

HARDINGE WORKHOLDING

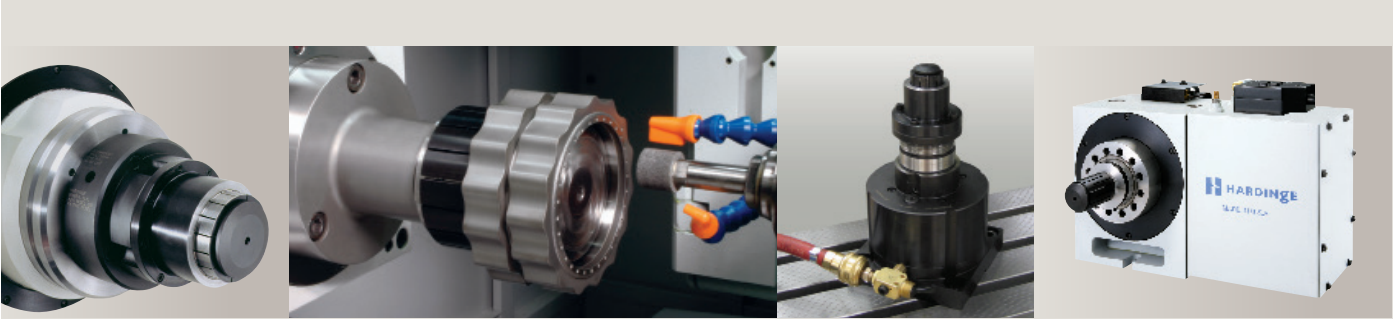
Sure-Grip Expanding Collet Systems



800-843-8801
WWW.HARDINGE.COM



The Hardinge ID Gripping Advantage



Hardinge® Sure-Grip® Expanding Collet Systems offer solutions to difficult machining problems for turning, milling, grinding, assembly and automation applications.



Hardinge stocks standard Type-A (A2-5, A2-6, A2-8), collet style (5C, 16C, 3J) and between-center styles. Custom manufacturing is available for other machine and fixture styles.

- Standard product to grip inside diameters from 1/8" to 4"
- Stationary arbor / work stop location guarantees part length control and rigidity
- .015" Expansion range for each collet accommodates part variation
- No "truing up" of arbor required — .0002" TIR as mounted
- .0005" TIR at grip surface (arbor & collet runout)
- Collet style mounts in any machine or fixture that accepts 5C, 16C or 3J collets using existing spindle or adapter
- Safety stop prevents damage if system is actuated without a part to be gripped
- Specials can be made for non-round shapes, deep grips or with a recessed draw plug for gripping to the bottom of the bore
- Quick delivery

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Sure-Grip® Expanding Collet Systems



5C Collet System



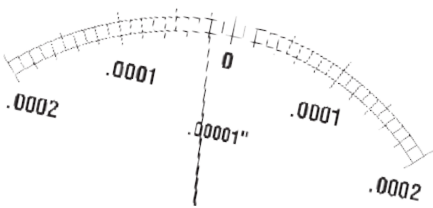
16C Collet System



3J Collet System

Styles for all machine brands—Collet-Style, Spindle-Mount Style and Center Arbors.

Benefit from reduced changeover time and quick centering.



Hardinge® precision manufacturing processes guarantee that the Total Indicator Reading (TIR) of the arbor will be within .0002" (.00508mm). With the expanding collet mounted on the arbor, the TIR of the collet and the arbor will not exceed .0005" (.0127mm).

Collet-Style Expanding Collet Systems 5C, 16C and 3J

Collet-Style Expanding Collet Systems mount directly into the collet angle of the spindle or collet adapter. It is a solid, one-piece body and arbor combination with a minimum of parts required to expand the collet. The expanding arbor instantly locates on center, unlike other designs. **Changeover from one collet size to another within range of the arbor size can be done in one minute. Changing to another arbor size takes three to five minutes.**

Spindle-Mount Style Expanding Collet Systems A2-5, A2-6 and A2-8

These Expanding Collet Systems mount directly onto the spindle of the machine. There is no centering adjustment required. Spindle mounts other than A2 series are available. **Changeover from one arbor size to another in this style is approximately five to seven minutes.**



A2-5, A2-6 and A2-8 Collet System

No costly adapters to mount the arbor onto the spindle. One inexpensive self-contained unit for the lowest-priced assembly in the industry!

Center Arbors for Precision Machining



The Sure-Grip® Arbor assembly is designed to be used on grinding machines and lathes. The arbor can be held between centers or chucked on one end and supported by a center on the other end. This expanding arbor assembly style is manually adjusted.

The arbors have a precision locating shoulder and diameter so you can fabricate custom workpiece stops.

Maximize your productivity by using two arbors. While one part is running, load the next part on the second arbor. Load the second arbor into the spindle when the first part is done. This is a big time saver when chucking one end of the arbor in a collet.

Sure-Grip Expanding Collets are available in 1/64" increments and a full range of metric sizes. The range of each collet is +.015" to -.001" (+.38 to -.025mm) from its specified size. For example, a 1.000" (25.40mm) expanding collet will hold work with a bore measuring .999" (25.37mm) to 1.015" (25.78mm), eliminating the need for decimal sizes.

Gripping Range of Expanding Collet Heads

The gripping range of each collet is +.015" to -.001" (+.38 to -.025mm) from its specified size.



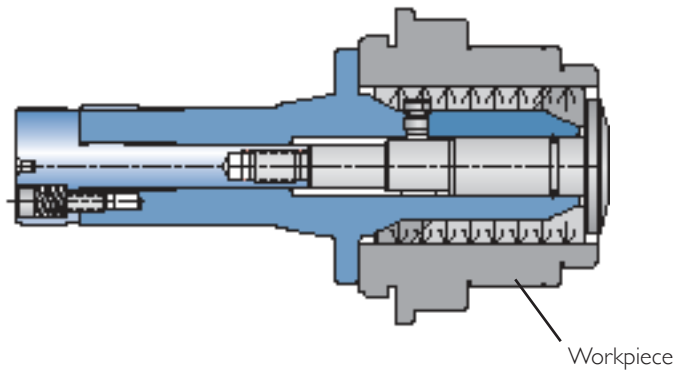
Wide Gripping Range

Sure-Grip Collet and Arbor Size Ranges

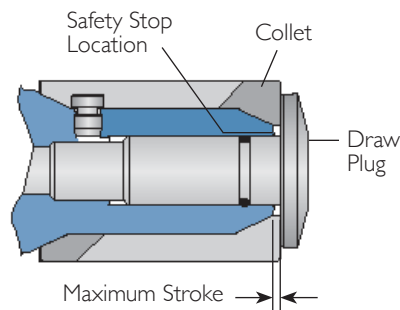
Model	Inch	Millimeter	Length
#100	1/8" to 1/2" (Soft)	3.17 to 12.70	.875" (22.22mm)
#200*	1/2" to 3/4"*	12.70 to 19.05	1.000" (25.40mm)
#250	3/4" to 1"	19.05 to 25.40	1.375" (34.92mm)
#300	1" to 1 1/2"	25.40 to 38.10	1.750" (44.45mm)
#400	1 1/2" to 2 1/4"	38.10 to 57.15	2.182" (55.42mm)
#500	2 1/4" to 3"	57.15 to 76.20	2.781" (70.63mm)
#600	3" to 4"	76.20 to 101.60	2.781" (70.63mm)

* Collet range up to .999" still available in previous model 200 design for existing users, however model 250 will achieve better gripping with its longer collet length.

Hardinge Design Expertise



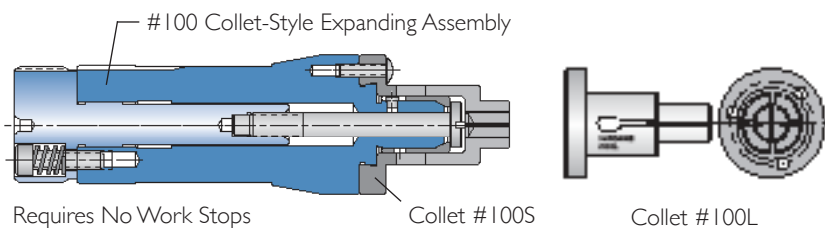
- True Parallel Gripping
- Built-in Safety Feature
- Interchangeable Collets



Small Diameter Capacity

The #100-style expanding collet will handle a range from $\frac{1}{8}$ " to $\frac{1}{2}$ " (3.175 to 12.70mm) and is machined to size by the customer. It is a unique design with a master expander as part of the arbor assembly. This expanding collet comes in two styles: #100S with a .300" (7.60mm) long pilot, and #100L with a .718" (18.20mm) long pilot. The recommended gripping length is a 1:1 ratio with the bore. For example: a $\frac{1}{8}$ " (3.175mm) bore equals a gripping length of $\frac{1}{8}$ " (3.175mm).

