

**MILLING MACHINE****ARBORS**

SERIES 358:

**FOR 30 40 50 NATIONAL STANDARD  
TAPER SPINDLES**

Milling Machine Arbors are made of top quality one piece forgings. Carefully heat treated and surfaces ground with extremely narrow tolerances assure a rigid setup and accurate machining operations. All threads are ground. Arbors are equipped with assorted solid spacers and necessary running bushings with standard keyways and threaded arbor nut.

**Type A arbors are provided with end pilots 23/32 x 1-3/4".**

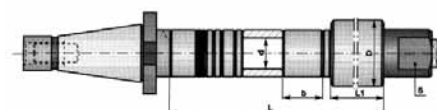
Drawbar Threads for:

#30 1/2" - 13

#40 5/8" - 11

#50 1" - 8

These arbors have right hand thread.

**STYLE A****STYLE B****RH ARBOR NUTS**

SERIES 360:



RH nuts are hardened and have a ground thread and shoulder.

| For Arbor Dia. | Thread Size  | Order No. | Price |
|----------------|--------------|-----------|-------|
| 7/8            | 7/8 - 14RH   | 7030005   |       |
| 1              | 1-14RH       | 7030010   |       |
| 1-1/4          | 1-1/4 - 12RH | 7030015   |       |
| 1-1/2          | 1-1/2 - 12RH | 7030020   |       |
| 2              | 2 - 12RH     | 7030025   |       |
| 2-1/2          | 2-1/2 - 12RH | 7030030   |       |

**STYLE A WITH PILOT**

| Arbor No.                                                      | Taper | Arbor Dia. d               | Length L            | Running Bushing D x L <sub>1</sub>                               | No. of Bushings  | Order No.                                | Price |
|----------------------------------------------------------------|-------|----------------------------|---------------------|------------------------------------------------------------------|------------------|------------------------------------------|-------|
| 30-7/8 - A10-2<br>31-A10-2<br>31-1/4 - A10-2<br>31-1/4 - A10-3 | 30    | 7/8<br>1<br>1-1/4<br>1-1/4 | 10                  | 1-5/8 x 2-5/8<br>1-5/8 x 2-5/8<br>1-5/8 x 2-5/8<br>1-7/8 x 3-1/8 | 1                | 7010005<br>7010010<br>7010015<br>7010017 |       |
| 40-7/8 - A10<br>40-7/8 - A16-3                                 | 40    | 7/8                        | 10<br>16            | -<br>1-7/8 x 3-1/8                                               | -<br>1           | 7010020<br>9110025                       |       |
| 41 - A8<br>41 - A10<br>41 - A12<br>41 - A16-3                  | 40    | 1                          | 8<br>10<br>12<br>16 | -<br>-<br>-<br>1-7/8 x 3-1/8                                     | -<br>-<br>-<br>1 | 7010027<br>7010028<br>9910030<br>9910035 |       |
| 41-1/4 - A8<br>41-1/4 - A10<br>41-1/4 - A12<br>41-1/4 - A16-3  | 40    | 1-1/4                      | 8<br>10<br>12<br>16 | -<br>-<br>-<br>1-7/8 x 3-1/8                                     | -<br>-<br>-<br>1 | 7010037<br>7010038<br>9910040<br>9910045 |       |
| 50-7/8 - A10<br>50-7/8 - A18-4                                 | 50    | 7/8                        | 10<br>18            | -<br>2-1/8 x 3-3/4                                               | -<br>1           | 9210050<br>9110055                       |       |
| 51 - A8<br>51 - A12<br>51 - A18-4                              | 50    | 1                          | 8<br>12<br>18       | -<br>-<br>2-1/8 x 3-3/4                                          | -<br>-<br>1      | 7010057<br>9910060<br>9910065            |       |
| 51-1/4 - A8<br>51-1/4 - A12<br>51-1/4 - A18-4                  | 50    | 1-1/4                      | 8<br>12<br>18       | -<br>-<br>2-1/8 x 3-3/4                                          | -<br>-<br>1      | 7010067<br>9910070<br>9910075            |       |

**STYLE B**

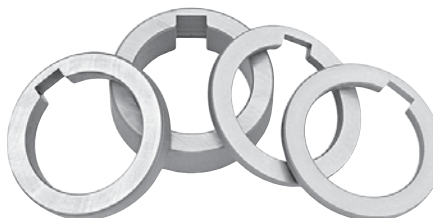
|                                                                                         |    |                                  |                               |                                                                       |                       |                                                     |  |
|-----------------------------------------------------------------------------------------|----|----------------------------------|-------------------------------|-----------------------------------------------------------------------|-----------------------|-----------------------------------------------------|--|
| 31 - B2                                                                                 | 30 | 1                                | 2                             | -                                                                     | -                     | 7015002                                             |  |
| 40-7/8 - B14-3<br>40-7/8 - B16-3                                                        | 40 | 7/8                              | 14<br>16                      | 1-7/8 x 3-1/8                                                         | 1                     | 7015005<br>7015006                                  |  |
| 41 - B3<br>41 - B14-3<br>41 - B20-3                                                     | 40 | 1                                | 3<br>14<br>20                 | -<br>1-7/8 x 3-1/8<br>1-7/8 x 3-1/8                                   | -<br>1<br>1           | 7015008<br>7015010<br>7015015                       |  |
| 41-1/4 - B3<br>41-1/4 - B14-3<br>41-1/4 - B20-3<br>41-1/2 - B20-4                       | 40 | 1-1/4<br>1-1/4<br>1-1/4<br>1-1/2 | 3<br>14<br>20<br>20           | -<br>1-7/8 x 3-1/8<br>1-7/8 x 3-1/8<br>2-1/8 x 3-3/4                  | -<br>1<br>1<br>1      | 7015017<br>7015020<br>7015025<br>7015030            |  |
| 51 - B3-1/2<br>51 - B15-4<br>51 - B18-4<br>51 - B24-4                                   | 50 | 1                                | 3-1/2<br>15<br>18<br>24       | -<br>2-1/8 x 3-3/4<br>2-1/8 x 3-3/4<br>2-1/8 x 3-3/4                  | -<br>1<br>2<br>2      | 7015033<br>7015035<br>7015040<br>7015045            |  |
| 51-1/4 - B3-1/2<br>51-1/4 - B15-4<br>51-1/4 - B18-4<br>51-1/4 - B24-4<br>51-1/4 - B30-4 | 50 | 1-1/4                            | 3-1/2<br>15<br>18<br>24<br>30 | -<br>2-1/8 x 3-3/4<br>2-1/8 x 3-3/4<br>2-1/8 x 3-3/4<br>2-1/8 x 3-3/4 | -<br>1<br>2<br>2<br>2 | 7015047<br>7015050<br>7015055<br>7015060<br>7015065 |  |
| 51-1/2 - B3-1/2<br>51-1/2 - B18-4<br>51-1/2 - B24-5<br>51-1/2 - B30-5<br>51-1/2 - B36-5 | 50 | 1-1/2                            | 3-1/2<br>18<br>24<br>30<br>36 | -<br>2-1/8 x 3-3/4<br>2-3/4 x 4-1/4<br>2-3/4 x 4-1/4<br>2-3/4 x 4-1/4 | -<br>2<br>2<br>2<br>2 | 7015067<br>7015070<br>7015075<br>7015080<br>7015085 |  |
| 52 - B24-5<br>52 - B30-5<br>52 - B36-5                                                  | 50 | 2                                | 24<br>30<br>36                | 2-3/4 x 4-1/4                                                         | 2                     | 7015090<br>7015095<br>7015100                       |  |
| 52-1/2 - B36-6                                                                          | 50 | 2-1/2                            | 36                            | 3-3/8 x 4-1/4                                                         | 2                     | 7015105                                             |  |

## SOLID SPACERS WITH KEYWAYS

### SERIES 361:

Spacers are hardened and have parallel and perpendicular surfaces precisely ground to ensure precise operation of cutters on milling machine arbors.

3/4" hole x 1/8" O.D. spacers available; please inquire.



| Width of Spacer  | 7/8" hole<br>1-3/8" O.D. |       | 1" hole<br>1-1/2" O.D. |       | 1-1/4" hole<br>1-3/4" O.D. |       | 1-1/2" hole<br>2-1/8" O.D. |       | 2" hole<br>2-3/4" O.D. |       | 2-1/2" hole<br>3-1/4" O.D. |       |
|------------------|--------------------------|-------|------------------------|-------|----------------------------|-------|----------------------------|-------|------------------------|-------|----------------------------|-------|
|                  | Order No.                | Price | Order No.              | Price | Order No.                  | Price | Order No.                  | Price | Order No.              | Price | Order No.                  | Price |
| 1/16             | 7020005                  |       | 7020090                |       | 7020175                    |       | 7020260                    |       | 7020385                |       | 7020470                    |       |
| 3/32             | 7020010                  |       | 7020095                |       | 7020180                    |       | 7020265                    |       | 7020390                |       | 7020475                    |       |
| 1/8              | 7020015                  |       | 7020100                |       | 7020185                    |       | 7020270                    |       | 7020395                |       | 7020480                    |       |
| 3/16             | 7020020                  |       | 7020105                |       | 7020190                    |       | 7020275                    |       | 7020400                |       | 7020485                    |       |
| 1/4              | 7020025                  |       | 7020110                |       | 7020195                    |       | 7020280                    |       | 7020405                |       | 7020490                    |       |
| 5/16             | 7020030                  |       | 7020115                |       | 7020200                    |       | 7020285                    |       | 7020410                |       | 7020495                    |       |
| 3/8              | 7020035                  |       | 7020120                |       | 7020205                    |       | 7020290                    |       | 7020415                |       | 7020500                    |       |
| 7/16             | 7020040                  |       | 7020125                |       | 7020210                    |       | 7020295                    |       | 7020420                |       | 7020505                    |       |
| 1/2              | 7020045                  |       | 7020130                |       | 7020215                    |       | 7020300                    |       | 7020425                |       | 7020510                    |       |
| 5/8              | 7020050                  |       | 7020135                |       | 7020220                    |       | 7020305                    |       | 7020430                |       | 7020515                    |       |
| 3/4              | 7020055                  |       | 7020140                |       | 7020225                    |       | 7020310                    |       | 7020435                |       | 7020520                    |       |
| 7/8              | 7020060                  |       | 7020145                |       | 7020230                    |       | 7020315                    |       | 7020440                |       | 7020525                    |       |
| 1                | 7020065                  |       | 7020150                |       | 7020235                    |       | 7020320                    |       | 7020445                |       | 7020530                    |       |
| 1-1/4            | 7020070                  |       | 7020155                |       | 7020240                    |       | 7020325                    |       | 7020450                |       | 7020535                    |       |
| 1-1/2            | 7020075                  |       | 7020160                |       | 7020245                    |       | 7020330                    |       | 7020455                |       | 7020540                    |       |
| 2                | 7020080                  |       | 7020165                |       | 7020250                    |       | 7020335                    |       | 7020460                |       | 7020545                    |       |
| 3                | 7020085                  |       | 7020170                |       | 7020255                    |       | 7020340                    |       | 7020465                |       | 7020550                    |       |
| Width of Key-way | 1/8                      |       | 1/4                    |       | 5/16                       |       | 3/8                        |       | 1/2                    |       | 5/8                        |       |

## ARBOR RUNNING BUSHINGS

### SERIES 362:

Bushings are hardened and have parallel and perpendicular surfaces precisely ground to ensure maximum holding power, rigid setup and accurate machining operations. Bushings have standard keyways which allow fixed mounting on arbor and prevent rotation.



