

HARDINGE WORKHOLDING

Spindle Tooling for Manual & CNC Lathes



800-843-8801
WWW.HARDINGE.COM



Value in Workholding

Team up with Hardinge to add value to your material-cutting processes and assembly operations. Work with dedicated sales, design and application engineers to solve difficult process problems, or choose your standard collet or step chuck knowing that quality and reliability comes with the Hardinge name. Experience value in longer lasting products, value in machine uptime, value in work-piece accuracy and value in your customer's satisfaction.



From bar stock to finished product – *100% Made in USA*

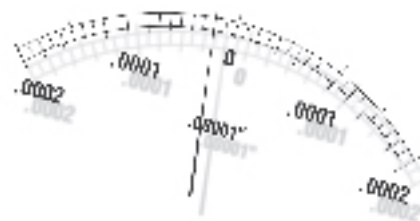
Individual care goes into every collet, feed finger and pad, at each manufacturing process, from handling the initial bar stock to polishing and laser etching. Generations of skilled-machine operators have taken part in the many critical processes of producing a hardened, precision-machined collet. Hardinge has been manufacturing workholding and industrial products for all brands of lathes, mills and grinding machines for over a century. Their process expertise, precision and accuracy provides a workholding product that is world-renowned.

Hardness, Spring and Spread

A very important factor in manufacturing collets, feed fingers and pads that are long lasting and provide the performance you expect is the raw material used and the heat treat process control system to guarantee proper hardness and tempering. Collets and feed fingers are prone to breakage where the hardened area meets the tempered area. Hardinge heat treat processes are planned to eliminate breakage on critical design areas to provide a product that is not subject to breakage and wear. Hardinge collets are 5 to 7 points of Rockwell "C" harder than competitor's products to provide a longer lasting product. The harder the collet, the longer the life, reducing collet changeover and downtime associated with collet changing. However, if a collet is too hard, it could be brittle and break. It is the combination of hardness, spring and spread that Hardinge has perfected over the years at their Elmira, New York facility.

Collet Concentricity Inspection

Concentricity is measured in terms of Total Indicator Runout (TIR) using a Hardinge Super-Precision® spindle. A gage pin is inserted in the collet and the TIR is measured at a set distance from the spindle face, depending on the order hole size, using a .00005" dial indicator. You can be assured of a qualified inspection – standard 5C collets will run .001" or better, while special accuracy collets will run .0002" or better. This assures that the collet will hold your part consistently during your specified machining operations.

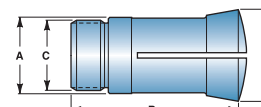


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Hardened, Precision-Machined Collets



The Hardinge Collet is manufactured to exacting standards from special alloy steel. Threads are heat treated and the body is spring tempered to assure accuracy and durability at low cost. A wide range of standard sizes and shapes (and some not so standard) are available for off-the-shelf delivery. 5C decimal collets are available in .001" increments from .015" up to and including 1.0625". All collets are available in fractional sizes of round, hexagon and square to capacity. In addition, many round collets are stocked in metric, decimal, letter and number sizes. Most of the popular sizes of round serrated, taper hole and rectangular collets are available from stock. Many collets include precision internal threads for the Hardinge threaded positive stops.



Dimensions and Capacities

| Type | A – Back Bearing Diameter | B – Overall Length | C – Thread | D – Head Diameter | ● | ⬡ | ■ |
|------|---------------------------|--------------------|------------------------------------|-------------------|-----------------|------------------|------------------|
| | | | | | Round Capacity | Hex Capacity | Square Capacity |
| 5C | 1.250" (31.75) | 3.281" (83.34) | 1.238" x 20 RH ¹ | 1.468" | 1 1/16" (26.99) | 29/32" (23.02) | 3/4" (19.05) |
| 16C | 1.889" (47.98) | 4.312" (109.52) | 1.870" x 1.75mm RH ¹ | 2.265" | 1 5/8" (41.28) | 1 13/32" (35.72) | 1 9/64" (28.97) |
| 20C | 2.378" (60.40) | 6.250" (158.75) | 2.359" (M60x1.5mm RH) ¹ | 2.880" (73.15) | 2" (50.80) | 1 3/4" (44.45) | 1 27/64" (36.11) |
| 25C | 2.930" (74.42) | 6.480" (161.59) | 2.871" (M73x1.5mm RH) ¹ | 3.470" (88.14) | 2.559" (65.00) | 2.216" (56.29) | 1.808" (45.92) |
| 3J | 2.000" (50.80) | 3.750" (95.25) | 1.988" x 20 RH | 2.205" | 1 3/4" (44.45) | 1 17/32" (38.89) | 1 1/4" (31.75) |

1 - Internal Stop Thread: (5C: 1.041" x 24 RH), (16C: 1.687" x 20 TPI RH), (20C: M53 x 1mm RH), (25C : 2 5/8" x 24 TPI RH), (3J : 1.79" x 24 TPI RH).

5C Hardened, Precision-Machined Collets



| Description | Part Number | Figure | Size Range |
|---------------------------|-------------------|--------|--|
| Special Accuracy | 1003-00-00-000000 | 1 | 1/64" to 1 1/16", Decimal, Metric & Fractional Sizes |
| Round Fractional | 1001-00-19-000000 | 1 | 1/64" to 1 1/16" inclusive by 1/64" increments |
| Hexagon Fractional | 1001-00-29-000000 | 1 | 1/16" to 7/8" inclusive by 1/64" increments |
| Square Fractional | 1001-00-39-000000 | 1 | 3/64" to 3/4" inclusive by 1/64" increments |
| Round Metric | 1001-00-17-000000 | 1 | .5mm to 27mm inclusive by .5mm increments ¹ |
| Round Decimal | 1001-00-18-000000 | 1 | .016" to 1.030" inclusive by .001" increments ¹ |
| Round Serrated Fractional | 1001-00-59-000000 | 1 | 1/4" to 1 1/64" inclusive by 1/64" increments ¹ |
| Morse Taper Hole | 1005-08-80-000000 | 2 | #1, #2, #3, #4 |
| B & S Taper Hole | 1005-09-80-000000 | 2 | #4, #5, #6, #7, #9 |
| Rectangular | 1001-00-49-000000 | 1 | 1/8" x 5/32" to 5/8" x 3/4" inclusive |

NOTE: Round 5C collets above 63/64", hex collets 55/64" and above, square 5C collets 23/32" and over, 5C number collets and letter collets do not have internal threads. For internal threads, see 5C-SC step collets.

Special-Accuracy 5C Collets are available. When held in a Hardinge Super-Precision® spindle, they are guaranteed to have a maximum TIR of .0002" for 5C round collets, and .0005" for 16C, 20C and 25C round collets over 3/16" (4.76mm) to the collet's capacity measured 1" from the face of the collet.



16C, 20C, 25C, 3J Hardened, Precision-Machined Collets

| Type | 16C Part No. / Size Range | | 20C Part No. / Size Range | | 25C Part No. / Size Range | | 3J Part No. / Size Range | |
|-------------------------|---------------------------|-------------------------|---------------------------|-----------------------|---------------------------|-----------------------|--------------------------|------------------------|
| Round Fractional | 1717-00-19 | 1/16" – 1 1/16" [1/64"] | 1701-00-19 | 1/16" – 2" [1/32"] | 1801-00-19 | 1/4" – 2 5/8" [1/64"] | 1593-00-19 | 1/64" – 1 3/4" [1/64"] |
| Hexagon Fractional | 1717-00-29 | 1/8" – 1 3/8" [1/16"] | 1701-00-29 | 1/4" – 1 3/4" [1/16"] | 1801-00-29 | 1/2" – 2 1/8" [1/16"] | 1593-00-29 | 3/16" – 1 1/2" [1/16"] |
| Square Fractional | 1717-00-39 | 1/8" – 1 3/8" [1/16"] | 1701-00-39 | 1/4" – 1 3/8" [1/16"] | 1801-00-39 | 1" – 1 3/4" [1/16"] | 1593-00-39 | 1/4" – 1 1/4" [1/16"] |
| Round Metric | 1717-00-17 | 1–42mm [1mm] | 1701-00-17 | 7–51mm [1mm] | 1801-00-17 | 15–65mm [1mm] | 1593-00-17 | 5–40mm [1mm] |
| Hex Metric | 1717-00-27 | 3–36mm [1mm] | 1701-00-27 | 6–40mm [1mm] | — | — | — | — |
| Square Metric | 1717-00-37 | 3–29mm [1mm] | — | — | — | — | — | — |
| Rd. Serrated Fractional | 1717-00-59 | 5/16" – 1 5/8" [1/32"] | 1701-00-59 | 1/2" – 2" [1/16"] | 1801-00-59 | 1/2" – 2 1/2" [1/16"] | 1593-00-59 | 3/8" – 1 5/8" [1/32"] |
| Round Serrated Metric | 1717-00-57 | 12–42mm [5mm] | 1701-00-57 | 10–50mm [1mm] | 1801-00-57 | 15–65mm [1mm] | — | — |

NOTE: Increments in brackets. 3J Collets 1/64" and under are 3 split. 3J Collets over 1 23/32" do not have internal stop threads. 16C Collets 1.615" and over do not have internal stop threads. 16C Collets are four split.



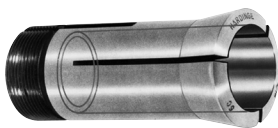
5C, 16C, 20C and 25C Collet Sets

Hardinge Special-Accuracy 5C Collet Sets are enclosed in a handsome walnut case with a certificate of accuracy signed by the President of Hardinge. Each collet in the set is tested in a Hardinge spindle and guarantees a maximum TIR of .0002" (.005mm). Sets are available in 1/64", 1/32" and .5mm increments.

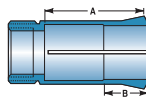
Standard-Accuracy Sets are available for 5C, 16C, 20C and 25C collets. These sets include our standard collets attractively priced and packaged in quantities that will outfit your machine nicely. Walnut box not included with Standard Accuracy Sets - see collet racks on page 27.

Collet Sets

| Type | Part Number: All Sizes With Internal Stop Threads | Part Number: Above 5/64" Have No Internal Threads | Increment | Quantity | Size & Range Stocked | Accuracy |
|------------------------|---|---|-----------|------------|-------------------------|-------------------------------|
| 5C - Round Fractional | 0901-07-00-000000 | 0901-00-00-000000 | 1/64" | 65 collets | 1/16" to 1 1/16" | Standard Accuracy |
| 5C - Round Fractional | 0903-07-00-000000 | 0903-00-00-000000 | 1/64" | 65 collets | 1/16" to 1 1/16" | Special Accuracy (.0002" TIR) |
| 5C - Round Fractional | 0902-07-00-000000 | 0902-00-00-000000 | 1/32" | 33 collets | 1/16" to 1 1/16" | Standard Accuracy |
| 5C - Round Fractional | 0904-07-00-000000 | 0904-00-00-000000 | 1/32" | 33 collets | 1/16" to 1 1/16" | Special Accuracy (.0002" TIR) |
| 5C - Round Metric | 0908-07-00-000000 | 0908-00-00-000000 | .5mm | 51 collets | 2mm to 27mm | Standard Accuracy |
| 5C - Round Metric | 0909-07-00-000000 | 0909-00-00-000000 | .5mm | 51 collets | 2mm to 27mm | Special Accuracy (.005mm TIR) |
| 16C - Round Fractional | 0913-00-00-000000 | — | 1/8" | 8 collets | 1/8" - 1 1/2" | Standard Accuracy |
| 16C - Round Fractional | 0915-00-19-000000 | — | 1/8" | 12 collets | 1/4" - 1 5/8" | Standard Accuracy |
| 16C - Round Fractional | 0917-00-19-000000 | — | 1/16" | 23 collets | 1/4" - 1 5/8" | Standard Accuracy |
| 20C - Round Fractional | 0919-00-19-000000 | — | 1/8" | 16 Collets | 1/8" - 2" | Standard Accuracy |
| 20C - Round Fractional | 0921-00-19-000000 | — | 1/16" | 31 collets | 1/8" - 2" | Standard Accuracy |
| 25C - Round Fractional | 0925-00-19-000000 | — | 1/16" | 33 collets | 1/2" - 2 1/2" | Standard Accuracy |
| 25C - Round Fractional | 0923-00-19-000000 | — | 1/8" | 17 collets | 1/2" - 2 1/2" | Standard Accuracy |



The **SC Step Collet** permits the use of the Hardinge threaded positive stops. The step depth varies depending on the collet capacity.



Step Collets – 5C-SC and 16C-SC

| Type | Part Number | Size Range | A - Max Depth | B - Length |
|-------------|--------------|-------------------------------------|----------------|----------------|
| 5C Round | 1001-07-19- | 1" to 1 1/16" | 2 3/8" (60.33) | 3/4" (19.05) |
| 5C Round | 1001-07-19- | 1 5/64" to 1 1/8" | 1 1/2" (38.10) | 1" (25.40) |
| 5C Hexagon | 1001-07-29- | 55/64" to 29/32" | 2 3/8" (60.33) | 3/4" (19.05) |
| 5C Hexagon | 1001-07-29- | 15/16" to 31/32" | 1 1/2" (38.10) | 1" (25.40) |
| 5C Hexagon | 1001-07-29- | 1" | 1 1/2" (38.10) | 1/2" (12.70) |
| 5C Square | 1001-07-39- | 23/32" to 3/4" | 2 3/8" (60.33) | 3/4" (19.05) |
| 16C Round | 91717-07-19- | Over 1 3/8" to 1 11/16" inclusive | 2 7/8" (73.03) | 1 3/8" (34.93) |
| 16C Round | 91717-07-19- | Over 1 11/16" to 1 3/4" Inclusive | 1 3/4" (44.45) | 1 3/4" (44.45) |
| 16C Hexagon | 91717-07-29- | Over 1 13/32" to 1 25/64" inclusive | 2 7/8" (73.03) | 1 3/8" (34.93) |
| 16C Hexagon | 91717-07-29- | Over 1 29/64" to 1 33/64" inclusive | 1 3/4" (44.45) | 1 3/4" (44.45) |
| 16C Square | 91717-07-39- | Over 1 3/64" to 1 3/16" inclusive | 2 7/8" (73.03) | 1 3/8" (34.93) |
| 16C Square | 91717-07-39- | Over 1 3/16" to 1 5/64" inclusive | 1 3/4" (44.45) | 1 3/4" (44.45) |

NOTE: Millimeters in parentheses. 5C-SC step collets have internal stop threads. Part numbers preceded by 9 are special order.

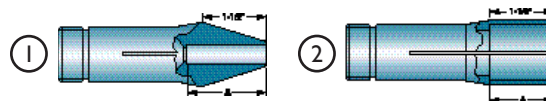
5C Extended-Nose Collets (Standard TIR: .001", 1/2" from Face)



5C Hardened, Precision-Machined Extended-Nose Collets are for the same applications as regular collets. The extended-nose permits deeper counter-bores and tool clearance for extended work. Extended-nose collets have internal threads for Hardinge positive stops.

| Type | Part Number | Figure | Size Range | A - Maximum Depth |
|------------------|-------------|--------|-------------------------|--------------------|
| Round Fractional | 8015-00-19- | 1 | 1/16" to 1 1/4" [1/64"] | Thru Hole; No Step |
| | | 1 | 1/16" to 29/32" 1 | 2" (50.80) |
| | | 2 | 3/4" to 1 1/16" 1 | 1 1/2" (38.10) |
| Round Metric | 8015-00-17- | 1 | 2mm to 32mm [.5mm] | Thru Hole; No Step |
| | | 1 | 3mm to 18mm 1 | 2" (50.80) |
| | | 2 | 20mm to 28mm 1 | 1 1/2" (38.10) |

NOTE: Increments in brackets. Special Accuracy Collet now available in 8015 style, .0005" TIR at 1/2" from Face. 1 - Diameter of face is order hole plus 1/4" (6.35mm)



Emergency Collets



Even with the best of planning, emergencies arise when your tool room and production departments require a stepped, odd size or special-shape collet. On such occasions, use the Hardinge® **Emergency Collet**. The soft face and pilot hole permit rapid drilling, boring or stepping out to the exact size required. Pins are supplied for precision machining. Emergency collets have internal threads for positive stops.

Extended-Nose Emergency Collets permit deeper counter bores when required, and tool clearance for extended work. Extended-nose emergency collets also have internal threads for positive stops. The collet shank section of a **5C Emergency Plug Chuck** is finished for direct application to your machine spindle. The nose section can be machined in place for the greatest degree of accuracy to suit your particular requirements for special arbors.

Emergency Collets – 3C & 5C

| 3C Model | Part Number | 5C Model | Part Number | Material | Pilot Hole | Slots |
|----------|-------------|----------|-------------------|----------|--------------|----------------|
| 3C Blank | 1583-10-00 | 5C Blank | 1001-10-00-000000 | Steel | — | — |
| 3C-E1 | 1585-12-10 | 5C-E1 | 1007-12-10-000000 | Steel | 1/16" (1.59) | Specify 3 or 4 |
| — | — | 5C-E1 | 1013-12-10-000000 | Brass | 1/16" (1.59) | 3 |
| 3CE | 1585-14-10 | — | — | Steel | 1/4" (6.35) | 4 |
| 3C-E2 | 1585-13-00 | 5C-E2 | 1007-13-10-000000 | Steel | 1/8" (3.18) | 3 |
| — | — | 5C-E2 | 1007-13-10-000004 | Steel | 1/8" (3.18) | 4 |
| — | — | 5C-E2 | 1013-13-10-000000 | Brass | 1/8" (3.18) | 3 |
| 3C-E0 | 1585-11-00 | 5C-E0 | 1007-11-00-000000 | Steel | — | 3 |

Emergency Collets – 16C, 20C, 25C & 3J

| Model | Part Number | Pilot Hole |
|---------------------------------|-------------------|---------------|
| 16C Emergency Collets - 3 Slots | | |
| 16C-E | 1717-14-00-000000 | 1/4" (6.35) |
| 16C-E1 | 1717-12-00-000000 | 1/16" (1.59)* |
| 16C-E2 | 1717-13-00-000000 | 1/8" (3.18) |
| 16C-E0 | 1717-11-00-000000 | — |
| 20C Emergency Collets - 4 Slots | | |
| 20C-E | 1701-14-10-000000 | 1/4" (6.35) |
| 20C-E0 | 1701-11-00-000000 | — |
| 25C Emergency Collets - 4 Slots | | |
| 25C-E | 1801-14-10-000000 | 1/2" (12.70) |
| 25C-E0 | 1801-11-00-000000 | — |
| 3J Emergency Collets - 4 Slots | | |
| 3J-E | 1595-14-10-000000 | 1/4" (6.35) |
| 3J-E1 | 1595-12-10-000000 | 1/16" (1.59) |
| Replacement Pins | | |
| 3C | 7721-00-00 | — |
| 5C, 16C, 20C & 3J | 7723-00-00 | — |
| 25C | 7725-00-00 | — |

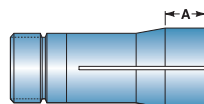
* Specify 3 or 4 slots

NOTE: Millimeters in parentheses.

3J Collets 1/16" and under are 3 split.

3J Collets over 1²³/₃₂" have no internal thread.

Emergency collets not intended to be heat treated.



Extended-Nose Emergency Collets

| Model | Part Number | Pilot Hole | A – Length |
|--------------------------------------|-------------------|--------------|----------------|
| 3C Emergency Collets - 3 Slots | | | |
| 3C-EN1 | 1795-14-10- | 1/4" (6.35) | 1" (25.40) |
| 3C-EN1-2 | 1795-13-10- | 1/8" (3.18) | 1" (25.40) |
| 3C-EN2 | 1797-14-10- | 1/4" (6.35) | 1/2" (12.70) |
| 5C Emergency Collets - 3 Slots | | | |
| 5C-EN1 | 1009-14-10-000000 | 1/4" (6.35) | 1" (25.40) |
| 5C-EN1-1 | 1009-12-10-000000 | 1/16" (1.59) | 1" (25.40) |
| 5C-EN1-2 | 1009-13-10-000000 | 1/8" (3.18) | 1" (25.40) |
| 5C-EN2 | 1011-14-10-000000 | 1/4" (6.35) | 1/2" (12.70) |
| 5C-EN2-1 | 1011-12-10-000000 | 1/16" (1.59) | 1/2" (12.70) |
| 5C-EN2-2 | 1011-13-10-000000 | 1/8" (3.18) | 1/2" (12.70) |
| 3C & 5C Emergency Plug Chuck - Solid | | | |
| 3C Plug | 1587-00-00- | — | 1" (25.40) |
| 5C Plug | 1015-00-00-000000 | — | 1 3/4" (44.45) |
| 16C Emergency Collets - 3 Slots | | | |
| 16C-EN1 | 1717-12-13-000000 | 1/4" (6.35) | 1" (25.40) |
| 16C-EN1-1 | 1717-13-13-000000 | 1/16" (1.59) | 1" (25.40)* |
| 16C-EN1-2 | 1717-14-13- | 1/8" (3.18) | 1" (25.40) |
| 16C-EN2 | 1717-12-14- | 1/4" (6.35) | 1/2" (12.70) |
| 16C-EN2-1 | 1717-13-14- | 1/16" (1.59) | 1/2" (12.70)* |
| 16C-EN2-2 | 1717-14-14- | 1/8" (3.18) | 1/2" (12.70) |
| 20C Emergency Collets - 4 Slots | | | |
| 20C-EN .75 | 1809-14-10- | 1/4" (6.35) | 3/4" (19.05) |
| 20C-EN 1.5 | 1811-14-10- | 1/4" (6.35) | 1 1/2" (38.10) |
| 3J Emergency Collets - 4 Slots | | | |
| 3J-EN1 | 1593-12-13- | 1/4" (6.35) | 1" (25.40) |
| 3J-EN2 | 1593-12-14- | 1/4" (6.35) | 1/2" (12.70) |
| Replacement Pins | | | |
| All Sizes | 7731-00-00 | — | — |

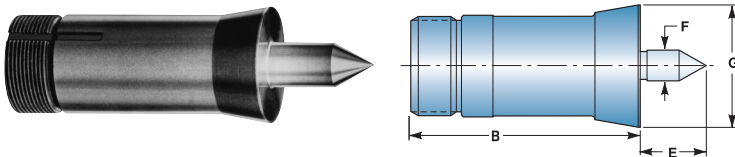
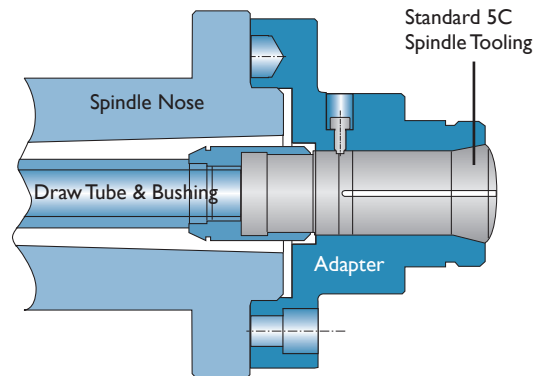
* Specify 3 or 4 slots



Kellenberger 5C Collet Adaptation Chuck

An adapter with draw tube permits the use of 5C spindle tooling on Kellenberger grinding machines. Use with collets, step chucks and Sure-Grip expanding collet systems. This system features the standard Hardinge threaded-nose design.

Part Number 0957-00-00-000000



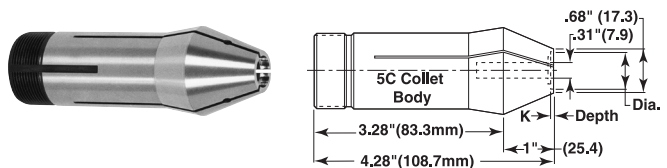
Headstock Centers – Male Center

| Style | Model | Part Number | B | E | F | G |
|-------|-------|----------------|---------------------------|----------------------------|---------------|----------------|
| 5C | G9-5C | 57-0000296 | 3 $\frac{3}{8}$ " (81.35) | 1 $\frac{9}{32}$ " (30.93) | .570" (14.47) | 1.470" (37.33) |
| 16C | AK-7 | AK-0000296-16C | 4.344" (110.33) | 1.250" (31.75) | .570" (14.47) | 2.250" (57.15) |
| 20C | AK-13 | AK-0000296-20C | 4.940" (125.47) | 1.250" (31.75) | .570" (14.47) | 2.880" (73.15) |
| 25C | AK-19 | AK-0000296-25C | 5.000" (127.00) | 1.250" (31.75) | .570" (14.47) | 3.464" (87.98) |

NOTE: Millimeters in parentheses.

5C LensMaker Collets

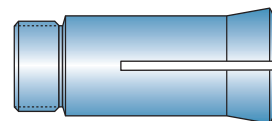
| Collet | Part Number | Diameter | Depth |
|-----------------|-------------------|----------|------------------|
| 5C LM (3 Split) | 8277-01-18-005010 | .501" | $\frac{1}{16}$ " |
| 5C LM (3 Split) | 8277-02-18-005010 | .501" | $\frac{1}{8}$ " |
| 5C LM (6 Split) | 8279-01-18-005010 | .501" | $\frac{1}{16}$ " |
| 5C LM (6 Split) | 8279-02-18-005010 | .501" | $\frac{1}{8}$ " |



5C-ST Long Bearing Drill Collets – Hardened, Precision-Machined

| Type | Part Number | Size Range |
|------------|-------------|---|
| Letter | 1017-00-16- | A to Z inclusive |
| Number | 1017-00-15- | 1 to 78 inclusive |
| Fractional | 1017-00-19- | $\frac{1}{64}$ " to $1\frac{1}{8}$ " inclusive by $\frac{1}{64}$ " increments |
| Metric | 1017-00-17- | 3mm to 25mm by .5mm increments |

NOTE: 5C-ST collets have longer bearing surface than standard 5C collets and do not have internal stop threads.



5C Step Chucks & Closers



Step Chucks are used for accurately holding work up to 6" in diameter. Castings, moldings, stampings and machined parts are held rigidly and accurately. Tubing can be held without crushing or distorting. Accurate gripping, the same as with collets, is yours when you use regular- and extra-depth capacity step chucks for holding larger diameters.

Regular-Depth Step Chucks are $\frac{3}{8}$ " larger in diameter than the rated size so the full capacity may be readily applied to a depth of $\frac{1}{2}$ ". A regular-depth step chuck closer is required for each rated size.

Extra-Depth Step Chucks are made so the full rated capacity may be applied to a depth of $1\frac{1}{4}$ ". An extra-depth step chuck closer is required for each rated size. Small closing angles are available on step chucks for non-rotating use.