The Hardinge design requires only a standard hex wrench to remove the collets. No special wrenches or special tools are needed.



Parallel Gripping

The Hardinge® Sure-Grip® Expanding Collet is a double-angle design. This design assures true parallel gripping of the workpiece with maximum torque. Generally, special restrictors are not needed when gripping a workpiece that is shorter than the collet's bearing diameter.

Safety Stop

A major concern with many expanding collets is over-expansion to a point where the collet is permanently distorted or it breaks. The Sure-Grip Expanding Collet System is designed with a built-in safety feature—the draw plug bottoms out on the face of the arbor, eliminating overexpansion.

Interchangeable Collets

Different Sure-Grip Expanding Collet Systems use the same collets for the grinding/turning arbor as they do for the spindle-mounted and collet-style expanding collet assemblies. This lets you use one set of collets for your turning, milling and grinding applications.

Specials

Sure-Grip Collets can be custom manufactured for special applications for spindles, sub-spindles and mill tables. Pick-off collets are frequently engineered for Swiss and multi-spindle machines. Splined or serrated surfaces can be made for special grips and shapes, while recessed draw plug styles might solve your short gripping problem.

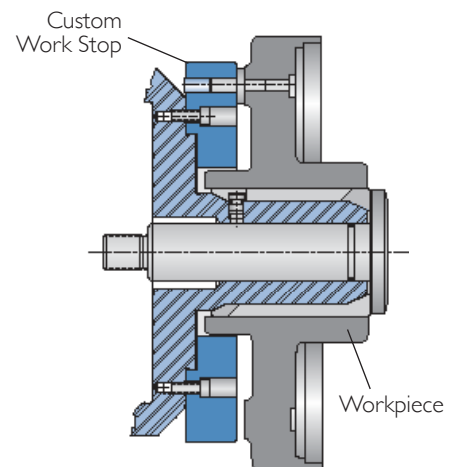
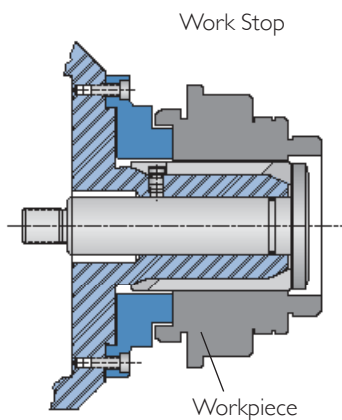
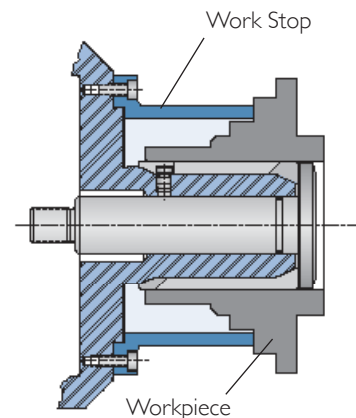
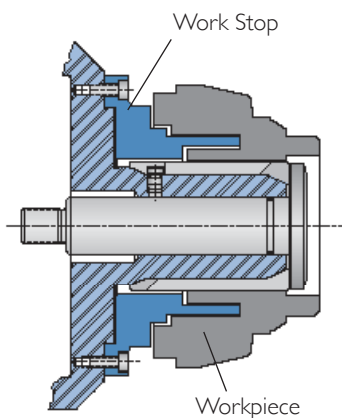
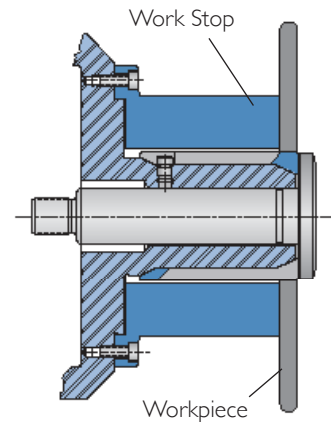
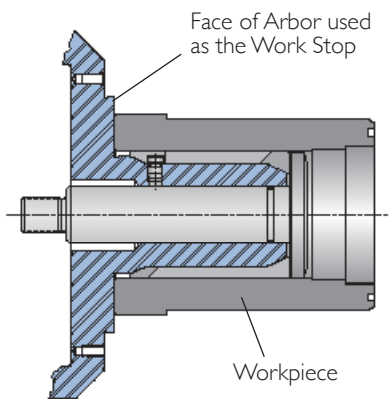
Exact Part Length Control

Dead-Length® Work Stop Configurations:

Hardinge Work Stops are machined by the customer to meet the requirements of the workpiece.

The Sure-Grip® Expanding Collet System assures exact workpiece lengths by locating the part against the face of the arbor or against a machineable work stop. The collet draws the workpiece firmly against the stop, producing an extremely stable part. The results are heavier cuts, better surface finishes, and closer tolerances. Long parts can be easily machined due to this added stability.

The Hardinge®
Dead-Length work stop design offers an extremely stable workpiece, resulting in heavier cuts, better surface finishes and closer tolerances.



Dead-Length® Work Stops and Draw Bar Adapters



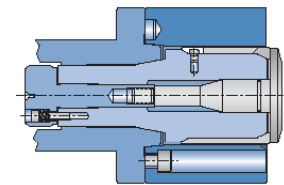
Hardinge Work Stop
bored and faced by customer
for part length control of
short workpiece

Dead-Length Work Stop

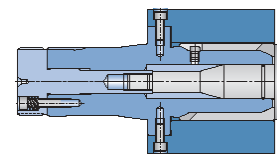
Hardinge® is the expert when it comes to exact part length control. Hardinge patented the first Dead-Length 5C and 16C collets used for high-production manufacturing.

The Sure-Grip® Expanding Collet has true part length control built into its design. The workpiece locates against the face of the arbor or the face of the work stop to ensure no longitudinal end movement.

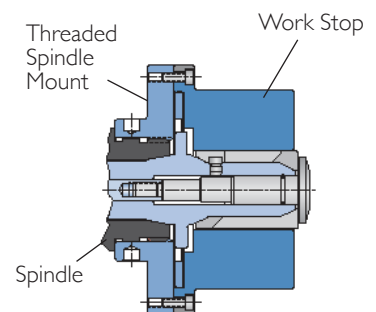
All expanding collets, except Model #100, take a machineable work stop that bolts directly to the expanding collet arbor or the machine's spindle, ensuring no end movement of the workpiece. The #400 and #500 5C-Style work stops are bolted to an optional threaded- or taper-nose spindle mount.



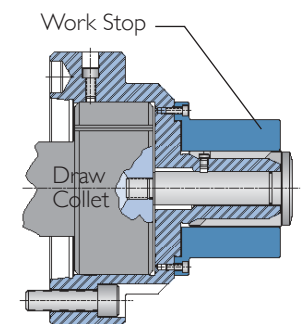
16C Collet-Style



3J Collet-Style



#400, #500 5C Collet-Style

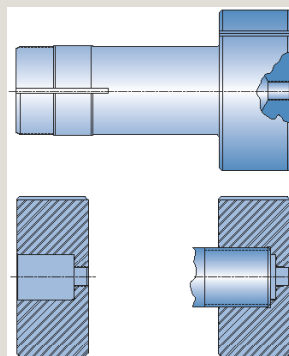


ANSI Spindle-Mount Style
A2-5, A2-6, A2-8

Draw Bar Adapters

The Sure-Grip Expanding Collet System can be used on any Hardinge spindle as well as all other machines with A2-5, A2-6 and A2-8 spindles. When mounted on Hardinge lathes, a Draw Collet is used. When mounted on ANSI and ISO A2 series spindles, a Draw Bar Adapter is used. The adapter is machined by the customer to fit the particular spindle's draw tube/bar. If the customer does not have the ability to machine the adapter, Hardinge will machine it with quick delivery and at a nominal cost.