## ARBOR SPACER SHIM SETS

### SERIES 671:

With standard keyways.



These assortments contain 19 pc. of the most needed shims.  
2 Ea.: .001, .002, .003, .004, .005, .006  
1 Ea.: .007, .008, .010, .012, .015, .020, .025

| O.D. of Bushing | Diameter of Hole | Length of Bushing | Width of Keyway | Order No. | Price |
|-----------------|------------------|-------------------|-----------------|-----------|-------|
| 1-5/8           | 7/8              | 2-5/8             | 1/8             | 7025005   |       |
| 1-5/8           | 1                | 2-5/8             | 1/4             | 7025010   |       |
| 1-5/8           | 1-1/4            | 2-5/8             | 5/16            | 7025015   |       |
| 1-7/8           | 7/8              | 3-1/8             | 1/8             | 7025020   |       |
| 1-7/8           | 1                | 3-1/8             | 1/4             | 7025025   |       |
| 1-7/8           | 1-1/4            | 3-1/8             | 5/16            | 7025030   |       |
| 2-1/8           | 7/8              | 3-3/4             | 1/8             | 7025035   |       |
| 2-1/8           | 1                | 3-3/4             | 1/4             | 7025040   |       |
| 2-1/8           | 1-1/4            | 3-3/4             | 5/16            | 7025045   |       |
| 2-1/8           | 1-1/2            | 3-3/4             | 3/8             | 7025050   |       |
| 2-3/4           | 7/8              | 4-1/4             | 1/8             | 7025055   |       |
| 2-3/4           | 1                | 4-1/4             | 1/4             | 7025060   |       |
| 2-3/4           | 1-1/4            | 4-1/4             | 5/16            | 7025065   |       |
| 2-3/4           | 1-1/2            | 4-1/4             | 3/8             | 7025070   |       |
| 2-3/4           | 2                | 4-1/4             | 1/2             | 7025075   |       |
| 3-3/8           | 2-1/2            | 4-1/2             | 5/8             | 7025080   |       |

| Inside Dia. | Outside Dia. | Order No. | Price |
|-------------|--------------|-----------|-------|
| 1/2         | 3/4          | 6714170   |       |
| 5/8         | 1            | 6714180   |       |
| 3/4         | 1-1/8        | 6714190   |       |
| 7/8         | 1-3/8        | 6714200   |       |
| 1           | 1-1/2        | 6714220   |       |
| 1-1/4       | 1-3/4        | 6714260   |       |
| 1-1/2       | 2-1/8        | 6714460   |       |
| 2           | 2-3/4        | 6714480   |       |

Individual sizes available. See our website or inquire.

## END MILL HOLDERS WITH "R-8" TAPER

### SERIES 371



**MEDA**  
Superior Import



- Made of alloy forged steel for long, durable service life.
- Hardened to RC 56-60 and ground to ensure maximum accuracy.
- End Mill Socket T.I.R. <0.0004".

For holding single and double end end mills.

| Model No.  | Hole Dia. | MEDA      |       | BISON     |       |
|------------|-----------|-----------|-------|-----------|-------|
|            |           | Order No. | Price | Order No. | Price |
| ER8-3/16   | 3/16      | 2150000   |       | 7160005   |       |
| ER8-3/8    | 3/8       | 2150001   |       | 7160010   |       |
| ER8-1/2    | 1/2       | 2150002   |       | 7160015   |       |
| ER8-5/8*   | 5/8       | 2150003   |       | 7160020   |       |
| ER8-3/4*   | 3/4       | 2150004   |       | 7160025   |       |
| ER8-7/8*   | 7/8       | 2150005   |       | 7160030   |       |
| ER8-1*     | 1         | 2150006   |       | 7160035   |       |
| ER8-1-1/4* | 1-1/4     | 2150007   |       | 7160040   |       |
| ER8-1-1/2* | 1-1/2     | 2150008   |       | 7160045   |       |

\* For Single-end End Mills only.

## SETS



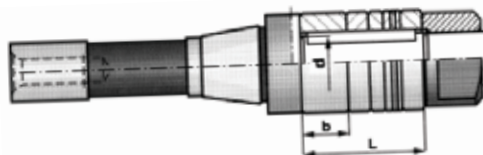
Set supplied with wooden stand.

| Brand | Pieces Per Set | Range            | Order No. | Price |
|-------|----------------|------------------|-----------|-------|
| MEDA  | 6              | 3/16 - 3/4" + 1" | 2150500   |       |
| BISON | 5              | 3/16 - 3/4"      | 7160105   |       |
| BISON | 8              | 3/16 - 1 1/4"    | 7160108   |       |

## SLITTING SAW & STUB MILLING MACHINE ARBOR WITH R8 SHANK

SERIES 363:

- Made of alloy forged steel for long, durable service life.
- Hardened to RC 56-60 and ground to ensure maximum accuracy.
- Face is held perpendicular to center line within 0.0004".
- Pilot diameter is sized for precision fit with cutter and is keyed for positive drive.
- Heavy duty locking RH nut and three arbor spacers are included.

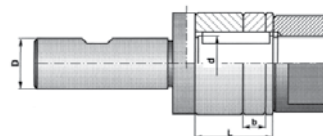


| Shank Dia. | Arbor Dia. d | L | MEDA      |       | BISON     |       |
|------------|--------------|---|-----------|-------|-----------|-------|
|            |              |   | Order No. | Price | Order No. | Price |
| R8         | 1            | 2 | 2110010   |       | 7070005   |       |
| R8         | 1-1/4        | 2 | 2110020   |       | 7070010   |       |

## STUB MILLING MACHINE ARBORS, WELDON SHANK

SERIES 363:

- For holding saws or small cutters.
- Designed to fit directly into standard end mill adapters.
- Made of alloy forged steel for long, durable service life.
- Hardened to RC 56-60 and ground to ensure maximum accuracy.
- Face is held perpendicular to center line within 0.0004".
- Pilot diameter is sized for precision fit with cutter and is keyed for positive drive.
- Heavy duty locking LH nut and three arbor spacers are included.



| Shank Dia. | Arbor Dia. d | L | MEDA      |       | BISON     |       |
|------------|--------------|---|-----------|-------|-----------|-------|
|            |              |   | Order No. | Price | Order No. | Price |
| 1/2        | 1/2          | 1 | 3633232   |       | 7072005   |       |
|            | 5/8          |   | 3633240   |       | 7072010   |       |
|            | 3/4          |   | 3633248   |       | 7072015   |       |
| 3/4        | 1/2          | 1 | 3634832   |       | 7072020   |       |
|            | 5/8          |   | 3634840   |       | 7072025   |       |
|            | 3/4          |   | 3634848   |       | 7072030   |       |
|            | 7/8          |   | 3634856   |       | 7072035   |       |
|            | 1            |   | 3634864   |       | 7072040   |       |
|            | 1-1/4        |   | 3634880   |       | 7072045   |       |

**MEDA**  
Superior Import



## Quality Machine Tool Accessories

**MEDA**  
Superior Import



**VERTEX**

## The Choice Is Yours!!!

## END MILL HOLDERS WITH MORSE TAPER SHANK

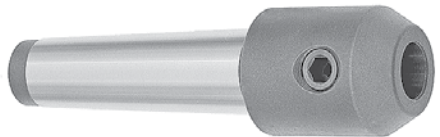
SERIES 369 : STYLE "A" WITH TANG END

SERIES 370 : STYLE "B" WITH THREADED END FOR DRAWBAR

- Made of alloy forged steel for long, durable service life.
- Hardened to RC 56-60 and ground to ensure maximum accuracy.
- End Mill Socket T.I.R. <0.0004".
- Sets are provided with nice wooden case.



Style A - "Tang Style"



Style B - "Drawbar Style"

For holding single and double end end mills.

\* For single-end mills only.

| Model No.  | Taper | Hole Diameter | Order No. |           | Price |
|------------|-------|---------------|-----------|-----------|-------|
|            |       |               | Style "A" | Style "B" |       |
| MT2-3/16   | M.T.2 | 3/16          | 2140040   | 2145040   |       |
| MT2-3/8    | M.T.2 | 3/8           | 2140041   | 2145041   |       |
| MT2-1/2*   | M.T.2 | 1/2           | 2140042   | 2145042   |       |
| MT2-5/8*   | M.T.2 | 5/8           | 2140043   | 2145043   |       |
| MT3-3/16   | M.T.3 | 3/16          | 2140050   | 2145050   |       |
| MT3-3/8    | M.T.3 | 3/8           | 2140051   | 2145051   |       |
| MT3-1/2    | M.T.3 | 1/2           | 2140052   | 2145052   |       |
| MT3-5/8*   | M.T.3 | 5/8           | 2140053   | 2145053   |       |
| MT3-3/4*   | M.T.3 | 3/4           | 2140054   | 2145054   |       |
| MT4-3/8    | M.T.4 | 3/8           | 2140061   | 2145061   |       |
| MT4-1/2    | M.T.4 | 1/2           | 2140062   | 2145062   |       |
| MT4-5/8    | M.T.4 | 5/8           | 2140063   | 2145063   |       |
| MT4-3/4    | M.T.4 | 3/4           | 2140064   | 2145064   |       |
| MT4-7/8*   | M.T.4 | 7/8           | 2140065   | 2145065   |       |
| MT4-1*     | M.T.4 | 1             | 2140066   | 2145066   |       |
| MT5-3/8    | M.T.5 | 3/8           | 2140071   | 2145071   |       |
| MT5-1/2    | M.T.5 | 1/2           | 2140072   | 2145072   |       |
| MT5-5/8    | M.T.5 | 5/8           | 2140073   | 2145073   |       |
| MT5-3/4    | M.T.5 | 3/4           | 2140074   | 2145074   |       |
| MT5-7/8    | M.T.5 | 7/8           | 2140075   | 2145075   |       |
| MT5-1      | M.T.5 | 1             | 2140076   | 2145076   |       |
| MT5-1-1/4* | M.T.5 | 1-1/4         | 2140077   | 2145077   |       |
| MT5-1-1/2* | M.T.5 | 1-1/2         | 2140078   | -         |       |
| MT5-2*     | M.T.5 | 2             | 2140079   | -         |       |
| MT6-1-1/4* | M.T.6 | 1-1/4         | 2140081   | -         |       |
| MT6-1-1/2* | M.T.6 | 1-1/2         | 2140082   | -         |       |
| MT6-2*     | M.T.6 | 2             | 2140083   | -         |       |

**BROWN & SHARPE TAPER**  
End Mill Holders are available;  
please inquire.

**MEDA**  
Superior Import

## SHELL END MILL ARBORS WITH "R-8" TAPER

SERIES 374:



**MEDA**  
Superior Import



- Made of alloy forged steel for long, durable service life.
- Hardened to RC 56-60 and ground to ensure maximum accuracy.
- Shell End Mill Pilot T.I.R. <0.0004".