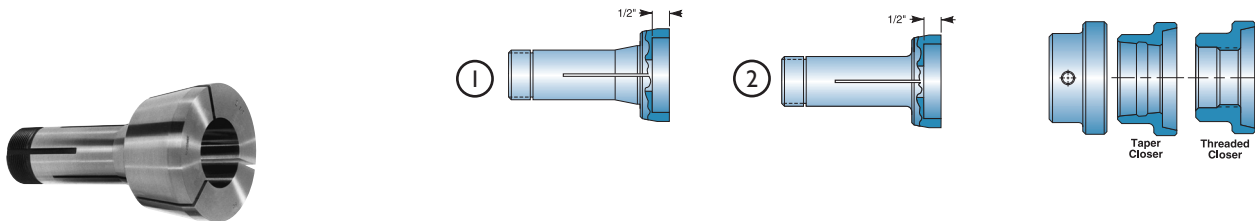
Step Chuck Closers are required when using step chucks on rotating spindles. Step chuck closers fit directly to the machine spindle. An inside taper corresponding to that on the step chuck places the closing pressure over the stepped area of the chuck, resulting in greater gripping power and accuracy. When ordering step chuck closers, specify for taper or threaded nose for 5C models or A2-4, A2-5, A2-6, A2-8 spindle noses. A step chuck closer is required for each rated size step chuck. The closer mounts directly on the spindle nose.

5C Regular-Depth Step Chucks and Closers – $\frac{1}{2}$ " / 12.70mm Max. Depth of Stop

| Step Chuck Rated Size Dia. x Depth | Part Number | Figure | Material | Slots | Small Closing Angle | Taper Closer ² | Threaded Closer ² |
|--|--------------------------------|--------|----------|-------|------------------------|---------------------------|------------------------------|
| 2" x $\frac{1}{2}$ " | 1389-00-19-000000 ¹ | 1 | Steel | 3 | Yes | 1421-26-00-000000 | 1421-00-00-000000 |
| 3" x $\frac{1}{2}$ " | 9-1483-00-00-000000 | 2 | Steel | 3 | No | 1423-26-00-000000 | 1423-00-00-000000 |
| 4" x $\frac{1}{2}$ " | 9-1485-00-00-000000 | 2 | Steel | 3 | No | 1425-26-00-000000 | 1425-00-00-000000 |
| 5" x $\frac{1}{2}$ " | 9-1487-00-00-000000 | 2 | Steel | 3 | No | 1427-26-00-000000 | 1427-00-00-000000 |
| 6" x $\frac{1}{2}$ " | 9-1489-00-00-000000 | 2 | Steel | 3 | No | 1429-26-00-000000 | 1429-00-00-000000 |

1 - Available in round sizes $1\frac{1}{16}$ " to 2" inclusive by $\frac{1}{16}$ " increments.
 2 - For Emergency and Hardened, Precision-Machined Step Chucks.
 NOTE: Part numbers preceded by a 9 are special order.

Spanner Wrench for Step Chuck Closers Part #460-0009189



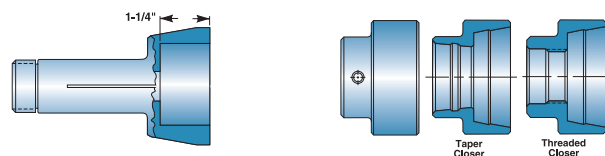
5C Extra-Depth Step Chucks and Closers – $1\frac{1}{4}$ " / 31.75mm Max. Depth of Stop

| Step Chuck Rated Size Dia. x Depth | Part Number | Material | Slots | Small Closing Angle | Taper Closer ² | Threaded Closer ² |
|--|--------------------------------|----------|-------|------------------------|---------------------------|------------------------------|
| 2" x $1\frac{1}{4}$ " | 1391-00-19-000000 ¹ | Steel | 3 | No | 1433-26-00-000000 | 1433-00-00-000000 |
| 3" x $1\frac{1}{4}$ " | 9-1491-00-00-000000 | Steel | 3 | No | 1435-26-00-000000 | 1435-00-00-000000 |
| 4" x $1\frac{1}{4}$ " | 9-1493-00-00-000000 | Steel | 3 | No | 1437-26-00-000000 | 1437-00-00-000000 |
| 5" x $1\frac{1}{4}$ " | 9-1495-00-00-000000 | Steel | 3 | No | 1439-26-00-000000 | 1439-00-00-000000 |
| 6" x $1\frac{1}{4}$ " | 9-1497-00-00-000000 | Steel | 3 | No | 1441-26-00-000000 | 1441-00-00-000000 |

1 - Available in round sizes $1\frac{1}{8}$ " to 2" inclusive by $\frac{1}{16}$ " increments.
 2 - For Emergency and Hardened, Precision-Machined Step Chucks
 NOTE: Part numbers preceded by a 9 are special order..

Spanner Wrench for Step Chuck Closers Part #460-0009189

CAUTION: Closers are required for all rotating step chuck applications. See page 40 for spindle rpm safety information.



Emergency Step Chucks are made for those situations where time does not allow for the ordering of a hardened step chuck. Emergency step chucks are supplied with pin holes and pins in place for precision machining. Pins are located beyond the maximum rated capacity of the step chuck—this permits stepping the chuck to its full capacity without cutting into the pins. Pins can be used, removed and saved for additional stepping operations.

Regular-Depth Step Chucks are $\frac{3}{8}$ " larger, while **Extra-Depth Step Chucks** are $\frac{3}{4}$ " larger in diameter than the rated size so the full capacity bore may be easily machined. A regular-depth step chuck can be bored to a maximum depth of $\frac{1}{2}$ ", the extra-depth step chuck to a maximum depth of $1\frac{1}{4}$ " with $1\frac{3}{4}$ " step for the 25C step chuck. A regular- or extra-depth step chuck closer is required for each rated size.

Hardinge Emergency Step Chucks are not designed to be heat treated by the customer. Step chucks with small closing angles are available for use with stationary (non-rotating) workholding devices only. All 5C taper and threaded-nose closers are made from cast iron. All other closers are made of steel.

5C Emergency **Regular-Depth** Step Chucks and Closers – $\frac{1}{2}$ " / 12.70mm Maximum Depth

| Step Chuck Rated Size Dia. x Depth | Part Number | Figure | Material | Slots | Small Closing Angle | Taper Closer | Threaded Closer |
|--|-------------------|--------|----------|-------|------------------------|-------------------|-------------------|
| 2" x $\frac{1}{2}$ " | 1351-00-10-000000 | 1 | Steel | 3 | Yes | 1421-26-00-000000 | 1421-00-00-000000 |
| 2" x $\frac{1}{2}$ " | 1351-25-00-000000 | 2 | Steel | — | Yes | 1421-26-00-000000 | 1421-00-00-000000 |
| 2" x $\frac{1}{2}$ " | 1377-00-10-000000 | 1 | Steel | 4 | Yes | 1421-26-00-000000 | 1421-00-00-000000 |
| 3" x $\frac{1}{2}$ " | 1353-00-10-000000 | 1 | Steel | 3 | Yes | 1423-26-00-000000 | 1423-00-00-000000 |
| 4" x $\frac{1}{2}$ " | 1355-00-10-000000 | 1 | Steel | 3 | Yes | 1425-26-00-000000 | 1425-00-00-000000 |
| 4" x $\frac{1}{2}$ " | 1369-00-10-000000 | 3 | Steel | 3 | No | 1425-26-00-000000 | 1425-00-00-000000 |
| 5" x $\frac{1}{2}$ " | 1357-00-10-000000 | 1 | Steel | 3 | Yes | 1427-26-00-000000 | 1427-00-00-000000 |
| 5" x $\frac{1}{2}$ " | 1371-00-10-000000 | 3 | Steel | 3 | No | 1427-26-00-000000 | 1427-00-00-000000 |
| 6" x $\frac{1}{2}$ " | 1359-00-10-000000 | 1 | Steel | 3 | Yes | 1429-26-00-000000 | 1429-00-00-000000 |
| 6" x $\frac{1}{2}$ " | 1373-00-10-000000 | 3 | Steel | 3 | No | 1429-26-00-000000 | 1429-00-00-000000 |
| 7" x $\frac{1}{2}$ " | 1375-00-10-000000 | 3 | Steel | 3 | No | 1431-26-00-000000 | 1431-00-00-000000 |

Replacement Pins Part #7723-00-00-000000. Spanner Wrench for Step Chuck Closers Part #460-0009189.

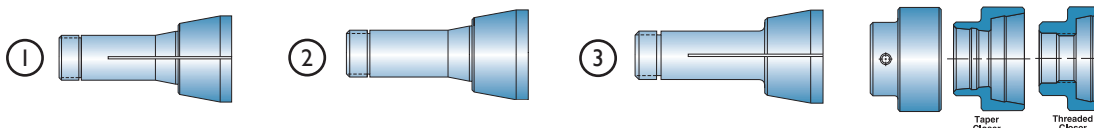


5C Emergency **Extra-Depth** Step Chucks and Closers – $1\frac{1}{4}$ " / 31.75mm Maximum Depth

| Step Chuck Rated Size Dia. x Depth | Part Number | Figure | Material | Slots | Small Closing Angle | Taper Closer | Threaded Closer |
|--|-------------------|--------|----------|-------|------------------------|-------------------|-------------------|
| 2" x $1\frac{1}{4}$ " | 1379-00-10-000000 | 1 | Steel | 3 | Yes | 1433-26-00-000000 | 1433-00-00-000000 |
| 2" x $1\frac{1}{4}$ " | 1379-25-00-000000 | 2 | Steel | — | Yes | 1433-26-00-000000 | 1433-00-00-000000 |
| 3" x $1\frac{1}{4}$ " | 1381-00-10-000000 | 3 | Steel | 3 | No | 1435-26-00-000000 | 1435-00-00-000000 |
| 4" x $1\frac{1}{4}$ " | 1383-00-10-000000 | 3 | Steel | 3 | No | 1437-26-00-000000 | 1437-00-00-000000 |
| 5" x $1\frac{1}{4}$ " | 1385-00-10-000000 | 3 | Steel | 3 | No | 1439-26-00-000000 | 1439-00-00-000000 |
| 6" x $1\frac{1}{4}$ " | 1387-00-10-000000 | 3 | Steel | 3 | No | 1441-26-00-000000 | 1441-00-00-000000 |

Replacement Pins Part #7723-00-00-000000. Spanner Wrench for Step Chuck Closers Part #460-0009189.

CAUTION: Closers are required for all rotating step chuck applications. See page 40 for spindle rpm safety information.



A2, 5C Emergency Step Chucks

Hardinge® **Emergency Step Chucks** used on A2-5 and A2-4 5C spindles have the same criteria as regular step chucks except the shank is longer. The closers are made of steel.

- The A2-4 Closer is used on the Hardinge QUEST® GT and CHNC 27 Lathe
- The A2-5 Closer is used on the older Hardinge CHNC®-5C and HXL (A2-5 5C spindle – the same closer used on all A2-5, 16C Spindles)

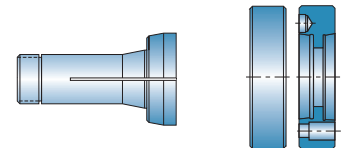
Because these 5C Step Chucks have a longer shank than standard 5C Step Chucks, they can only be used on Hardinge CONQUEST GT, QUEST GT, CHNC 27, CHNC-5C and HXL A2-5 5C lathes. A2-4 and A2-5 hardened, precision-machined step chucks are available as special orders.



A2-5 and A2-4 — 5C Emergency **Regular-Depth** Step Chucks & Closers — ½" / 12.70mm Maximum Depth

| Step Chuck Rated Size Dia. x Depth | Part Number | Material | Slots | Small Closing Angle | Closer for A2-5 CHNC-5C and HXL-5C | Closer for A2-4 QUEST GT |
|------------------------------------|-------------------|----------|-------|---------------------|------------------------------------|--------------------------|
| 2" x ½" | 1263-00-00-000000 | Steel | 3 | No | 16-0002682 | 5-0002682 |
| 3" x ½" | 1251-00-00-000000 | Steel | 3 | No | 16-0002683 | 5-0002683 |
| 4" x ½" | 1265-00-00-000000 | Steel | 3 | No | 16-0002684 | 5-0002684 |
| 5" x ½" | 1253-00-00-000000 | Steel | 3 | No | 16-0002685 | — |
| 6" x ½" | 1255-00-00-000000 | Steel | 3 | No | 16-0002686 | — |

NOTE: The shank of these step chucks are longer than standard 5C step chucks. Replacement Pins Part #7723-00-00-000000. Bolts for Closers: A2-4 & A2-5 Part # – MS-0104019 (M10 x 1.5 x 25)

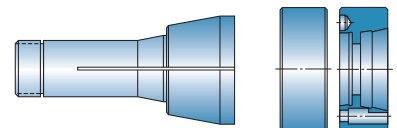


A2-5 and A2-4 – 5C Emergency **Extra-Depth** Step Chucks & Closers — 1¼" / 31.75mm Maximum Depth

| Step Chuck Rated Size Dia. x Depth | Part Number | Material | Slots | Small Closing Angle | Closer for A2-5 | Closer for A2-4 QUEST GT |
|------------------------------------|-------------------|----------|-------|---------------------|-----------------|--------------------------|
| 2" x 1¼" | 1267-00-00-000000 | Steel | 3 | No | 16-0002682-OC | 5-0002682-OC |
| 3" x 1¼" | 1257-00-00-000000 | Steel | 3 | No | 16-0002683-OC | 5-0002683-OC |
| 4" x 1¼" | 1269-00-00-000000 | Steel | 3 | No | 16-0002684-OC | 5-0002684-OC |
| 5" x 1¼" | 1259-00-00-000000 | Steel | 3 | No | 16-0002685-OC | — |
| 6" x 1¼" | 1261-00-00-000000 | Steel | 3 | No | 16-0002686-OC | — |

NOTE: The shank of these step chucks are longer than standard 5C step chucks. Replacement Pins Part #7723-00-00-000000. Bolts for Closers: A2-4 & A2-5 Part # – MS-0104019 (M10 x 1.5 x 25)

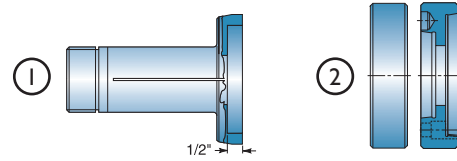
CAUTION: Closer required for all rotating step chuck applications.



16C Hardened, Precision-Machined **Regular-Depth** Step Chucks & A2-5 Closers – 1/2" / 12.70mm Max. Depth

| Rated Size Dia. x Depth | Step Chuck Part Number | Figure | Closer Part Number | Figure |
|----------------------------|---------------------------|--------|-----------------------|--------|
| 2" x 1/2" | 9-1273-00-00-00000 | 1 | 16-0002682 | 2 |
| 3" x 1/2" | 1215-00-19-0000001 | 1 | 16-0002683 | 2 |
| 4" x 1/2" | 9-1217-00-00-00000 | 1 | 16-0002684 | 2 |
| 5" x 1/2" | 9-1219-00-00-00000 | 1 | 16-0002685 | 2 |
| 6" x 1/2" | 9-1221-00-00-00000 | 1 | 16-0002686 | 2 |

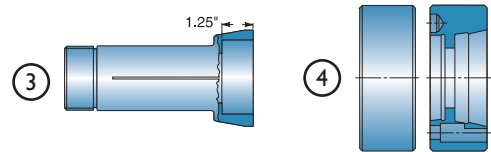
1 - Available from stock in round sizes 1 1/8" to 3" inclusive by 1/16" increments. NOTE: All closers made of steel. Part numbers preceded by a 9 are special order.



16C Hardened, Precision-Machined **Extra-Depth** Step Chucks & A2-5 Closers – 1/4" / 31.75mm Max. Depth

| Rated Size Dia. x Depth | Step Chuck Part Number | Figure | Closer Part Number | Figure |
|----------------------------|---------------------------|--------|-----------------------|--------|
| 2" x 1/4" | 9-1277-00-00-00000 | 3 | 16-0002682-OC | 4 |
| 3" x 1/4" | 9-1223-00-00-00000 | 3 | 16-0002683-OC | 4 |
| 4" x 1/4" | 9-1225-00-00-00000 | 3 | 16-0002684-OC | 4 |
| 5" x 1/4" | 9-1227-00-00-00000 | 3 | 16-0002685-OC | 4 |
| 6" x 1/4" | 9-1229-00-00-00000 | 3 | 16-0002686-OC | 4 |

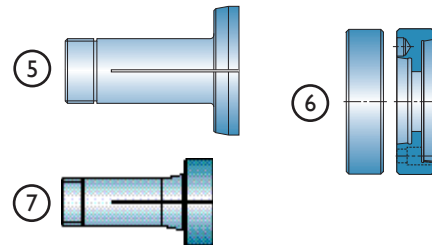
NOTE: All closers made of steel. Part numbers preceded by a 9 are special order. CAUTION: Closer required for all rotating step chuck applications.



16C & 3J Emergency **Regular-Depth** Step Chucks & 16C A2-5 Closers – 1/2" / 12.70mm Maximum Depth

| Rated Size Dia. x Depth | 16C Step Chuck Part Number | Figure | A2-5 Closer Part Number | Figure | 3J Step Chuck Part Number | Figure |
|----------------------------|-------------------------------|--------|----------------------------|--------|------------------------------|--------|
| 2" x 1/2" | 1275-39-00-000000 | 5 | 16-0002682 | 6 | 1597-00-10-000000 | 7 |
| 3" x 1/2" | 1231-39-00-000000 | 5 | 16-0002683 | 6 | 1599-00-10-000000 | 7 |
| 4" x 1/2" | 1233-39-00-000000 | 5 | 16-0002684 | 6 | 1649-00-00-000000 | 7 |
| 5" x 1/2" | 1235-39-00-000000 | 5 | 16-0002685 | 6 | 1725-00-00-000000 | 7 |
| 6" x 1/2" | 1237-39-00-000000 | 5 | 16-0002686 | 6 | 1659-00-00-000000 | 7 |

NOTE: All closers made of steel. 3J Step Chucks do not require a closer. Replacement Pins Part #7723-00-00-000000. WARNING: 3J step chucks have no large closing angle, therefore, centrifugal force will severely reduce gripping force as the rpm increases.



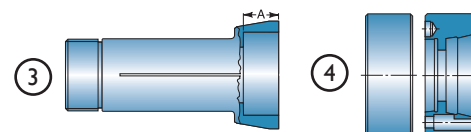
16C, 20C and 25C Emergency **Extra-Depth** Step Chucks & Closers (A2-5, A2-6, A2-8)

| Rated Size Dia. x Depth | 16C 1-1/4" | 20C 1-1/4" | 25C 1-3/4" | Figure | 16C | 20C | 25C | | Figure |
|----------------------------|-------------|-------------|-------------|--------|---------------|---------------|--------------------|----------------|--------|
| | Step Chuck | Step Chuck | Step Chuck | | A2-5 Closer | A2-6 Closer | A2-6 / A2-8 Closer | | |
| | Part Number | Part Number | Part Number | | Part Number | Part Number | Part Number | | |
| 2" x 1/4" | 1281-39-00- | — | — | 3 | 16-0002682-OC | — | QUEST® A2-6 | Others A2-8 | 4 |
| 3" x 1/4" | 1241-39-00- | 1283-00-00- | — | 3 | 16-0002683-OC | 20-0002683-OC | — | — | 4 |
| 4" x 1/4" | 1243-39-00- | 1285-00-00- | 1287-00-00- | 3 | 16-0002684-OC | 20-0002684-OC | 2995-00- | 1443-00- | 4 |
| 5" x 1/4" | 1245-39-00- | — | — | 3 | 16-0002685-OC | — | — | — | 4 |
| 6" x 1/4" | 1247-39-00- | 1289-00-00- | 1293-00-00- | 3 | 16-0002686-OC | 20-0002686-OC | 2997-00- | 1445-00- | 4 |
| 8" x 1/4" | OA | OA | 1447-00-10- | 3 | OA | OA | 2999-00- | 1449-00- | 4 |

NOTE: Millimeters in parentheses. OA = On Application. Replacement Pins Part #7723-00-00-000000. Emergency step chucks not intended to be heat treated.

CAUTION: Closer required for all rotating step chuck applications.

Closer Mounting Bolt Part Numbers:
 16C 0101216
 20C MS-0104219
 25C MS-0104620



3C/4C Emergency Step Chucks



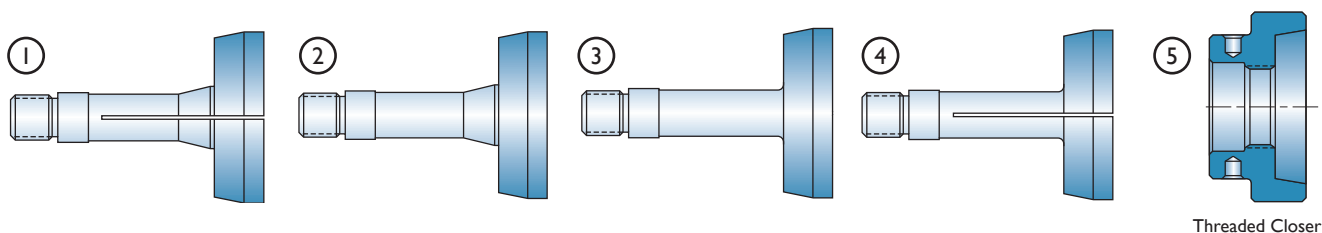
Emergency step chucks are made of soft, machineable steel, while closers are made of cast iron. Step chucks with small closing angles are available for use in stationary (non-rotating) workholding devices. Contact us for more information.

1300-series part numbers listed below are Hardinge® standard 3C and 4C Step Chucks made to order – other models will be quoted upon application.

3C & 4C Regular-Depth Step Chucks & Closers

| Rated Size & Type | Standard Item | Step Chuck Part Number | Figure | Slots | Small Closing Angle | Closer – Tapered | Closer – Threaded Fig 5 |
|-------------------|---------------|------------------------|--------|-------|---------------------|-------------------|-------------------------|
| 2" 3C | x | 1301-00-10-000000 | 1 | 3 | Yes | 1401-26-00-000000 | 1401-00-00-000000 |
| 2" 3C | | HS-4300 | 2 | — | Yes | 1401-26-00-000000 | 1401-00-00-000000 |
| 3" 3C | | HS-4301 | 3 | — | No | 1403-26-00-000000 | 1403-00-00-000000 |
| 3" 3C | x | 1307-00-10-000000 | 4 | 3 | No | 1403-26-00-000000 | 1403-00-00-000000 |
| 4" 3C | | HS-4302 | 3 | — | No | 1405-26-00-000000 | 1405-00-00-000000 |
| 4" 3C | x | 1309-00-10-000000 | 4 | 3 | No | 1405-26-00-000000 | 1405-00-00-000000 |
| 5" 3C | | HS-4303 | 3 | — | No | 1407-26-00-000000 | 1407-00-00-000000 |
| 5" 3C | | 37-2625-A | 4 | 3 | No | 1407-26-00-000000 | 1407-00-00-000000 |
| 6" 3C | | HS-4304 | 3 | — | No | | |
| 6" 3C | | 37-0002626-A | 4 | 3 | No | | |
| 2" 4C | x | 1320-00-00-000000 | 2 | — | Yes | 1411-26-00-000000 | 1411-00-00-000000 |
| 2" 4C | x | 1321-00-10-000000 | 1 | 3 | Yes | 1411-26-00-000000 | 1411-00-00-000000 |
| 3" 4C | | HS-4306 | 3 | — | No | 1413-26-00-000000 | 1413-00-00-000000 |
| 3" 4C | x | 1323-00-10-000000 | 2 | 3 | No | 1413-26-00-000000 | 1413-00-00-000000 |
| 4" 4C | | 8946D | 3 | — | No | 1415-26-00-000000 | 1415-00-00-000000 |
| 4" 4C | | 47-2624-A | 4 | 3 | No | 1415-26-00-000000 | 1415-00-00-000000 |
| 5" 4C | | HS-4308 | 3 | — | No | 1417-26-00-000000 | 1417-00-00-000000 |
| 5" 4C | | 47-2625-A | 4 | 3 | No | 1417-26-00-000000 | 1417-00-00-000000 |
| 6" 4C | | HS-4309 | 3 | — | No | | |

CAUTION: Closers are required for all rotating step chuck applications. See page 40 for spindle rpm safety information.

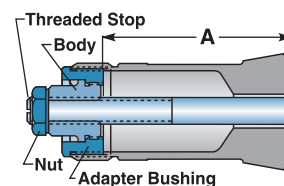
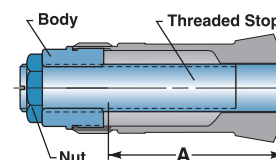


Threaded Positive Solid Stops

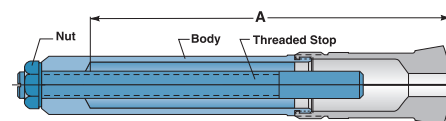
| Style | Description | Part Number | Model | A – Depth |
|-------|--|-------------------|--------|---------------|
| 5C | Solid Stop Assembly | 1049-00-00-000000 | SS-5C | 3/4" (73.38) |
| | Body | 1051-00-00-000000 | | |
| | Nut | 5A-0001466-C | | |
| | Threaded Stop ¹ | 1053-00-00-000000 | | |
| 16C | Solid Stop Assembly | 1805-00-00-000000 | SS-16C | 3/4" (95.25) |
| | Body | 1807-00-00-000000 | | |
| | Nut | 1185-00-00-000000 | | |
| | Threaded Stop ¹ | 1183-02-00-000000 | | |
| 16C | Adapter-Style Assembly | 1199-00-00-000000 | — | 3/4" (95.25) |
| | Body | 1051-00-00-000000 | | |
| | Adapter Bushing | 1155-01-00-000000 | | |
| | Nut | 5A-0001466-C | | |
| 16C | Threaded Stop (1/2" diameter) ¹ | 1071-00-00-000000 | | |
| | Adapter Bushing | 1155-01-00-000000 | | |
| 20C | Solid Stop Assembly | 1279-00-00-000000 | 20C-SS | 5/8" (149.23) |
| | Body | 1278-00-00-000000 | | |
| | Nut | 1185-00-00-000000 | | |
| | Threaded Stop ¹ | 1271-00-00-000000 | | |
| 25C | Solid Stop Assembly | 1073-00-00-000000 | 25C-SS | 6/8" (155.58) |
| | Body | 1075-00-00-000000 | | |
| | Nut | 1185-00-00-000000 | | |
| | Threaded Stop ¹ | 1271-00-00-000000 | | |
| 3J | Solid Stop Assembly | 1999-00-00-000000 | — | 3" (76.2) |
| | Body | 1051-00-00-000000 | | |
| | Adapter Bushing | 1995-00-00-000000 | | |
| | Threaded Stop ¹ (1/2" Dia.) | 1071-00-00-000000 | | |
| | Nuts [2] | 5A-0001466-C | | |
| 22J | Solid Stop Assembly | 1719-00-00-000001 | 22J-SS | 3/4" (92.07) |
| | Body | 1719-00-00-000002 | | |
| | Nut | 1185-00-00-000000 | | |
| | Threaded Stop ¹ | 1271-00-00-000000 | | |



The standard Hardinge® collet comes with a deep, precision-threaded section at the rear of the capacity bore to permit the use of Hardinge positive solid and ejector stops. Purchase a standard collet and it is always ready for stop work since the threaded capacity bore is found in all fractional, decimal, hexagon, square, rectangular and emergency Hardinge collets within the ranges listed. The Hardinge solid, ejector and long threaded stops are threaded into and positively locked against the end of the collet. Once locked in place, the stop cannot move even under heavy drilling or other end-working pressures. The three types of stops permit a wide variety of chucking work since all are adjustable and machinable for the desired part length to the maximum workpiece depths indicated.