Hardinge-Style Draw Collet



A2-Style
Blank Draw
Bar Adapter

Customer-
or Hardinge-
machined
Draw Bar
Adapter

Frequently Asked Questions:



Can I or can't I? Check the frequently asked questions below:

Can I machine a workpiece without using a work stop?

Yes & No. The collet draws back as it grips the bore of the workpiece. Any variation in the gripping diameter will cause the part to pull back farther or less than the setup piece. If you are only machining the OD of the part, then a work stop is not necessary. Unfortunately, 99% of the time this is not the case. Typically you will be machining a face or shoulder which has a length dimension that has to be held to a locating surface. This requires a work stop.

Do I have to buy a different collet for each different bore size?

No. The collets will handle a variation in size of -.001" to +.015" (-.025mm to +.381mm). If you have a 1 $\frac{3}{4}$ " (6.35mm) collet, it can grip workpieces that have bores from 1.749" to 1.765" (6.10mm to 6.96mm) in diameter.

Will I damage the expansion collet if I close the collet without a workpiece on it?

No. The Sure-Grip System is designed to eliminate this problem. The draw bar will contact the face of the arbor before the collet can be over-expanded.

Can I buy Emergency Expanding Collets?

No. Because the collets come in $\frac{1}{64}$ " (.396mm) sizes and each collet can handle a variation of -.001" to +.015" (-.025mm to +.381mm), there is no need for emergency collets.

Can I grip internally on a hex-shaped part?

Yes. Hex and square collets are available.

I plan on taking $\frac{1}{8}$ " off a part while holding on a small bore. Can I use the Model #100?

No. The #100 collet is for light machining operations such as taking a few thousandths off the face or OD of a workpiece. We recommend that you use the Model "S" Precision-Style Expanding Collet for heavier stock removal on parts with bores less than $\frac{1}{2}$ " (12.70mm) in size.

Can I damage my Sure-Grip System if I use too much draw bar force?

Yes. The maximum draw bar forces are listed below. If you exceed these forces, damage to the arbor assembly may result.

Maximum Draw Bar Force

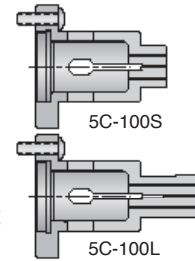
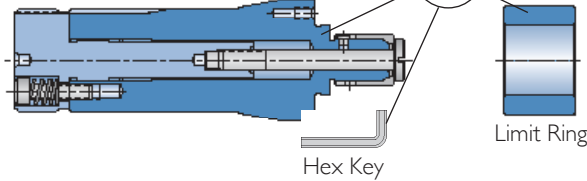
Style	#100	#200	#250	#300	5C #400	5C #500	#400	#500	#600
Max. Pounds									
Spindle-Mount	2,000	2,000	2,000	4,000	—	—	7,000	9,000	9,000
Collet-Style	2,000	2,000	2,000	4,000	4,000	4,000	7,000	7,000	7,000
Max. Newtons									
Spindle-Mount	8,896	8,896	8,896	17,793	—	—	31,138	40,034	40,034
Collet-Style	8,896	8,896	8,896	17,793	17,793	17,793	31,138	31,138	31,138

5C Sure-Grip® Expanding Collet System Assemblies



Short / Long
Collet Assemblies
(sold separately)

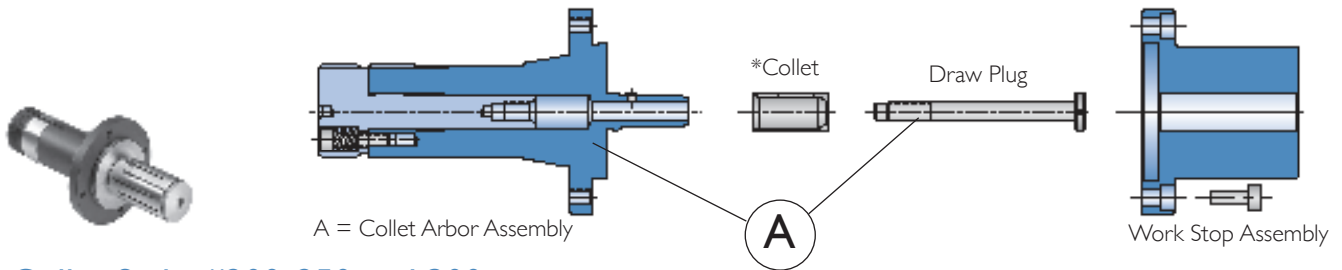
A = Collet Arbor Assembly



5C Collet-Style, #100

Working Range	Collet Model	Collets & (3) Screws Part Number*	"A" Collet Arbor Assembly
1/8" to 1/2" (3.17 to 12.70mm)	5C-100S	1833-00-00-000000	1869-00-00-000100
1/8" to 1/2" (3.17 to 12.70mm)	5C-100L	1833-00-00-100000	1869-00-00-000100

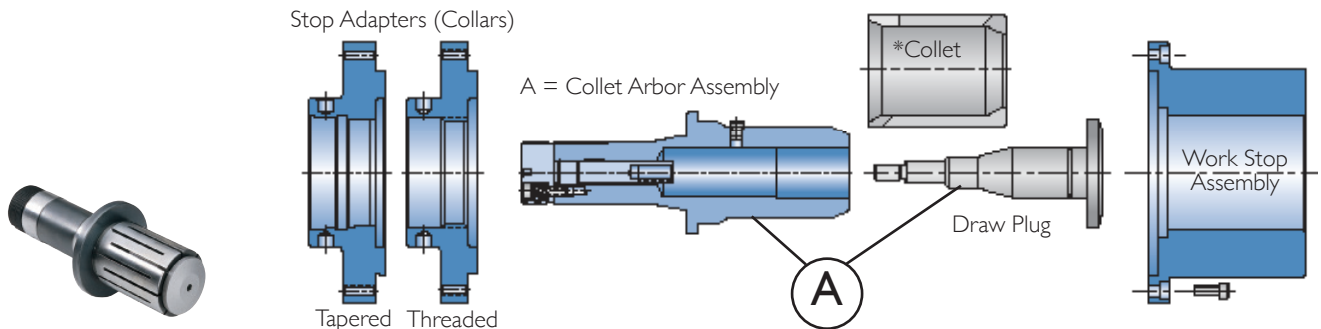
* Expanding collet assemblies are not included in collet arbor assembly—see page 27 for complete list.
Collets are machined to size by the customer in the Model #100 series. Set of 3 collet screws only – part number 0300108.



5C Collet-Style, #200, 250 and 300

Working Range	Collet Model	Collet Part Number*	"A" Collet Arbor Assembly	Workstop Assembly
1/2" to .765" (12.70 to 19.43mm)	5C-200	1835-00-19	1869-00-00-000200	1875-00-00-000200
3/4" to 1.015" (29.00 to 25.78mm)	5C-250	1861-00-19	1869-00-00-000250	1875-00-00-000250
1" to 1.515" (25.40 to 38.48mm)	5C-300	1837-00-19	1869-00-00-000300	1875-00-00-000300

* Expanding collets not included in the collet arbor assembly—see page 27 for complete list.



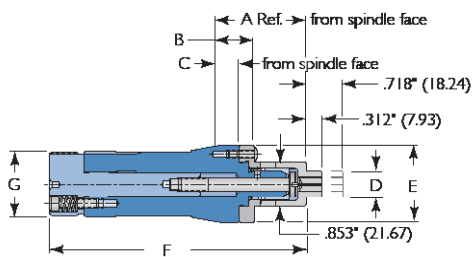
5C Collet-Style, #400 and 500

Working Range	Collet Model	"A" Collet Part No.*	Arbor Assembly	Threaded Stop Adapter	Tapered Stop Adapter	Work Stop Assembly
1 1/2" to 2.265" (38.10 to 57.53mm)	5C-400	1839-00-19	1869-00-00-000400	7887-00-00-400500	7889-00-00-400500	1855-00-00-000400
2 1/4" to 3.015" (57.10 to 76.58mm)	5C-500	1841-00-19	1869-00-00-000500	7887-00-00-400500	7889-00-00-400500	1855-00-00-000500

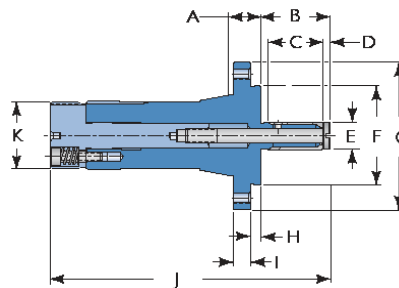
Note: Collets are available in 1/64" increments within the above stated ranges. Each collet will hold a workpiece with a bore of -.001" (.025mm) under the size of the collet to +.015" (.381mm) over the size of the collet. * Expanding collets not included in the collet arbor assembly—see page 27 for complete list.