| Hole Dia. | Range of Shell E/M | MEDA      |       | BISON     |       |
|-----------|--------------------|-----------|-------|-----------|-------|
|           |                    | Order No. | Price | Order No. | Price |
| 1/2       | 1-1/4 to 1-1/2     | 2165002   |       | 7065005   |       |
| 3/4       | 1-3/4 to 2         | 2165004   |       | 7065010   |       |
| 1         | 2-1/4 to 2-3/4     | 2165006   |       | 7065015   |       |
| 1-1/4     | 3 to 3-1/2         | 2165007   |       | 7065020   |       |
| 1-1/2     | 4 to 5             | 2165008   |       | 7065025   |       |

### SETS:

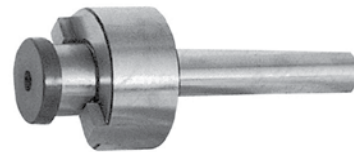
Sets supplied with wooden stand.



| Description               | MEDA      |       | BISON     |       |
|---------------------------|-----------|-------|-----------|-------|
|                           | Order No. | Price | Order No. | Price |
| 5 Pc. Set<br>1/2 - 1 1/2" | 2165005   |       | 7065805   |       |

## SHELL END MILL ARBORS WITH STRAIGHT SHANK

SERIES 375:



**MEDA**  
Superior Import

| Dia. of Shank | Dia. for Shell End Mill Hole | Order No. | Price |
|---------------|------------------------------|-----------|-------|
| 1/2           | 1/2                          | 2170023   |       |
| 1/2           | 3/4                          | 2170024   |       |
| 3/4           | 3/4                          | 2170044   |       |
| 3/4           | 1                            | 2170046   |       |

## ARBOR SCREWS FOR SHELL END MILL ARBORS

SERIES 379:



| Arbor Dia.Size | Thread | Order No. | Price |
|----------------|--------|-----------|-------|
| 1/2            | 1/4-28 | 7080005   |       |
| 3/4            | 3/8-24 | 7080010   |       |
| 1              | 1/2-20 | 7080015   |       |
| 1-1/4          | 5/8-18 | 7080020   |       |
| 1-1/2          | 3/4-16 | 7080025   |       |
| 2              | 1-14   | 7080030   |       |

**END MILL HOLDERS WITH NST 30, 40 & 50 TAPERS****MEDA**  
Superior Import

SERIES 364:

| NST Taper | Hole Dia. | MEDA      |       | BISON     |       | BISON (Sets)                                      |       |
|-----------|-----------|-----------|-------|-----------|-------|---------------------------------------------------|-------|
|           |           | Order No. | Price | Order No. | Price | Order No.                                         | Price |
| 30        | 3/16      | 2115100   |       | 7165005   |       | 7165307<br>7 Pc. Set<br>3/16 - 1"<br>(no 1/4")    |       |
|           | 1/4       | -         |       | 7165007   |       |                                                   |       |
|           | 3/8       | 2115110   |       | 7165010   |       |                                                   |       |
|           | 1/2       | 2115120   |       | 7165015   |       |                                                   |       |
|           | 5/8       | 2115130   |       | 7165020   |       |                                                   |       |
|           | 3/4       | 2115140   |       | 7165025   |       |                                                   |       |
|           | 7/8       | 2115150   |       | 7165026   |       |                                                   |       |
|           | 1         | 2115160   |       | 7165027   |       |                                                   |       |
| 40        | 3/16      | 2115200   |       | 7165030   |       | 7165409<br>9 Pc. Set<br>3/16 - 1-1/2<br>(no 1/4") |       |
|           | 1/4       | -         |       | 7165032   |       |                                                   |       |
|           | 3/8       | 2115210   |       | 7165035   |       |                                                   |       |
|           | 1/2       | 2115220   |       | 7165040   |       |                                                   |       |
|           | 5/8       | 2115230   |       | 7165045   |       |                                                   |       |
|           | 3/4       | 2115240   |       | 7165050   |       |                                                   |       |
|           | 7/8       | 2115250   |       | 7165055   |       |                                                   |       |
|           | 1         | 2115260   |       | 7165060   |       |                                                   |       |
|           | 1-1/4*    | 2115270   |       | 7165065   |       |                                                   |       |
|           | 1-1/2*    | 2115280   |       | 7165070   |       |                                                   |       |
| 50        | 3/16      | -         |       | 7165073   |       | 7165510<br>9 Pc. Set<br>3/8 - 2"                  |       |
|           | 3/8       | 2115310   |       | 7165075   |       |                                                   |       |
|           | 1/2       | 2115320   |       | 7165080   |       |                                                   |       |
|           | 5/8       | 2115330   |       | 7165085   |       |                                                   |       |
|           | 3/4       | 2115340   |       | 7165090   |       |                                                   |       |
|           | 7/8       | 2115350   |       | 7165095   |       |                                                   |       |
|           | 1         | 2115360   |       | 7165100   |       |                                                   |       |
|           | 1-1/4*    | 2115370   |       | 7165105   |       |                                                   |       |
|           | 1-1/2*    | 2115380   |       | 7165110   |       |                                                   |       |
|           | 2*        | 2115390   |       | 7165115   |       |                                                   |       |
|           | 2-1/2*    | 2115400   |       | -         |       |                                                   |       |

- Produced according to AT3 specifications.
- Made of alloy forged steel for long, durable service life.
- Hardened to RC 56-60 and ground to ensure maximum accuracy.
- End Mill Socket T.I.R. <0.0004".



Draw Bar Threads:

NST 30 1/2" - 13

NST 40 5/8" - 11

NST 50 1" - 8

\*Holders are only for single end mills

Set supplied with wooden stand.

**SHELL END MILL ARBORS WITH MT SHANK**

SERIES 376:

**FACE MILL HOLDERS**

SERIES 204:



- NST Taper is produced according to AT3 specifications.
- Made of alloy forged steel for long, durable service life.
- Shell Mill Pilot T.I.R. <0.0004".
- Holders have four mounting holes with the thread 5/8 - 11 on a 4" bolt circle to hold 8" or larger Face Milling Cutters.
- Holders have 1" Drive Keys.



Style A - "Tang Style"

Draw Bar Threads:

MT 4 1/2" - 13

MT 5 5/8" - 11



Style B - "Drawbar Style"



Draw Bar Threads:

NST 40 5/8" - 11

NST 50 1" - 8

NST 60 1-1/4" - 7



| MT Shank | Arbor Dia. | For Shell End Mills | Style "A" |       | Style "B" |       |
|----------|------------|---------------------|-----------|-------|-----------|-------|
|          |            |                     | Order No. | Price | Order No. | Price |
| 4        | 1/2        | 1-1/4 to 1-1/2      | 7051005   |       | 7055005   |       |
|          | 3/4        | 1-3/4 to 2          | 7051010   |       | 7055010   |       |
|          | 1          | 2-1/4 to 2-3/4      | 7050015   |       | 7055015   |       |
|          | 1-1/4      | 3 to 3-1/2          | 7051020   |       | 7055020   |       |
|          | 1-1/2      | 4 to 5              | 7051025   |       | 7055025   |       |
| 5        | 1          | 2-1/4 to 2-3/4      | 7050030   |       | 7055030   |       |
|          | 1-1/4      | 3 to 3-1/2          | 7050035   |       | 7055035   |       |
|          | 1-1/2      | 4 to 5              | 7050040   |       | 7055040   |       |

**BROWN & SHARPE TAPER Shell End Mill Arbors** are available; please inquire.

| Shank  | Holder Dia. | Arbor Length | Order No. | Price | *LIMITED QUANTITY |
|--------|-------------|--------------|-----------|-------|-------------------|
| NST 40 | 2           | 6.20         | 7170005   |       |                   |
|        | 2-1/2       |              | 7170020   |       |                   |
| NST 50 | 2           | 7.56         | 7170010   |       |                   |
|        | 2-1/2       |              | 7170025   |       |                   |
| NST 60 | 2           | 10.70        | 7170015*  |       |                   |
|        | 2-1/2       |              | 7170030   |       |                   |

| Shank | Holder Dia. | Arbor Length | Order No. | Price |
|-------|-------------|--------------|-----------|-------|
| MT 5  | 2           | 9.57         | 7170035   |       |
|       | 2-1/2       |              | 7170045   |       |
| MT 6  | 2           | 13.58        | 7170040   |       |
|       | 2-1/2       |              | 7170050   |       |

## SHELL END MILL ARBORS WITH NST SHANK

SERIES 373:

**MEDA**  
Superior Import

Draw Bar Threads:  
NST 30 1/2" - 13  
NST 40 5/8" - 11  
NST 50 1"-8

| NST Shank | Arbor Dia. | For Shell End Mills | Order No. | Price |
|-----------|------------|---------------------|-----------|-------|
| 30        | 1/2        | 1-1/4 to 1-1/2      | 7060005   |       |
|           | 3/4        | 1-3/4 to 2          | 7061010   |       |
|           | 1          | 2-1/4 to 2-3/4      | 7060015   |       |
|           | 1-1/4      | 3 to 3-1/2          | 7061020   |       |
| 40        | 1/2        | 1-1/4 to 1-1/2      | 7060025   |       |
|           | 3/4        | 1-3/4 to 2          | 7060030   |       |
|           | 1          | 2-1/4 to 2-3/4      | 7060035   |       |
|           | 1-1/4      | 3 to 3-1/2          | 7060040   |       |
|           | 1-1/2      | 4 to 5              | 7060045   |       |
|           | 2          | 5-1/2 to 6          | 7060050   |       |
| 50        | 1/2        | 1-1/4 to 1-1/2      | 7060055   |       |
|           | 3/4        | 1-3/4 to 2          | 7060060   |       |
|           | 1          | 2-1/4 to 2-3/4      | 7060065   |       |
|           | 1-1/4      | 3 to 3-1/2          | 7060070   |       |
|           | 1-1/2      | 4 to 5              | 7060075   |       |
|           | 2          | 5-1/2 to 6          | 7060080   |       |
|           | 2-1/2      | 6-1/2 & larger      | 2170040   |       |

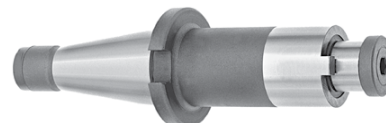


- Made of alloy forged steel for long, durable service life.
- Hardened to RC 56-60 and ground to ensure maximum accuracy.
- Shell End Mill Pilot T.I.R. <0.0004".

Sets with wooden stand available; please inquire.

## 4" EXTENSION TYPE

SERIES 373:



| NST Shank | Arbor Dia. | For Shell End Mills | Order No. | Price |
|-----------|------------|---------------------|-----------|-------|
| 40        | 3/4        | 1-3/4 to 2          | 7075002   |       |
|           | 1          | 2-1/4 to 2-3/4      | 7075005   |       |
| 50        | 1          | 2-1/4 to 2-3/4      | 7075010   |       |
|           | 1-1/4      | 3 to 3-1/2          | 7075015   |       |
|           | 1-1/2      | 4 to 5              | 7075020   |       |

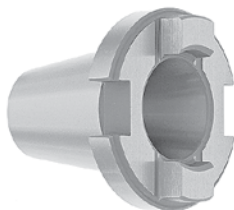
## MILLING MACHINE ADAPTERS

SERIES 365:



### FOR CHANGING FROM ONE NST TAPER TO A SMALLER NST

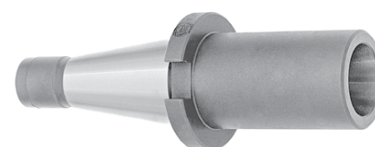
- NST Shanks are produced according to AT3 specifications.
- Made of alloy forged steel for long, durable service life.
- Hardened to RC 56-60 and ground to ensure maximum accuracy.
- Taper seat T.I.R. <0.0004".