16C Adapter-style Solid Stop Assembly



Long Stop Assembly

Long Stops

| Long Stop | 5C | 16C | 20C / 25C | 3J |
|----------------------------|-------------------|-------------------|-----------|-------------------|
| Assembly Part Number | 1067-00-00-000000 | 1213-00-00-000000 | N/A | 2003-00-00-000000 |
| Model | LS-5C | LS-16C | — | — |
| A – Depth | 7/8" (190.50) | 7/4" (184.15) | — | 7/8" (200) |
| Body | 1069-00-00-000000 | 1181-02-00-000000 | — | 1997-00-00-000000 |
| Threaded Stop ¹ | 1071-00-00-000000 | 1183-02-00-000000 | — | 1183-02-00-000000 |
| Nut | 5A-0001466-C | 1185-00-00-000000 | — | 1185-00-00-000000 |

1- Threaded stops can be altered to different lengths.

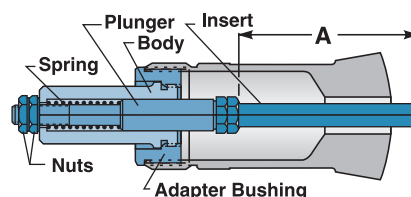
NOTE: Millimeters in parentheses.

Ejector Stops

| Ejector Stop | 5C | 16C | 20C / 25C | 3J |
|----------------------|-------------------|-------------------------|-----------|-------------------------|
| Assembly Part Number | 1057-00-00-000000 | 1155-00-00-000000 | N/A | 2001-00-00-000000 |
| Model | ES-5C | ES-16C | — | ES-3J |
| A – Dimension | 2 3/4" (69.85) | 3 3/8" (85.73) | — | 3 3/8" (85.73) |
| Body | 1059-00-00 | 1059-00-00 | — | 1059-00-00 |
| Plunger | 1061-00-00 | 1061-00-00 | — | 1061-00-00 |
| Insert | 1063-00-00 | 1063-00-00 | — | 1063-00-00 |
| Spring | 1065-00-00 | 1065-00-00 | — | 1065-00-00 |
| Adpt bushing | — | 1155-01-00 ¹ | — | 1995-00-00 ¹ |
| Nuts [2] | U-0004141-C | U-0004141-C | — | U-0004141-C |

1- Use AF7 wrench (7559)

NOTE: Millimeters in parentheses.



Collets are not included in assemblies.

5C/16C Universal Collet Stops

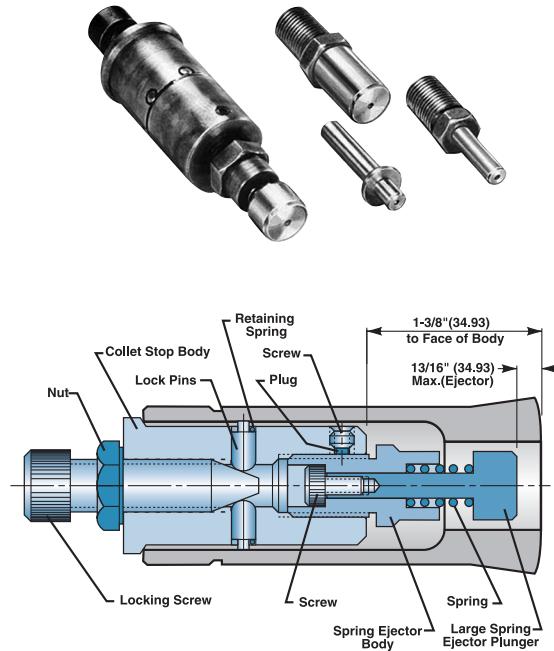
5C Universal Collet Stop Set

The Hardinge® Universal Collet Stop Set will convert Hardinge 5C collets without internal threads into Solid Stop or Spring Ejector Stop Collets. The two solid inserts and the two inserts for the spring ejector housing can be machined to suit varying requirements. The front end of the collet stop body has a standard 1/2-20 thread for convenient application of other sizes and special-shaped stops. The solid inserts of the spring ejector are adjustable in or out in the stop body to arrive at the desired chucking depth. The locking screw and brass plug hold the insert or spring ejector in the predetermined position. Once that is done, merely place the collet stop in the back of the collet and tighten the lock screw—see illustration. This causes the locking plugs to securely anchor the collet stop inside the collet. Application does not require machining of the collet—the stop is merely placed in the collet.

5C Universal Collet Stop Set

| Description | Part Number | Figure | Model |
|---------------------------------------|-------------------|--------|----------|
| Universal Stop Set - | 1019-00-00-000000 | | G10 |
| Includes: | | | |
| Collet Stop Body | 1029-00-00-000000 | | RX-107-F |
| Locking Screw | 1031-00-00-000000 | | RX-107-G |
| Nut | U-0004141-C | | |
| Lock Pins [6] | 1021-00-00-000000 | | RX-107-A |
| Retaining Spring | 1025-00-00-000000 | | RX-107-C |
| Plug | N37-0000483 | | |
| Screw | 0550303 | | |
| Solid Insert, 9/16" Dia. ¹ | 1023-00-00-000000 | A | RX-107-B |
| Solid Insert, 1/4" Dia. ¹ | 1027-00-00-000000 | B | RX-107-E |
| Plunger, 9/16" Dia. ¹ | 1035-00-00-000000 | C | RX-107-L |
| Plunger, 1/4" Dia. ¹ | 1037-00-00-000000 | D | RX-107-N |
| Spring for Plunger | 1039-00-00-000000 | | RX-107-R |
| Spring Ejector Body | 1033-00-00-000000 | | RX-107-H |
| Screw | 0100306 | | |

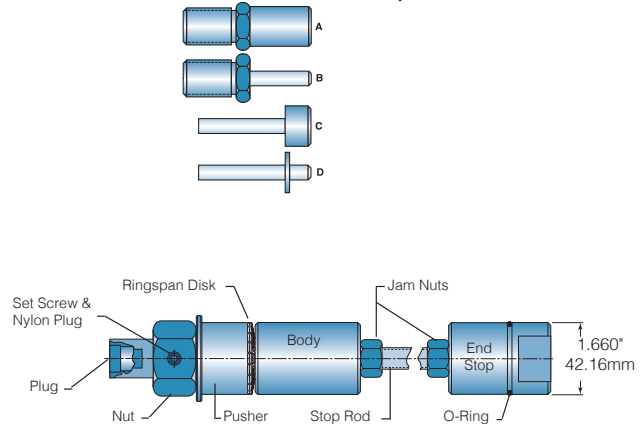
1 - Can be altered to different lengths. NOTE: Millimeters in parentheses.



16C Universal Stop – Draw-Tube Style

| Description | Part Number |
|-------------------------------------|-------------------|
| Universal Stop Assembly - includes: | 1717-66-00-000000 |
| Plug | 1717-66-01-000000 |
| Body | 1717-66-02-000000 |
| Nut | 1717-66-03-000000 |
| 10 - 32" x 9/16" Set Screws [3] | 0570303 |
| 5/32" x 1/16" Nylon Plugs [3] | N370000483 |
| Pusher | 1717-66-04-000000 |
| Ringspan Disks | 1717-66-08-000000 |
| 1/2" - 13 Jam Nut | MD 0003182 |
| Short Stop Rod | 1717-66-05-000000 |
| Long Stop Rod | 1717-66-06-000000 |
| End Stop | 1717-66-07-000000 |
| O-Ring | OR 0002427 |

NOTE: Unit is mounted in the draw tube of the collet closer.



Stop Wrench for Collet Body



| Description | 5C Part Number | 16C Part Number | 20C Part Number | 25C Part Number | 3J Part Number |
|--------------------|----------------|-----------------|-----------------|-----------------|----------------|
| Collet Stop Wrench | ST-0011759 | CC-0011759 | CL-0011759-A | 7605-00-00 | ST-0011759-01 |
| Model Number | G-15 | 16C-15 | 20C-15 | 25C-15 | 3J-15 |
| Body | ST-0004025-02 | CC-0004025 | CL-0004025-01 | 7609-00-00 | ST-0004025 |
| Handle | ST-0006239 | CC-0006239 | CC-0006239 | CC-0006239 | CC-0006239 |
| Key | ST-0011006 | ST-0011006 | CL-0011006 | CL-0011006 | ST-0011006-01 |

Hardinge® Dead-Length Collet Assembly

Shoulders and faces can be machined to exact length, regardless of OD variations with the Hardinge Dead-Length Collet Assembly. Parts are loaded against an adjustable solid stop which is threaded into the inner collet. The inner collet, in turn, is spring-loaded against the spindle face. There is no end movement.

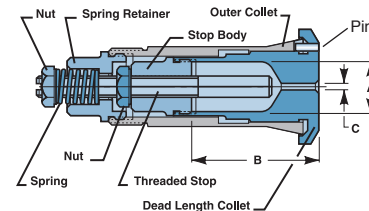
The low-cost inner collet has a soft face and pilot hole to permit boring to size in the machine spindle for exacting concentricity. The inner collet is pinned to the outer collet to maintain location and original bored accuracy.

Dead-Length Collets can be used on all machines and attachments with a 5C/16C spindle and draw bar. The outer collet, solid stop, spring and nut are interchangeable between the Dead-Length Collet and the Dead-Length 2" Step Chuck on the following page. The complete assembly is a one time purchase; after that, buy the inner collet only.



5C Dead-Length Collet Assembly

| Description | Part Number | Model | A – Chucking Diameter | B – Maximum Depth of Stop | C – Pilot Hole or Bore Size |
|--|-------------------|------------|-----------------------|---------------------------|-----------------------------|
| Emergency Collet Assembly: | 1157-00-00-000000 | 5DS-71 | | | |
| Outer Collet Assembly excludes the Dead-Length Inner Collet – Includes parts listed below: | 1157-02-00-000000 | 5DS-71 | | | |
| Spring | 1165-00-00-000000 | | | | |
| Spring Retainer | 1163-00-00-000000 | | | | |
| Nuts [2] | U-0004141-C | | | | |
| Outer Collet | 1161-00-10-000000 | 5DS-71-3 | | | |
| Threaded Stop | 3263-00-00-000000 | | | | |
| Stop Body | 3261-00-00-000000 | | | | |
| Emergency Dead-Length Inner ¹ Collet, 1/8" | 1159-00-10-000000 | 5DS-71-1 | Under 7/8" (22.23) | 2 1/8" (53.98) | 1/8" (3.18) |
| Other Available Collets | | | | | |
| Emergency Dead-Length Collet, 1/32" | 1159-11-00-000000 | | Under 7/8" (22.23) | 2 1/8" (53.98) | 1/32" (.79) |
| Hardened Collet | 1159-00-19-000000 | 5DS-71-1HG | Under 7/8" (22.23) | 2 1/8" (53.98) | Order Size |
| Solid Stop Assembly | 3259-00-00-000000 | 11-9150 | | | |

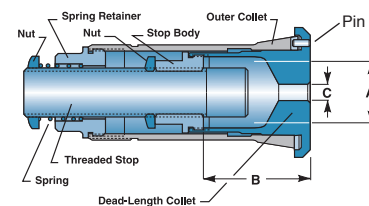


I - Dead-Length Inner Collet sold separately.

NOTE: Millimeters in parentheses. Replacement Pins Part #7721.

16C Dead-Length Collet Assembly

| Description | Part Number | Model | A – Chucking Diameter | B – Maximum Depth of Stop | C – Pilot Hole or Bore Size |
|--|-------------------|------------|----------------------------|---------------------------|-----------------------------|
| 16C Emergency Collet Assembly: | 1171-00-00-000000 | 16DS-80 | 1 13/32" (35.72) and under | 2" (50.80) | 1/8" (3.18) |
| Outer Collet Assembly excludes the Dead-Length Inner Collet – Includes parts listed below: | 1171-02-00-000000 | | | | |
| Spring | 1187-00-00-000000 | | | | |
| Spring Retainer | 1189-00-00-000000 | | | | |
| Nuts [2] | 1185-00-00-000000 | | | | |
| Outer Collet | 1177-00-00-000000 | 16DS-80-03 | | | |
| Threaded Stop | 1183-02-00-000000 | | | | |
| Stop Body | 1181-01-00-000000 | | | | |
| Emergency Dead-Length Inner Collet | 1173-13-00-000000 | 16DS-80-01 | | | |



I - Dead-Length collet sold separately.

NOTE: Millimeters in parentheses. Replacement Pins Part Number: 7721.

Dead-Length® Step Chucks

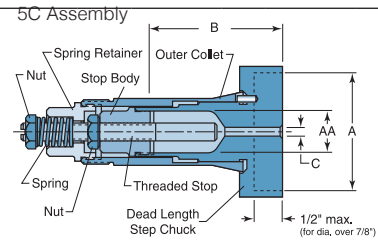
Hardinge® Dead-Length Step Chucks will accommodate larger chucking diameters. Shoulders and faces can be machined to exact length, regardless of OD variations with the Hardinge Dead-Length Step Chucks. The low-cost step chuck has a soft face and pilot hole to permit boring to size in the machine spindle for exacting concentricity. The step chuck is pinned to the outer collet to maintain location and original bored accuracy.

Dead-Length Step Chucks can be used on all machines and attachments with a 5C/16C spindle and draw bar. The outer collet, solid stop, spring and nut are inter-changeable between the Dead-Length Collet and the Dead-Length 2" Step Chuck. The complete assembly is a one time purchase; after that, buy the step chuck only.

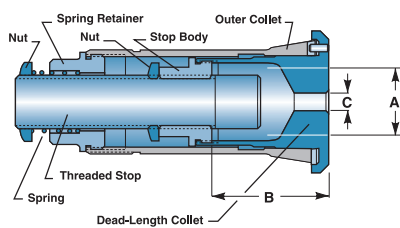


Dead-Length Emergency Step Chucks

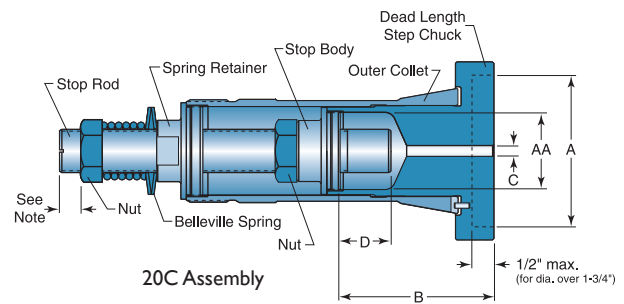
| Description | 5C Part Number | 16C Part Number | 20C Part Number | A – Chucking Diameter | AA – Chucking Diameter | B – Maximum Depth of Stop | C – Maximum Pilot Hole |
|--|-------------------|-------------------|-------------------|-----------------------|------------------------|---------------------------|------------------------|
| Emergency Step Chuck Assembly: | 1167-00-00-000000 | 1179-00-00-000000 | 2041-00-00-000000 | | | | |
| Model | 5DS71SC | 16DS80SC | 20DS | | | | |
| Outer Collet Assembly excludes the Dead-Length Inner Step Chuck – Includes parts listed below: | 1157-02-00-000000 | 1171-02-00-000000 | 2041-02-00-000000 | | | | |
| Spring | 1165-00-00-000000 | 1187-00-00-000000 | 1187-00-00-000000 | | | | |
| Spring (Belleville) [2] 20C Only | | | AM901170 | | | | |
| Spring Retainer | 1163-00-00-000000 | 1189-00-00-000000 | 1815-00-00-000000 | | | | |
| Nuts [2] | U-0004141-C | 1185-00-00-000000 | 1185-00-00-000000 | | | | |
| Outer Collet | 1161-00-10-000000 | 1177-00-00-000000 | 2039-00-0-0000000 | | | | |
| Threaded Stop (Stop Rod) | 3263-00-00-000000 | 1183-02-00-000000 | 1271-00-00-000000 | | | | |
| Stop Body | 3261-00-00-000000 | 1181-01-00-000000 | 1813-00-00-000000 | | | | |
| Dead-Length Inner Step Chuck | | | | | | | |
| 5C | 1169-00-10-000000 | | | 2" (50.80) | 7/8" (22.23) | 2 5/8" (66.67) | 1/4" (6.35) |
| 16C | | 1175-00-00-000000 | | 2 3/4" (69.85) | 1 13/32" (35.72) | 2 5/8" (66.67) | 1/4" (6.35) |
| 20C | | | 2037-00-00-000000 | 3 1/2" (88.90) | 1 3/4" (44.45) | 3 1/2" (88.9) | 1/4" (6.35) |



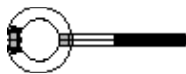
NOTE: Millimeters in parentheses. Emergency Collets not intended to be heat treated. Hardened, precision-machined collets are available upon application. To set spring tension, compress coil spring completely by hand, then back off nut one turn.



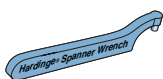
16C Assembly



20C Assembly



Collet Stop Wrench for Outer Collet



Inner Collet Spanner



Adjustable Face Spanner for Spring Retainer

Wrenches, Spanners & Pins for Dead-Length Collet Assemblies

| Part Name | 5C Part Number | 16C Part Number | 20C Part Number |
|--|--------------------------------|--------------------------------|--------------------------------|
| Collet Stop Wrench | ST-0011759 | CC-0011759 | CL-0011759-A |
| Inner Collet Spanner Wrench | 7893-00-00-000000 ¹ | 7895-00-00-000000 ² | 7897-00-00-000000 ³ |
| Adjustable Face Spanner | — | 7891-00-00-000000 ¹ | — |
| Pins (3) for DL Collet – 5C, 16C | 7721-00-00-000000 | 7721-00-00-000000 | 7721-00-00-000000 |
| Pins (3) for Step Chuck – 5C, 16C, 20C | 7723-00-00-000000 | 7723-00-00-000000 | 7723-00-00-000000 |

1 – 3/16" pin, 2 – 7/32" pin, 3 – 1/4" pin



Dead-Length Thru-Hole Collets

Thru-hole collets are ideal for bar work and long workpieces. Bar stock up to $\frac{3}{4}$ " in diameter can pass "through" the 5C collet, while maintaining part length control. The 16C Collet allows for bar stock up to $1\frac{3}{16}$ ". With the Dead-Length Collet feature, the bar stock will not draw back from the stock stop.

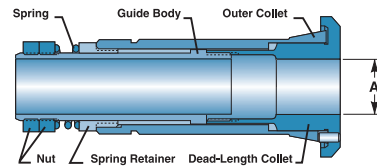
In use, the outer collet threads directly into the collet closer draw bar. The bar stock is then fed through the collet and located against the turret-mounted stock stop. As the closer is actuated, the draw bar pulls the outer collet into the machine spindle, allowing the inner collet to contract and accurately grip the stock. Because the inner collet is spring-loaded against the spindle face, no end movement is possible.

Hardened, precision-machined or emergency collets can be used as the inner collet. The 5C hardened, precision-machined collets are available in sizes $\frac{1}{32}$ " to $\frac{3}{4}$ ", inclusive by $\frac{1}{32}$ " increments. Over-capacity sizes, available for chucking work are: $\frac{25}{32}$ ", $1\frac{1}{16}$ ", $\frac{27}{32}$ ", and $\frac{7}{8}$ " (cannot be used for bar work). The low-cost emergency inner collet has a soft face with pins for machining and a $\frac{1}{8}$ " pilot hole to permit boring to size in the machine spindle for exacting concentricity. The inner collet is keyed to the outer collet to maintain location and original bored accuracy. The pins used for machining can be saved for stepping out the collet on future jobs.

Buy the complete assembly one time, and then just buy the inner collets when needed. Use in any machine or fixture with a 5C/16C spindle and collet draw bar.

Dead-Length Thru-Hole Collet (Not Available for 20C or 25C)

| Description | 5C Part Number | 16C Part Number | A – Pilot Hole | Round | Hexagon | Square |
|--|-------------------|-------------------|------------------------|----------------------------------|---------------------------|---------------------------|
| Emergency Collet Assembly: | 1157-01-00-000000 | 1171-01-00-000000 | | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Model Number | 5DS-71-TR | 16C-80-DTCL | | | | |
| Outer Collet Assembly excludes | 1157-01-01-000000 | — | | | | |
| Inner Dead-Length Collet – Includes parts listed below: | | | | | | |
| Spring | 1133-00-00-000000 | 16A-00081015C | | | | |
| Spring Retainer | 1131-00-00-000000 | 1171-01-02-000000 | | | | |
| Nuts [2] | 1157-06-00-000000 | 1171-01-03-000000 | | | | |
| Outer Collet | 1161-00-00-000000 | 1177-00-00-000000 | | | | |
| Guide Body | 1129-00-00-000000 | 1171-01-01-000000 | | | | |
| Inner Dead-Length Collets | | | | | | |
| 5C Emergency Dead-Length Collet | 1159-00-10-000000 | | $\frac{1}{8}$ " (3.18) | $\frac{3}{4}$ " (19.05) | $\frac{41}{64}$ " (16.27) | $\frac{17}{32}$ " (13.50) |
| 5C Hardened Precision DL Collet ² | 1159-00-19-000000 | | | $\frac{3}{4}$ " (19.05) | $\frac{41}{64}$ " (16.27) | $\frac{17}{32}$ " (13.50) |
| 16C Emergency Dead-Length Collet | | 1173-13-00-000000 | $\frac{1}{8}$ " (3.18) | $1\frac{1}{16}$ " (30.16) | $1\frac{1}{64}$ " (25.80) | $\frac{53}{64}$ " (21.03) |
| 16C Hardened Precision DL Collet | | 1173-00-19-000000 | | $1\frac{1}{16}$ " (30.16) | $1\frac{1}{64}$ " (25.80) | $\frac{53}{64}$ " (21.03) |



1 – Dead-Length collet sold separately. 2 – Available in $\frac{1}{32}$ " increments.

NOTE: Millimeters in parentheses. Part numbers preceded by 9 are special order.

Dead-Length® Collet Ejector Stops



5C Ejector



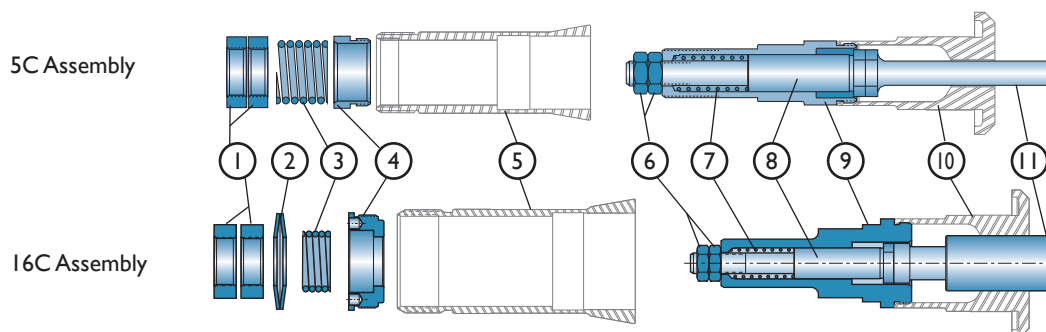
16C Ejector

- Ideal for second operation work
- Kicks part out into part chute when collet is opened
- Ejects part into step collet and holds it against shoulder while collet is closing
- Ejects part into a feed finger style parts transfer device
- One time purchase of complete assembly; after that, buy only the "Stop for Plunger"

5C and 16C Dead-Length Collet Ejector Stop Assembly

| Description | Key | 5C D.L. Ejector Stop Part Number | 16C D.L. Ejector Stop Part Number |
|--|-----|----------------------------------|-----------------------------------|
| Ejector Assembly Only - No Collets ** | | 2165-00-00-000000 | 2175-00-00-000000 |
| Ejector Stop Assembly - Complete | | 2161-00-00-000000 | 2171-00-00-000000 |
| Ejector Assembly & Outer Collet * | | 2163-00-00-000000 | 2173-00-00-000000 |
| Ejector Assembly Step Chuck - Complete | | 2157-00-00-000000 | 2159-00-00-000000 |
| Parts List - Components | | | |
| Nut/nuts1 | 1 | 2169-00-00-000000 | 2179-00-00-000000 |
| Belville Springs [2] | 2 | N/A | CE-1750057 |
| Large Spring | 3 | CE-0975105-1250 | CE-1100105-0875 |
| Spring Retainer | 4 | 1131-00-00-000000 | 2181-00-00-000000 |
| Outer Collet | 5 | 1161-00-10-000000 | 1177-00-00-000000 |
| Small Nut | 6 | U-0004141-C | U-0004141-C |
| Small Spring | 7 | 1065-00-00-000000 | 1065-00-00-000000 |
| Heavy Small Spring | 7 | — | CE-0000054 |
| Plunger | 8 | 1061-00-00-000000 | 1061-00-00-000000 |
| Ejector Body | 9 | 2167-00-00-000000 | 2177-00-00-000000 |
| Emergency Dead-Length Collet | 10 | 1159-00-10-000000 | 1173-00-00-000000 |
| Hardened, Precision Dead-Length Collet | 10 | 1159-00-19-00Size | On Application |
| Collet | | | |
| Dead-Length Step Chuck | 10 | 1169-00-10-000000 | 1175-00-00-000000 |
| Stop for Plunger | 11 | 1063-00-00-000000 | 2183-00-00-000000 |

** Includes Parts: 1, 2, 3, 4, 6, 7, 8, 9 and 11; * Includes Parts: 1, 2, 3, 4, 5, 6, 7, 8, 9 and 11



The **Dead-Length Spider-Stop Step Chuck** is designed to handle workpieces larger than the capacity of the Dead-Length 16C Collet or Step Chuck. The spider stop slides through oversize slots in the step chuck and locates against the collet seat in the machine's 16C spindle. A stop button screws into the spider stop and can be machined to locate against the reference location on the workpiece. This system requires a standard extra-depth step chuck closer.