5C Sure-Grip® Expanding Collet Systems

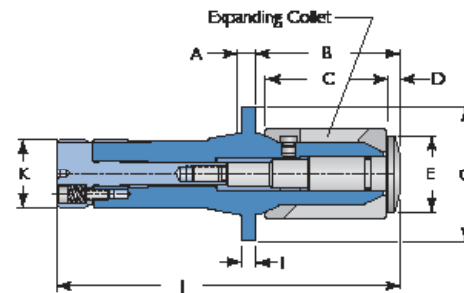
Dimensions



Model #100



Model #200, 250, 300



Model #400, 500

Collet Assembly Dimensions (Expanding collets are not included in assemblies)

Dimensions	A	B	C	D	E	F	G	H	I	J	K
5C - #100	1.671" (42.44)	.672" (17.07)	.375" (9.53)	.515" (13.08)	1.470" (37.34)	4.952" (125.81)	1.238" (31.45)	—	—	—	—
5C - #200	.567" (14.40)	1.250" (31.75)	1.000" (25.40)	.157" (3.97)	.490" (12.45)	1.812" (46.02)	2.709" (66.81)	.187" (4.75)	.310" (7.87)	5.097" (129.46)	1.238" (31.45)
5C - #250	.590" (14.98)	1.717" (43.67)	1.375" (34.92)	.157" (3.97)	.618" (15.69)	1.812" (46.02)	2.709" (66.81)	.187" (4.75)	.310" (7.87)	5.468" (138.88)	1.238" (31.45)
5C - #300	.567" (14.40)	2.066" (52.47)	1.750" (44.75)	.187" (4.75)	.990" (25.15)	1.812" (46.02)	2.709" (66.81)	.187" (4.75)	.310" (7.87)	5.928" (150.57)	1.238" (31.45)
5C - #400	.300" (7.62)	2.548" (64.71)	2.182" (55.42)	.250" (6.35)	1.393" (35.38)	—	2.437" (61.90)	—	.247" (6.27)	6.128" (155.65)	1.238" (31.45)

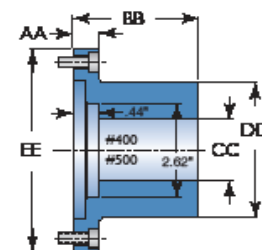
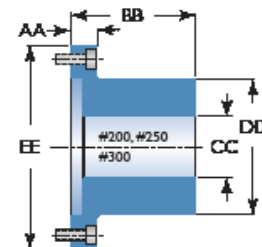
Millimeters in parentheses.

Work Stop Dimensions

Dimensions	AA	BB	CC	DD	EE	Stop Part No.	Screw PN
5C - #200	.437" (11.11)	1.312" (33.34)	.530" (13.46)	1.750" (44.45)	2.708" (68.78)	1875-00-00-000200	0100306
5C - #250	.437" (11.11)	1.687" (42.84)	.765" (19.43)	1.750" (44.45)	2.708" (68.78)	1875-00-00-000250	0100306
5C - #300	.437" (11.11)	2.078" (52.78)	1.030" (26.19)	1.750" (44.45)	2.708" (68.78)	1875-00-00-000300	0100308
5C - #400	.437" (11.11)	2.543" (64.59)	1.530" (39.11)	4.202" (106.73)	5.250" (133.35)	1855-00-00-000400	0100308
5C - #500	.437" (11.11)	3.187" (80.95)	2.280" (57.91)	4.202" (106.73)	5.250" (133.35)	1855-00-00-000500 (Spindle-Mounted)	0100308

Millimeters in parentheses.

Note: Work stop not required for #100 Collet Assembly – collet does not move when closed on bore.

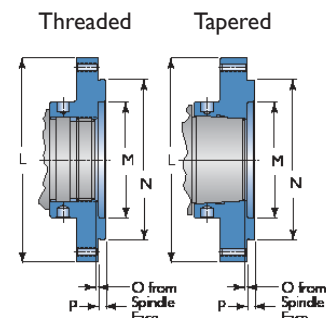


5C Spindle Work Stop Adapters (Collars) Dimensions/Part Num.

Work Stop Adapter	M	N	O	P	Part Number
Threaded-Nose Stop Adapter	3.000" (76.2)	4.124" (104.75)	.090" (2.29)	.187" (4.75)	7887-00-00-400500
Tapered-Nose Stop Adapter	3.000" (76.2)	4.124" (104.75)	.090" (2.29)	.187" (4.75)	7889-00-00-400500

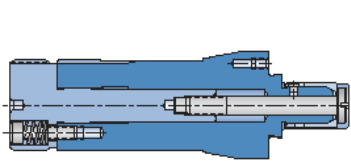
Millimeters in parentheses.

Note: Spanner Wrench for Work Stop Adapters – Part Number: 460-0009189

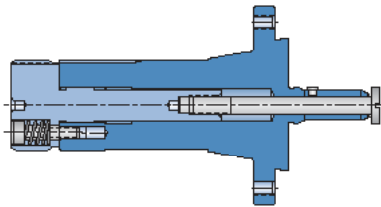


5C Sure-Grip® Expanding Collet Systems

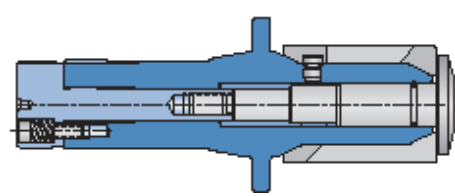
Parts List



Model #100



Model #200, 250, 300



Model #400, 500

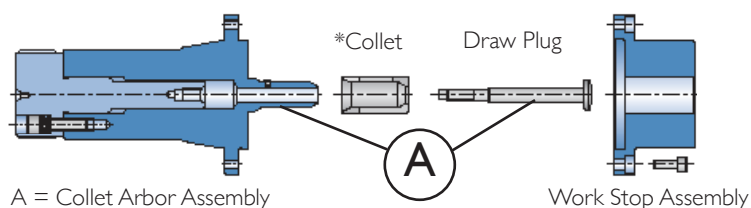
Part	Style	Part Number
<p>Collet Arbor:</p> <p>Model #100</p> <p>Model #200, 250, 300</p> <p>Model #400, 500</p>	5C – #100	1871-00-00-000100
	5C – #200	1871-00-00-000200
	5C – #250	1871-00-00-000250
	5C – #300	1871-00-00-000300
	5C – #400	1871-00-00-000400
	5C – #500	1871-00-00-000500
<p>Key:</p>	5C – #100/200/250	7869-00-00-100200
	5C – #300	7869-00-00-000300
	5C – #400	7869-00-00-000400
	5C – #500	7869-00-00-000400
<p>Draw Plug:</p>	5C – #100	1853-00-00-000200
	5C – #200	1873-00-00-000200
	5C – #250	1873-00-00-000250
	5C – #300	1873-00-00-000300
	5C – #400	1873-00-00-000400
	5C – #500	1873-00-00-000500
<p>Threaded Draw Bushing:</p>	5C – #100/200/250	7885-00-00-100200
	5C – #300	7885-00-00-300500
	5C – #400	7885-00-00-300500
	5C – #500	7885-00-00-300500
<p>Cap Screw:</p>	5C – #100/500	0100312
<p>Spring:</p>	5C – #100/500	CS-0006045
<p>Hex Wrench:</p>	5C – #100 Only	W-0011864
<p>O-Ring:</p>	#300	6-0009431
	#400	OR-0000810
	#500	OR-0001416
<p>Expander:</p>	5C – #100 Only	1849-00-00-000100
<p>Limit Ring:</p>	5C – #100 Only	1851-00-00-000100

Note: Expanding collet not included in assemblies.