### Open End Type

| NST Shank | NST Hole | Order No. | Price |
|-----------|----------|-----------|-------|
| 40        | 30       | 7110005   |       |
| 50        | 30       | 7110010   |       |
| 50        | 40       | 7110015   |       |

### FOR CHANGING FROM NST SHANK TO R8 SOCKET



Adapters are provided with the screw (inside) to hold tools with 7/16-20 R8 shank. To hold adapter in the spindle use draw bar with standard thread.

### Drawbar End Type

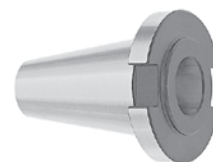
| NST Shank | Hole | Draw Bar Thread | Order No. | Price |
|-----------|------|-----------------|-----------|-------|
| 40        | R8   | 5/8-11          | 7105005   |       |
| 50        | R8   | 1 - 8           | 7105010   |       |

### FOR CHANGING FROM NST SHANK TO MT SOCKET

### Open End Type\*

| NST Shank | MT Hole | Order No. | Price |
|-----------|---------|-----------|-------|
| 40        | 2       | 7090005   |       |
|           | 3       | 7090010   |       |
|           | 4       | 7090015   |       |
| 50        | 3       | 7190020   |       |
|           | 4       | 7090025   |       |

\* Limited Quantity



### FOR CHANGING FROM NST SHANK TO MT SOCKET



### Drawbar End Type

| NST Shank | MT Hole | Draw Bar Thread | Order No. | Price |
|-----------|---------|-----------------|-----------|-------|
| 40        | 2       | 5/8 - 11        | 7100005   |       |
|           | 3       |                 | 7100010   |       |
|           | 4       |                 | 7100015   |       |
|           | 5       |                 | 7100020   |       |
|           | 5       |                 | 7100025   |       |
| 50        | 2       | 1-8             | 7100024   |       |
|           | 3       |                 | 7100025   |       |
|           | 4       |                 | 7100030   |       |
|           | 5       |                 | 7100035   |       |

### FOR CHANGING FROM R8 SHANK TO MT SOCKET



**MEDA**  
Superior Import

### Drawbar End Type

| R8 Shank | MT Hole | Draw Bar Thread | MEDA      |       | BISON     |       |
|----------|---------|-----------------|-----------|-------|-----------|-------|
|          |         |                 | Order No. | Price | Order No. | Price |
| R8       | 2       | 7/16 - 20       | 2125004   |       | 7115005   |       |
|          |         | 7/16 - 20       | 2125005   |       |           |       |

## SLITTING OR SLOTTING SAW ARBORS

SERIES 382



Spring loaded mechanism on Order No.'s 2205000 and 2205002 permits use of saw blades with various hole diameters.

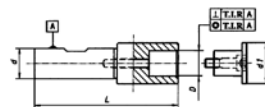
| Diameter of Arbor                                                                  | Length          | Fits Hole Sizes | Order No.          | Price |
|------------------------------------------------------------------------------------|-----------------|-----------------|--------------------|-------|
| 1/2 R-8                                                                            | 2-1/2<br>5-3/32 | 1/2-1<br>x 8ths | 2205000<br>2205002 |       |
| 1/2                                                                                | 2-3/4           | 1/4             | 2205016            |       |
| 1/2                                                                                | 2-1/2           | 3/8             | 2205024            |       |
| 1/2                                                                                | 2-1/2           | 1/2             | 2205032            |       |
| <b>3-Piece Set On A Wooden Block</b><br><b>Includes: 2205016, 2205024, 2205032</b> |                 |                 |                    |       |
| 1/2                                                                                | 2-1/2           | 1/4, 3/8, 1/2   | 2205300            |       |

## SLITTING & SLOTTING SAW ARBORS

SERIES 382:

HARDENED AND PRECISELY GROUND

- Rigid arbors, with extended length, reach areas that standard short arbors cannot.
- Each arbor is ground for precision within 0.002".
- Super low profile cups allows cutter to get lower and closer to working area.
- Plug style cup gives extra support and rigidity when working with larger diameter saws.
- Sets are supplied in a wooden stand.



| Shank Dia. d                   | T.I.R. Hole Size D     | d <sub>1</sub>       | L                    | Order No.                     | Price   |
|--------------------------------|------------------------|----------------------|----------------------|-------------------------------|---------|
| .500                           | .250<br>.375<br>.500   | .500<br>.625<br>.750 | 2.70<br>2.88<br>3.07 | 7123005<br>7123010<br>7123015 |         |
| Set of 3 Arbors .250" - .500"  |                        |                      |                      |                               | 7123050 |
| .750                           | .625<br>1.000<br>1.250 | 1.00<br>1.50<br>1.75 | 3.53<br>3.78<br>4.03 | 7123105<br>7123110<br>7123115 |         |
| Set of 3 Arbors .625" - 1.250" |                        |                      |                      |                               | 7123150 |

## CNC TOOL CART

SERIES 569:



2-Storage trays, protective lining inside. Angled tray for easy, quick tool access from either side. Heavy duty 5" x 1-1/4" casters load rated at 1000 lbs. Heavy gauge - all steel infrared/baked epoxy finish. Solid side panels for maximum strength & stability. Interlocking side panel construction adds strength. Durable nylon inserts to help prevent damage.

Weight: 75 lbs.

Dimensions: 18"W x 35-1/4"L x 35"H



| Model No. | Order No. | Taper | Description                     | Price |
|-----------|-----------|-------|---------------------------------|-------|
| 13930     | 9913930   | #30   | Holds 48 BT, CAT V Flange, NMTB |       |
| 13935     | 9913935   | #35   | Holds 48 BT                     |       |
| 13940     | 9913940   | #40   | Holds 48 BT, CAT V Flange, NMTB |       |
| 13945     | 9913945   | #45   | Holds 36 BT, CAT V Flange       |       |
| 13950     | 9013950   | #50   | Holds 36 BT, CAT V Flange, NMTB |       |

## CNC AND COLLET PLATFORM

SERIES 569:



Conveniently holds your CNC toolholders or collets at the ready, for quick access. Angled platform for the 30-35-40-45-50 taper tools and 5C or R8 collets. Holds 24 toolholders for 30-35 and 40 taper, 18 tools for 45 and 50 taper, and 96 tools for 5C or R8.



| Model No. | Order No. | Price | Model No. | Order No. | Price |
|-----------|-----------|-------|-----------|-----------|-------|
| 30P       | 14830     |       | 50P       | 14850     |       |
| 35P       | 14835     |       | 96P5C     | 14856     |       |
| 40P       | 14840     |       | 96PR8     | 9914866   |       |
| 45P       | 14845     |       |           |           |       |

## CNC TOOLHOLDER RACK FOR 40 & 50 TAPERS

SERIES 569:



Bench mount, hand carry, or mount on top of your shop cart to move your 40 & 50 taper tools to the job. Made of heavy gauge steel with nylon inserts to help protect your tooling, painted texture black with Huot's pollution free powder coating process. Built-in end handles for comfortable carrying.



| Model No. | Order No. | Description                       | Price |
|-----------|-----------|-----------------------------------|-------|
| 14780     | 14780     | For 40 taper tools, holds 6 tools |       |
| 14790     | 14790     | For 50 taper tools, holds 5 tools |       |

## CNC TOOL TOWER

SERIES 569:



Provides economical, free standing storage for 30, 40, 50 taper tools.

- The Tool Tower comes with 3 shelves and can be stacked to form a 5 or 6 shelf tower (optional stacking kit sold separately).
- Nylon inserts protect each holder.
- Sturdy 16 gauge steel construction.

Weight: 65 lbs.

Dimensions: 27-5/16" W x 18-5/16" D x 36" H

| Model No. | Description    | Taper | Order No. | Price |
|-----------|----------------|-------|-----------|-------|
| 13830     | Holds 24 tools | 30    | 5613830   |       |
| 13840     | Holds 24 tools | 40    | 5613840   |       |
| 13850     | Holds 18 tools | 50    | 5613850   |       |
| 14860     | Stacking Kit   | -     | 5613860   |       |



## CATERPILLAR V-FLANGE TG COLLET CHUCKS

COMPLETELY INTERCHANGEABLE WITH ALL

TG-100 & 150 COLLETS

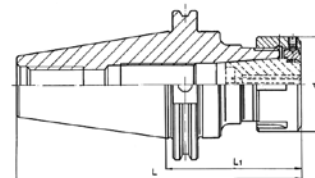
SERIES 654:

- Completely Interchangeable with all TG Collets.
- Produced according to AT3 specifications.
- Collet seat taper T.I.R. < .0002".
- Made of alloy forged steel for long, durable service life.
- Hardened to RC 52-56 and ground to ensure maximum accuracy.
- Through spindle coolant capability.
- Retention Knobs are sold separately.

Draw Bar Threads:

CAT-40 5/8" - 11

CAT-50 1" - 8



Collet Wrench

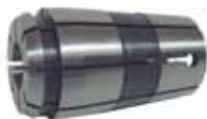
| Taper No. | TG Collet No. | Collet Clamping Range | d     | L <sub>1</sub> | L       | Chuck Order No. | Price |
|-----------|---------------|-----------------------|-------|----------------|---------|-----------------|-------|
| CAT 40    | 100           | 3/32-1                | 2-1/2 | 3              | 5-11/16 | 7180403         |       |
|           |               |                       |       | 4              | 6-11/16 | 7180404         |       |
|           |               |                       |       | 6              | 8-11/16 | 7180406         |       |
| CAT 50    | 100           | 3/32-1                | 2-1/2 | 3-1/8          | 7-1/8   | 7180503         |       |
|           |               |                       |       | 3-1/2          | 7-1/2   | 7180504         |       |
|           |               |                       |       | 5-1/2          | 9-1/8   | 7180505         |       |
|           |               |                       |       | 7-1/2          | 11-1/2  | 7180507         |       |
|           |               |                       |       | 3              | 7       | 7180513         |       |
|           | 150           | 1/2-1-1/2             | 3-1/2 | 3-1/2          | 7-1/2   | 7180514         |       |
|           |               |                       |       | 5-1/2          | 9-1/2   | 7180517         |       |
|           |               |                       |       |                |         |                 |       |

| TG Collet Style | Wrench Order No. | Price |
|-----------------|------------------|-------|
| 100             | 7180930          |       |
| 150             | 7180935          |       |

## 100 TG COLLETS

SERIES 661:

**MEGA**  
Superior Import



## 150 TG COLLETS

SERIES 662:

**MEGA**  
Superior Import



| Size  | Order No. | Price | Size  | Order No. | Price |
|-------|-----------|-------|-------|-----------|-------|
| 3/32  | 6610006   |       | 37/64 | 6610037   |       |
| 7/64  | 6610007   |       | 19/32 | 6610038   |       |
| 1/8   | 6610008   |       | 39/64 | 6610039   |       |
| 9/64  | 6610009   |       | 5/8   | 6610040   |       |
| 5/32  | 6610010   |       | 41/64 | 6610041   |       |
| 11/64 | 6610011   |       | 21/32 | 6610042   |       |
| 3/16  | 6610012   |       | 43/64 | 6610043   |       |
| 13/64 | 6610013   |       | 11/16 | 6610044   |       |
| 7/32  | 6610014   |       | 45/64 | 6610045   |       |
| 15/64 | 6610015   |       | 23/32 | 6610046   |       |
| 1/4   | 6610016   |       | 47/64 | 6610047   |       |
| 17/64 | 6610017   |       | 3/4   | 6610048   |       |
| 9/32  | 6610018   |       | 49/64 | 6610049   |       |
| 19/64 | 6610019   |       | 25/32 | 6610050   |       |
| 5/16  | 6610020   |       | 51/64 | 6610051   |       |
| 21/64 | 6610021   |       | 13/16 | 6610052   |       |
| 11/32 | 6610022   |       | 53/64 | 6610053   |       |
| 23/64 | 6610023   |       | 27/32 | 6610054   |       |
| 3/8   | 6610024   |       | 55/64 | 6610055   |       |
| 25/64 | 6610025   |       | 7/8   | 6610056   |       |
| 13/32 | 6610026   |       | 57/64 | 6610057   |       |
| 27/64 | 6610027   |       | 29/32 | 6610058   |       |
| 7/16  | 6610028   |       | 59/64 | 6610059   |       |
| 29/64 | 6610029   |       | 15/16 | 6610060   |       |
| 15/32 | 6610030   |       | 61/64 | 6610061   |       |
| 31/64 | 6610031   |       | 31/32 | 6610062   |       |
| 1/2   | 6610032   |       | 63/64 | 6610063   |       |
| 33/64 | 6610033   |       | 1     | 6610064   |       |
| 17/32 | 6610034   |       |       |           |       |
| 35/64 | 6610035   |       |       |           |       |
| 9/16  | 6610036   |       |       |           |       |

| Size  | Order No. | Price | Size    | Order No. | Price |
|-------|-----------|-------|---------|-----------|-------|
| 1/2   | 6620032   |       | 1       | 6620064   |       |
| 33/64 | 6620033   |       | 1-1/64  | 6620065   |       |
| 17/32 | 6620034   |       | 1-1/32  | 6620066   |       |
| 35/64 | 6620035   |       | 1-3/64  | 6620067   |       |
| 9/16  | 6620036   |       | 1-1/16  | 6620068   |       |
| 37/64 | 6620037   |       | 1-5/64  | 6620069   |       |
| 19/32 | 6620038   |       | 1-3/32  | 6620070   |       |
| 39/64 | 6620039   |       | 1-7/64  | 6620071   |       |
| 5/8   | 6620040   |       | 1-1/8   | 6620072   |       |
| 41/64 | 6620041   |       | 1-9/64  | 6620073   |       |
| 21/32 | 6620042   |       | 1-5/32  | 6620074   |       |
| 43/64 | 6620043   |       | 1-11/64 | 6620075   |       |
| 11/16 | 6620044   |       | 1-3/16  | 6620076   |       |
| 45/64 | 6620045   |       | 1-13/64 | 6620077   |       |
| 23/32 | 6620046   |       | 1-7/32  | 6620078   |       |
| 47/64 | 6620047   |       | 1-15/64 | 6620079   |       |
| 3/4   | 6620048   |       | 1-1/4   | 6620080   |       |
| 49/64 | 6620049   |       | 1-17/64 | 6620081   |       |
| 25/32 | 6620050   |       | 1-9/32  | 6620082   |       |
| 51/64 | 6620051   |       | 1-19/64 | 6620083   |       |
| 13/16 | 6620052   |       | 1-5/16  | 6620084   |       |
| 53/64 | 6620053   |       | 1-21/64 | 6620085   |       |
| 27/32 | 6620054   |       | 1-11/32 | 6620086   |       |
| 55/64 | 6620055   |       | 1-23/64 | 6620087   |       |
| 7/8   | 6620056   |       | 1-3/8   | 6620088   |       |
| 57/64 | 6620057   |       | 1-25/64 | 6620089   |       |
| 29/32 | 6620058   |       | 1-13/32 | 6620090   |       |
| 59/64 | 6620059   |       | 1-27/64 | 6620091   |       |
| 15/16 | 6620060   |       | 1-7/16  | 6620092   |       |
| 61/64 | 6620061   |       | 1-29/64 | 6620093   |       |
| 31/32 | 6620062   |       | 1-15/32 | 6620094   |       |
| 63/64 | 6620063   |       | 1-31/64 | 6620095   |       |
|       |           |       | 1-1/2   | 6620096   |       |

## CATERPILLAR V-FLANGE END MILL HOLDERS

SERIES 655:

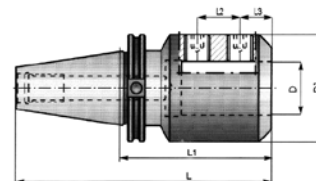
| Taper No. | D     | L <sub>1</sub> | L       | L <sub>3</sub> | L <sub>2</sub> | D <sub>1</sub> | Holder Order No. | Price |
|-----------|-------|----------------|---------|----------------|----------------|----------------|------------------|-------|
| 40        | 3/16  | 2-1/2          | 5-3/16  | 9/16           | -              | 3/4            | 7185411          |       |
|           | 1/4   | 2-1/2          | 5-3/16  |                | -              | 13/16          | 1854113          |       |
|           | 1/4   | 4              | 6-11/16 |                | -              | 13/16          | 1854114          |       |
|           | 5/16  | 2-1/2          | 5-3/16  | 25/32          | -              | 7/8            | 1854115          |       |
|           | 5/16  | 4              | 6-11/16 |                | -              | 7/8            | 1854117          |       |
|           | 3/8   | 2-1/2          | 5-3/16  |                | -              | 1-3/8          | 7185412          |       |
|           | 3/8   | 5              | 7-11/16 |                | -              | 1-3/8          | 1854122          |       |
|           | 7/16  | 2-1/2          | 5-3/16  |                | -              | 1-1/4          | 1854123          |       |
|           | 1/2   | 2-5/8          | 5-5/16  | 7/8            | -              | 1-3/4          | 7185413          |       |
|           | 1/2   | 5              | 7-11/16 |                | -              | 1-3/4          | 7185417          |       |
|           | 5/8   | 3-3/4          | 6-7/16  | 15/16          | -              | 1-3/4          | 7185431          |       |
|           | 5/8   | 5-1/2          | 8-3/16  | 15/16          | -              | 1-3/4          | 7185437          |       |
|           | 3/4   | 3-3/4          | 6-7/16  | 1              | -              | 1-3/4          | 7185441          |       |
|           | 3/4   | 5-1/2          | 8-3/16  | 1              | -              | 1-3/4          | 7185447          |       |
|           | 7/8   | 4              | 6-11/16 | 1-1/16         | 7/8            | 2-3/64         | 7185451          |       |
|           | 1     | 4              | 6-11/16 |                |                | 2-31/64        | 7185461          |       |
|           | 1-1/4 | 4-1/8          | 6-15/16 |                |                | 2-3/4          | 7185471          |       |
|           | 1-1/4 | 6              | 8-11/16 | 1-1/8          | 1              | 2-3/4          | 7185475          |       |
|           | 1-1/2 | 4-5/8          | 7-5/16  |                |                | 3-9/64         | 7185481          |       |
|           | 1-1/2 | 6              | 8-11/16 |                |                | 3-9/64         | 7185485          |       |
| 50        |       | 4-1/2          | 8-1/2   | 25/32          | -              | 1-1/4          | 7185512          |       |
|           | 3/8   | 6-1/2          | 10-1/2  |                | -              |                | 7185513          |       |
|           |       | 2-5/8          | 6-5/8   |                | -              |                | 7185521          |       |
|           | 1/2   | 4-5/8          | 8-5/8   | 7/8            | -              | 1-3/4          | 7185522          |       |
|           |       | 6-5/8          | 10-5/8  |                | -              |                | 7185523          |       |
|           | 5/8   | 3-3/4          | 7-3/4   |                | -              |                | 7185531          |       |
|           |       | 5-3/4          | 9-3/4   | 15/16          | -              | 1-3/4          | 7185532          |       |
|           |       | 7-3/4          | 11-3/4  |                | -              |                | 7185533          |       |
|           | 3/4   | 3-3/4          | 7-3/4   |                | -              |                | 7185541          |       |
|           |       | 5-3/4          | 9-3/4   | 1              | -              | 1-3/4          | 7185542          |       |
|           |       | 7-3/4          | 11-3/4  |                | -              |                | 7185543          |       |
|           | 7/8   | 3-3/4          | 7-3/4   |                |                |                | 7185551          |       |
|           |       | 5-3/4          | 9-3/4   | 1-1/16         | 7/8            | 2-3/64         | 7185552          |       |
|           |       | 7-3/4          | 11-3/4  |                |                |                | 7185553          |       |
|           | 1     | 4              | 8       |                |                |                | 7185561          |       |
|           |       | 6              | 10      | 1-1/8          | 1              | 2-31/64        | 7185562          |       |
|           |       | 8              | 12      |                |                |                | 7185563          |       |
|           | 1-1/4 | 4              | 8       |                |                |                | 7185571          |       |
|           |       | 6              | 10      | 1-1/8          | 1              | 2-3/4          | 7185572          |       |
|           |       | 8              | 12      |                |                |                | 7185573          |       |
|           | 1-1/2 | 4              | 8       |                |                |                | 7185581          |       |
|           |       | 6              | 10      | 1-1/8          | 1              | 3-9/64         | 7185582          |       |
|           |       | 8              | 12      |                |                |                | 7185583          |       |
|           | 2     | 5-5/8          | 9-5/8   |                |                |                | 7185591          |       |
|           |       | 7-5/8          | 11-5/8  | 1-3/16         | 1-7/16         | 3-15/16        | 7185592          |       |
|           |       | 9-5/8          | 13-5/8  |                |                |                | 7185593          |       |
|           | 2-1/2 | 6              | 10      | 1-3/16         | 1-7/16         | 4-1/4          | 7185595          |       |



### DRAW BAR THREADS:

CAT-40 5/8" - 11

CAT-50 1" - 8



- Produced according to AT3 specifications.
- Made of alloy forged steel for long, durable service life.
- Hardened to RC 52-56 and ground to ensure maximum accuracy.
- End Mill Socket T.I.R. <0.0002".
- Through spindle coolant capability.
- Retention Knobs are sold separately.

## UNIVERSAL CNC TOOL TIGHTENING FIXTURES

SERIES 639:



### FEATURES:

- Multiple usage on tool holder tapers NMTB (ISO), CAT & BT as well as cylindrical tooling.
- Efficiently designed for maximum protection of tool holder.
- Enables strong gripping power of cutting tools.
- Compact design for mounting on work table or tool cart.
- Fixture No. 7189543 comes complete with 4 pc. set of inter-changeable adapters to cover tapers 30, 40 & 50.



| Taper Size   | H   | K   | L   | d    | Weight lbs. | Order No. | Price |
|--------------|-----|-----|-----|------|-------------|-----------|-------|
| 40           |     | 3.0 | 6.7 | 1.69 | 12.5        | 7189400   |       |
| 30, 40, & 50 | 8.0 | 4.5 | 9.5 | 2.83 | 36.0        | 7189543   |       |

## CATERPILLAR V-FLANGE FACE MILL HOLDERS

SERIES 656:

- Produced according to AT3 specifications.
- Made of alloy forged steel for long, durable service life.
- Shell Mill Pilot T.I.R. <0.0002".
- Holders have four mounting holes with 5/8 - 11 thread on a 4" bolt circle to hold 8" or larger Face Milling Cutters.
- Retention Knobs are sold separately.