The Spider-Stop Step Chuck has only one moving part — the step chuck. This allows for much better concentricity than the standard Dead-Length Collet System, even for smaller diameter workpieces. The Step Chuck is first machined to the chucking diameter of the workpiece and to a depth to accommodate the stop button. The stop button is machined to the locating surface of the workpiece. The stop button is assembled. The unit is mounted into the spindle of the machine that already has the appropriate step chuck closer mounted. With the collet closer in the open position and the workpiece held against the stop button, the draw tube is turned until the step chuck just grips the workpiece and then backed off 1/2 a turn. The part should easily load into the step chuck. The collet closer is locked in this position. With the part firmly located against the stop button, the step chuck is closed. It is important that the stop button be lightly faced after the unit is mounted in the spindle to ensure extremely precise perpendicularity with the locating surface.

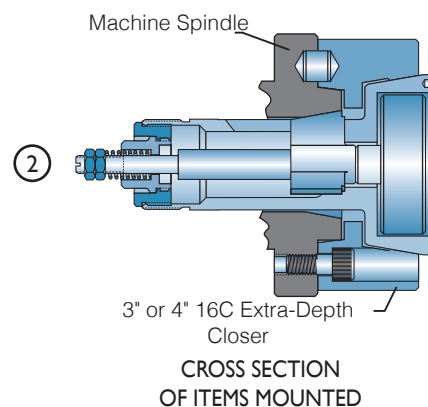
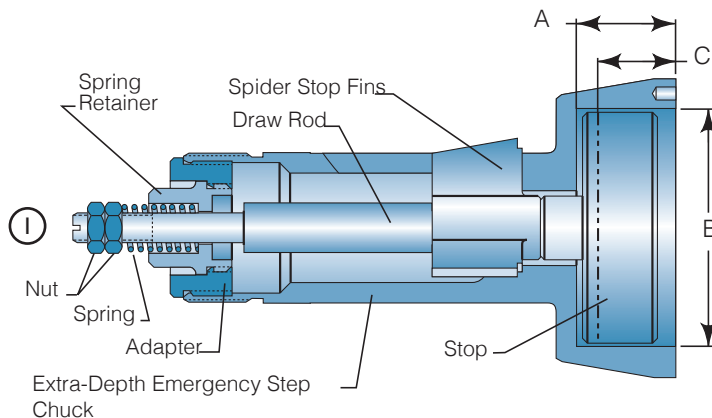
16C Dead-Length Spider-Stop Step Chuck

| Description | Part Number | Figure | A – Maximum Bore Depth | B – Maximum Chucking Dia. | C – Maximum Chucking Depth |
|--|-------------------|--------|------------------------|---------------------------|----------------------------|
| 3" ED Emergency Dead-Length Step Chuck Assembly | 1331-00-00-000000 | 1 | 1.250" (31.75) | 3.00" (76.20) | 1.000" (25.40) |
| 3" ED Emergency Dead-Length Step Chuck | 1327-00-00-000000 | 1 | | | |
| 3" Stop Button | 1137-00-00-000000 | 1 | | | |
| Spider-Stop Assembly, Includes: | 1239-00-00-000000 | 1 | | | |
| Spider Stop Fins* | 1325-00-00-000000 | 1 | | | |
| Draw Rod | 1349-00-00-000000 | 1 | | | |
| Adapter Bushing | 1155-01-00-000000 | 1 | | | |
| Spring Retainer | 1163-00-00-000000 | 1 | | | |
| Spring | 1165-00-00-000000 | 1 | | | |
| Nut [2] | U 0004141 | 1 | | | |
| 3" 16C ED Hardened Step Chuck Closer (sold separately) | 16-0002683-OC | 2 | | | |
| 4" ED Emergency Dead-Length Step Chuck Assembly | 1367-00-00-000000 | 1 | 1.250" (31.75) | 4.00" (101.60) | 1.000" (25.40) |
| 4" ED Emergency D.L. Step Chuck | 1329-00-00-000000 | 1 | | | |
| 4" Stop Button | 1319-00-00-000000 | 1 | | | |
| Spider-Stop Assembly (Parts Shown Above) | 1239-00-00-000000 | 1 | | | |
| 4" 16C ED Hardened Step Chuck Closer (sold separately) | 16-0002684-OC | 2 | | | |

* 1/2"-20TPI (Internal Thread) x 3/8" (15.9mm) deep can be used for customer made extensions.

NOTE: Millimeters in parentheses.

Initial Order Requires: One 3" or 4" Emergency Dead-Length Step Chuck Assembly and one 3" or 4" Extra-Depth Hardened Step Chuck Closer.



Style "S" Master Collets & Pads



The **Style "S" Master Collet**, although originally designed for first operation machining on multi-spindle automatic screw machines, has many benefits to the CNC lathe operator. The collet pads can be changed much quicker than a standard solid collet, the cost is less and it requires much less storage space. Depending on size, the TIR for the master collet and pads is .004" to .008".

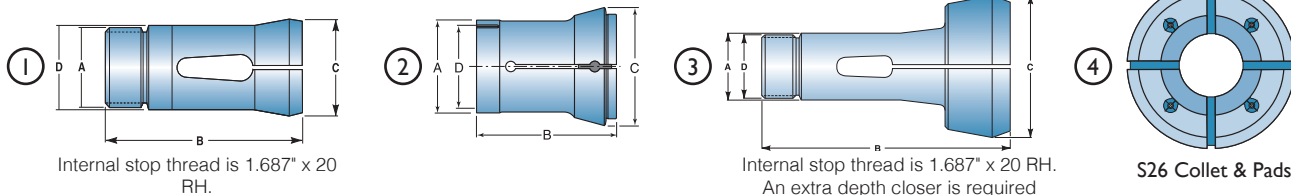
The Style "S" Master Collet System with Hardened, Precision collet pads should not be used for secondary work because of the system's large TIR. Some customers are successful using emergency pads which they bore to size on the machine tool. Choose from soft emergency or semi-hard emergency pads for longer wear. When the pads are removed from the master collet and then replaced, they may again runout excessively. Emergency collets are used again when re-bored to sizes larger than the original bore.

Style "S" Master Collets and Pads

| Style | Master Part Number | Fig | Extra-Depth Closer Part Number | Pad Part Number | A – Back Bearing Diameter | B – Overall Length | C – Collet Face Diameter | D – Thread | Round | Hexagon | Square |
|------------------------|--------------------|-----|--------------------------------|-----------------|---------------------------|--------------------|--------------------------|-------------------------|----------------|------------------|------------------|
| S10 (B42) | 5205-00- | 2 | — | 5601 | 1.887" (47.93) | 3.688" (93.68) | 2.355" (59.82) | M43 x 1 | 1" (25.40) | 59/64" (21.83) | 49/64" (17.86) |
| S12 (16C) | 1717-01- | 1 | — | 5603 | 1.889" (47.98) | 4.625" (117.48) | 2.265" (57.53) | 1.870" x 1.75 mm RH | 1 1/4" (31.75) | 1 1/16" (26.99) | 7/8" (22.23) |
| S16 (16C) | 1717-02- | 3 | 16-0002683-OC | 5607 | 1.889" (47.98) | 6.453" (163.91) | 3.875" (98.43) | 1.870" x 1.75 mm RH | 1 5/8" (41.28) | 1 13/32" (35.72) | 1 3/64" (28.97) |
| S20 (20C) | 1249-00- | 3 | 20-0002683-OC | 5609 | 2.378" (60.33) | 8.388" (213.06) | 3.750" (95.25) | 2.359" / M60 x 1.5mm RH | 2" (50.80) | 1 23/32" (43.66) | 1 13/32" (35.72) |
| S26 (20C) | 3605N as a special | | | 5613 | 2.378" (60.33) | 8.813" (223.85) | 4.750" (120.65) | 2.359" / M60 x 1.5mm RH | 2 5/8" (66.68) | 2 17/64" (57.55) | 1 27/32" (46.83) |
| S22 (B65) ¹ | 5311-00- | 2 | — | 5611 | 2.832" (71.93) | 4.328" (109.93) | 3.603" (91.51) | M66 x 1 | 2 1/4" (57.15) | 1 15/16" (49.21) | 1 37/64" (40.08) |
| S26 (25C) | 1291-00- | 4 | 1443-00-00-000000 | 5613 | 2.930" (74.42) | 9.020" (229.11) | 4.926" (125.38) | 2.871" / M73 x 1.5mm RH | 2 5/8" (66.68) | 2 17/64" (57.55) | 1 27/32" (46.83) |

¹ - Uses Clamp Assembly 7627 (3 ea.) in parentheses.

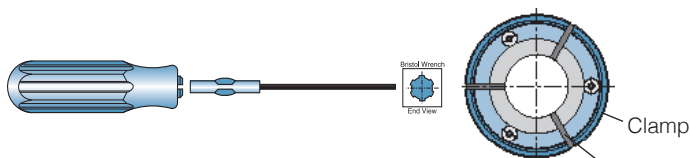
NOTE: Millimeters



Style "S" Pads – Standard, Soft Emergency, Semi-hard Emergency

| Description | Round Smooth Part Number | Round Serrated Part Number | Round Metric Part Number | Hexagon Part Number | Square Part Number | Emergency Part Number | Semi-Hard Emerg. Part Number |
|-------------|--------------------------|----------------------------|--------------------------|---------------------|--------------------|-----------------------|------------------------------|
| S10 Pads | 5601-00-19- | 5601-00-59- | 5601-00-57- | 5601-00-29- | 5601-00-39- | 5601-14-10- | — |
| S12 Pads | 5603-00-19- | 5603-00-59- | 5603-00-57- | 5603-00-29- | 5603-00-39- | 5603-14-10- | 5603-13-10 |
| S16 Pads | 5607-00-19- | 5607-00-59- | 5607-00-57- | 5607-00-29- | 5607-00-39- | 5607-14-10- | 5607-13-10 |
| S20 Pads | 5609-00-19- | 5609-00-59- | 5609-00-57- | 5609-00-29- | 5609-00-39- | 5609-14-10- | 5609-13-10 |
| S22 Pads | 5611-00-19- | 5611-00-59- | 5611-00-57- | 5611-00-29- | 5611-00-39- | 5611-14-10- | 5611-13-10 |
| S26 Pads | 5613-00-19- | 5613-00-59- | 5613-00-57- | 5613-00-29- | 5613-00-39- | 5613-14-10- | 5613-13-10 |

NOTE: Other pad configurations available.



S10, S12, S16, S20 & S26 Collet & Pads

| Description | Part Number |
|----------------------------------|-------------------|
| Bristol Wrench Handle | 7909-00-00-000010 |
| Wrench .111" | 7909-00-00-000001 |
| Wrench .145" | 7909-00-00-000002 |
| Bristol "L" Wrench | 7637-00-00-000000 |
| Bristol Wrench Handle | 7909-00-00-000013 |
| Seal (Sold by the dozen) | 7643-00-00-010000 |
| Clamp Assembly 3 ea. (S26 4 ea.) | 7619-00-00-000000 |
| Clamp Assembly for S22 (3 ea.) | 7627-00-00-000000 |



The Hardinge® Super-Precision® **Master Expanding Collet** is a valuable aid for close tolerance machining. There is no end movement of the master expanding collet or pads. The collet threads are separate from the collet body and pull back to operate the expander. The shoulder on the machineable pads locates the work for Dead-Length® control for facing repetitive parts to the same length. No spindle nose cap is required.

The master collet is hardened and precision-machined. The pads are soft for turning in the machine spindle for exacting concentricity. Depending on job application, pads may be machined for internal gripping from ¼" to 3" ID. The limit ring is used to stabilize the pads while turning to the desired diameter. Pad segments and master collet are stamped "A", "B" and "C" for replacement positioning. The pads may be re-machined for smaller diameters. Can be used on all machines or attachments with a 5C or 16C spindle and operates with the standard draw spindle (bar). The collet body assembly and the limit rings are a one-time purchase. After that, you only have to order the low-cost pads.

Master Expanding Collet Assembly – 5C and 16C

| Description | 5C Part Number | 16C Part Number |
|--|-------------------|-------------------|
| Master Expanding Collet Assembly ¹ – includes parts listed below: | 1139-00-00-000000 | 1191-00-00-000000 |
| Expanding Collet Body | 1141-00-00-000000 | 1193-00-00-000000 |
| Draw Thread | 1143-00-00-000000 | 1195-00-00-000000 |
| Draw Plug | 1145-00-00-000000 | 1197-00-00-000000 |
| Spring | 1151-00-00-000000 | 1151-00-00-000000 |
| Screw | 0100306 | 0100306 |
| Nut | U-0004141-C | U-0004141-C |
| Model Number | 5EC-70 | 16EC-80 |

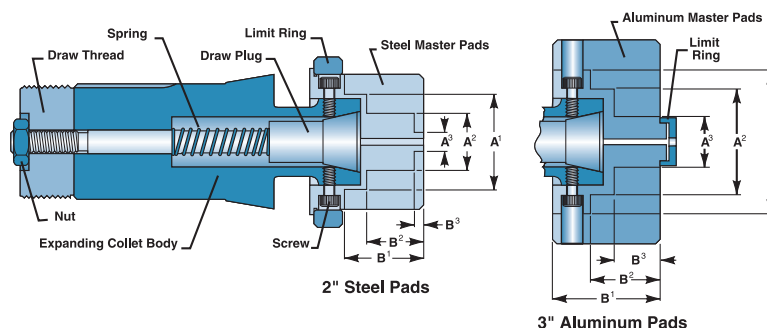
1 - Requires master pad set and appropriate limit ring; each sold separately.

Master Expanding Collet Pad Sets – ¼" to 3" (6.35 to 76.20mm) Capacity

| Description | Part Number | Model | Pad Capacity | A – Gripping Diameter | B – Maximum Turned Length |
|---|-------------------|----------|--------------|--------------------------------------|-------------------------------|
| 2" Steel Master Pad Set ² | 1147-00-00-000000 | 5EC-70-4 | 2" (50.80) | Over 1½" to 2" (38.10 to 50.80) [A1] | 1¼" (26.99) [B1] |
| | | | 2" (50.80) | Over ¾" to 1½" (9.53 to 38.10) [A2] | ¾" (19.05) [B2] |
| | | | 2" (50.80) | ¼" to ¾" (6.35 to 9.53) [A3] | Equal to Diameter Turned [B3] |
| Limit Ring for 2" Pads | 1149-00-00-000000 | | | | |
| 3" Aluminum Master Pad Set ² | 1153-00-00-000000 | 5EC-70-7 | 3" (76.20) | Over 2" to 3" (50.80 to 76.20) [A1] | 1½" (41.27) [B1] |
| | | | 3" (76.20) | Over 1½" to 2" (38.10 to 50.80) [A2] | 1¼" (26.99) [B2] |
| | | | 3" (76.20) | ¾" to 1½" (19.05 to 38.10) [A3] | ¾" (19.05) [B3] |
| Limit Ring for 3" Pads | 1111-22-00-000000 | | | | |

2 - Requires limit ring.

NOTE: Millimeters in parentheses.



Precision Expanding Collets



The Model-S Expanding collet draw plug expands at the front of the collet, resulting in maximum gripping force in the bore of a small diameter workpiece. For larger diameter workpieces, Hardinge recommends the Sure-Grip® Expanding Collet System.

Model-S Precision Expanding Collets

Precision internal chucking simplifies your tooling and machining operations. Precision results are assured when many operations are done in one chucking. The Model-S expanding collet assembly is precision engineered for small inside diameter chucking.

Concentricity requirements, like all machining specifications, are very rigid. With the Hardinge expanding collet unit, it is easy to obtain concentric and square shoulders, faces and diameters with a previously machined bore. The Hardinge expanding collet adjusts to meet your most exacting requirements by means of four concentricity adjusting screws. Exact lengths are easily obtained since both the stationary expanding collet and work locating stop have no end movement. The work locating stop is machined in place during machine set up, assuring an absolutely square locating surface. When the collet is in the released position, it is smaller in diameter than the bore of the part. The result is fast and easy loading and unloading.

5C and 16C Model-S Expanding Collet Assembly — 3/8" to 3/4" (9.52 to 19.05mm) by 1/64" Increments

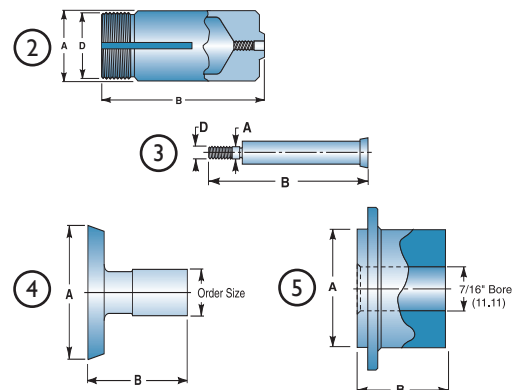
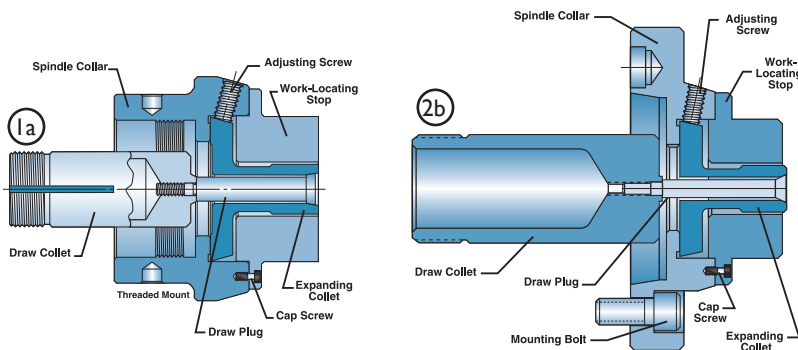
| Description | Part Number | Fig. | Model | A – Back Bearing Outside Diameter | B – Overall Length | D – Thread |
|--|---------------------------|------|---------|-----------------------------------|--------------------|---------------------|
| 5C Model-S Assembly ¹ | | | | | | |
| - Taper | 1077-26-00-000000 | 1a | | | | |
| - Threaded | 1077-00-00-000000 | 1a | | | | |
| includes parts below: | | | | | | |
| Draw Collet | 1079-00-00-000000 | 2 | E-206 | 1.249" (31.72) | 3.250" (82.55) | 1.238" x 20 RH |
| Draw Plug | 1081-00-00-000000 | 3 | ES-207 | .254" (6.45) | 2.750" (69.85) | .245" x 28 RH |
| Spindle Collar: | | 1a | | | | |
| - Taper-Nose | 1083-00-00-000000 | | E-211 | | | |
| - Threaded-Nose | 1085-00-00-000000 | | E-211-D | | | |
| - A2-4 and A2-5 | Special Order | | | | | |
| Adjusting Screw | 0570510 | | | | | |
| Cap Screw | 0100308 | | | | | |
| 16C Model-S Assembly ¹ | 1205-02-00-000000 | 1b | | | | |
| includes parts below: | | | | | | |
| Draw Collet | 1209-02-00-000000 | 2 | | 1.889" (47.98) | 4.312" (109.53) | 1.870" x 1.75 mm RH |
| Draw Plug | 1081-16-00-000000 | 3 | | .220" (5.59) | 2.969" (75.41) | 7 mm x .75 RH |
| Spindle Collar | 16-0000211-A201 | 1b | | | | |
| Adjusting Screws [4] | 0550710 | 1b | | | | |
| Cap Screws [3] | 0100308 | 1b | | | | |
| Mounting Bolts [4] | 0101216 | 1b | | | | |
| Model-S Expanding Collet ² | 1089 (fractional/decimal) | 4 | MP3461 | 2.255" (57.28) | 1.750" (44.45) | |
| Work-Locating Stop ³ | 1087-00-00-000000 | 5 | ES-209 | 2.312" (58.72) | 1.218" (30.94) | |
| Spanner for Spindle Collars, 5/16" Pin | 460-0009189 | | | | | |

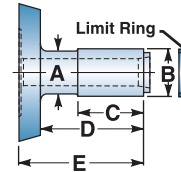
- 1 - Requires Model-S Expanding collet sold separately.
- 2 - Required with assembly. Available in Round sizes 3/8" to 3/4" by 1/64" increments.
- 3 - Optional. Recommended for positive part location.



Spanner for Spindle Collars

NOTE: Millimeters in parentheses.





Model-S Emergency Expanding Collets

| Part Description | Number | Model | A – Neck Turned Range | B – Gripping Diameter | C – Gripping Length | D – Face to Length | E – Shoulder Depth | Length |
|---|------------|---------|------------------------------------|-----------------------|---------------------|--------------------|--------------------|----------------|
| Model-S Emergency Expanding Collet ¹ | 1093-00-00 | S-E | .562" to .750" (14.27 to 19.05) | .547" (13.89) | .766" (19.46) | .906" (23.01) | 1.281" (32.54) | 1.656" (42.06) |
| Limit Ring | 1093-22-00 | MP3461C | | | | | | |

¹ - Limit Ring required

Note: Millimeters in parentheses.



Sure-Grip® Expanding Collet Systems

The Hardinge **Sure-Grip® Expanding Collet System** is ideal for internal gripping of larger diameter bores. The Sure-Grip system has a larger gripping range and considerably more gripping force due to its true parallel closing. Refer to models 200, 250, 300, 400, 500 and 600 in **brochure #2270**.

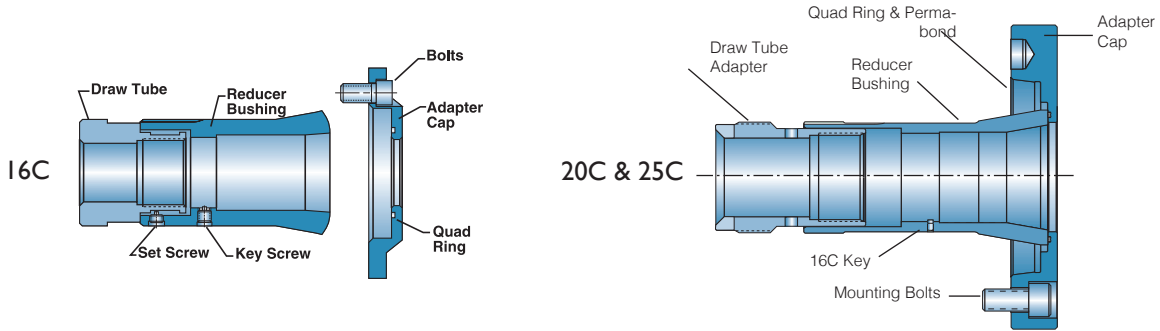
Advantages of the Sure-Grip Expanding Collet System...

- Instant centering of the arbor—no adjustment needed after mounting
- Quick changeover
- Wide gripping range for each collet
- True parallel gripping even when gripping on half the collet body
- High gripping force
- Light gripping on small parts with bores down to 1/8" (3.175mm)
- Built-in safety stop to prevent the collet from overexpanding
- Exact part length control
- Consistency in collet capacity for different spindle styles (interchangeable collets)
- Delivery in 3 to 5 days

Collet & Step Chuck Adapters



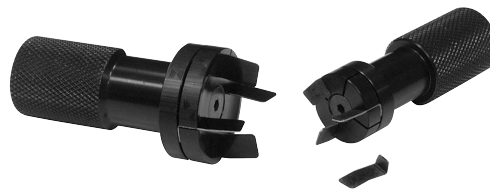
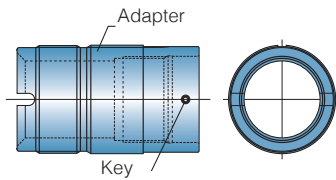
Collet adapters let you use smaller collets in machines with larger collet seats. Units are available to adapt 5C collets to 16C spindles, 16C collets to 20C and 25C spindles and 16C step chucks to 20C spindles. These units are valuable when you do not have the proper size standard collet for the machine but do have the proper size in a smaller style collet. Do not consider this unit when doing precision work. Because of the number of parts in the assembly, the TIR of the machined diameters to the chucked diameters may be unacceptable. This system should not be considered when doing many collet changes a day. It may take from 15 to 30 minutes to change a collet. It is more cost effective to purchase the proper style collet for the machine tool.



Spindle Collet Adapters

| Description | A2-5 Spindle 16C to 5C Part Number | A2-6 Spindle 20C to 16C Part Number | A2-6 QUEST® 25C to 16C Part Number | A2-8 Spindle 25C to 16C Part Number |
|------------------------------|--|---|--|---|
| Adapter Assembly - includes: | 16B-0000185-5C | 7535-00-00 | 2993-00-00 | 7457-00-00 |
| Draw Tube Adapter | 16A-0000301-5C | 7541-00-00 | 7463-00-00 | 7463-00-00 |
| Reducer Bushing | 16A-0000186-5C | 7537-00-00 | 7461-00-00 | 7461-00-00 |
| Bolts [3] (20C & 25C 4ea.) | CC-0007373 | MS-0104219 | MS-0104219 | MS-0104620 |
| Adapter Cap | 16B-0010768 | 7543-00-00 | 7543-00-00 | 7459-00-00 |
| Quad Ring | 40-0011151-32 | 41-0011151-45 | 41-0011151-45 | 41-0011151-45 |
| Key | — | 7539-00-00 | 7465-00-00 | 7465-00-00 |
| Key Screw | 16-0000338-5C | — | — | — |
| Set Screw | N-0590304-L | — | — | — |
| PermaBond 910 | QC-0010884 | QC-0010884 | QC-0010884 | QC-0010884 |

NOTE: For use with collets, positive stops, master expanding collet and pads, collet fixture plates, stub/mill arbors, and spindle centers and drivers.



Spindle Step Chuck Adapters

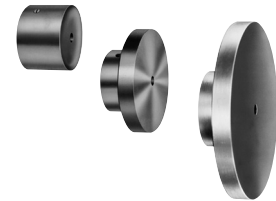
| Style | Description | Part Number |
|-------|---|---|
| 16C | N/A | |
| 20C | 20C to 16C Step Chuck Adapter - includes: Draw Tube Adapter Key | 7911-00-00-000000 7913-00-00-000000 7915-00-00-000000 |
| 25C | N/A | |

NOTE: Uses the lathe's standard closer with the adapted step chuck.

Collet Face Spanner Wrenches

| Collet | Wrench Part Number | Replacement Finger Set Part Number |
|---------|--------------------|------------------------------------|
| 3J, 16C | 7901-00-00-00003J | 7901-00-00-00FNGR |
| 5C | 7899-00-00-000000 | 7899-00-00-00FNGR |
| 20C | 7901-00-00-00020C | 7901-00-00-00FNGR |
| 25C | 7901-00-00-00025C | 7901-00-00-00FNGR |
| S15 | 7901-00-00-000S15 | 7901-00-00-0015FN |
| S20 | 7901-00-00-000S20 | 7901-00-00-00SFNG |
| S26 | 7901-00-00-000S26 | 7901-00-00-00SFNG |
| S30 | 7901-00-00-000S30 | 7001-00-00-00SFNG |

Fixture plates are used to mount parts which cannot be held in a collet, step chuck, expanding collet or jaw chuck. The clamping method is custom designed and manufactured by the customer to meet the machining requirements. Fixture plates normally have to be balanced to be safely run because the parts are not uniform or clamped in an off-center position. Collet and spindle-mount styles are available for both 5C and 16C spindles.

