.223	0.167	5.66	4.24	0.197	0.157	5	4								#10	M4, M5	
																			#8	
		1/4"	0.255	0.191	6.48	4.85	0.217	0.177	5.5	4.5									M4, M5.5	#10
		9/32"	0.286	0.214	7.26	5.44	0.220	0.177	5.6	4.5								#12	M6	1/4"-20
M7,M8		5/16"	0.318	0.238	8.08	6.05	0.236	0.177	6	4.5										
		11/32"	0.349	0.262	8.86	6.65	0.236	0.193	6	4.9	M5		M5							
M10		3/8"	0.381	0.286	9.68	7.26	0.236	0.193	6	4.9	M6,M8		M6	M8						
		13/32"	0.323	0.242	8.20	6.15	0.240	0.197	6.1	5									M6	
		7/16"	0.323	0.242	8.20	6.15	0.244	0.197	6.20	5									M8, M7	5/16"-18
		15/32"	0.354	0.265	8.99	6.73	0.248	0.197	6.30	5									1/4"-20	
M12, M12.5		1/2"	0.367	0.275	9.32	6.99	0.276	0.217	7	5.5	M10	G1/8"		M10	1/4"	3/8"			M10, M9	
		17/32"	0.398	0.298	10.11	7.57	0.315	0.236	8	6									M11	1/8"
M14		9/16"	0.429	0.322	10.90	8.18	0.315	0.244	8	6.2			M8		5/16"	7/16"				
		19/32"	0.460	0.345	11.68	8.76	0.315	0.248	8	6.3									5/16"-18	
M16		5/8"	0.480	0.360	12.19	9.14	0.335	0.256	8.5	6.5									M12	
		21/32"	0.511	0.383	12.96	9.73	0.354	0.276	9	7				M12	3/8"	1/2"			M12	
M18		11/16"	0.542	0.406	13.77	10.31	0.394	0.315	10	8			M10							
		23/32"	0.573	0.430	14.55	10.92	0.413	0.315	10.5	8									M14, M15	
		3/4"	0.590	0.442	14.99	11.23	0.433	0.354	11	9	M14	G1/4"		M14		9/16"				1/4"
		25/32"	0.621	0.466	15.77	11.84	0.472	0.354	12	9	M16	G3/8"		M16		5/8"			M14, M15	
M20		13/16"	0.652	0.489	16.56	12.42	0.492	0.394	12.5	10								M16	M16	
		27/32"	0.684	0.513	17.37	13.03	0.512	0.394	13	10									M17	