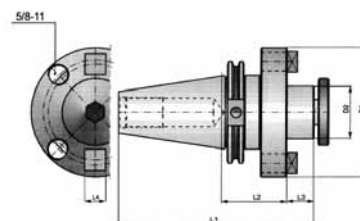
### Draw Bar Threads:

CAT - 40 5/8" - 11

CAT - 50 1" - 8



| Taper No. | Arbor Dia. D2 | L <sub>1</sub> | L <sub>2</sub> | L <sub>3</sub> | Drive Key L <sub>4</sub> | D <sub>1</sub> | Holder Order No. | Price |
|-----------|---------------|----------------|----------------|----------------|--------------------------|----------------|------------------|-------|
| 50        | 2             | 7.3            | 2.4            | 15/16          | 3/4                      | 4-7/8          | 7182502          |       |
|           | 2             | 8.9            | 4              | 15/16          | 3/4                      | 4-7/8          | 7182504          |       |
|           | 2-1/2         | 7.5            | 2.4            | 1-1/8          | 1                        | 4-7/8          | 7182512          |       |
|           | 2-1/2         | 9.1            | 4              | 1-1/8          | 1                        | 4-7/8          | 7182514          |       |



## CATERPILLAR V-FLANGE ER COLLET CHUCKS AND SETS

SERIES 664:



- Produced according to AT3 specifications.
- Collet seat taper T.I.R. < .0002".
- Made of alloy forged steel for long, durable service life.
- Hardened to RC 52-56 and ground to ensure maximum accuracy.
- Through spindle coolant capability.
- Retention Knobs are sold separately.

See page 548 for Collet Nuts and Wrenches



More chuck lengths & more sets available; please inquire.



17 pc. ER Collet Chuck Sets

Draw Bar Threads:  
CAT-40 5/8" - 11  
CAT-50 1" - 8

Sets include 15 collets  
1/8-1x16<sup>th</sup>, collet chuck  
and wrench in case.

| Taper No. | ER Collet No. | Collet Clamping Range | d    | L <sub>1</sub> | L    | Chuck Order No. | Price |
|-----------|---------------|-----------------------|------|----------------|------|-----------------|-------|
| 40        | ER16          | 1/8-7/16              | 1.26 | 2.5            | 5.20 | 7188415         |       |
|           |               |                       |      | 3              | 5.70 | 7188417         |       |
|           | ER20          | 1/8-1/2               | 1.38 | 2.5            | 3.4  | 7188420         |       |
|           |               |                       |      | 4              | 3.6  | 7188422         |       |
|           | ER25          | 1/8-5/8               | 1.65 | 2.5            | 5.2  | 7188424         |       |
|           |               |                       |      | 4              | 6.70 | 7188426         |       |
|           | ER32          | 1/8-3/4               | 1.97 | 3              | 5.70 | 7188431         |       |
|           |               |                       |      | 4              | 6.70 | 7188432         |       |
|           | ER40          | 1/8-1                 | 2.50 | 4              | 6.70 | 7188440         |       |
|           |               |                       |      | 17 pc. Set     |      | 7188449         |       |
| 50        | ER40          | 1/8-1                 | 2.50 | 4              | 8.00 | 7188543         |       |
|           |               |                       |      | 17 pc. Set     |      | 7188549         |       |

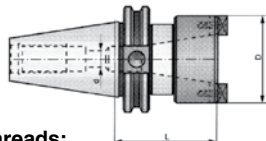
See pages 547 - 548 for COLLETS.

## CATERPILLAR V-FLANGE ADAPTERS, CAT-50 TO 40

SERIES 657:



- Produced according to AT3 specifications.
- Made of alloy forged steel for long, durable service life.
- Taper seat T.I.R. < 0.0002".
- Retention Knobs are sold separately.



Draw Bar Threads:  
CAT40 5/8" 11  
CAT50 1" 8

| Taper No. | Taper No. Hole | L     | D    | d   | Weight lbs. | Order No. | Price |
|-----------|----------------|-------|------|-----|-------------|-----------|-------|
| 50        | 40             | 3.150 | 3.46 | .65 | 6.6         | 7184504   |       |

## CATERPILLAR V-FLANGE DOUBLE ANGLE COLLET CHUCKS

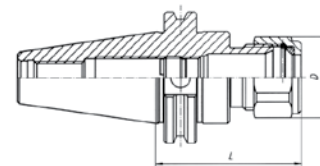
SERIES 654:



- Suitable for use with all DA180 Collets.
- Produced according to AT3 specifications.
- Collet seat taper T.I.R. < .0002".
- Made of alloy forged steel for long, durable service life.
- Hardened to RC 52-56 and ground to ensure maximum accuracy.
- Through spindle coolant capability.
- Retention Knobs are sold separately.



Draw Bar Threads:  
CAT-40 5/8" - 11  
CAT-50 1" - 8



DA180 Collets

| Taper No. | Collet Range | L    | D Hex | Chuck Order No. | Price |
|-----------|--------------|------|-------|-----------------|-------|
| CT 40     | 1/8-3/4      | 2.75 | 1.54  | 7193415         |       |
|           |              | 4    |       | 7193424         |       |
| CT 50     | 1/8-3/4      | 4    |       | 7193524         |       |
|           |              | 6    |       | 7193526         |       |
|           |              | 8    |       | 7193528         |       |

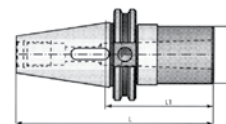
See page 544 for COLLETS.

## CATERPILLAR V-FLANGE MT ADAPTERS

SERIES 657:



- Produced according to AT3 specifications.
- Made of alloy forged steel for long, durable service life.
- Morse Taper Seat T.I.R. < 0.0002".
- Hardened to RC 52-56 and ground to ensure maximum accuracy.
- Retention Knobs are sold separately.

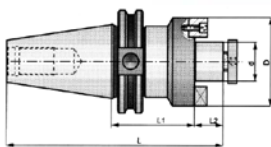


Draw Bar Threads:  
CAT-40 5/8" - 11  
CAT-50 1" - 8

| Taper No. | MT Hole | D     | L      | L <sub>1</sub> | Order No. | Price |
|-----------|---------|-------|--------|----------------|-----------|-------|
| 40        | 2       | 1-1/4 | 4-7/8  | 2-3/16         | 7183402   |       |
|           | 3       | 1-3/4 | 5-7/16 | 2-3/4          | 7183403   |       |
|           | 4       | 2     | 6-1/4  | 3-9/16         | 7183404   |       |
| 50        | 2       | 1-1/4 | 6      | 2              | 7183502   |       |
|           | 3       | 1-5/8 | 6-1/2  | 2-1/2          | 7183503   |       |
|           | 4       | 2     | 7-3/8  | 3-3/8          | 7183504   |       |
|           | 5       | 2-3/4 | 7-3/4  | 3-3/4          | 7183505   |       |

## CATERPILLAR V-FLANGE SHELL END MILL HOLDERS

SERIES 656:



- Produced according to AT3 specifications.
- Alloy forged steel for long, durable service life.
- Hardened to RC 52-56 and ground to ensure maximum accuracy.
- Shell Mill Pilot T.I.R. < 0.0002".
- Retention knobs are sold separately.

Draw Bar Threads:

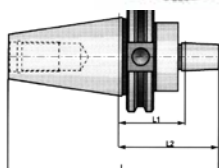
CAT-40 5/8" - 11

CAT-50 1" - 8

| Taper No. | d     | L <sub>1</sub> | L        | L <sub>2</sub> | D <sub>2</sub> | Holder Order No. | Price |
|-----------|-------|----------------|----------|----------------|----------------|------------------|-------|
| 40        | 1/2   | 1-3/8          | 4-5/8    | 9/16           | 1-3/8          | 7186403          |       |
|           | 3/4   | 1-3/8          | 4-3/4    | 11/16          | 1-49/64        | 7186405          |       |
|           | 1     | 2-1/16         | 5-7/16   | 11/16          | 2-11/64        | 7186407          |       |
|           | 1-1/4 | 2-1/8          | 5-1/2    | 11/16          | 2-33/64        | 7186409          |       |
|           | 1-1/2 | 2-13/16        | 6-1/32   | 15/16          | 3-5/64         | 7186411          |       |
| 50        | 1/2   | 1-1/2          | 6-3/16   | 9/16           | 1-3/8          | 7186503          |       |
|           |       | 3-1/2          | 8-3/16   |                |                | 7186505          |       |
|           |       | 5-1/2          | 10-3/16  |                |                | 7186507          |       |
|           | 3/4   | 1-1/2          | 6-3/16   | 11/16          | 1-49/64        | 7186509          |       |
|           |       | 3-1/2          | 8-3/16   |                |                | 7186511          |       |
|           |       | 5-1/2          | 10-3/16  |                |                | 7186513          |       |
|           | 1     | 2              | 6-11/16  | 11/16          | 2-11/64        | 7186515          |       |
|           |       | 4              | 8-11/16  |                |                | 7186517          |       |
|           |       | 6              | 10-11/16 |                |                | 7186519          |       |
|           | 1-1/4 | 1-1/2          | 6-3/16   | 11/16          | 2-33/64        | 7186521          |       |
|           |       | 3-1/2          | 8-3/16   |                |                | 7186523          |       |
|           |       | 5-1/2          | 10-3/16  |                |                | 7186525          |       |
|           | 1-1/2 | 2-13/32        | 7-11/32  | 15/16          | 3-55/64        | 7186527          |       |
|           |       | 4              | 8-15/16  |                |                | 7186529          |       |
|           |       | 6              | 10-15/16 |                |                | 7186531          |       |
|           | 2     | 2-13/32        | 7-11/32  | 15/16          | 3-55/64        | 7186533          |       |
|           |       | 4              | 8-15/16  |                |                | 7186535          |       |
|           |       | 6              | 10-15/16 |                |                | 7186537          |       |

## CATERPILLAR V-FLANGE JACOBS TAPER HOLDERS

SERIES 658:



- Produced according to AT3 specifications.
- Made of alloy forged steel for long, durable service life.
- Hardened to RC 52-56 and ground to ensure maximum accuracy.
- Jacobs Taper T.I.R. < 0.0002".
- Retention Knobs are sold separately.