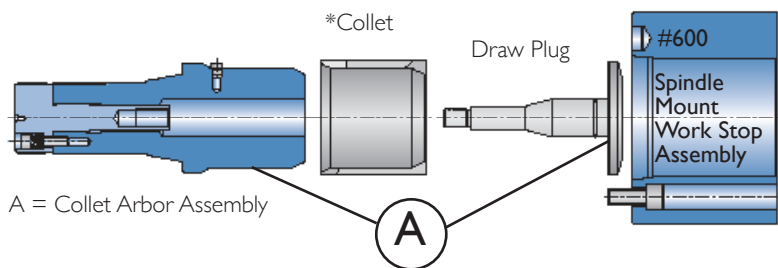
I6C Sure-Grip® Expanding Collet Systems Assemblies



I6C Collet-Style, #200, 250 and 300



I6C Collet-Style, #400, 500 and 600



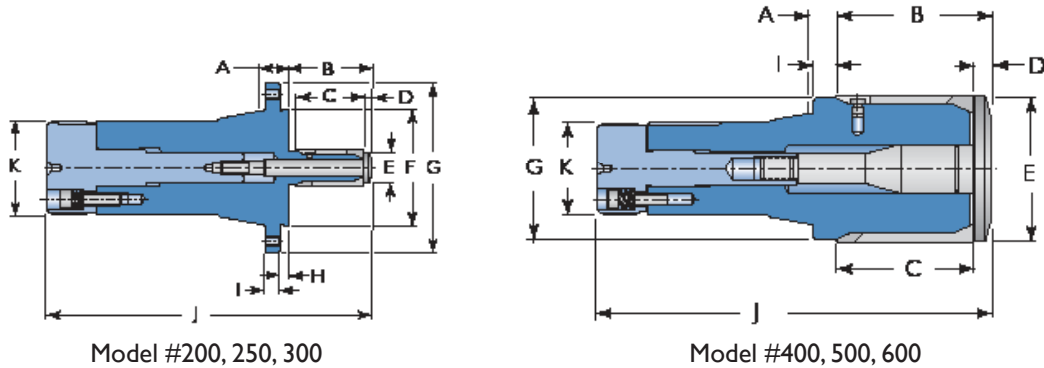
I6C Collet-Style, #200 - 600

Working Range	Model	Collet Part Number*	"A" Collet Arbor Assembly	Work Stop Assembly
½" to .765" (12.70 to 19.43mm)	I6C-200	1835-00-19-	2071-00-00-000200	1855-00-00-000200
¾" to 1.015" (19.05 to 25.78mm)	I6C-250	1861-00-19-	2071-00-00-000250	1855-00-00-000250
1" to 1.515" (25.40 to 38.48mm)	I6C-300	1837-00-19-	2071-00-00-000300	1855-00-00-000300
1½" to 2.265" (38.10 to 57.53mm)	I6C-400	1839-00-19-	2071-00-00-000400	2077-00-00-000400
2¼" to 3.015" (57.15 to 76.58mm)	I6C-500	1841-00-19-	2071-00-00-000500	2077-00-00-000500
3" to 4.015" (76.20 to 101.98mm)	I6C-600	1843-00-19-	2071-00-00-000600	2077-00-00-000600

Note: Collets are available in ¼" increments within the above stated ranges. Each collet will hold a workpiece with a bore of -.001" (.025mm) under the size of the collet to +.015" (.381mm) over the size of the collet. * Expanding collets not included in the collet arbor assembly—see page 27 for complete list.

I6C Sure-Grip® Expanding Collet Systems

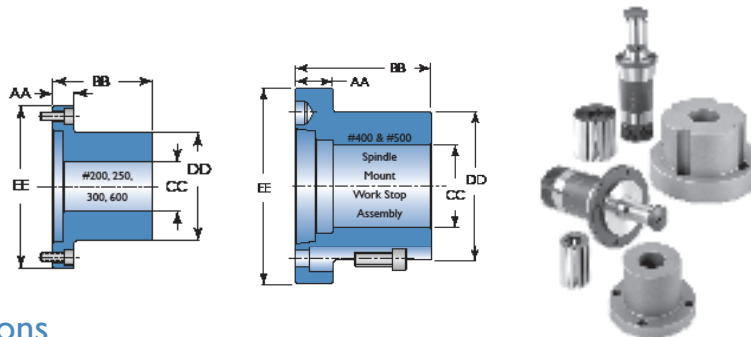
Dimensions



Collet Assembly Dimensions (Expanding collets are not included in assemblies)

Dimensions	A	B	C	D	E	F	G	H	I	J	K
16C - #200	.419" (10.64)	1.437" (36.49)	1.000" (25.40)	.157" (3.97)	.490" (12.45)	2.312" (58.72)	3.375" (85.72)	.187" (4.75)	.310" (7.87)	6.137" (155.88)	1.870" (47.49)
16C - #250	.419" (10.64)	1.687" (42.87)	1.375" (34.92)	.157" (3.97)	.618" (15.69)	2.312" (58.72)	3.375" (85.72)	.187" (4.75)	.310" (7.87)	6.534" (165.95)	1.870" (47.49)
16C - #300	.419" (10.64)	2.078" (52.78)	1.750" (44.75)	.187" (4.75)	.990" (25.15)	2.312" (58.72)	3.375" (85.72)	.187" (4.75)	.310" (7.87)	7.720" (196.08)	1.870" (47.49)
16C - #400	.438" (11.12)	2.620" (54.71)	2.182" (55.42)	.250" (6.35)	1.393" (35.38)	—	2.437" (61.90)	—	.247" (6.27)	6.128" (155.65)	1.870" (47.49)
16C - #500	.5149" (13.07)	3.358" (86.53)	2.781" (70.64)	.312" (7.92)	2.185" (55.50)	—	2.437" (61.90)	—	.247" (6.27)	6.987" (177.47)	1.870" (47.49)
16C - #600	.5147" (13.07)	3.797" (96.44)	3.187" (80.94)	.375" (9.52)	2.968" (75.38)	—	2.875" (73.02)	—	.247" (6.27)	7.998" (203.14)	1.870" (47.49)

Millimeters in parentheses.



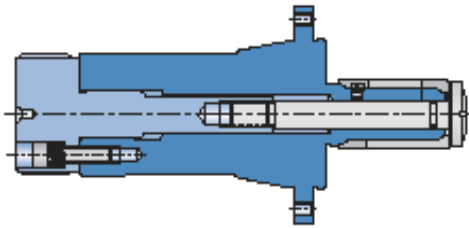
Work Stop Dimensions

Dimensions	AA	BB	CC	DD	EE	Part Number	Screw Part No.
16C - #200	.437" (11.11)	1.437" (36.49)	.530" (13.46)	2.250" (57.15)	3.375" (86.72)	1855-00-00-000200	0100308
16C - #250	.437" (11.11)	1.687" (42.84)	.765" (19.43)	2.250" (57.15)	3.375" (85.72)	1855-00-00-000250	0100308
16C - #300	.437" (11.11)	2.078" (52.78)	1.030" (26.19)	2.250" (57.15)	3.375" (85.72)	1855-00-00-000300	0100308
16C - #400 Spindle Mount	1.056" (26.59)	3.162" (80.31)	1.530" (38.86)	4.202" (107.73)	5.500" (139.70)	2077-00-00-000400 (Spindle Mounted)	0101216 or MS-0104019
16C - #500 Spindle Mount	1.056" (26.59)	3.797" (96.44)	2.342" (59.48)	4.202" (107.73)	5.500" (139.70)	2077-00-00-000500 (Spindle Mounted)	0101216 or MS-0104019
16C - #600 Spindle Mount	—	3.797" (96.44)	3.032" (77.01)	—	5.500" (139.70)	2077-00-00-000600 (Spindle Mounted)	0101216 or MS-0104019

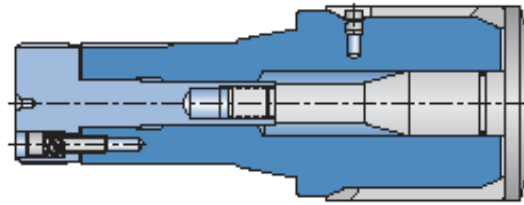
Millimeters in parentheses.