# Tap Standards ANSI / Metric

ANSI Shank							Metric Shank												
metric thread ANSI Shank	Tap #	fract. Dia.	inch shank Dia.	inch square	Dia (mm)	square (mm)	inch shank Dia.	inch square	Dia (mm)	square (mm)	DIN352 hand tap short	DIN353 inch	DIN371 strong shank	DIN374 normal + fine	DIN2182 normal inch	out of range inch	ISO 529	JIS	JIS INCH
M22		7/8"	0.697	0.523	17.70	13.28	0.551	0.433	14	11	M18			M18		11/16"		M18	3/8"
							0.551	0.441	14	11.2							M18		
M24		15/16"	0.760	0.570	19.30	14.48	0.591	0.472	15	12								M20	
M25		1"	0.800	0.600	20.32	15.24	0.630	0.472	16	12	M20	G1/2"		M20		13/16"			
M27		1-1/16"	0.862	0.646	21.89	16.41	0.669	0.512	17	13								M22	
		1-1/8"	0.896	0.672	22.76	17.07	0.709	0.551	18	14									1/2"
M30		1-3/16"	0.959	0.719	24.36	18.26	0.709	0.571	18	14.5	M22	G5/8"		M22		7/8"			
		1-1/4"	1.021	0.766	25.93	19.46	0.709	0.571	18	14.5	M24			M24		15/16"			
M33		1-5/16"	1.084	0.813	27.53	20.65	0.748	0.591	19	15								M24, M25	1/2"NPT
		1-3/8"	1.108	0.831	28.14	21.11	0.787	0.591	20	15								M26, M27	
M36		1-7/16"	1.171	0.878	29.74	22.3	0.787	0.630	20	16	M27	G3/4"		M27		1"			
		1-1/2"	1.233	0.925	31.32	23.5	0.827	0.669	21	17								M28	
M39		1-5/8"	1.305	0.979	33.15	24.87	0.866	0.669	22	17								M28	
M42		1-3/4"	1.430	1.072	36.32	27.23	0.866	0.709	22	18	M30	G7/8"		M30		1-1/8"			
		1-7/8"	1.519	1.139	38.58	28.93	0.906	0.669	23	17								M30	3/4"
M48		2"	1.644	1.233	41.76	31.32	0.945	0.748	24	19								M32	3/4"NPT
							0.984	0.748	25	19								M33	
							0.984	0.787	25	20	M33	G1"		M33		1-1/4"			
<b>Pulley Taps</b>																			
M6		1/4"	0.255	0.191	6.48	4.85	1.024	0.827	26	21								M35, M34	1"
M8		5/16"	0.318	0.238	8.08	6.04	1.102	0.827	28	21								M36, M38	1" NPT
M10		3/8"	0.381	0.286	9.68	7.26	1.102	0.866	28	22	M36	G1-1/8"		M36		1-3/8"			
		7/16"	0.444	0.333	11.28	8.46	1.102	0.882	28	22.4									
		1/2"	0.504	0.380	12.80	9.65	1.181	0.906	30	23								M39, M40	
		5/8"	0.633	0.475	16.08	12.06	1.260	0.945	32	24	M39	G1-1/4"		M39		1-1/2"			
		3/4"	0.756	0.569	19.20	14.45	1.260	0.945	32	24	M42	G1-1/4"		M42		1-5/8"			
<b>Pipe Taps</b>																			
		1/8"SS	0.313	0.234	7.94	5.94	1.260	1.024	32	26								M42	1-1/4"
		1/8"LS	0.437	0.328	11.11	8.33	1.378	1.024	35	26								M45	1-3/8"
		1/4"	0.563	0.421	14.29	10.69	1.417	1.142	36	29	M45	G1-3/8"		M45		1-3/4"			
		3/8"	0.700	0.531	17.78	13.49	1.417	1.142	36	29	M48	G1-1/2"		M48		1-7/8"			
		1/2"	0.687	0.515	17.46	13.08	1.417	1.142	36	29		G1-3/4"							
		5/8"	0.813	0.594	20.64	15.09	1.496	1.142	38	29		G2"						M48	1-1/2"
		3/4"	0.906	0.679	23.02	17.25	1.575	1.260	40	32	M52	G2-1/4"		M52		2"			
		7/8"	1.094	0.812	7.78	20.62	1.772	1.378	45	35	M56	G2-1/2"		M56		2-1/4"			
		1"	1.125	0.843	28.57	21.41	1.772	1.378	45	35	M60			M60		2-1/2"			
		1-1/4"	1.313	0.984	33.34	24.99	1.969	1.535	50	39	M64	G2-3/4"		M64		2-1/2"			
		1-3/8"	1.108	0.831	28.14	21.11	1.969	1.535	50	39		G3"							
		1-1/2"	1.500	1.125	38.10	28.57	2.205	1.732	56	44	M68	G3-1/4"		M68		2-3/4"			
							2.205	1.732	56	44						3"			

**Notes:**

A series of horizontal dashed lines for writing notes.

# Accutek Manufacturing Tips

## Accutek Manufacturing Tip #4

Types of Improper Tool holder wear and/or damage – The average tool holder shank, whether HSK, CAT, BT, or Steep taper Face contact has a “dimension life” of about 3-5 years. This means most tool holders, regardless of brand, are usually worn beyond new “Standard ANSI or DIN” specifications. This “wear” means your tools are no longer maintaining proper spindle taper/tool shank taper contact, TIR accuracy, or even proper spindle taper alignment. All this “Wear” means your machining processes are fighting to maintain centerline and highest level of machine spindle and toolholder interface. Types of wear and causes:



### Normal wear

- 1) Even surface wear pattern from flange back towards retention knob end.
  - 2) No nicks or dents that cause high spots or low spots on taper
- Proper tool holder and spindle care:
- 1) Make sure tool taper is clean before inserting into tool carousel or machine spindle
  - 2) Make sure you use a spindle taper wiper every day
  - 3) Store tool holders in clean environment and sprayed with rust preventing lubricant is being store longer than 14 days
  - 4) DO NOT store tool holders in metal or wood storage racks – wood hold moisture and will cause rust. Steel will scratch or dent taper.

### Fretting (not rust!)

- Causes:
- 1) Poor drawbar force pressure
  - 2) Excessive radial load on cutting tool/holder assembly
  - 3) Spindle taper surface in poor condition or bell mouth
- Resolutions:
- 1) Check drawbar force to make sure in is within factory specifications
  - 2) Reduce radial load on application
  - 3) Check spindle taper and tool holder taper for “out of specification” dimensions and spindle bell mousing

### Uneven Taper Wear

- Causes:
- 1) Over torque of Retention Knobs
  - 2) Incorrect Retention knob for machine spindle
  - 3) Poor quality tool holder material or heat treatment and grind
- Resolutions:
- 1) Torque specifications for retention knob
  - 2) Check Drawbar Force
  - 3) Conduct Taper/Spindle Bluing process to see if tool taper or machine taper is correct.



**Accutek Inc.**  
15 W. Commercial Ave., Addison IL 60101-4501  
info@accutekusa.com  
+1 (312) 857-6577

[www.accutekusa.com](http://www.accutekusa.com)