Draw Bar Threads:

CAT40 5/8" - 11

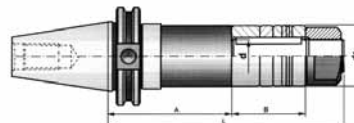
CAT50 1" - 8

| Taper No. | Jacobs Taper | L     | L <sub>1</sub> | L <sub>2</sub> | Order No. | Price |
|-----------|--------------|-------|----------------|----------------|-----------|-------|
| CT40      | 2            | 5.062 |                | 2.375          | 7181402   |       |
|           | 3            | 5.406 |                | 2.719          | 7181403   |       |
|           | 4            | 5.844 | 1.50           | 3.156          | 7181404   |       |
|           | 6            | 5.187 |                | 2.500          | 7181406   |       |
|           | 33           | 5.187 |                | 2.500          | 7181433   |       |
| CT50      | 3            | 6.718 |                | 2.719          | 7181503   |       |
|           | 4            | 7.157 |                | 3.156          | 7181504   |       |
|           | 5            | 7.375 | 1.50           | 3.375          | 7181505   |       |
|           | 6            | 6.500 |                | 2.500          | 7181506   |       |
|           | 33           | 6.500 |                | 2.500          | 7181533   |       |

## CATERPILLAR V-FLANGE STUB ARBOR HOLDERS

SERIES 659:

- Shank taper accuracy AT3 or better.
- Made of alloy forged steel for long, durable service life.
- Hardened to RC 52-56 and ground to ensure maximum accuracy.
- Face is held perpendicular to centerline within 0.0002".
- Pilot diameter is sized for precision fit with cutter and is keyed for positive drive.
- Heavy duty locking RH nut and 5 arbor spacers are included - 1/16", 1/8", 1/4", 3/8", 3/4". For more spacers see page 549.
- Retention Knobs are sold separately.



Draw Bar Threads:

CAT-40 5/8" - 11

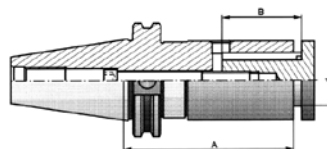
CAT-50 1" - 8

| Taper No. | Arbor Dia. d | A | d <sub>1</sub> | L     | B | Order No. | Price |
|-----------|--------------|---|----------------|-------|---|-----------|-------|
| 40        | 1            | 4 | 1-1/2          | 7.0   | 2 | 7191410   |       |
|           | 1-1/4        | 4 | 1-3/4          | 7-1/4 | 2 | 7191415   |       |
|           | 1-1/2        | 4 | 2-1/8          | 7-1/2 | 2 | 7191420   |       |
| 50        | 1            | 4 | 1-1/2          | 7.0   | 2 | 7191510   |       |
|           | 1            | 6 | 1-1/2          | 9.0   | 2 | 7191515   |       |
|           | 1-1/4        | 4 | 1-3/4          | 7-1/4 | 2 | 7191520   |       |
|           | 1-1/4        | 6 | 1-3/4          | 9-1/4 | 2 | 7191525   |       |
|           | 1-1/2        | 4 | 2-1/8          | 7-1/2 | 2 | 7191530   |       |
|           | 1-1/2        | 6 | 2-1/8          | 9-1/2 | 2 | 7191535   |       |

## CATERPILLAR V-FLANGE SEMI FLUSH SLITTING SAW HOLDERS

SERIES 659:

- Shank taper accuracy AT3 or better.
- Made of alloy forged steel for long, durable service life.
- Hardened to RC 52-56 and ground to ensure maximum accuracy.
- Face is held perpendicular to centerline within 0.0002".
- Designed for slitting saws up to 5/16" thick. For wider cutters use Stub Arbor Holder.
- Pilot diameter is sized for precision fit with cutter and is keyed for positive drive.
- Semi-flush nose cap gets in tight areas.
- Retention Knobs are sold separately.



Draw Bar Threads:

CAT-40 5/8" - 11

CAT-50 1" - 8

| Taper No. | Arbor Dia. | A | B    | Order No. | Price |
|-----------|------------|---|------|-----------|-------|
| 40        | 5/8        | 4 | 1.77 | 7192405   |       |
|           | 1          | 4 | 1.77 | 7192410   |       |
|           | 1-1/4      | 4 | 1.77 | 7192415   |       |
| 50        | 1          | 4 | 1.77 | 7192510   |       |
|           | 1          | 6 | 3    | 7192515   |       |
|           | 1-1/4      | 4 | 1.77 | 7192520   |       |
|           | 1-1/4      | 6 | 3    | 7192525   |       |

## BT FLANGE ER COLLET CHUCKS AND SETS

SERIES 989:

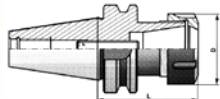
- Suitable for use with all ER Collets.
- Produced to AT3 specifications.
- Collet seat taper T.I.R. < .0002".
- Alloy forged steel for long, durable service life.
- Hardened to RC 52-56 and ground to ensure maximum accuracy.
- Through spindle coolant capability.



### 17 pc. ER Collet Chuck Sets

Sets include 15 collets

1/8-1x16",  
collet chuck and  
wrench in case.



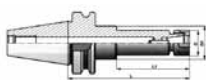
Draw Bar Threads:  
BT-40 M16 x 2  
BT-50 M24 x 3

| Taper No. | Collet No. | Collet Range | L    | D    | Chuck Order No.    | Price |
|-----------|------------|--------------|------|------|--------------------|-------|
| BT 40     | ER 25      | 3/64-5/8     | 2.36 | 1.65 | 7178425            |       |
|           | ER 32      | 1/8-3/4      | 2.75 | 2.00 | 7178432            |       |
|           | ER 40      | 1/8-1        | 2.75 | 2.50 | 7178442            |       |
|           | ER 40      | 1/8-1        | 2.75 | 2.50 | 17 pc. Set 7178449 |       |
| BT 50     | ER 32      | 1/8-3/4      | 2.75 | 2.00 | 7178532            |       |
|           | ER 40      | 1/8-1        | 3.15 | 2.50 | 7178542            |       |
|           | ER 40      | 1/8-1        | 3.15 | 2.50 | 17 pc. Set 7178549 |       |
|           | ER 40      | 1/8-1        | 3.15 | 2.50 | 17 pc. Set 7178549 |       |

See pages 547 - 548 for collets.

## BT EXTENSION TYPE COLLET CHUCKS

SERIES 989:

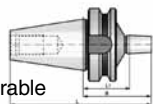


| Taper No. | Collet No. | Collet Range | L    | L <sub>1</sub> | D    | D <sub>1</sub> | Chuck Order No. | Price |
|-----------|------------|--------------|------|----------------|------|----------------|-----------------|-------|
| BT 40     | ER 16      | 1/32-25/64   | 3.94 | -              | 1.10 | -              | 7178414         |       |
|           |            |              | 5.91 | 3.35           | 1.10 | 1.57           | 7178416         |       |
| BT 50     | ER 16      | 1/32-25/64   | 3.94 | -              | 1.10 | -              | 7178514         |       |
|           |            |              | 5.91 | 3.35           | 1.10 | 1.57           | 7178516         |       |

## BT FLANGE JACOBS TAPER HOLDERS

SERIES 991:

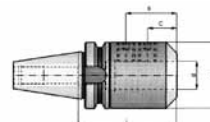
- Produced according to AT3 specifications.
- Made of alloy forged steel for long, durable service life.
- Hardened to RC 52-56 and ground to ensure maximum accuracy.
- Jacobs Taper T.I.R. < 0.0002".
- Retention Knobs are sold separately.



| Taper No. | Jacobs Taper | L <sub>1</sub> | B    | L    | Order No. | Price |
|-----------|--------------|----------------|------|------|-----------|-------|
| BT40      | 2            |                | 2.4  | 4.95 | 7175402   |       |
|           | 3            |                | 2.7  | 5.28 | 7175403   |       |
|           | 4            | 1-1/2          | 3.15 | 5.73 | 7175404   |       |
|           | 6            |                | 2.5  | 5.07 | 7175406   |       |
|           | 33           |                | 2.5  | 5.07 | 7175433   |       |
| BT50      | 3            |                | 3.2  | 7.2  | 7175503   |       |
|           | 4            | 2              | 3.65 | 7.6  | 7175504   |       |
|           | 6            |                | 3.0  | 7.0  | 7175506   |       |
|           | 33           |                | 3.0  | 7.0  | 7175533   |       |

## BT FLANGE END MILL HOLDERS

SERIES 988:



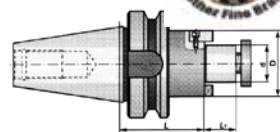
- Produced according to AT3 specifications.
- Made of alloy forged steel for long, durable service life.
- Hardened to RC 52-56 and ground to ensure maximum accuracy.
- End Mill Socket T.I.R. < 0.0002".
- Through spindle coolant capability.

| Taper No. | d     | L    | D    | C    | B    | Order No. | Price |
|-----------|-------|------|------|------|------|-----------|-------|
| 40        | 3/16  | 2.50 | .78  | .56  | -    | 7179402   |       |
|           | 1/4   | 2.50 | .78  | .56  | -    | 7179404   |       |
|           | 5/16  | 2.50 | .87  | .72  | -    | 7179407   |       |
|           | 3/8   | 2.50 | 1.12 | .75  | -    | 7179411   |       |
|           | 3/8   | 4.00 | 1.12 | .75  | -    | 7179415   |       |
|           | 1/2   | 2.50 | 1.50 | .88  | -    | 7179421   |       |
|           | 1/2   | 4.00 | 1.50 | .88  | -    | 7179425   |       |
|           | 5/8   | 2.50 | 1.62 | .94  | -    | 7179431   |       |
|           | 5/8   | 4.00 | 1.62 | .94  | -    | 7179435   |       |
|           | 3/4   | 2.50 | 1.75 | 1.00 | -    | 7179441   |       |
|           | 3/4   | 4.00 | 1.75 | 1.00 | -    | 7179445   |       |
|           | 7/8   | 3.50 | 2.17 | 1.00 | 1.81 | 7179451   |       |
|           | 1     | 3.50 | 2.38 | 1.00 | 2.00 | 7179461   |       |
|           | 1     | 5.00 | 2.38 | 1.12 | 2.12 | 7179465   |       |
| 50        | 3/8   | 3.00 | 1.12 | .75  | -    | 7179511   |       |
|           | 1/2   | 3.00 | 1.50 | .88  | -    | 7179521   |       |
|           | 5/8   | 3.00 | 1.62 | .94  | -    | 7179531   |       |
|           | 3/4   | 3.00 | 1.75 | 1.00 | -    | 7179541   |       |
|           | 1     | 4.00 | 2.48 | 1.00 | 2.00 | 7179561   |       |
|           | 1-1/4 | 4.00 | 2.69 | 1.00 | 2.00 | 7179571   |       |
|           | 1-1/2 | 4.00 | 2.88 | 1.00 | 2.00 | 7179581   |       |
|           | 2     | 5.00 | 3.62 | 1.38 | 2.88 | 7179591   |       |

## BT FLANGE SHELL END MILL HOLDERS

SERIES 990:

- Produced according to AT3 specifications.
- Made of alloy forged steel for long, durable service life.
- Hardened to RC 52-56 and ground to ensure maximum accuracy.
- Shell End Mill Pilot T.I.R. < 0.0002".
- Through spindle coolant capability.