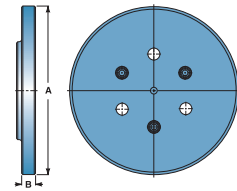


3 Sizes of 5C Fixture Plates

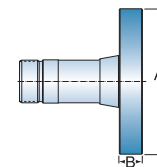
Spindle-Mounted and Collet-Style Fixture Plates

| Description | Taper Part No. | Threaded Part No. | Taper Model | Threaded Model | A – Diameter | B – Flange |
|--------------------|-------------------|-------------------|-------------|----------------|-----------------|---------------|
| 5C Fixture Plate | 53A-0008750 | 53A-0008750-D | C-23 | C-23D | 3" (76.20) | — |
| 5C Fixture Plate | 55A-0008750 | 55A-0008750-D | C-24 | C-24D | 5" (127.00) | 3/4" (19.05) |
| 5C Fixture Plate | 59A-0008750 | 59A-0008750-D | C-25 | C-25D | 8 7/8" (225.43) | 3/4" (19.05) |
| 16C Fixture Plate | A2-0008750-05 | | | C-24A | 5 1/2" (139.70) | — |
| A2-5 Fixture Plate | A2-0008750-08 | | | C-25A | 8 7/8" (225.43) | .750" (19.05) |
| 5C Collet-Style | 1397-00-00-000000 | | | 5C-3F | 3 3/8" (85.73) | 1" (25.40) |
| 5C Collet-Style | 1399-00-00-000000 | | | 5C-4F | 4 3/8" (111.13) | 1" (25.40) |
| 16C Collet-Style | 1785-00-00-000000 | | | — | 6.370" (161.79) | 1" (25.40) |

NOTE: Millimeters in parentheses.



A2-5 Fixture Plate



Collet Style Fixture Plates

Dead-Length Work Stops (Backing Plates) are used to hold extremely close lengths on parts that have a stem and a locating shoulder. The stem is gripped by the collet and the shoulder located against the stop plate. As the collet closes, it pulls the workpiece back against the backing plate. The workpiece length can be accurately controlled even when the gripping diameter of the part varies. The part is much more stable than one held in a collet against its face or a counterbore. This allows longer parts to be machined with better tool life. When running small quantities, the spindle mount does not have to be used. This system is the least costly of all precision length control systems.

5C Dead-Length Work Stops

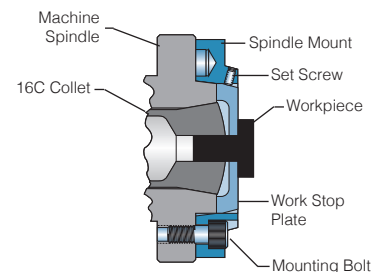
| Description | Taper Part Number | Threaded Part Number | Taper Model | Threaded Model |
|------------------------|-------------------|----------------------|-------------|----------------|
| Spindle Mount | ST-0011203 | ST-0011203-D | WS | WSD |
| Stop Plates [Set of 3] | | ST-0011223 | | WSS |



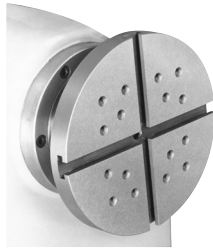
5C Spindle Mount & Stop Plates

16C Dead-Length Work Stop Assembly

| Description | Part Number |
|-----------------------------|-------------------|
| Spindle Mount Assembly | 1311-00-00-000000 |
| Includes: | |
| Work Stop Spindle Mount | 1313-00-00-000000 |
| Flat Face Set Screw [4] | 0570306 |
| Mounting Bolt [4] | 0101216 |
| Work Stop Plates (Set of 3) | 1315-00-00-000000 |



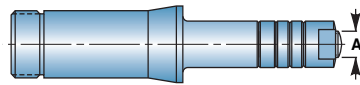
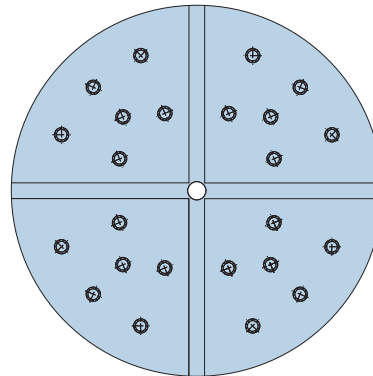
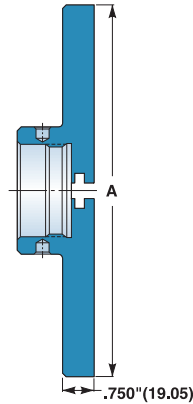
5C Face & Angle Plates



| 5C Face Plates | Taper Part Number | Threaded Part Number | Taper Model | Threaded Model | A – Diameter |
|-----------------------------|-------------------|----------------------|-------------|----------------|-----------------|
| Face Plate ¹ -5C | 57A-0000692 | 57A-0000692-D | C-26 | C-26D | 7.000" (177.80) |
| Face Plate ¹ -5C | 59A-0000692 | 59A-0000692-D | C-27 | C-27D | 8.875" (225.42) |

Spanner for Face, Fixture & Driver Plates and Work Stops, 5/16" Pin Part No. 460-0009189

¹ – Drilled and tapped for 5/16" x 18 TPI bolts. **NOTE:** Millimeters in parentheses.



5C Stub/Mill Arbors

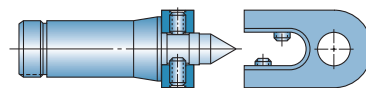
5C Stub Arbors are available in 5/8" and 1/2" shaft diameter. The stub arbors can be used on any mill with a 5C spindle. They are made for simple milling operations on Hardinge-style mills.

| Description | Part Number | Model | A – Shaft Dia. |
|--------------------|--------------|-------|----------------|
| Stub/Mill Arbor | 54-0002602 | M-4 | 5/8" (15.88) |
| Stub/Mill Arbor | 53-0002602 | M-5 | 1/2" (12.70) |
| Center With Driver | U-0009186 | M-1 | |
| Drive Plate: | | | |
| Taper | 57-0000298 | G-12 | N/A |
| Threaded | 57-0000298-D | G-12D | N/A |
| Driving Dog | 37-0002617 | G-1 | N/A |

NOTE: Millimeters in parentheses.

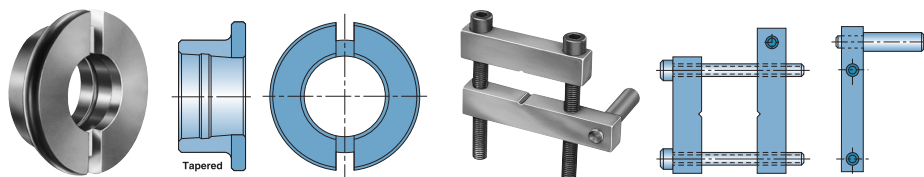
5C Center with Driver

The Hardened, Precision-Machined center with the driver is required for between-center work on any machine or attachment with a 5C Spindle.



5C Driving Dog and Driver

The drive plate mounts on the Hardinge 5C spindle nose and is used in conjunction with the driving dog to drive work between centers. When ordering, specify for taper- or threaded-nose spindle.



Custom manufacturing of Special Collets and Step Chucks

Hardinge will manufacture special 5C, 16C, 20C and 25C collets and step chucks to hold your extruded stock, non-round parts, eccentric, off-center and stepped parts. Special accuracy collets and step chucks, extremely deep and/or large diameter step chucks and closers are some of the frequently made items in our special collet department. If you have a special workholding application, Hardinge can manufacture a workholding device to accurately grip it.

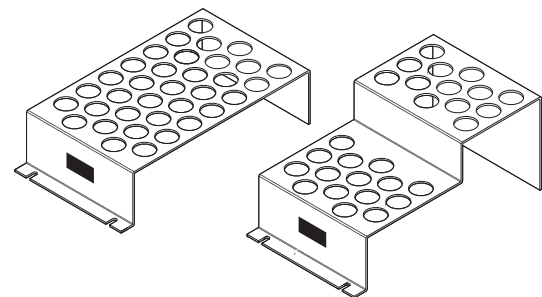


Specials are manufactured to rigid specifications, including material, proper heat treat and machined accuracy. The experts in our engineering department can offer you technical assistance in designing your collet, step chuck or related workholding device for your special machining needs. Hardinge can manufacture many of your unusual or unique workholding items to your specifications. For generations, Hardinge specials have been the choice of experienced machinists, manufacturing engineers and productivity-oriented manufacturers.

To request a quote or to order a special workholding device, please call 800-843-8801, or fax your drawing to 607-737-0090. Specifications for the most common special collets are shown on the following two pages. These pages can be photocopied, filled out and faxed or mailed to the Hardinge Sales Department. When sample parts are being sent to Hardinge, please call for a Returned Material Authorization number to help speed up the process. The drawings and sample parts should be addressed to: Hardinge Inc., Collet Sales Department, One Hardinge Drive, Elmira, NY, 14902-1507.



Protect your 5C collet investment with Hardinge® **Collet Racks**. Store your collets in a manner that will protect the head angle, threads and keyway. The collet racks give quick access and easy collet selection and are designed to bolt to your work table for maximum stability. Available in a 35 capacity rack and a stepped 28 capacity rack. The stepped model holds fully assembled Dead-Length® collets, collets with stops, master expansion collets, standard and extra-depth step chucks.



| 5C Collet Racks | Capacity | Part Number |
|--------------------------|----------|-------------------|
| 5C Collet Rack | 35 | 0944-00-00-000032 |
| 5C Collet Rack - Stepped | 28 | 0944-00-00-000028 |

Custom Quote Request | of 3

To place your order or request a quote, simply fill out this form and send the requested information below. We want to make it easy as possible for you to get your quotation back, so checking the box in front of each item will help to ensure everything is complete before sending the information to us. The following two pages will assist you in choosing your collet configuration.

- Your Name _____
- Company _____
- Address _____
- City, State & Zip _____
- Phone _____
- Fax _____
- Machine Make and Model Number on which workholding will be used:**
(Example: Hardinge Quest 8/51)
- Collet Required:**
(Example: 20C)
- Spindle Nose:**
(Example: A2-6)
- Sample Stock** (6" long - extruded stock), casting, first operation part, finished part
- Legible Prints** of the stock, finished part. These must be marked to show the diameters or surfaces to be gripped. Mark the locating surface used for length control. Please mark the surfaces to be machined.
- AutoCad Files** or dxf files of the above, if available.
- Written Explanation** of any special requirements:
For example special concentricity or perpendicularity requirements, concerns with chip flushing, requirements for thru-spindle coolant, customer concerns with part being deformed by gripping, large variation of gripping surface or locating dimensions, etc.

Explanation:

— This page may be duplicated —

- Fill in the Type of Collet or Special (example 5C, 20C, 3J)
 - Find the illustration of the feature needed in one of the boxes
 - Put a Bold "X" in the box to indicate that feature
 - Write the required dimensions next to their numbers in the chart to the right
- Note: Only fill in the dimensions for the numbers on one illustration

Type of Collet or Special:
(example: 5C, 16C, #3J, etc.)

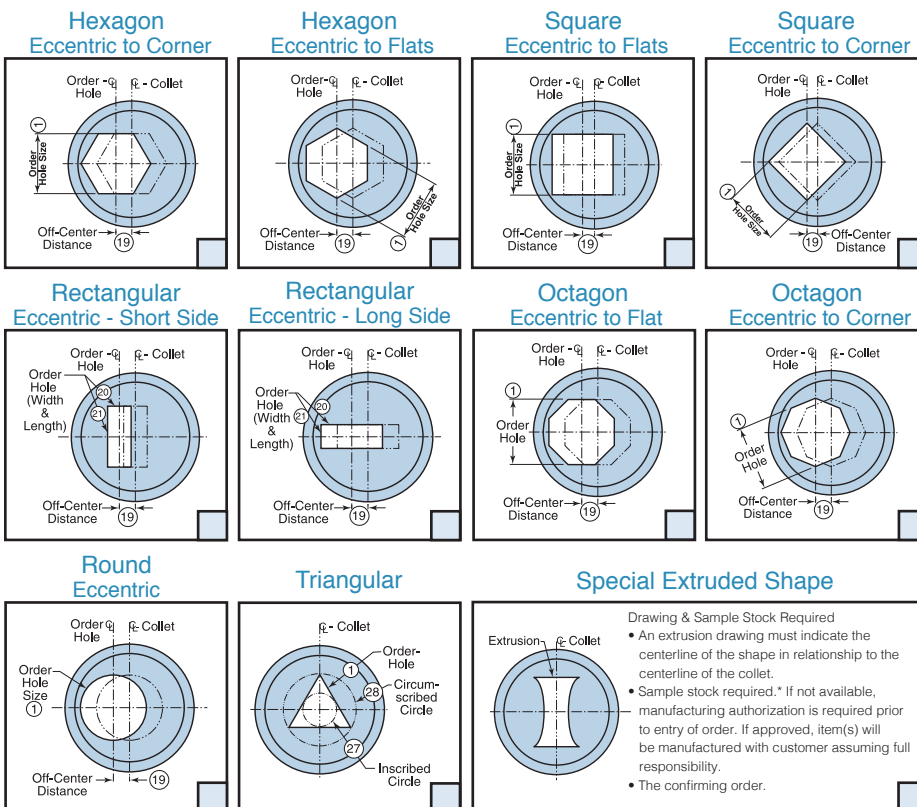
Numbers below correspond to dimensions in boxes

Today's Date _____
 Date Order Required _____
 Customer Number _____
 Purchase Order Number _____
 Method of Shipping _____

Bill To:
 Name _____
 Title/Dept. _____
 Company _____
 Address _____
 City, State, Zip _____
 Phone _____ Fax _____

Ship To: (If different from Bill To)
 Name _____
 Title/Dept. _____
 Company _____
 Address _____
 City, State, Zip _____
 Phone _____ Fax _____

- ① Order Hole Size: _____
- ② Order Hole, 2nd: _____
- ③ Number of Slots: _____
- ④ Radius: _____
- ⑤ Bearing Length: _____
- ⑥ Bearing Length Front: _____
- ⑦ Back Drill Dia.: _____
- ⑧ Relief Dia.: _____
- ⑨ Relief Length: _____
- ⑩ Depth of Step, 1st: _____
- ⑪ Depth of Step, 2nd.: _____
- ⑫ Auxiliary Hole Size: _____
- ⑬ Length of Extension: _____
- ⑭ Dia. at Face: _____
- ⑮ Degrees Taper/Chamfer: _____
- ⑯ Front Dimension of Taper: _____
- ⑰ Rear Dimension of Taper: _____
- ⑱ Taper-Industrial Std: _____
- ⑲ Off Center Distance: _____
- ⑳ Order Hole - Width: _____
- ㉑ Order Hole - Length: _____
- ㉒ Thread Length: _____
- ㉓ Threads Per Inch: _____
- ㉔ Right/Left Hand Thrd.: _____
- ㉕ Class Thread (1), (2), (3): _____
- ㉖ Chamfer Depth: _____
- ㉗ Inscribed Circle: _____
- ㉘ Circumscribed Circle: _____
- ㉙ Clearance Bore: _____
- ㉚ Actuator Stroke: _____



Send Drawings, Sample Parts
and this form to:

Hardinge Inc.

Collet Sales Dept.
One Hardinge Drive
Elmira, New York 14902-1507

Phone: 800-843-8801

Fax: 607-737-0090

Email: info@shophardinge.com

Canada: 800-468-5946

Drawing & Sample Stock Required

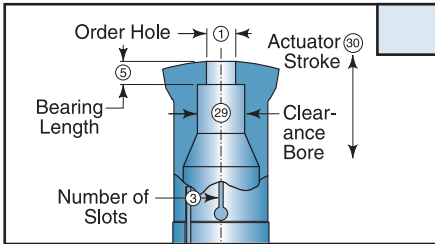
- An extrusion drawing must indicate the centerline of the shape in relationship to the centerline of the collet.
- Sample stock required. * If not available, manufacturing authorization is required prior to entry of order. If approved, item(s) will be manufactured with customer assuming full responsibility.
- The confirming order.

*One 6" length of stock required when ordering 1 to 3 collets; two 6" lengths for 4 to 7 collets; three 6" lengths for 8 to 11 collets; four 6" lengths for 12 to 15 collets ordered.

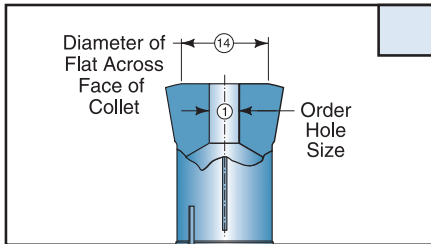
Custom Quote Request 3 of 3

Checkmark the box with the feature you require and record the dimensions on the corresponding lines 1-30 on the previous page.

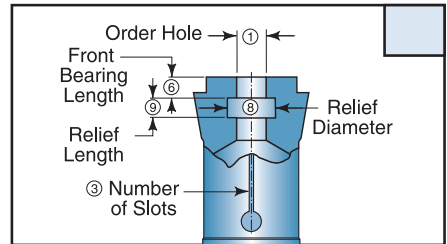
Over-the Shoulder



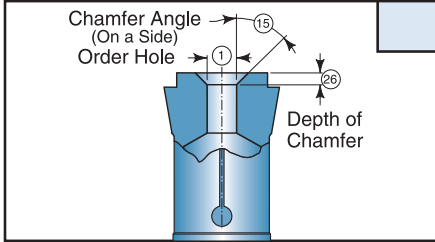
Flat Face



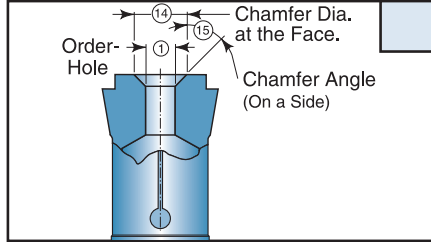
Bearing Relief



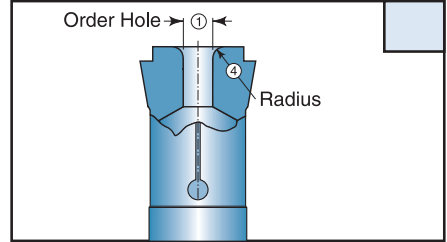
Chamfer - Depth



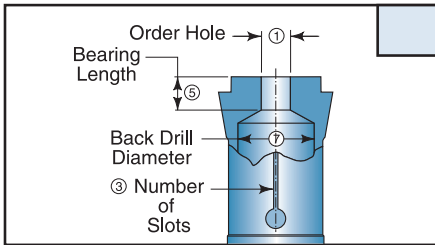
Chamfer - Diameter



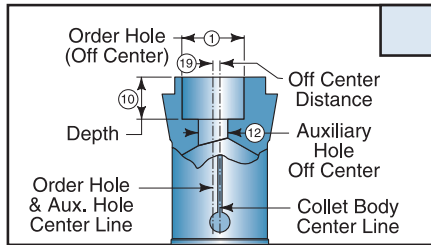
Radius



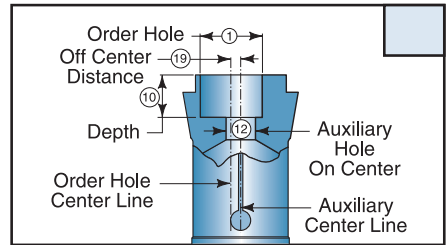
Special Bearing Length



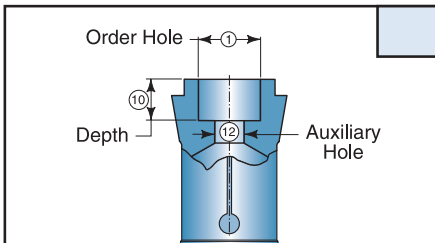
Eccentric Step - Aux. Off Center



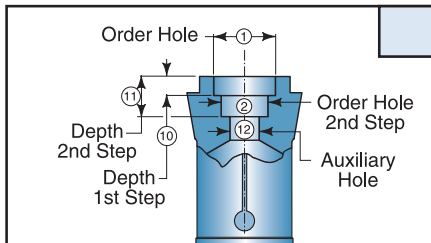
Eccentric Step - Aux. On Center



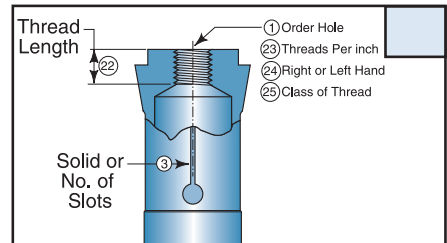
Single-Stepped



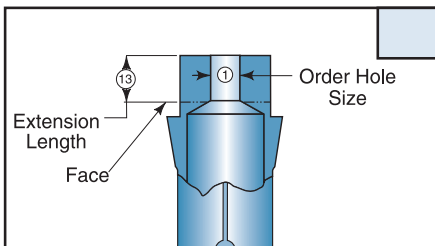
Double-Stepped



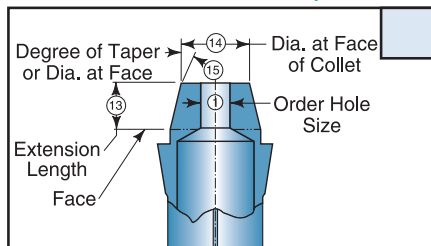
Threaded Order Hole



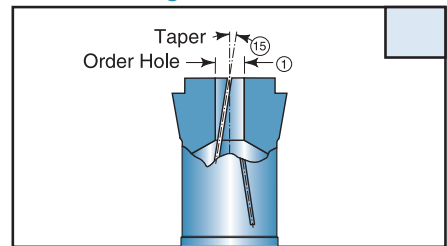
Extended Nose - Straight



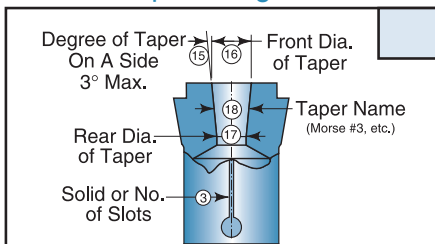
Extended Nose - Tapered



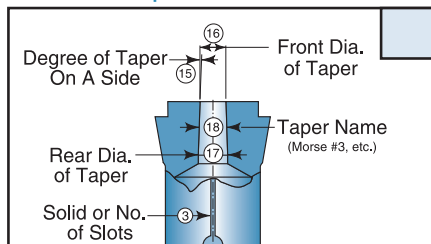
Angular Slotted



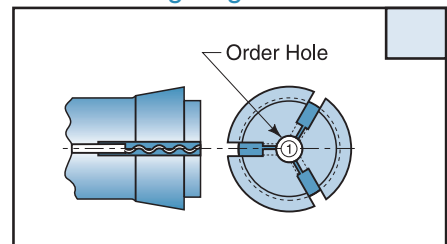
Taper - Regular



Taper - Reverse



Zig-Zag Slots



B65 Collet Chuck

The B65 collet chuck is a Dead-Length® system designed to provide very precise length control of the workpiece. This exact part-length feature makes it possible to accurately transfer parts from one spindle to the other within .0005" (.0127 mm). The system uses either B65 Solid or B65 Style S22 Master Collets and pads.

The B65 Stationary Collet is used on the Hardinge QUEST® TwinTurn® 65 CNC Turning Center and other machines that use B65 Stationary Collet Systems.

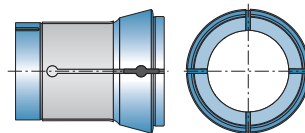
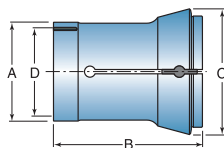
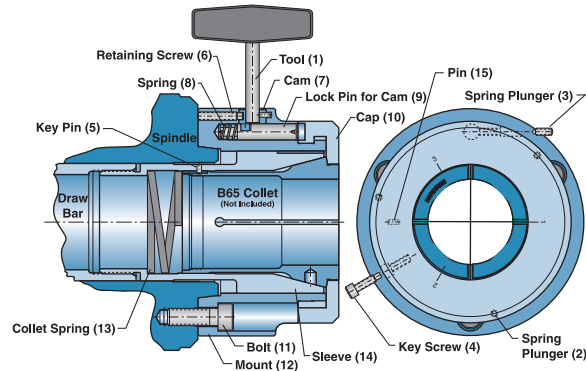
Stationary collet systems are noted for their length control feature. The collet does not move when it is closed. It is inserted into the collet chuck or spindle adapter and held in place with a cap. The collet is closed by a sleeve which moves forward on the collet closing angle. The B65 standard collet has RTV sealant in slots up to the Teflon chip sleeve and seal.



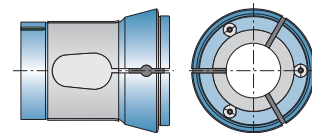
These units can be used for Dead-Length applications on lathes with A2-6 spindle noses. Separate link-ups will be needed for other lathes. Collet sold separately.

B65 Collet Chuck Assembly and Parts List

| Item | Description | Qty | Part Number |
|------|----------------------------------|-----|-------------------|
| | B65 Collet Chuck Assembly | 1 | 3757-00-00-000000 |
| 1 | Tool | 1 | 3757-00-00-000009 |
| 2 | Spring Plunger Reid # ST-4N | 3 | CE 0375711 |
| 3 | Spring Plunger Reid # K2-N | 1 | CE 0375712 |
| 4 | Key Screw | 1 | 37570000000008 |
| 5 | Key Pin | 1 | 37570000000007 |
| 6 | Retaining Screw | 1 | 37570000000006 |
| 7 | Cam | 1 | 37570000000005 |
| 8 | Spring-Spec. # C-0360-047-1000-M | 1 | CE 0360047100M |
| 9 | Lock Pin for Cam | 1 | 37570000000004 |
| 10 | Cap | 1 | 37570000000002 |
| 11 | M12 x 30 Socket Head Cap Screw | 3 | MS 0104220 |
| 12 | B65 Mount | 1 | 37570000000001 |
| 13 | Collet Spring | 1 | CE 0375710 |
| 14 | Collet Sleeve | 1 | 37570000000003 |
| 15 | 1/8" Dia. x 5/16" Dowel Pin | 1 | 0004628 |



B65 Standard Collet



B65 Style-S Collet

Collet Dimensions

| Collet Style | A – Back Bearing Dia. | B – Overall Length | Head Diameter | D – ID Stop Thread | Round Capacity | Hex Capacity | Square Capacity |
|--------------|-----------------------|--------------------|----------------|--------------------|------------------------------|--------------------------------|--------------------------------|
| Std. | 2.832" (71.93) | 4.328" (109.93) | 3.603" (91.51) | M66 x 1 | 1/16" – 2.559" | 1/16" – 2.216" | 1/16" – 1.809" |
| S22 | 2.832" (71.93) | 4.328" (109.93) | 3.603" (91.51) | M66 x 1 | 1/8" – 2 1/4" (3.17 - 57.15) | 1/4" – 1 15/16" (6.35 - 49.21) | 1/4" – 1 37/64" (6.35 - 40.08) |

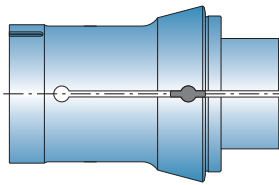
* No internal threads over 2.530" Round, 2.191" Hex, 1.789" Square

NOTE: Millimeters in parentheses.