I6C Sure-Grip® Expanding Collet Systems

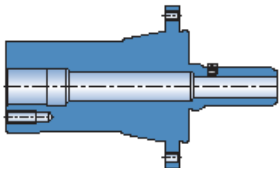
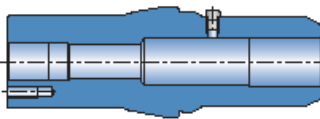
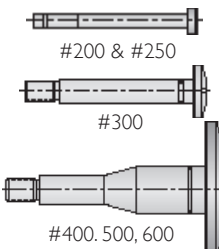
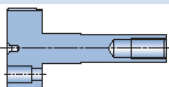



Parts List



Model #200, 250, 300



Model #400, 500, 600

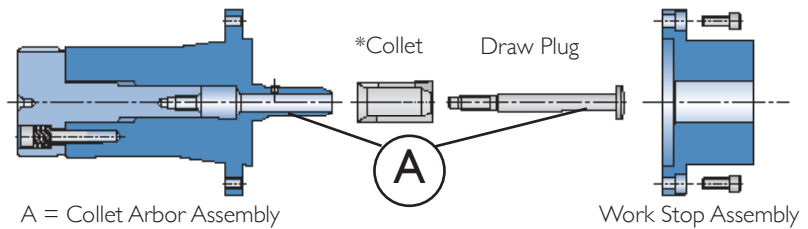
	Part	Style	Part Number		
 <p>Model #200, 250, 300</p>	Collet Arbor:	16C - #200	2073-00-00-000200		
		16C - #250	2073-00-00-000250		
		16C - #300	2073-00-00-000300		
		16C - #400	2073-00-00-000400		
		16C - #500	2073-00-00-000500		
		16C - #600	2073-00-00-000600		
 <p>Model #400, 500, 600</p>	Key:	16C - #200/250	7869-00-00-100200		
		16C - #300	7869-00-00-000300		
		16C - #400	7869-00-00-000400		
		16C - #500/600	7869-00-00-000400		
		 <p>#200 & #250 #300 #400, 500, 600</p>	Draw Plug:	16C - #200	1873-00-00-000200
				16C - #250	1873-00-00-000250
16C - #300	1853-00-00-000300				
16C - #400	2079-00-00-000400				
16C - #500	2079-00-00-000500				
16C - #600	2079-00-00-000600				
	Threaded Draw Bushing:	16C - #200/250	2075-00-00-200250		
		16C - #300	2075-00-00-000300		
		16C - #400	2075-00-00-400600		
		16C - #500/600	2075-00-00-400600		
	Cap Screw:	16C - #200/600	0100616		
	Spring:	16C - #200/600	CE-0000049		
	O-Ring:	16C - #300	6-0009431		
		16C - #400	OR-0000810		
		16C - #500/600	OR-0001416		

Note: Expanding collet not included in assemblies.

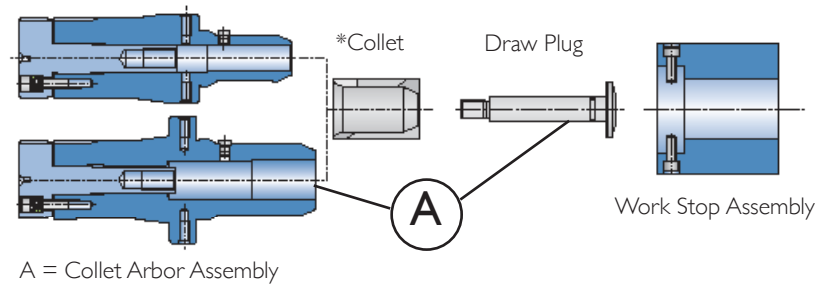
3J Sure-Grip® Expanding Collet System Assemblies



3J Collet-Style, #200, 250 and 300



3J Collet-Style, #400, 500 and 600



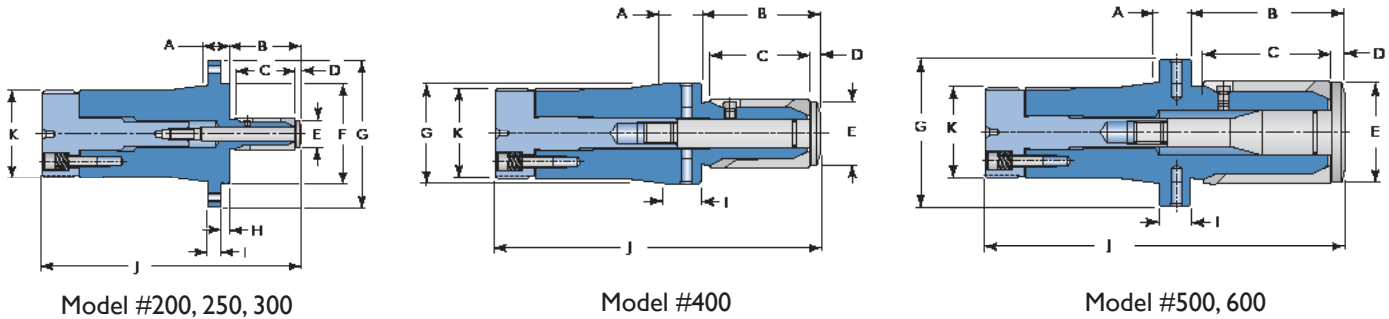
3J Collet-Style, #200 - 600

Working Range	Model	Collet Part Number*	"A" Collet Arbor Assembly	Work Stop Assembly
½" to .765" (12.70 to 19.43mm)	3J-200	1835-00-19-	2083-00-00-000200	1855-00-00-000200
¾" to 1.015" (19.05 to 25.78mm)	3J-250	1861-00-19-	2083-00-00-000250	1855-00-00-000250
1" to 1.515" (25.40 to 38.48mm)	3J-300	1837-00-19-	2083-00-00-000300	1855-00-00-000300
1½" to 2.265" (38.10 to 57.53mm)	3J-400	1839-00-19-	2083-00-00-000400	2085-00-00-000400
2¼" to 3.015" (57.15 to 76.58mm)	3J-500	1841-00-19-	2083-00-00-000500	2085-00-00-000500
3" to 4.015" (76.20 to 101.98mm)	3J-600	1843-00-19-	2083-00-00-000600	2085-00-00-000600

Note: Collets are available in ¼" increments within the above stated ranges. Each collet will hold a workpiece with a bore of -.001" (.025mm) under the size of the collet to +.015" (.381mm) over the size of the collet. * Expanding collets not included in the collet arbor assembly—see page 27 for complete list

3J Sure-Grip® Expanding Collet Systems

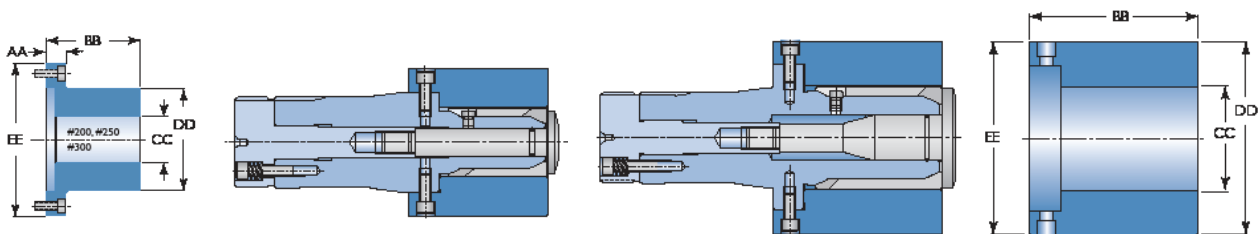
Dimensions



Collet Assembly Dimensions (Expanding collets are not included in assemblies)