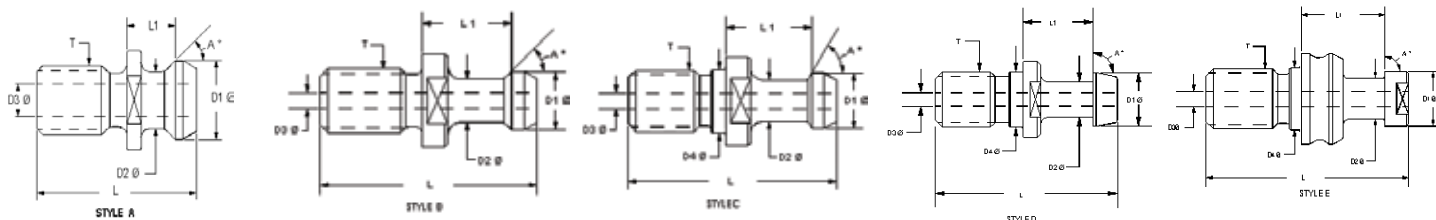
| Taper No. | d     | D    | L     | L <sub>1</sub> | Order No. | Price |
|-----------|-------|------|-------|----------------|-----------|-------|
| 40        | 1/2   | 1.18 | 1-3/4 | .56            | 7176403   |       |
|           | 3/4   | 1.50 | 2     | .69            | 7176405   |       |
|           | 1     | 1.73 | 2     | .69            | 7176407   |       |
|           | 1-1/4 | 2.08 | 2-1/4 | .69            | 7176409   |       |
|           | 1-1/2 | 2.48 | 2-1/4 | .92            | 7176411   |       |
| 50        | 3/4   | 1.5  | 2-1/4 | .69            | 7176509   |       |
|           | 1     | 1.73 | 2-1/4 | .69            | 7176515   |       |
|           | 1     | 1.73 | 4     | .69            | 7176517   |       |
|           | 1     | 1.73 | 6     | .69            | 7176519   |       |
|           | 1-1/4 | 2.08 | 2-1/2 | .69            | 7176521   |       |
|           | 1-1/4 | 2.08 | 4     | .69            | 7176523   |       |
|           | 1-1/4 | 2.08 | 6     | .69            | 7176525   |       |
|           | 1-1/2 | 2.48 | 2-1/2 | .92            | 7176527   |       |
|           | 1-1/2 | 2.48 | 4     | .92            | 7176529   |       |
|           | 1-1/2 | 2.48 | 6     | .92            | 7176531   |       |
|           | 2     | 3.07 | 2-1/2 | .94            | 7176533   |       |
|           | 2     | 3.07 | 4     | .94            | 7176535   |       |

**RETENTION KNOBS**

SERIES 378:



We can supply many  
other **KNOBS**;  
please inquire.



| Order No.               | Price | Style | "T" Threads Dia. Pitch | "A" Angle Radius | "D1" Knob Dia. | "D2" Neck Dia. | "D3" Hole Dia. | "D4" Pilot Dia. | "L" OAL In | "L1" Length In | Hole |
|-------------------------|-------|-------|------------------------|------------------|----------------|----------------|----------------|-----------------|------------|----------------|------|
| <b>TOOL SHANK BT-30</b> |       |       |                        |                  |                |                |                |                 |            |                |      |
| 7831109                 |       | C     | M12X1.75               | 45               | 0.431          | 0.2740         | N/A            | 0.4918          | 1.690      | 0.707          | N    |
| 8311091                 |       | C     | M12X1.75               | 60               | 0.431          | 0.2740         | N/A            | 0.4918          | 1.690      | 0.707          | N    |
| <b>TOOL SHANK CT-30</b> |       |       |                        |                  |                |                |                |                 |            |                |      |
| 7811111                 |       | A     | .500-13                | 45               | 0.52           | 0.3850         | 0.187          | N/A             | 1.100      | 0.320          | Y    |
| <b>TOOL SHANK BT-40</b> |       |       |                        |                  |                |                |                |                 |            |                |      |
| 8111221                 |       | A     | M16X2.0                | 45               | 0.74           | 0.4900         | 0.281          | N/A             | 1.500      | 0.440          | Y    |
| 7811126                 |       | A     | M16X2.0                | 45               | 0.74           | 0.4900         | N/A            | N/A             | 1.612      | 0.552          | N    |
| 7831113                 |       | C     | M16X2.0                | 45               | 0.589          | 0.3920         | N/A            | 0.669           | 2.360      | 1.100          | N    |
| 8311131                 |       | C     | M16X2.0                | 60               | 0.589          | 0.3920         | N/A            | 0.669           | 2.360      | 1.100          | N    |
| 8311132                 |       | C     | M16X2.0                | 90               | 0.589          | 0.3920         | N/A            | 0.669           | 2.360      | 1.100          | N    |
| 8311134                 |       | C     | M16X2.0                | 45               | 0.589          | 0.3920         | 0.197          | 0.669           | 2.360      | 1.100          | Y    |
| 8311135                 |       | C     | M16X2.0                | 60               | 0.589          | 0.3920         | 0.197          | 0.669           | 2.360      | 1.100          | Y    |
| 8311136                 |       | C     | M16X2.0                | 90               | 0.589          | 0.3920         | 0.197          | 0.669           | 2.360      | 1.100          | Y    |
| <b>TOOL SHANK CT-40</b> |       |       |                        |                  |                |                |                |                 |            |                |      |
| 7811122                 |       | A     | .625-11                | 45               | 0.74           | 0.4900         | 0.281          | N/A             | 1.500      | 0.440          | Y    |
| 7811123                 |       | A     | .625-11                | 45               | 0.74           | 0.4900         | N/A            | N/A             | 1.500      | 0.440          | N    |
| 7812622                 |       | B     | .625-11                | 45               | 0.588          | 0.3920         | N/A            | N/A             | 2.265      | 1.000          | N    |
| 7817122                 |       | B     | .625-11                | 45               | 0.594          | 0.4060         | N/A            | N/A             | 2.250      | 1.139          | N    |
| 7817123                 |       | B     | .625-11                | 45               | 0.594          | 0.4060         | 0.157          | N/A             | 2.250      | 1.138          | Y    |
| 7831114                 |       | C     | .625-11                | 45               | 0.589          | 0.3920         | N/A            | 0.636           | 2.250      | 0.988          | N    |
| 8311141                 |       | C     | .625-11                | 60               | 0.589          | 0.3920         | N/A            | 0.636           | 2.250      | 0.988          | N    |
| 8311142                 |       | C     | .625-11                | 90               | 0.589          | 0.3920         | N/A            | 0.636           | 2.250      | 0.988          | N    |
| 7831222                 |       | D     | .625-11                | 90               | 0.589          | 0.3880         | N/A            | 0.625           | 2.037      | 0.777          | N    |
| 7831226                 |       | A     | .625-11                | 45               | 0.74           | 0.4900         | 0.280          | 0.6405          | 1.624      | 0.440          | Y    |
| 7831514                 |       | C     | .625-11                | 45               | 0.589          | 0.3920         | 0.200          | 0.636           | 2.250      | 0.988          | Y    |
| 7831616                 |       | B     | .625-11                | 15               | 0.746          | 0.5490         | N/A            | N/A             | 1.890      | 0.792          | N    |
| 7831617                 |       | B     | .625-11                | 15               | 0.746          | 0.5490         | 0.276          | N/A             | 1.890      | 0.792          | Y    |
| 8318141                 |       | C     | .625-11                | 60               | 0.589          | 0.3920         | 0.138          | 0.636           | 2.250      | 0.988          | Y    |
| 7832114                 |       | B     | .625-11                | 45               | 0.588          | 0.3920         | N/A            | N/A             | 2.125      | 0.988          | N    |
| 8324142                 |       | C     | .625-11                | 90               | 0.589          | 0.3920         | N/A            | N/A             | 1.970      | 0.707          | N    |
| 7835030                 |       | C     | .625-11                | 90               | 0.589          | 0.3920         | 0.224          | 0.636           | 2.250      | 0.988          | Y    |
| <b>TOOL SHANK CT45</b>  |       |       |                        |                  |                |                |                |                 |            |                |      |
| 7811133                 |       | A     | .750-10                | 45               | 0.94           | 0.6050         | 0.375          | N/A             | 1.800      | 0.580          | Y    |
| 8311162                 |       | C     | .750-10                | 90               | 0.746          | 0.5490         | N/A            | 0.761           | 2.770      | 1.228          | N    |
| <b>TOOL SHANK BT50</b>  |       |       |                        |                  |                |                |                |                 |            |                |      |
| 8111441                 |       | A     | M24X3.0                | 45               | 1.14           | 0.8200         | 0.468          | N/A             | 2.300      | 0.700          | Y    |
| 7831117                 |       | C     | M24X3.0                | 45               | 0.903          | 0.6680         | N/A            | 0.9839          | 3.350      | 1.376          | N    |
| 8311171                 |       | C     | M24X3.0                | 60               | 0.903          | 0.6680         | N/A            | 0.9839          | 3.350      | 1.376          | N    |
| 8311172                 |       | C     | M24X3.0                | 90               | 0.903          | 0.6680         | N/A            | 0.9839          | 3.350      | 1.376          | N    |
| 7831643                 |       | C     | M24X3.0                | 45               | 0.903          | 0.6680         | 0.236          | 0.9839          | 3.350      | 1.376          | Y    |
| <b>TOOL SHANK CT50</b>  |       |       |                        |                  |                |                |                |                 |            |                |      |
| 7811143                 |       | A     | 1.00-8                 | 45               | 1.14           | 0.8200         | 0.505          | N/A             | 2.300      | 0.700          | Y    |
| 7811144                 |       | A     | 1.00-8                 | 45               | 1.14           | 0.8200         | 0.468          | N/A             | 2.300      | 0.700          | Y    |
| 7811146                 |       | A     | 1.00-8                 | 45               | 1.14           | 0.8200         | N/A            | N/A             | 2.300      | 0.700          | N    |
| 7817144                 |       | A     | 1.00-8                 | 45               | 1.14           | 0.8200         | 0.460          | N/A             | 2.300      | 0.700          | Y    |
| 7831118                 |       | C     | 1.00-8                 | 45               | 0.903          | 0.6680         | N/A            | 1.026           | 3.350      | 1.384          | N    |
| 8311181                 |       | C     | 1.00-8                 | 60               | 0.903          | 0.6680         | N/A            | 1.026           | 3.350      | 1.384          | N    |
| 8311182                 |       | C     | 1.00-8                 | 90               | 0.903          | 0.6680         | N/A            | 1.026           | 3.350      | 1.384          | N    |
| 8312441                 |       | E     | 1.00-8                 | 90               | 0.908          | 0.6680         | N/A            | 1.026           | 3.350      | 1.384          | N    |
| 7831246                 |       | A     | 1.00-8                 | 45               | 1.14           | 0.8200         | 0.390          | 1.026           | 2.300      | 0.700          | Y    |
| 7831645                 |       | C     | 1.00-8                 | 45               | 0.903          | 0.6680         | 0.390          | 1.026           | 3.355      | 1.384          | Y    |
| 8318441                 |       | C     | 1.00-8                 | 60               | 0.903          | 0.6680         | 0.335          | 1.026           | 3.355      | 1.384          | Y    |
| 8324182                 |       | C     | 1.00-8                 | 90               | 0.942          | 0.7060         | N/A            | N/A             | 2.519      | 0.904          | N    |
| 8324202                 |       | A     | 1.00-8                 | 90               | 0.942          | 0.7060         | 0.315          | N/A             | 2.519      | 0.904          | Y    |
| 8342182                 |       | C     | 1.00-8                 | 90               | 0.903          | 0.6680         | 0.250          | 1.026           | 3.350      | 1.384          | Y    |