B65 Collets – Standard and Style-S

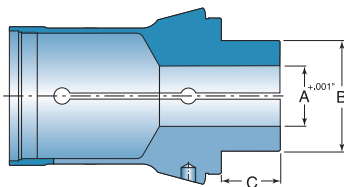
| Description | Round Smooth Part Number | Round Serrated Part Number | Hexagon Part Number | Square Part Number | Emergency Part Number |
|-----------------------|--------------------------|----------------------------|---------------------|--------------------|-----------------------|
| B65 Solid Collet | 3743-00-19- | 3743-00-59- | 3743-00-29- | 3743-00-39- | 3743-14-10- |
| B65 S22 Master Collet | 5311-00-00- | — | — | — | — |
| S22 Pads | 5611-00-19- | 5611-00-59- | 5611-00-29- | 5611-00-39- | 5611-14-10- |

NOTE: Other collet & pad configurations available.



B65 Collets – Emergency Extended-Nose

| Description | Part Number | Nose Length | Pin Part No. ($\frac{3}{16}$ " x 1") |
|--------------------------------|-------------------|----------------|---------------------------------------|
| B65 Ext. Nose Emergency Collet | 3743-14-13-001875 | 1.5" from face | TL-0006648 |

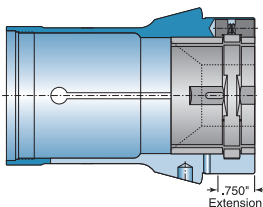


B65 Special Extended-Nose Hardened Precision Collets

Hardened, precision collets were designed for the times you require extended-nose collets due to tooling interference. The hardened precision collets are most economical for long run jobs.

| Description | Part Number | A – Smooth or Serrated Bore | B – Nose Diameter C – Extension |
|-------------------------------|--------------|---|---|
| B65 Ext. Nose Hardened Collet | 93743-67-18- | $\frac{1}{8}$ " to $2\frac{3}{64}$ " (3.17 to 63.89) | determined by the customer, or Hardinge, to meet the specific workpiece requirements. |

NOTE: Millimeters in parentheses.

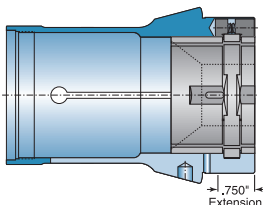


B65 Style S22 Extended-Nose Master Collet

The Style "S" Extended-Nose Master Collets are ideal when frequently changing bar stock diameters. Only the pads need to be changed from one bar size to another; much quicker than changing standard collets. The pads take up less storage space and are less expensive than standard collets.

| Description | Part Number | Nose Diameter |
|---------------------------------|-------------------|----------------|
| B65 S22 Ext. Nose Master Collet | 5311-54-00-000000 | 3.188" (80.97) |

NOTE: Millimeters in parentheses.



B65 Style S22 Extended-Nose Emergency Pads

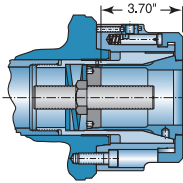
The Special Style-S Extended-Nose Emergency Pads are specifically designed for the Extended-Nose S22 Master Collet. The back of the pad extends the full length of the master collet bore. This design ensures that the closing forces are directly over the collet pads. This is a special order product.

| Description | Part Number | Nose Diameter |
|------------------------|-------------------|--|
| B65 S22 Ext. Nose Pads | 95611-67-00-0769Q | $\frac{1}{8}$ " to $2\frac{1}{4}$ " (3.1 to 57.15) |

NOTE: Millimeters in parentheses.

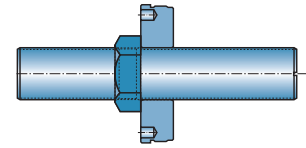
B65 Threaded Positive Solid Stops

The stop assembly is threaded into the back of the collet and can be machined to locate the part for accurate length control.



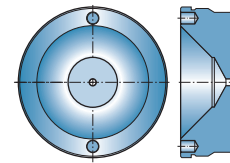
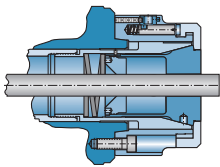
| Description | Part Number |
|-------------------------------------|-------------------|
| B65 Solid Stop Assembly - includes: | 3759-00-00-000000 |
| Body | 3759-00-00-000001 |
| Nut | 1185-00-00-000000 |
| Threaded Stop (1" diameter screw) | 1363-00-00-000000 |

NOTE: The stop can be installed in all solid and master collets internally threaded with bores up to: 2.530" (64.2mm) Round; 2.191" (55.6mm) Hex; 1.789" (45.4mm) Square.



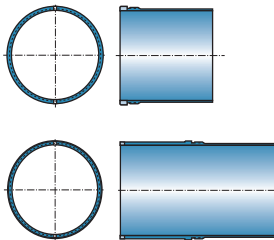
B65 Guide Bushing

The Guide Bushing is used to guide and support the bar stock into the bore of the collet when changing bars. The hole in the bushing should be $\frac{1}{32}$ " (.79mm) larger than the bar stock. The hole is bored to size by the customer. (Part Number 3761-00-00-000000)



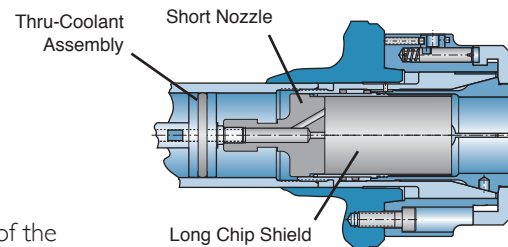
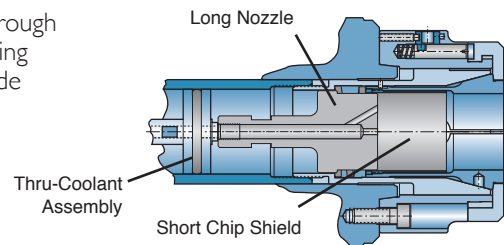
B65 (Internal) Chip Shield Kits

The shield reduces the possibility of chips going through the slots of the collet when through drilling or boring second operation work. The threaded stop or guide bushing cannot be used with the shield.



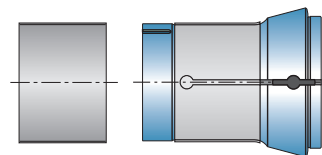
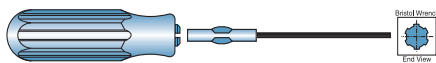
| Description | Part Number |
|------------------------------|-------------------|
| Short Sleeve Kit - includes: | 3757-00-00-000010 |
| Shield | 3757-00-00-000011 |
| Wrench | 3757-00-00-000012 |
| Long Coolant Nozzle | 3757-00-00-000015 |
| Long Sleeve Kit - includes: | 3757-00-00-000013 |
| Shield | 3757-00-00-000014 |
| Wrench | 3757-00-00-000012 |
| Short Coolant Nozzle | 3757-00-00-000016 |

NOTE: The chip shield can be installed in all solid and master collets below 2.43" (61.7mm) round.



B65 Coolant Nozzles

The Coolant Nozzles are threaded onto the end of the thru-spindle coolant assembly before the unit is inserted into the draw tube. The short nozzle is for the long chip shield and the long nozzle is for the short chip shield.

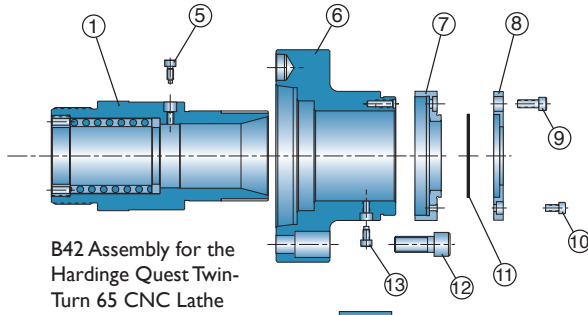


B65 Accessories

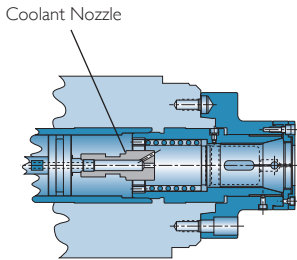
| Description | Part Number |
|-----------------------------|--------------------|
| Bristol Wrench Handle | 7909-00-00-000013 |
| Wrench .145" | 7909-00-00-000002 |
| Seal - Standard Collet (12) | 7649-00-00-010000 |
| Seal - Style "S" (by dozen) | 7643-00-00-010000 |
| Clamp Asm. 1 ea. (3 Req.) | 7627-00-00-000000 |
| Bristol "L" Wrench | 7639-00-00-000000 |
| RTV Sealant (for slots) | CE-0010884-0832 |
| Teflon Sleeve | 3757-00-00-0000A19 |

An external Heat-Shrinkable **Teflon Sleeve** is standard on all B65 collets with the straight slots which have a relief hole at the end. Older collets with the tear-drop slot may not have the sleeve. Its purpose is to help keep chips from getting into the collet chuck assembly. The Teflon sleeve can easily be replaced if it becomes damaged. It can also be added to older B65 collets. The slots are sealed up to the sleeve with RTV Sealant (Dow Corning #832).

TT65 / LMC to B42 Collet System



B42 Assembly for the Hardinge Quest Twin-Turn 65 CNC Lathe



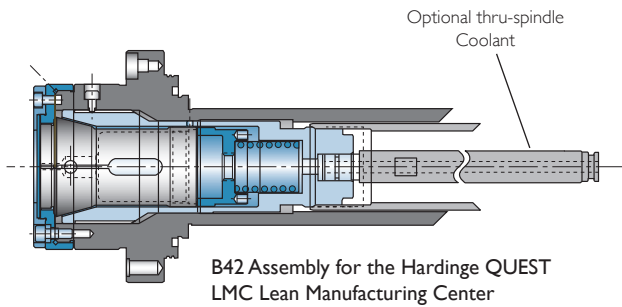
The B42 Coolant Nozzle is threaded onto the end of the through-spindle coolant assembly before the unit is inserted into the draw tube. Coolant nozzle included. Part Number 3111-00-00-000011.

The **B42 Stationary Collet Adapter Assembly** is a Dead-Length® system designed to provide precise length control of the workpiece. This feature makes it possible to accurately transfer parts from one spindle to the other within .0005" (.0127 mm). The system uses either B42 Solid or B42 Style S10 Master Collets and pads. The B42 Stationary Collet can be used on the Hardinge machines indicated below as well as other machines with an A2-6 spindle nose. Separate linkups will be required.

Adapter Assembly and Parts List for the Hardinge® Quest® TwinTurn® 65

| Item | Description | Qty | Part Number |
|------|--|-----|-------------------|
| — | B42 Collet Adapter Assembly | 1 | 3719-00-00-000001 |
| 1 | Spring Assembly (Items 1-4 in previous catalog—do not disassemble) | 1 | 3719-00-00-000015 |
| 5 | — Removable Keyscrew | 1 | 3111-00-00-000007 |
| 6 | — Mount | 1 | 3719-00-00-000002 |
| 7 | — Cap | 1 | 3719-00-00-000003 |
| 8 | — Cover | 1 | 3719-00-00-000005 |
| 9 | — M6 x 16 SHCS | 4 | MS 0103617 |
| 10 | — M5 x 10 SHCS | 4 | MS 0103515 |
| 11 | — Seal | 6 | 3719-00-00-000006 |
| 12 | — M12 x 30 SHCS | 4 | MS 0104019 |
| 13 | — Keyscrew | 1 | 3111-00-00-000008 |
| 14 | — Plug | 6 | 3075-00-00-000004 |
| 15 | — Coolant Nozzle | 1 | 3111-00-00-000011 |
| 16 | — Teflon Sleeve | 3 | 3719-00-00-000012 |

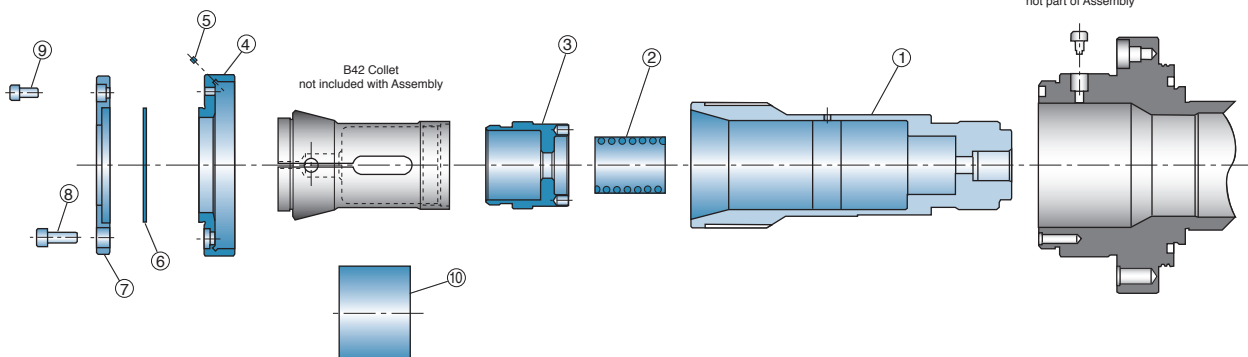
B42 Adapter Assembly and Parts List for the QUEST® LMC42 Lean Manufacturing Cell



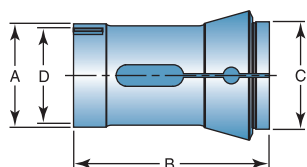
B42 Assembly for the Hardinge QUEST LMC Lean Manufacturing Center

B42 extended-nose collets, expanding collets, ejector stops, chip control and thru-spindle coolant are available per application.

| Item | Description | Qty | Part Number |
|------|-----------------------------|-----|-------------------|
| — | B42 Collet Adapter Assembly | 1 | 3719-00-00-000024 |
| 1 | — Collet Sleeve | 1 | 3719-00-00-000025 |
| 2 | — Collet Sleeve Spring | 1 | CE-1250156-1750 |
| 3 | — Spring Retainer | 1 | 3719-00-00-000026 |
| 4 | — Cap | 1 | 3719-00-00-000003 |
| 5 | — Plug | 6 | 3075-00-00-000004 |
| 6 | — Seal | 1 | 3719-00-00-000006 |
| 7 | — Cover | 1 | 3719-00-00-000005 |
| 8 | — M6 x 16 SHCS | 4 | MS 0103617 |
| 9 | — M5 x 10 SHCS | 4 | MS 0103515 |
| 10 | — Teflon Sleeve | 3 | 3719-00-00-000012 |
| 11 | — Instructions | 1 | B -0009500-0121 |



Machine Spindle & Key Screw
not part of Assembly



Dimensions

| Collet Style | A – Back Bearing Diameter | B – Overall Length | C – Head Diameter | D – ID Stop Thread | Round Capacity | Hex Capacity | Square Capacity |
|--------------|---------------------------|--------------------|-------------------|--------------------|------------------------------|--------------------------------|------------------------------|
| Std. | 1.887" (47.93) | 3.688" (93.68) | 2.355" (59.82) | M43 x 1 | 1/16"(1.58) – 1 5/8" (41.28) | 1/16"(1.58) – 1 13/32" (35.72) | 1/16"(1.58) – 1 1/4" (28.97) |
| S10 | 1.887" (47.93) | 3.688" (93.68) | 2.355" (59.82) | M43 x 1 | 1/8"(3.17) – 1" (25.40) | 1/4"(6.35) – 59/64" (21.83) | 1/4"(6.35) – 45/64" (17.86) |

NOTE: Millimeters in parentheses.

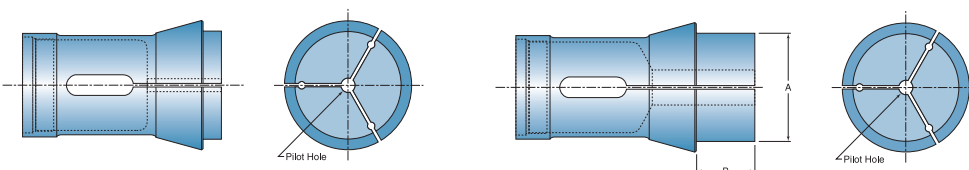
B42 Collets – Standard and S10 Master Collets and Pads

| Description | Round Smooth Part Number | Round Serrated Part Number | Hexagon Part Number | Square Part Number | Emergency Part Number |
|-----------------------|--------------------------|----------------------------|---------------------|--------------------|-----------------------|
| B42 Solid Collet | 3719-00-19- | 3719-00-59- | 3719-00-29- | 3719-00-39- | 3719-14-10- |
| B42 S10 Master Collet | 5205-00-00- | — | — | — | — |
| S10 Pads | 5601-00-19- | 5601-00-59- | 5601-00-29- | 5601-00-39- | 5601-14-10- |

NOTE: Other configuration collets & pads available.

B42 Emergency Collets—Standard and Extended-Nose

Even with the best planning, emergencies arise when your tool room and production departments require a stepped, odd size or special-shaped collet. On such occasions, use the Hardinge emergency collet. The soft face and pilot hole allow rapid drilling, boring or stepping out to the exact required size. The extended-nose allows deeper counter bores, when required, and tool clearance for extended work. Emergency collets have internal threads for positive stops.



| Description | Part Number | Pilot Hole | A – Nose Diameter | B – Nose Length |
|------------------------------------|-------------------|--------------|---------------------------|--------------------------------------|
| B42 Emergency Collet | 3719-14-11-000000 | .250" (6.35) | 1.970" (50.00) | .375" (9.53) |
| B42 Extended-Nose Emergency Collet | 3719-14-11-000007 | .250" (6.35) | 1.970" (50.00) (Standard) | 1.250" (31.75) (.875" over standard) |

NOTE: Millimeters in parentheses.

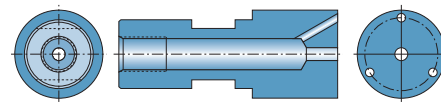
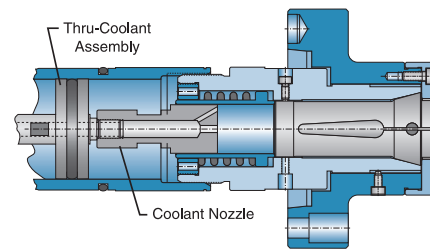
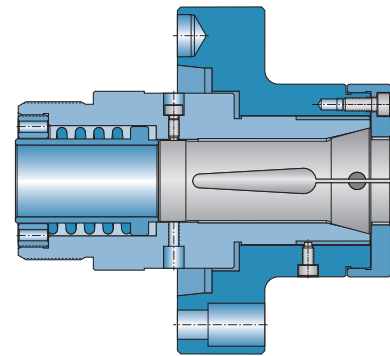
TT65 to #22 B&S Collet System



The **#22 B&S Dead-Length Collet Chuck System** will provide minimal tool interference while achieving shorter cycle times when your work is under 1/4" diameter.

The nose diameter is just 3.5" by 2.3" (88.9 x 58.4mm) long with an overall chuck length of 3.783" (96mm) from the spindle locating surface. This stationary collet design provides precise length control of the workpiece. The Dead-Length feature makes it possible to accurately transfer parts from one spindle to the other within .0005" (.0127mm). The system uses either #22, #22Y or #22SC B&S collets.

The #22 B&S Stationary Collet is used on the Hardinge QUEST® TwinTurn® 65 CNC Turning Center and other machines that use #22 B&S Stationary Collet Systems.

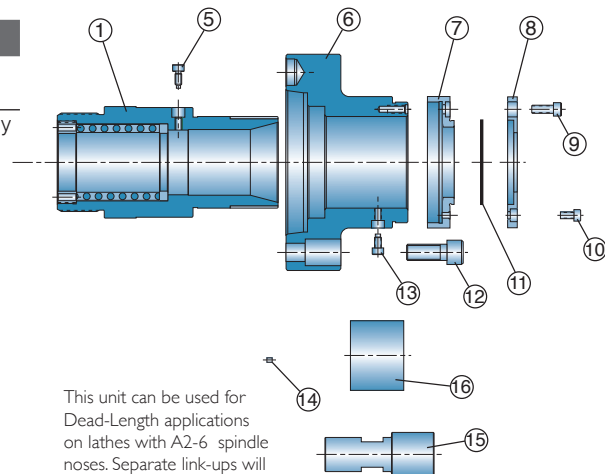


The **#22 B&S Coolant Nozzle** is threaded onto the end of the through-spindle coolant assembly before the unit is inserted into the draw tube. A coolant nozzle is included with each assembly. Part Number 3111-00-00-000011.

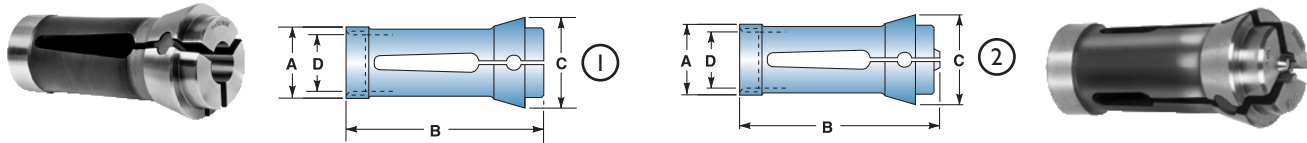
TT65 to #22 B&S Collet Assembly and Parts List

| Item | Part Number | Qty | Description |
|------|-------------------|-----|---|
| — | 3111-00-00-000001 | 1 | TT65 to #22 B&S Collet Assembly |
| 1 | 3111-00-00-000015 | 1 | — Spring and Sleeve Assembly (Items 1-4 in previous catalog—do not disassemble) |
| 5 | 3111-00-00-000007 | 1 | — Removable Keyscrew |
| 6 | 3111-00-00-000002 | 1 | — Mount |
| 7 | 3111-00-00-000003 | 1 | — Cap |
| 8 | 3111-00-00-000005 | 1 | — Cover |
| 9 | MS 0103617 | 4 | — M6 x 16 SHCS |
| 10 | MS 0103515 | 4 | — M5 x 10 SHCS |
| 11 | 3111-00-00-000006 | 6 | — Seal |
| 12 | MS 0104019 | 4 | — M12 x 30 SHCS |
| 13 | 3111-00-00-000008 | 1 | — Keyscrew |
| 14 | 3075-00-00-000004 | 6 | — Plug |
| 15 | 3111-00-00-000011 | 1 | — Coolant Nozzle |
| 16 | 3111-00-00-000012 | 3 | — Teflon Sleeve |

NOTE: Keyed collets are not standard.



This unit can be used for Dead-Length applications on lathes with A2-6 spindle noses. Separate link-ups will be needed for other lathes. Collet not included.



The **#22 B&S Stationary Collet** is used on the Hardinge QUEST® TwinTurn® 65 CNC Turning Center and other machines that use #22 B&S Stationary Collet Systems.

Dimensions

| Description | Part Number | Figure | Style | A – Back Bearing Diameter | B – Overall Length | C – Collet Head Diameter | D - Thread | Round Capacity | Hexagon Capacity | Square Capacity |
|---------------|-------------|--------|-------|---------------------------|--------------------|--------------------------|----------------|----------------|------------------|-----------------|
| Collet, Solid | 3111 | 1 | 22 | 1.498" (38.05) | 4.250" (107.95) | 1.925" (48.90) | — | 1 1/4" (31.75) | 1 5/64" (27.38) | 7/8" (22.22) |
| Collet, Solid | 3109 | 2 | 22Y | 1.498" (38.05) | 4.312" (109.53) | 1.925" (48.90) | — | .092" (2.33) | 5/64" (1.98) | 1/16" (1.58) |
| Collet, Solid | 3227 | 1 | 22SC | 1.498" (38.05) | 4.250" (107.95) | 1.925" (48.90) | 1.291" x 24 RH | 1 1/4" (31.75) | 1 5/64" (27.38) | 7/8" (22.22) |

Stop Collet

NOTE: Millimeters in parentheses.

#22 B&S Collets – Standard and Stop Collets

| Description | Round Smooth Part Number | Round Serrated Part Number | Hexagon Part Number | Square Part Number |
|-------------------|--------------------------|----------------------------|---------------------|--------------------|
| #22 B&S Standard | 3111-00-19- | 3111-00-59- | 3111-00-29- | 3111-00-39- |
| #22Y B&S Standard | 3109-00-19- | 3109-00-59- | 3109-00-29- | 3109-00-39- |
| #22SC B&S Stop | 3227-00-19- | 3227-00-59- | 3227-00-29- | 3227-00-39- |

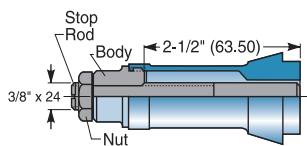
NOTE: Other configuration collets also available.

#22 B&S Emergency Collets

| Emergency | Part Number | Pilot Hole |
|------------------|-------------|------------|
| #22 Collet Blank | 3111-10-00 | — |
| #22SC-E | 3233-14-10- | 1/4" |
| #22SC-E1 | 3233-12-10- | 1/16" |
| #22SC-E2 | 3233-13-10- | 1/8" |

SS22 Solid Collet Stop for #22SC B&S Collet

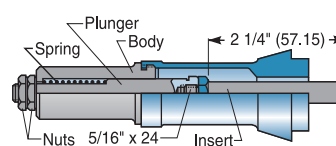
The solid stop assembly is threaded into the back of the #22 B&S collet and the stop rod can be machined to length to locate the part. Collet sold separately.



| Description | Part Number |
|-------------|-------------------|
| Assembly | 3269-00-00-000000 |
| – Body | 3271-00-00-000000 |
| – Nut | 5-0001466-B |
| – Stop Rod | 1071-00-00-000000 |

SE Ejector Stop for #22SC B&S Collets

The threaded ejector stop assembly is threaded into the back of the collet. The insert can be machined to locate the part. Collet sold separately.



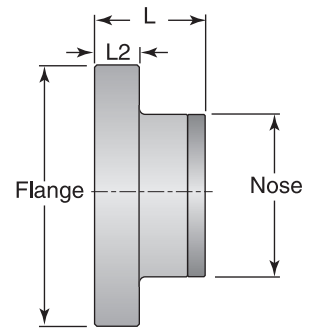
| Description | Part Number |
|-------------|-------------------|
| Assembly | 3273-00-00-000000 |
| – Body | 3275-00-00-000000 |
| – Plunger | 3277-00-00-000000 |
| – Insert | 3279-00-00-000000 |
| – Nut (2) | 5-0001466-B |
| – Spring | 3281-00-00-000000 |

16C to #22 B&S Collet System



These units can be used for Dead-Length applications on lathes with A2-5 spindle noses. Separate link-ups will be needed for other lathes.