Dimensions	A	B	C	D	E	F	G	H	I	J	K
3J - #200	.616" (15.64)	1.280" (32.51)	1.000" (25.40)	.157" (3.98)	.490" (12.44)	2.312" (58.72)	3.375" (85.72)	.187" (4.75)	.310" (7.87)	5.589" (141.96)	1.988" (50.49)
3J - #250	.616" (15.64)	1.650" (41.91)	1.375" (34.92)	.157" (3.98)	.618" (15.69)	2.312" (58.72)	3.375" (85.72)	.187" (4.75)	.310" (7.87)	5.957" (151.30)	1.988" (50.49)
3J - #300	.616" (15.64)	2.185" (55.49)	1.750" (44.45)	.250" (6.35)	.990" (25.14)	2.312" (58.72)	3.375" (85.72)	.187" (4.75)	.310" (7.87)	6.495" (164.97)	1.988" (50.49)
3J - #400	.807" (20.49)	2.620" (66.54)	2.182" (55.42)	.250" (6.35)	1.390" (35.30)	—	2.205" (56.00)	—	.750" (19.05)	7.120" (180.84)	1.988" (50.49)
3J - #500	.807" (20.49)	3.358" (85.29)	2.781" (70.63)	.312" (7.92)	2.185" (55.49)	—	3.205" (81.40)	—	.688" (17.47)	7.860" (199.64)	1.988" (50.49)
3J - #600	.807" (20.49)	3.420" (86.86)	2.781" (70.63)	.375" (9.52)	2.968" (75.38)	—	3.205" (81.40)	—	.688" (17.47)	7.920" (201.16)	1.988" (50.49)

Millimeters in parentheses.



Model #200, 250, 300

Model #400

Model #500, 600

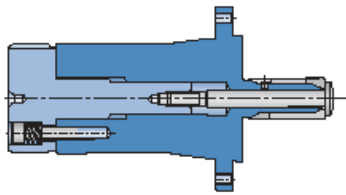
Work Stop Dimensions

Dimensions	AA	BB	CC	DD	EE	Part Number	Cap Screw Part No.
3J - #200	.437" (11.11)	1.437" (36.49)	.530" (13.46)	2.250" (57.15)	3.375" (86.72)	1855-00-00-000200	0100306
3J - #250	.437" (11.11)	1.687" (42.84)	.765" (19.43)	2.250" (57.15)	3.375" (85.72)	1855-00-00-000250	0100306
3J - #300	.437" (11.11)	2.078" (52.78)	1.030" (26.19)	2.250" (57.15)	3.375" (85.72)	1855-00-00-000300	0100308
3J - #400	—	3.057" (77.64)	1.530" (38.86)	3.250" (82.55)	3.250" (82.55)	2085-00-00-000400	0100510
3J - #500	—	3.735" (94.86)	2.280" (57.91)	4.250" (107.95)	4.250" (107.95)	2085-00-00-000500	0100510
3J - #600	—	3.735" (94.86)	3.030" (76.96)	4.250" (107.95)	4.250" (107.95)	2085-00-00-000600	0100510

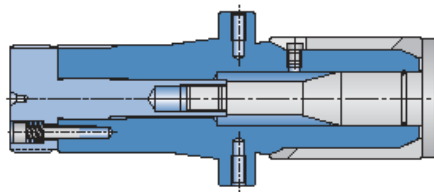
Millimeters in parentheses.

3J Sure-Grip® Expanding Collet Systems

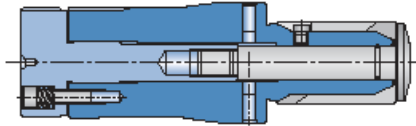
Parts List



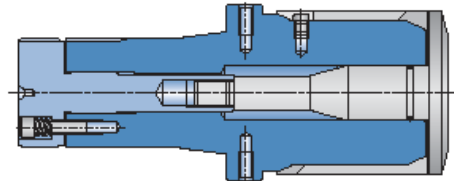
Model #200, 250, 300



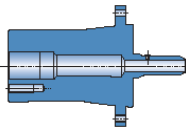
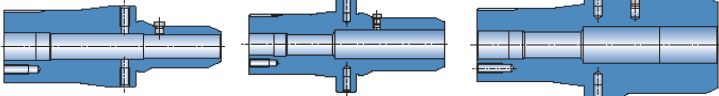

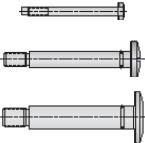
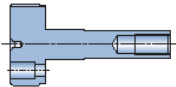



Model #500



Model #400



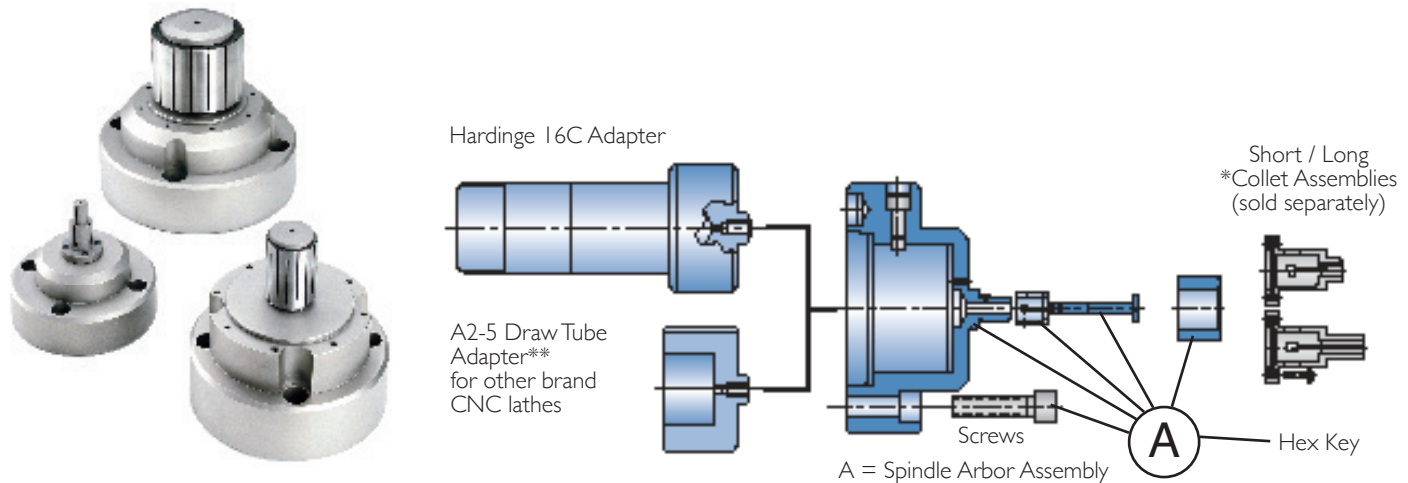
Model #600

Part	Style	Part Number
 Model #200, 250, 300	3J – #200	2087-00-00-000200
	3J – #250	2087-00-00-000250
	3J – #300	2087-00-00-000300
	3J – #400	2087-00-00-000400
	3J – #500	2087-00-00-000500
	3J – #600	2087-00-00-000600
 Model #400 Model #500 Model #600	Collet Arbor:	
	Key:	3J – #200/250 7869-00-00-100200
	Draw Plug*:	16C – #200 1873-00-00-000200 16C – #250 1873-00-00-000250 16C – #300 1853-00-00-000300 16C – #400 2079-00-00-000400 16C – #500 2079-00-00-000500 16C – #600 2079-00-00-000600
	Threaded Draw Bushing:	3J – #200 2089-00-00-200250 3J – #250 2089-00-00-200250 3J – #300 2089-00-00-000300 3J – #400 2089-00-00-400600 3J – #500 2089-00-00-400600 3J – #600 2089-00-00-400600
	Cap Screw:	3J – #200/600 0100616
	Spring:	3J – #200/600 CE-0000049
	O-Ring:	#300 6-0009431 #400 OR-0000810 #500/600 OR-0001416

Note: Same as 16C.