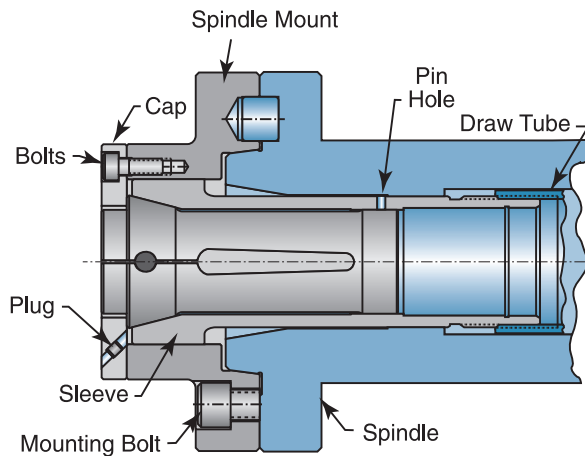
#22 B&S Collets sold separately on previous page.



A2-5 16C Spindle to #22 B&S Collet Adaptation Chuck

| Description | Assembly Part Number | Spindle | L – Length | L2 – Length | Flange OD | Nose OD | Thru Capacity |
|---------------------|----------------------|---------|----------------|---------------|----------------|----------------|---------------|
| A2-5 16C to #22 B&S | 1717-09-00-000000 | A2-5 | 2.285" (58.04) | .915" (23.24) | 5.500" (139.7) | 3.400" (86.36) | 1.25" (31.75) |

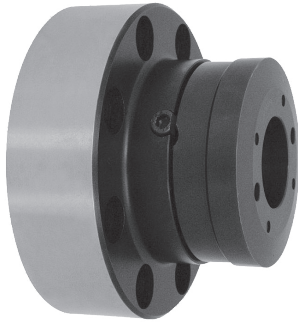
NOTE: Millimeters in parentheses.



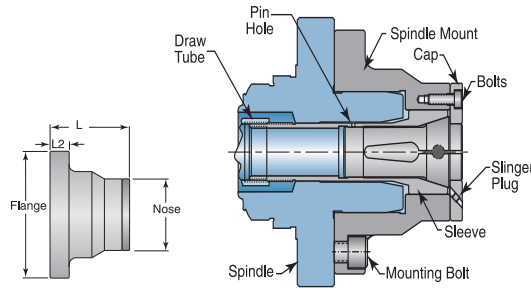
Parts List

| Description | Qty | Part Number |
|------------------------------------|-----|-------------------|
| Sleeve | 1 | 1717-09-00-000003 |
| Mount | 1 | 1717-09-00-000001 |
| Cap | 1 | 1717-09-00-000002 |
| Bolts for Cap – M6 x 16 | 4 | MS 0103617 |
| Mounting Bolts – M10 x 25 | 3 | MS 0104019 |
| Slinger Hole Plug | 6 | 1717-09-00-000004 |
| Orientation Pin 1/8" Dia. (Option) | 1 | 3757-00-00-000007 |

#1 | B&S Dead-Length Adapter



Not exactly as shown. See drawing for stepped nose design.

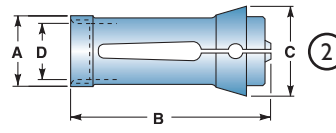
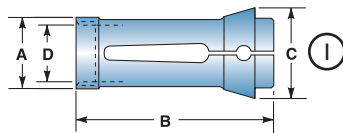


Assembly Parts List

| Description | Qty | Part Number |
|----------------------------|-----|----------------------|
| - Sleeve | 1 | 3075-00-00-000003 |
| - Mount | 1 | 3075-00-00-000001 |
| - Cap | 1 | 3075-00-00-000002 |
| - Bolts for Cap, M5 x 16 | 4 | MS 0103517 |
| - Mounting Bolts, M10 x 25 | 3 | MS 0104019 |
| - Slinger Hole Plug | 6 | 3075-00-00-000004 |
| - Orientation Pin (Option) | 1 | - 3/32" Diameter Pin |

GT 5C to #1 | B&S Collet Adaptation Chuck

| Description | Assembly Part Number | Spindle | L - Length | L2 - Length | Flange OD | Step OD | Nose OD | Thru Capacity |
|-------------|----------------------|---------|----------------|--------------|-----------------|----------------|----------------|---------------|
| GT 5C | 3075-00-00-000000 | GT | 2.820" (71.62) | .76" (19.30) | 5.000" (127.00) | 3.400" (86.36) | 2.830" (71.88) | 5/64" (21.82) |



NOTE: Millimeters in parentheses.



#1 | B&S Collet Dimensions

| Description | Part Number | Figure | Style | A - Back Bearing Diameter | B - Overall Length | C - Collet Head Diameter | D - Thread | Round Capacity | Hexagon Capacity | Square Capacity |
|---------------|-------------|--------|-------|---------------------------|--------------------|--------------------------|---------------|----------------|------------------|-----------------|
| Collet, Solid | 3057 | 1 | 11 | 1.061" (26.95) | 2.875" (73.03) | 1.490" (37.85) | — | 7/8" (22.22) | 3/4" (19.05) | 5/8" (15.87) |
| Collet, Solid | 3055 | 2 | 11Y | 1.061" (26.95) | 2.937" (74.60) | 1.490" (37.85) | — | 55/64" (21.83) | 3/4" (19.05) | 39/64" (11.11) |
| Collet, Solid | 3217 | 1 | 11SC | 1.061" (26.95) | 2.875" (73.03) | 1.490" (37.85) | .916" x 24 RH | 55/64" (21.83) | 47/64" (18.65) | 19/32" (15.08) |
| Stop Collet | | | | | | | | | | |
| Collet, Solid | MP3591 | 2 | 11SCY | 1.061" (26.95) | 2.937" (74.60) | 1.490" (37.85) | .916" x 24 RH | 55/64" (21.83) | 47/64" (18.65) | 19/32" (15.08) |

Stop Collet (Special Collet)

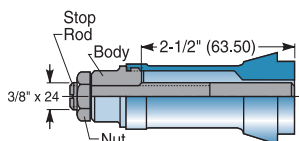
NOTE: Millimeters in parentheses.. Special Collets are not stock items.

#1 | B&S Collets – Standard and Stop Collets

| Description | Round Smooth Part Number | Round Serrated Part Number | Hexagon Part Number | Square Part Number |
|-------------------|--------------------------|----------------------------|---------------------|--------------------|
| #11 Solid Collet | 3057-00-19- | 3057-00-59- | 3057-00-29- | 3057-00-39- |
| #11Y Solid Collet | 3055-00-19- | 3055-00-59- | 3055-00-29- | 3055-00-39- |
| #11SC Stop Collet | 3217-00-19- | 3217-00-59- | 3217-00-29- | 3217-00-39- |

SS1 | Solid Collet Stop for #1 | SC B&S Collets

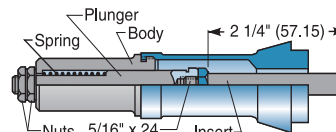
The solid stop assembly is threaded into the back of the #1 | B&S collet and the stop rod can be machined to length to locate the part. Collets sold separately.



| Description | Part Number |
|-------------|-------------------|
| Assembly | 3259-00-00-000000 |
| - Body | 3261-00-00-000000 |
| - Nut | U-0004141-C |
| - Stop Rod | 3263-00-00-000000 |

SE1 | Ejector Stop for #1 | SC B&S Collets

The threaded ejector stop assembly is threaded into the back of the collet. The insert can be machined to locate the part. Collets sold separately.

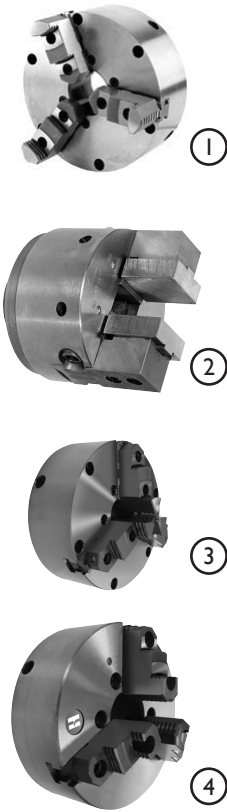


| Description | Part Number |
|-------------|-------------------|
| Assembly | 3265-00-00-000000 |
| - Body | 3267-00-00-000000 |
| - Plunger | 1061-00-00-000000 |
| - Insert | 1063-00-00-000000 |
| - Spring | 1065-00-00-000000 |
| - Nuts (2) | U-0004141-C |

Manual Jaw Chucks

2, 3, and 4-jaw Chucks are available for manual machines with Hardinge® 5C Spindles. Products shown with bold part numbers are included with the chuck. Manual Chucks are also available with A2-4 and A2-5 mounting plates where indicated below.

Hardinge and other CNC lathes use Sure-Grip® 3-Jaw Power Chucks. Information for Sure-Grip chucks, along with full line of jaws for all chucks, can be found in Hardinge brochure number 2357 (chucks) and 2358 (jaws).



| Description | Figure | Chuck | Soft Jaw | OD Jaw | ID Jaw | Reversible Hard Jaw | Wrench |
|---|--------|---------------|--------------|--------|--------|---------------------|-------------|
| 5" 3-Jaw Universal | | | | | | | |
| Taper-Nose Spindle | 2 | 53B-5405-HB | 53B-5405-SJ | — | — | 53B-5405-HJ | 53B-5405-CK |
| Threaded-Nose Spindle | 2 | 53B-5405-HB D | 53B-5405-SJ | — | — | 53B-5405-HJ | 53B-5405-CK |
| with A2-4 Mounting Plate | 4 | 53B-5405-BCA4 | 53B-5405-SJ | — | — | 53B-5405-HJ | 53B-5405-CK |
| with A2-5 Mounting Plate | 4 | 53B-5405-BCA5 | 53B-5405-SJ | — | — | 53B-5405-HJ | 53B-5405-CK |
| 5" 4-Jaw Independent | | | | | | | |
| Taper-Nose Spindle | 2 | 54B-5405-HB | — | — | — | 54B-5405-SJR | 54B-5405-CK |
| Threaded-Nose Spindle | 2 | 54B-5405-HB D | — | — | — | 54B-5405-SJR | 54B-5405-CK |
| 6" 2-Jaw Universal (Jaws not included) | | | | | | | |
| Taper-Nose Spindle | 3 | 62-5405-HB | 62-5405-SJ | — | — | — | 62-5405-CK |
| Threaded-Nose Spindle | 3 | 62-5405-HB D | 62-5405-SJ | — | — | — | 62-5405-CK |
| 6" 3-Jaw Universal | | | | | | | |
| Taper-Nose Spindle | 2 | 63B-5405-HB | 63B-5405-SJ | — | — | 63B-5405-HJ | 63B-5405-CK |
| Threaded-Nose Spindle | 2 | 63B-5405-HB D | 63B-5405-SJ | — | — | 63B-5405-HJ | 63B-5405-CK |
| with A2-4 Mounting Plate | 4 | 63B-5405-BCA4 | 63B-5405-SJ | — | — | 63B-5405-HJ | 63B-5405-CK |
| with A2-5 Mounting Plate | 4 | 63B-5405-BCA5 | 63B-5405-SJ | — | — | 63B-5405-HJ | 63B-5405-CK |
| 6" 4-Jaw Independent | | | | | | | |
| Taper-Nose Spindle | 2 | 64B-5405-HB | 64B-5405-STJ | — | — | 64B-5405-HTJ | 64B-5405-CK |
| Threaded-Nose Spindle | 2 | 64B-5405-HB D | 64B-5405-STJ | — | — | 64B-5405-HTJ | 64B-5405-CK |
| with A2-4 Mounting Plate | 4 | 64B-5405-BCA4 | 64B-5405-STJ | — | — | 64B-5405-HTJ | 64B-5405-CK |
| with A2-5 Mounting Plate | 4 | 64B-5405-BCA5 | 64B-5405-STJ | — | — | 64B-5405-HTJ | 64B-5405-CK |
| 8" 3-Jaw Independent | | | | | | | |
| with A2-5 Spindle Mount | 4 | 83-5405-A25 | — | — | — | 83-5405-HRJ | 83-5405-KEY |
| 10" 3-Jaw Independent | | | | | | | |
| with A2-5 Spindle Mount | 4 | 13-5405-A25 | — | — | — | 13-5405-HRJ | 13-5405-KEY |

Safety Information for 5C Spindle Tooling - Read Carefully

RECOMMENDATIONS FOR SAFE OPERATING CONDITIONS FOR HARDINGE 5C CAST IRON SPINDLE TOOLING

NOTE: All tooling is assumed NOT to be weakened by usage and to be free of defects.

| SPINDLE TOOLING | SPEED | DRAWBAR FORCE |
|--------------------------------|--------------------|-------------------------|
| 2", 3" & 4" Step Chuck Closers | Less than 5000 rpm | Less than 5000 lb force |
| 5" and 6" Step Chuck Closers | Less than 4000 rpm | Less than 5000 lb force |

FACE PLATES AND FIXTURE PLATES

The maximum surface speed of 6000 fpm includes allowances made for load eccentricities, clamping forces and stress concentrations. Operator discretion is needed because precise guidelines cannot be established due to the uncertainties in operating conditions. Following is a rough guideline. All rpm recommendations listed below result in surface speeds of less than 6000 fpm.

| SPINDLE TOOLING | SPEED |
|--------------------------------|--------------------|
| 3" Fixture Plates | Less than 3500 rpm |
| 5" Fixture Plates | Less than 3000 rpm |
| 8.875" Fixture Plates | Less than 2000 rpm |
| 5" Jaw Chuck | Less than 3000 rpm |
| 6" Jaw Chuck | Less than 2500 rpm |
| 7" Face Plate with angle plate | Less than 2500 rpm |
| 9" Face Plate with angle plate | Less than 2000 rpm |

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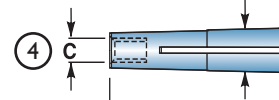
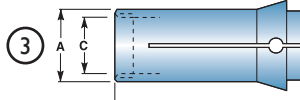
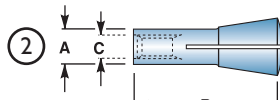
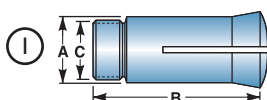
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Collets by Style

| Collet | Part Number | Figure | Dimensions | | | Rated Capacity | | |
|--------|-------------|--------|--------------------|--------------------|----------------|--------------------|--------------------|-------------------|
| | | | A | B | C | Round | Hexagon | Square |
| | | | Back Bearing | Overall Length | Thread | | | |
| 1A | 9-1501 | 1 | .650" (16.51) | 2.563" (65.10) | .640" x 26 RH | 1/2" (12.70) | 7/16" (11.11) | 11/32" (8.73) |
| 1AM | 1505 | 1 | 1.125" (28.58) | 3.906" (99.21) | 1.118" x 24 RH | 1" (25.40) | 7/8" (22.23) | 23/32" (18.26) |
| 1B | 9-1509 | 2 | .437" (11.10) | 1.750" (44.45) | .312" x 30 RH | 5/16" (7.94) | 7/32" (5.56) | 3/16" (4.76) |
| 1C | 1511 | 1 | .335" (8.51) | 1.438" (36.53) | .322" x 40 RH | 1/4" (6.35) | 7/32" (5.56) | 11/64" (4.37) |
| 1J | 1513 | 1 | 1.250" (31.75) | 3.000" (76.20) | 1.238" x 20 RH | 1 1/16" (26.99) | 7/8" (22.23) | 3/4" (19.05) |
| 1K | 1521 | 3 | 1.250" (31.75) | 2.813" (71.45) | — | 1" (25.40) | 7/8" (22.23) | 23/32" (18.26) |
| 2A | 9-1527 | 1 | .860" (21.84) | 3.313" (84.15) | .850" x 20 RH | 1 1/16" (17.46) | 19/32" (15.08) | 15/32" (11.91) |
| 2AB | 9-1529 | 2 | .750" (19.05) | 2.563" (65.10) | .500" x 20 RH | 5/8" (15.88) | 31/64" (12.30) | 25/64" (9.92) |
| 2AM | 9-1531 | 1 | .629" (15.98) | 3.188" (80.98) | .622" x 24 RH | 1/2" (12.70) | 7/16" (11.11) | 11/32" (8.73) |
| 2B* | 9-1533 | 2 | .590" (14.99) | 2.031" (51.59) | .437" x 26 RH | 1/2" (12.70) | 7/16" (11.11) | 11/32" (8.73) |
| 2C | 9-1535 | 1 | .450" (11.43) | 1.812" (46.02) | .442" x 30 RH | 1 1/32" (8.73) | 19/64" (7.54) | 15/64" (5.95) |
| 2H | 1537 | 1 | .826" (20.98) | 4.250" (107.95) | .799" x 20 RH | 5/8" (15.88) | 17/32" (13.50) | 7/16" (11.11) |
| 2J | 1539 | 1 | 1.625" (41.28) | 3.250" (82.55) | 1.611" x 18 RH | 1 3/8" (34.93) | 1 3/16" (30.16) | 1" (25.40) |
| 2L | 9-1553 | 1 | .950" (24.13) | 3.000" (76.20) | .938" x 20 RH | 3/4" (19.05) | 21/32" (16.67) | 17/32" (13.50) |
| 2M | 1555 | 4 | 2 Morse 2 Morse | 2.875" (73.03) | .375" x 16 RH | 1/2" (12.70) | 13/32" (10.31) | 11/32" (8.73) |
| 2NS | 1693 | 1 | .324" (8.23) | 1.562" (39.67) | .318" x 40 RH | 1/4" (6.35) | 13/64" (5.16) | 11/64" (4.37) |
| 2OS | 1691 | 1 | .299" (7.59) | 1.250" (31.75) | .263" x 40 RH | 3/16" (4.76) | 5/32" (3.97) | 1/8" (3.18) |
| 2S | 1557 | 1 | .750" (19.05) | 3.234" (82.14) | .745" x 18 RH | 9/16" (14.29) | 31/64" (12.30) | 25/64" (9.92) |
| 2VB | 9-1561 | 2 | .595" (15.11) | 2.438" (61.93) | .437" x 26 RH | 1/2" (12.70) | 7/16" (11.11) | 11/32" (8.73) |
| 3AM | 9-1569 | 1 | .750" (19.05) | 3.188" (80.98) | .742" x 24 RH | 5/8" (15.88) | 17/32" (13.50) | 7/16" (11.11) |
| 3AT | 1573 | 1 | .687" (17.45) | 2.313" (58.75) | .637" x 26 RH | 1/2" (12.70) | 7/16" (11.11) | 11/32" (8.73) |
| 3B | 1581 | 2 | .875" (22.23) | 3.438" (87.33) | .625" x 16 RH | 3/4" (19.05) | 41/64" (16.27) | 17/32" (13.50) |
| 3C | 1583 | 1 | .650" (16.51) | 2.688" (68.28) | .640" x 26 RH | 1/2" (12.70) | 7/16" (11.11) | 11/32" (8.73) |
| 3H | 1589 | 1 | 1.125" (28.58) | 4.438" (112.73) | 1.050" x 20 RH | 7/8" (22.23) | 3/4" (19.05) | 5/8" (15.88) |
| 3JA | 1593 | 1 | 2.000" (50.80) | 3.750" (95.25) | 1.988" x 20 RH | 1 3/4" (44.45) | 1 1/2" (38.10) | 1 1/4" (31.75) |
| 3NS | 1601 | 1 | .687" (17.45) | 2.875" (73.03) | .647" x 20 RH | 1/2" (12.70) | 7/16" (11.11) | 11/32" (8.73) |

* Do not confuse with 2B Simons - See Turret Lathe chapter in Automatics Catalog — #2287
 ^ Internal Stop Thread is 1.790 x 24 RH

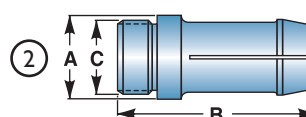
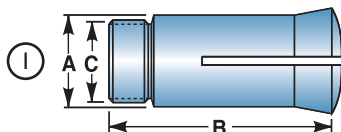
NOTE: Millimeters in parentheses.
 Part numbers preceded by 9 are special order.



| Collet | Part Number | Figure | Dimensions | | | Rated Capacity | | |
|-----------------|-------------|--------|-------------------|--------------------|-----------------------------|-------------------|-------------------|-------------------|
| | | | A | B | C | Round | Hexagon | Square |
| | | | Back Bearing | Overall Length | Thread | | | |
| 3OS | 9-1603 | 1 | .589" (14.96) | 2.094" (53.19) | .518" x 26 RH | 3/8" (9.53) | 5/16" (7.94) | 17/64" (6.75) |
| 3PN | 9-1605 | 1 | .650" (16.51) | 2.063" (52.40) | .645" x 24 RH | 1/2" (12.70) | 7/16" (11.11) | 11/32" (8.73) |
| 3PO | 9-1607 | 1 | .599" (15.21) | 2.063" (52.40) | .500" x 24 RH | 3/8" (9.53) | 5/16" (7.94) | 17/64" (6.75) |
| 3S | 9-1609 | 1 | 1.000" (25.40) | 4.594" (116.69) | .995" x 20 RH | 3/4" (19.05) | 21/32" (16.67) | 17/32" (13.50) |
| 3SC | 9-1613 | 1 | .350" (8.89) | 1.587" (40.30) | .293" x 36 RH | 3/16" (4.76) | 5/32" (3.97) | 1/8" (3.18) |
| 3SS | 9-1611 | 1 | .589" (14.96) | 2.125" (53.98) | .515" x 26 RH | 3/8" (9.53) | 5/16" (7.94) | 17/64" (6.75) |
| 4C | 1621 | 1 | .950" (24.13) | 3.000" (76.20) | .938" x 20 RH | 3/4" (19.05) | 21/32" (16.67) | 17/32" (13.50) |
| 4NS | 1625 | 1 | .826" (20.98) | 3.500" (88.90) | .800" x 20 RH | 5/8" (15.88) | 17/32" (13.50) | 7/16" (11.11) |
| 4OS | 9-1629 | 1 | .750" (19.05) | 2.781" (70.64) | .660" x 20 RH | 1/2" (12.70) | 7/16" (11.11) | 11/32" (8.73) |
| 4PN | 9-1631 | 1 | 1.000" (25.40) | 2.906" (73.81) | .995" x 16 RH | 3/4" (19.05) | 21/32" (16.67) | 17/32" (13.50) |
| 4S | 9-1635 | 1 | .998" (25.35) | 3.250" (82.55) | .982" x 20 RH | 3/4" (19.05) | 21/32" (16.67) | 17/32" (13.50) |
| 5C ^A | 1001 | 1 | 1.250" (31.75) | 3.281" (83.34) | 1.238" x 20 RH ¹ | 11/16" (26.99) | 29/32" (23.02) | 3/4" (19.05) |
| 5M | 9-1643 | 2 | 1.438" (36.53) | 3.438" (87.33) | 1.238" x 20 RH | 7/8" (22.23) | 3/4" (19.05) | 5/8" (15.88) |
| 5NS | 9-1647 | 1 | 1.062" (26.97) | 4.219" (107.16) | 1.050" x 20 RH | 7/8" (22.23) | 3/4" (19.05) | 5/8" (15.88) |
| 5OS | H5026 | 1 | 1.062" (26.97) | 3.500" (88.90) | .937" x 18 RH | 3/4" (19.05) | 41/64" (16.27) | 33/64" (13.10) |
| 5P | 9-1651 | 1 | .812" (20.62) | 3.687" (93.65) | .807" x 24 RH | 5/8" (15.88) | 17/32" (13.50) | 7/16" (11.11) |
| 5PN | 9-1653 | 1 | 1.312" (33.32) | 3.406" (86.51) | 1.307" x 16 RH | 1" (25.40) | 7/8" (22.23) | 23/32" (18.26) |
| 5SC | 9-1655 | 1 | .600" (15.24) | 2.438" (61.93) | .500" x 26 RH | 3/8" (9.53) | 21/64" (8.33) | 17/64" (6.75) |
| 5ST | 1017 | 1 | 1.250" (31.75) | 3.281" (83.34) | 1.238" x 20 RH | 11/16" (26.99) | 29/32" (23.02) | 3/4" (19.05) |
| 5V | 9-1657 | 1 | .850" (21.59) | 3.875" (98.43) | .775" x 18 RH | 9/16" (14.29) | 31/64" (12.30) | 25/64" (9.92) |
| 6H | 1667 | 1 | 1.375" (34.93) | 4.750" (120.65) | 1.300" x 20 RH | 1 1/8" (28.58) | 31/32" (24.61) | 51/64" (20.24) |
| 6K | 1671 | 1 | .842" (21.39) | 3.000" (76.20) | .762" x 26 RH | 5/8" (15.88) | 17/32" (13.50) | 7/16" (11.11) |
| 6L | 1675 | 1 | 1.250" (31.75) | 4.438" (112.73) | 1.178" x 20 RH | 1" (25.40) | 7/8" (22.23) | 23/32" (18.26) |
| 6NS | 1663 | 1 | 1.312" (33.32) | 5.906" (150.01) | 1.234" x 14 RH | 1" (25.40) | 55/64" (21.83) | 45/64" (17.86) |
| 6R | 1679 | 1 | 1.375" (34.93) | 4.938" (125.43) | 1.300" x 20 RH | 1 1/8" (28.58) | 31/32" (24.61) | 25/32" (19.85) |

A – Internal stop thread is 1.041" x 24 RH.

NOTE: Millimeters in parentheses.
Part numbers preceded by 9 or H are special order.

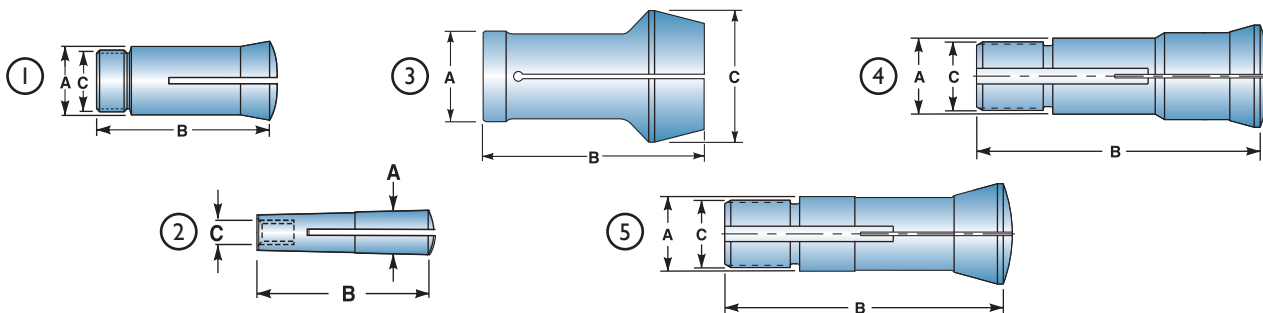


Collets by Style

| Collet | Part Number | Figure | Dimensions | | | Rated Capacity | | |
|-------------------------------|-------------|--------|--------------------|--------------------|-----------------------------------|-------------------------------|---------------------------------|---------------------------------|
| | | | A | B | C | Round | Hexagon | Square |
| | | | Back Bearing | Overall Length | Thread | | | |
| 7B | 9-1685 | 2 | 7 B & S 7 B & S | 3.125" (79.38) | .375" x 16 RH | 1/2" (12.70) | 13/32" (10.32) | 11/32" (8.73) |
| 7 B & S | 9-1687 | 2 | 7 B & S 7 B & S | 2.875" (73.03) | .375" x 16 RH | 1/2" (12.70) | 13/32" (10.32) | 11/32" (8.73) |
| 7P | 9-1689 | 1 | 1.125" (28.58) | 4.750" (120.65) | 1.120" x 20 RH | 7/8" (22.23) | 3/4" (19.05) | 5/8" (15.88) |
| 7R | 2581 | 3 | 1.062" (26.97) | 3.500" (88.90) | — | 7/8" (22.22) | 3/4" (19.05) | 5/8" (15.88) |
| 8H | 9-1695 | 1 | 1.500" (38.10) | 4.750" (120.65) | 1.425" x 20 RH | 1 1/4" (31.75) | 1 1/16" (26.99) | 7/8" (22.23) |
| 8ST | 9-1697 | 1 | 2.375" (60.33) | 5.906" (150.01) | 2.354" x 12 RH | 2 1/8" (53.98) | 1 27/32" (46.83) | 1 1/2" (38.10) |
| 8WN | 1699 | 1 | 1.250" (31.75) | 3.875" (98.43) | 1.245" x 16 RH | 1" (25.40) | 7/8" (22.23) | 23/32" (18.26) |
| 9B | 9-1707 | 2 | 9 B & S 9 B & S | 4.125" (104.78) | .500" x 13 RH | 3/4" (19.05) | 4 1/64" (16.27) | 17/32" (13.50) |
| 10L | 9-1713 | 1 | 1.562" (39.67) | 5.500" (139.70) | 1.490" x 18 RH | 1 1/4" (31.75) | 1 1/16" (26.99) | 7/8" (22.23) |
| 10P | 9-1715 | 1 | 1.500" (38.10) | 4.750" (120.65) | 1.495" x 20 RH | 1 1/4" (31.75) | 1 1/16" (26.99) | 7/8" (22.23) |
| 16C ^A | 1717 | 1 | 1.889" (47.98) | 4.312" (109.52) | 1.870" x 1.75 mm RH ¹ | 1 5/8" (41.28) | 1 13/32" (35.72) | 1 9/64" (28.97) |
| 20C ^B | 1701 | | 2.378" (60.40) | 6.250" (158.75) | M60-1.5mm RH | 2" (50.80) | 1 3/4" (44.85) | 1 27/64" (36.07) |
| 20W | 1777 | 1 | .787" (19.99) | 2.719" (69.06) | .775" X 6 thrds/cm RH Buttress | 9/16" (14.29) | 31/64" (12.30) | 25/64" (9.92) |
| 22J | 1719 | 1 | 2.562" (65.07) | 4.000" (101.60) | 2.550" x 18 RH | 2 1/4" (57.15) | 1 15/16" (49.21) | 1 9/16" (39.69) |
| 25C ^C | 1801 | 1 | 2.930" (74.42) | 6.480" (161.49) | M73 x 1.5mm RH | 2.559" (65.00) | 2.216" (56.29) | 1.808" (45.92) |
| 25W | 1901 | 5 | .984" (24.99) | 3.719" (94.46) | .970" x 15 RH Buttress | 3/4" (19.05) | 4 1/64" (16.27) | 17/32" (13.49) |
| 25W OS Thru1903 (Oversize) | | 4 | .984" (24.99) | 3.719" (94.46) | .970" x 15 RH Buttress | 3/4" (19.05) | 4 1/64" (16.27) | 17/32" (13.49) |
| 25W OS Stepped | 1903 | 4 | .984" (24.99) | 3.719" (94.46) | .970" x 15 RH Buttress | .751" - 1" (19.07 - 25.40) | .642" - 7/8" (16.30 - 22.22) | .532" - 3/4" (13.51 - 19.05) |
| 32S | 1723 | 1 | .703" (17.86) | 2.563" (65.10) | .690" x 24 RH | 1/2" (12.70) | 7/16" (11.11) | 11/32" (8.73) |
| 35J | 9-1727 | 1 | 3.875" (98.43) | 5.000" (127.00) | 3.861" x 18 RH | 3 1/2" (88.90) | 3" (76.20) | 2 7/16" (61.91) |
| 42S | 9-1729 | 1 | 1.250" (31.75) | 3.688" (93.68) | 1.236" x 20 RH | 1" (25.40) | 7/8" (22.23) | 23/32" (18.26) |

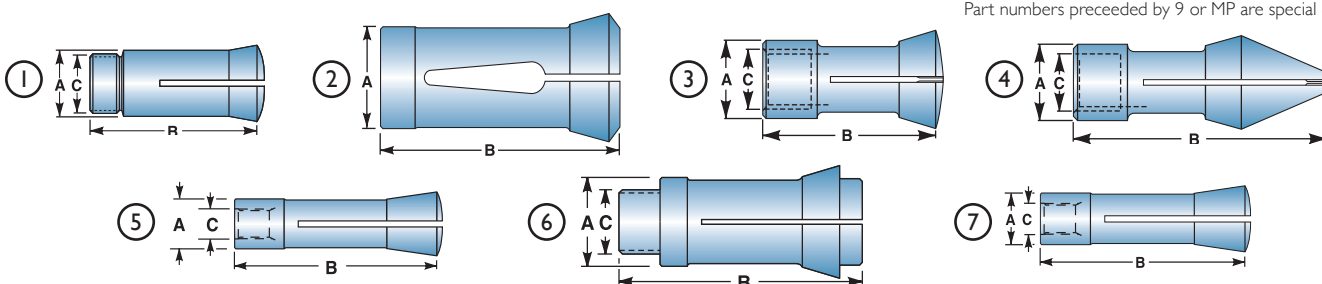
A - Internal stop thread is 1.687" x 20 RH.
 B - Internal stop thread is M53 x 1mm RH.
 C - Internal stop thread is 2 5/8" - 24 TPI RH.

NOTE: Millimeters in parentheses.
 Part numbers preceded by 9 are special order.



| Collet | Part Number | Figure | Dimensions | | | Rated Capacity | | |
|--------------------------|-------------|-------------|-------------------|--------------------|--------------------------------|---|---|---|
| | | | A | B | C | Round | Hexagon | Square |
| | | | Back Bearing | Overall Length | Thread | | | |
| 50V | 1731 | 6 | 1.250" (31.75) | 4.000" (101.60) | 1.125" x 24 RH | ¹⁵ / ₁₆ " (23.81) | ¹³ / ₁₆ " (20.64) | ²¹ / ₃₂ " (16.67) |
| 52SC | 9-1733 | 1 | .800" (20.32) | 3.688" (93.68) | .795" x 20 RH | ⁵ / ₈ " (15.88) | ¹⁷ / ₃₂ " (13.50) | ⁷ / ₁₆ " (11.11) |
| 115 | 1735 | 1 | 1.344" (34.14) | 3.500" (88.90) | 1.307" x 20 LH | 1 ¹ / ₈ " (28.58) | ³¹ / ₃₂ " (24.61) | ⁵¹ / ₆₄ " (20.24) |
| 215 | 9-1739 | 1 | 2.030" (51.56) | 4.750" (120.65) | 1.990" x 18 LH | 1 ³ / ₄ " (44.45) | 1 ¹ / ₂ " (38.10) | 1 ⁷ / ₃₂ " (30.96) |
| 315 | 1743 | 1 | 3.687" (93.65) | 5.500" (139.70) | 3.622" x 16 LH | 3 ¹ / ₄ " (82.55) | 2 ¹³ / ₁₆ " (71.44) | 2 ¹ / ₄ " (57.15) |
| B3 | 1745 | 5 | .650" (16.51) | 3.031" (76.99) | .437" x 20 RH | ¹ / ₂ " (12.70) | ⁷ / ₁₆ " (11.11) | 1 ¹ / ₃₂ " (8.73) |
| B32 Thru-Hole | 2249 | 1 | 1.259" (31.97) | 4.008" (101.80) | Buttress 1.169" x 15 RH | .943" (23.95) | .817" (20.75) | .667" (16.94) |
| B32 Stepped | 2249 | 1 | 1.259" (31.97) | 4.008" (101.80) | Buttress 1.169" x 15 RH | .943" to 1.25" (23.95 to 3.17) | .817" to 1.091" (20.75 to 17.71) | .667" to .89" (16.94 to 22.6) |
| B32/45 Thru-Hole | 2239 | 4 (page 44) | 1.259" (31.97) | 4.623" (117.42) | Buttress 1.169" x 15 RH | ⁵⁹ / ₆₄ " (23.41) | .817" (20.75) | .667" (16.94) |
| B32/45 Stepped | 2241 | 4 (page 44) | 1.259" (31.97) | 4.623" (117.42) | Buttress 1.169" x 15 RH | .922" to 1 ³ / ₄ " (23.4 to 44.45) | .817" to 1 ¹ / ₂ " (20.75 to 38.10) | .667" to 1 ¹ / ₄ " (16.94 to 31.7) |
| B45 Thru-Hole | 2243 | 1 | 1.771" (44.98) | 4.290" (108.96) | M42 x 1.5 RH | 1 ¹³ / ₃₂ " (35.71) | 1.240" (31.49) | 1.013" (25.73) |
| B45 Stepped | 2245 | 1 | 1.771" (44.98) | 4.290" (108.96) | M42 x 1.5 RH | 1.407" to 1 ³ / ₄ " (35.73 to 44.45) | 1.240" to 1 ¹ / ₂ " (31.49 to 38.10) | 1.013" to 1.25" (25.73 to 31.7) |
| D5 | 9-1747 | 5 | .780" (19.81) | 3.031" (76.99) | .500" x 20 RH | ⁵ / ₈ " (15.88) | ¹⁷ / ₃₂ " (13.50) | ⁷ / ₁₆ " (11.11) |
| GTM | 1789 | 5 | .625" (15.88) | 2.437" (61.90) | .437" x 20 RH | ¹ / ₂ " (12.70) | ⁷ / ₁₆ " (11.11) | 1 ¹ / ₃₂ " (8.73) |
| J & L Center Mill MP2932 | 7 | 7 | .999" (25.37) | 4.375" (111.13) | .625" x 11 RH | ³ / ₄ " (19.05) | ⁴¹ / ₆₄ " (16.27) | ³³ / ₆₄ " (13.10) |
| JC | 1751 | 6 | 1.360" (34.54) | 4.000" (101.60) | — | 1 ³ / ₁₆ " (30.16) | 1" (25.40) | 1 ³ / ₁₆ " (20.64) |
| LB | 1755 | 2 | .687" (17.45) | 2.000" (50.80) | — | ¹ / ₂ " (12.70) | ⁷ / ₁₆ " (11.11) | 1 ¹ / ₃₂ " (8.73) |
| Pro 20 Thru-Hole | 2247 | 4 (page 44) | .7874" (20) | 3.700" (93.98) | Buttress .775" x 6 Thrds/cm | .5708" (14.50) | .4921" (12.5) | .3937" (10.0) |
| Pro 20 Stepped | 2247 | 4 (page 44) | .7874" (20) | 3.700" (93.98) | Buttress .775" x 6 Thrds/cm | .5708" to .7874" (14.50 to 20.0) | .4921" to .6693" (12.5 to 17.0) | .3937" to .551" (10.0 to 14.0) |
| RO | 9-1769 | 3 | 1.250" (31.75) | 2.938" (74.63) | .875" x 16 RH | 1 ¹ / ₈ " (28.58) | ³¹ / ₃₂ " (24.61) | ²⁵ / ₃₂ " (19.85) |
| RO | 9-1771 | 4 | 1.250" (31.75) | 4.437" (112.70) | .875" x 16 RH | .800" (20.32) | 1 ¹ / ₁₆ " (17.46) | ⁹ / ₁₆ " (14.29) |
| RO | 9-1773 | 4 | 1.250" (31.75) | 4.437" (112.70) | .875" x 16 RH | 1 ¹ / ₈ " (28.58) | ³¹ / ₃₂ " (24.61) | ²⁵ / ₃₂ " (19.85) |
| RO | 9-1767 | 3 | 1.250" (31.75) | 2.938" (74.63) | .875" x 16 RH | .800" (20.32) | 1 ¹ / ₁₆ " (17.46) | ⁹ / ₁₆ " (14.29) |
| R8 | 1757 | 5 | .950" (24.13) | 4.000" (101.60) | .437" x 20 RH | ³ / ₄ " (19.05) | ⁴¹ / ₆₄ " (16.27) | 1 ⁷ / ₃₂ " (13.50) |

NOTE: Millimeters in parentheses.
Part numbers preceded by 9 or MP are special order.



Frequently Asked Questions

Why buy a Hardened, Precision-Machined Collet?

A hardened, precision-machined collet has a head angle and bore that are case hardened to 60 to 63 Rockwell. This will give you the maximum life possible. The bore is hardened, precision-machined and guaranteed to have a TIR of .001" or less. Special-accuracy collets are available that are guaranteed to have a TIR of .0002". Before investing in a special-accuracy collet, check your standard collet – they usually have a TIR of .0005" or better.

Why not buy a bargain collet?

A bargain is possible because something has been compromised. The head angle and bore are not in the 60+ Rockwell range. The back bearing of the collet is not held to precision size and concentricity tolerances. The bore, head angle, back bearing and thread are not all concentric with each other. Because the collet is softer than a Hardinge collet, it will wear very quickly. A hardened, precision-machined collet can last for years.

When should I use an emergency collet?

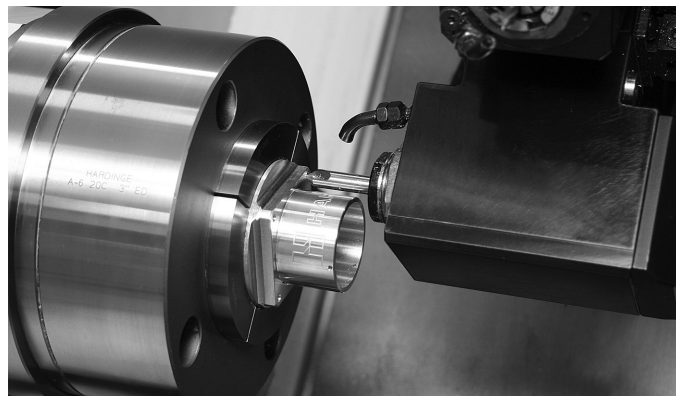
An emergency collet can be used when:

- You need a collet bore to run as close as the spindle's TIR; an emergency is bored in place in the machine's spindle.
- A hardened, precision-machined collet is necessary for any long run or high wear situation. But, if one doesn't exist in your inventory, an emergency collet can be quickly bored to size. It allows the job to get in the schedule while waiting for delivery of the hardened, precision-machined collet.
- A job consisting of a couple hundred parts and the proper size hardened, precision-machined collet is not available.

Points to consider: The head angle and the collet bore are not heat treated on emergency collets and will wear quickly under heavy or long use. The rule of thumb for the life of the bore and leaf tension of an emergency collet is 300 to 500 pieces. The threads are heat treated but the leaves of the collet are not spring tempered. This results in the collet leaves losing their elasticity. Eventually you will not be able to put the part in the collet because the leaves have lost their tension.

Why do I have to use a stop plate with my Sure-Grip Expanding Collet?

The expanding collet is pulled back with a draw plug to open it. If the chucking ID of the parts vary, the collet will pull back or stick out farther than the previous piece. The Stop Plate eliminates the movement of the part and also stabilizes it for heavy stock removal.



Is there an adapter that allows me to use my 5C collets in the 16C spindle?

Yes, there is a 16C-to-5C collet adapter which accepts 5C collets. There are many limitations, however. The major one is concentricity. Because of the number of parts in the assembly, the TIR will be .002" or more. If you are a production shop, you should not consider the adapter except for emergency situations. It takes about 15 minutes to change a collet. When doing secondary work, it will not be possible to hold concentricity of less than .002". Adapters are also available for 20C-to-16C and 25C-to-16C.

Why do I need Dead-Length® Collets or Step Chucks?

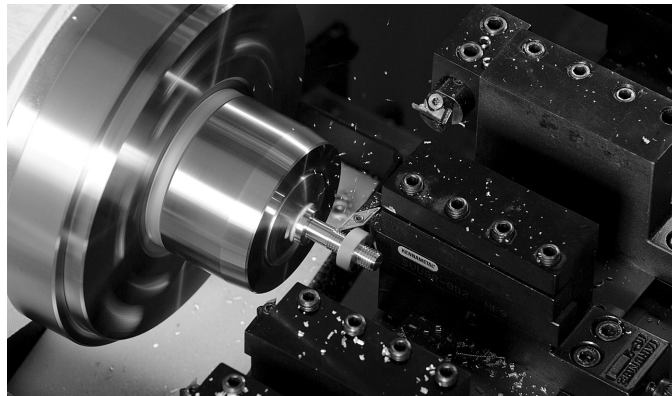
All draw-in collets have a diameter-to-length ratio when doing secondary operations. When using 5C, 16C, 20C, 25C collets or other collets with a 10° head angle, the ratio is 1:3. For every .001" change on the chucking diameter, the part will either pull back .003" or stick out .003" from the setup part. This can mean a total length variation of .009" when the chucking diameter varies .003". If the print calls for a length tolerance less than .002", a standard collet cannot be used. This is where the Dead-Length collet is ideal. If the stock diameter varies .003", the finished part lengths will not vary more than a few ten thousandths of an inch (.0002" to .0005").

I have noticed that the threads and back bearing on our collets are being damaged and have to be replaced. How can I eliminate this expense?

Vises, vise-grips and pump pliers are probably the cause of your problem. Purchase several collet wrenches for each style (5C, 16C, 20C, 25C, etc.) collet in your shop. These wrenches are keyed and locate over the back bearing of the collet to hold it while the threaded stop, Dead-Length assembly, etc., are tightened into the collet.

I have Style "S" Master Collets on my multi-spindle automatics. Can I use them on my CNC Lathe?

Possibly. If you're doing bar work, they work very well. The Style "S" Master Collet system was developed for use on multi-spindle automatic bar machines where collet runout is of very little concern. Secondary work on CNC machines requires very good collet concentricity, usually better than .001" TIR. Style "S" Master Collet system's TIR could be as high as .004" to .008", making them unacceptable for secondary work. Emergency pads will work in an emergency. Once you remove them, they cannot be used to run the same job again as their TIR will be unacceptable.



What is the difference between the Dead-Length® Collet and the Dead-Length Spider-Stop Step Chucks?

The Dead-Length Collet uses the face of the spindle as its locating surface for the inner collet. Because the spindle doesn't move when the draw bar pulls the collet back, the inner collet also doesn't move, resulting in length control. The Dead-Length Spider-Stop Step Chuck uses a spider stop that fits inside the slots of the step chuck and locates against the collet seat (angle) of the spindle. Because the collet seat doesn't move when the draw bar pulls back the step chuck, neither does the spider stop or the workpiece. There is an internal thread in the face of the spider which accepts the male thread in the stop button. The customer has to bore out the step chuck to accommodate the stop button. The stop button is machined to conform to the location point of the workpiece.

Is there ever a reason I would use a Dead-Length Spider-Stop Step Chuck for small diameter work?

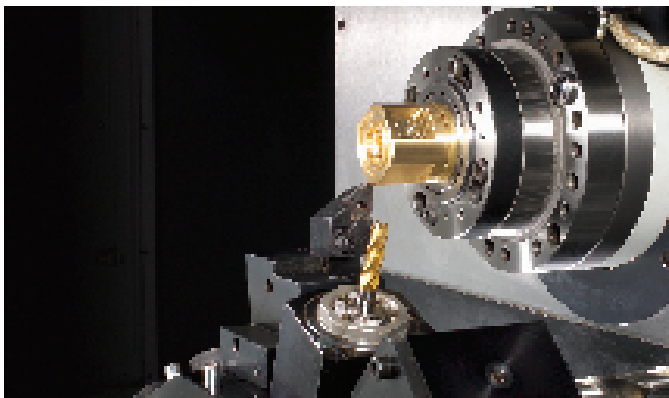
Yes. Occasionally a customer finds that the standard 5C Dead-Length Collet does not allow them to hold their parts to the print's concentricity requirements. A Dead-Length collet does not run as concentric as a Hardened, Precision-Machined collet even though it may be bored in place. This is because of the allowances between the moving parts. A Dead-Length Spider Step Chuck is identical to a standard collet; there is only one moving part — the step chuck. This attribute will allow closer concentricities between chucking and machined diameters than with a standard Dead-Length collet.

I have a 6" diameter part which I want to hold in a Dead-Length Spider-Stop Step Chuck, but it has a maximum size of 4". What can I do?

Order a special Dead-Length step chuck. Request Hardinge Brochure #2285, "Precision Length Control", which describes many ways to control length and various ideas relating to step chucks.

Will threaded collet stops help me hold lengths?

No, however if the diameter of the part being gripped is held to a very close tolerance, the answer could be yes. Unfortunately the stop is attached to the collet, which draws back with the draw bar. For every .001" variation in the chucking diameter, the collet will draw back or stick out .003". The main purpose of a collet stop is to eliminate the push-back of the part while it is being machined, or to automatically eject the part when the collet is opened.



I have a part that requires internal gripping. After turning, I want to take it to a mill for additional work but still want to grip on the ID. What are my options?

There are two options – The "Master Expanding Collet" and the "Sure-Grip® Collet-Style Expanding Collet." Both of these can be taken to an index fixture or dividing head that has a 5C or 16C collet seat. The Master Expanding Collet uses interchangeable pads which can be removed and stored. This unit is opened with a draw plug that actuates the collet in the front. It is mainly for light-duty machining. The Sure-Grip Collet-Style Expanding Collet system will also work. The collets are parallel opening and have a range from .125" to 4". This system, in the larger sizes, can handle heavy-duty machining operations.

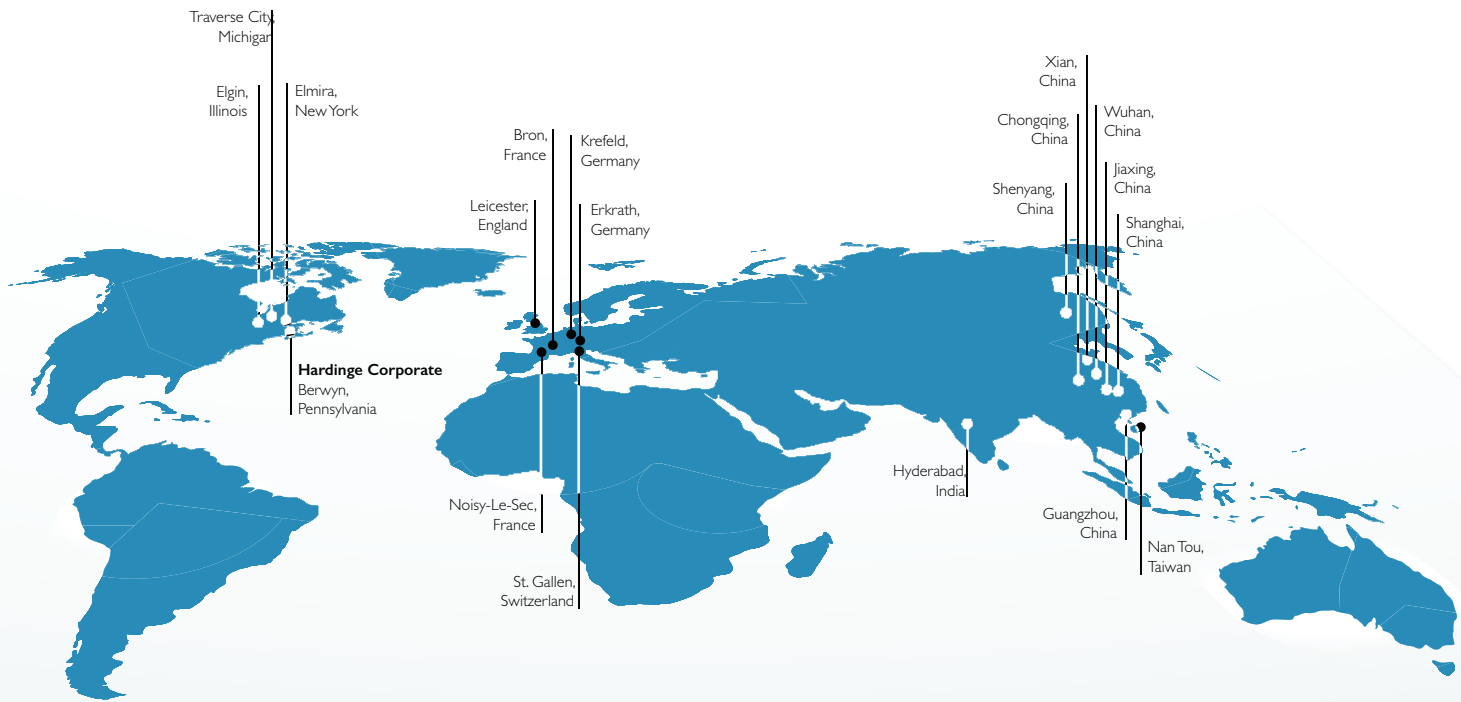
What is the correct procedure for boring out an emergency collet or step chuck?

Insert the collet in the spindle with the draw bar in the full open position. Make certain that all the pins are in the face of the collet or step chuck. Adjust the collet closer until closed on the pins and then back off $\frac{1}{8}$ to $\frac{1}{4}$ of a turn. DO NOT back off enough to where the collet angle is not fully seated in the spindle. Lock the draw bar in this position. Decrease the chucking force as much as possible (do not use the same force you would to grip the part). Close the collet. If you can pull the pins out, you should increase the chucking pressure until the pins cannot be removed. Rough and finish the bore to the chucking diameter of the part. Remove the collet or step chuck and deburr it. Thoroughly clean the spindle, step chuck, closer and then remount them. Adjust the collet closer for proper gripping and the correct draw bar pressure to hold the workpiece.

I have a part with a 9" chucking diameter to be run on my QUEST® T51 Lathe. I want to hold it in a step chuck which will allow me to run at my machine's maximum rpm. Your catalog lists the largest step chuck as 8". Can I get a larger step chuck and closer?

Yes. We have a full department set up to make special spindle tooling to help you with any situation you may encounter. You are right about using a step chuck and closer. If your part has a good chucking diameter (+.001", -.003"), you will be more productive than when holding the part in a 3-jaw power chuck. As with the jaw chuck, it is necessary to check for turret tooling interferences.





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