A2-5 Spindle-Mount Sure-Grip® Expanding Collet Systems

Assemblies

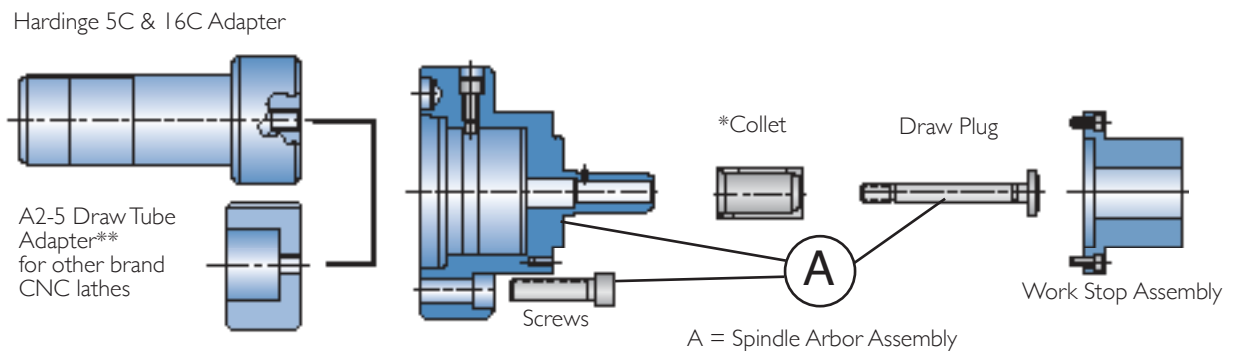


A2-5 Spindle-Mount Style, #100

Working Range	Model	Collet & Screw Part Number*	**CNC Lathe Draw Tube Adapter	Hardinge 16C Adapter	"A" Collet Arbor Assembly
1/8" to 1/2" (3.17 to 12.70mm)	A2-5-100S	1833-00-00-000000	7875-00-00-100200	7873-00-00-100200	1845-00-00-000100
1/8" to 1/2" (3.17 to 12.70mm)	A2-5-100L	1833-00-00-100000	7875-00-00-100200	7873-00-00-100200	1845-00-00-000100

* Expanding collet assemblies are not included in collet arbor assembly—see page 27 for complete list. Collets are machined to size by the customer in the Model #100 series.

** Draw Tube Adapters can be machined by the customer or by Hardinge – please provide make, model and serial number of machine tool.



A2-5 Spindle-Mount Style, #200 - 600

Working Range	Model	Collet Part No.*	**CNC Lathe Adapter	Hardinge GS150, SV150 and Talent 6/45 Adapter	Hardinge 16C Adapter	"A" Spindle Arbor Assembly	Work Stop Assembly
1/2" to .765" (12.70 to 19.43mm)	A2-5-200	1835-00-19-	7875-00-00-100200	7875-00-90-645200	7873-00-00-100200	1845-00-00-000200	1855-00-00-000200
3/4" to 1.015" (19.05 to 25.78mm)	A2-5-250	1861-00-00-	7875-00-00-100200	7875-00-90-645200	7873-00-00-100200	1845-00-00-000250	1855-00-00-000250
1" to 1.515" (25.40 to 38.48mm)	A2-5-300	1837-00-19-	7875-00-00-000300	7875-00-90-645300	7873-00-00-000300	1845-00-00-000300	1855-00-00-000300
1 1/2" to 2.265" (38.10 to 57.53mm)	A2-5-400	1839-00-19-	7875-00-00-000400	7875-00-90-645400	7873-00-00-000400	1845-00-00-000400	1855-00-00-000400
2 1/4" to 3.015" (57.15 to 76.58mm)	A2-5-500	1841-00-19-	7875-00-00-500600	7875-00-90-645600	7873-00-00-500600	1845-00-00-000500	1855-00-00-000500
3" to 4.015" (76.20 to 101.98mm)	A2-5-600	1843-00-19-	7875-00-00-500600	7875-00-90-645600	7873-00-00-500600	1845-00-00-000600	1855-00-00-000600

Note: Collets are available in 1/64" increments within the above stated ranges. Each collet will hold a workpiece with a bore of -.001" (.025mm) under the size of the collet to +.015" (.381mm) over the size of the collet.

* Expanding collets not included in the collet arbor assembly—see page 27 for complete list.

** Draw Tube Adapters can be machined by the customer or by Hardinge – please provide make, model and serial number of machine tool.

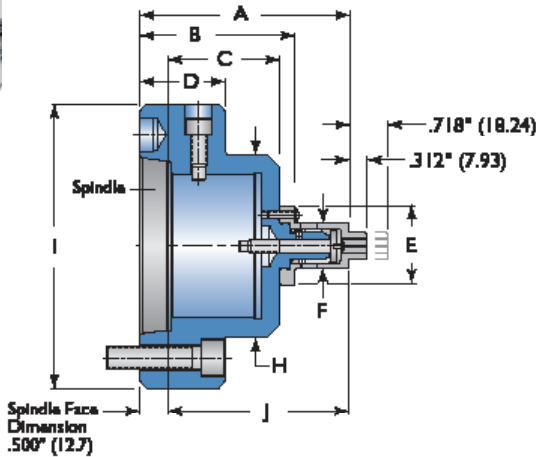
This product can be used on
Hardinge and all other brands of
CNC Lathes with an A2-5 spindle.

A2-5 Spindle-Mount Sure-Grip® Expanding Collet Systems

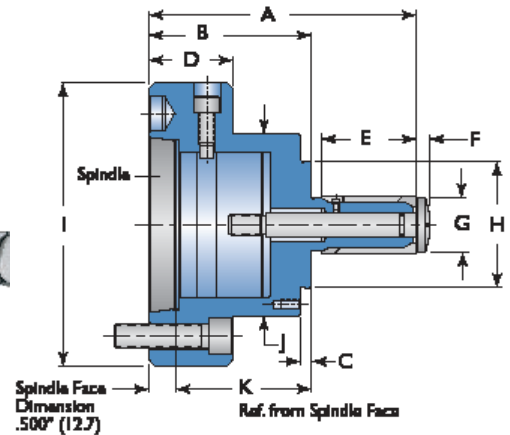
Dimensions



Model #1



Model #200 - 600



Collet Assembly Dimensions (Expanding collets are not included in assemblies)

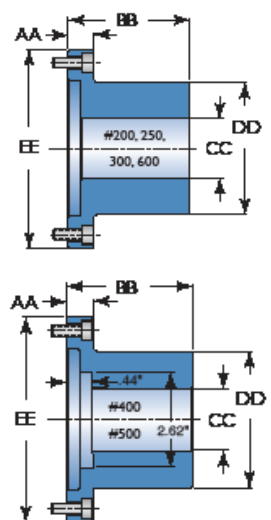
	A	B	C	D	E	F	G	H	I	J	K
A2-5 - #100	3.872" (98.35)	2.870" (72.90)	2.015" (51.18)	1.562" (39.68)	1.470" (37.34)	.853" (21.67)	—	3.374" (85.70)	5.250" (133.35)	3.312" (84.12)	—
A2-5 - #200	4.128" (104.85)	3.000" (76.20)	.187" (4.75)	1.560" (39.62)	1.000" (25.40)	.125" (3.175)	.490" (12.45)	2.312" (58.75)	5.250" (133.35)	3.375" (85.73)	2.440" (61.98)
A2-5 - #250	4.500" (114.30)	3.000" (76.20)	.187" (4.75)	1.560" (39.62)	1.375" (34.92)	.157" (3.98)	.618" (15.69)	2.312" (58.75)	5.250" (133.35)	3.375" (85.73)	2.440" (61.98)
A2-5 - #300	4.940" (125.48)	3.000" (76.20)	.187" (4.75)	1.560" (39.62)	1.750" (44.45)	.250" (6.35)	.990" (25.15)	2.312" (58.75)	5.250" (133.35)	3.375" (85.73)	2.440" (61.98)
A2-5 - #400	5.370" (136.40)	3.000" (76.20)	.187" (4.75)	2.813" (71.44)	2.182" (55.42)	.250" (6.35)	1.393" (35.38)	4.124" (104.75)	5.250" (133.35)	5.250" (133.35)	2.440" (61.98)
A2-5 - #500	6.046" (153.57)	3.000" (76.20)	.187" (4.75)	2.813" (71.44)	2.781" (70.64)	.312" (7.938)	2.185" (55.50)	4.124" (104.75)	5.250" (133.35)	5.250" (133.35)	2.440" (61.98)
A2-5 - #600	6.046" (153.57)	3.000" (76.20)	.187" (4.75)	2.813" (71.44)	2.781" (70.64)	.374" (9.252)	2.968" (75.39)	4.124" (104.75)	5.250" (133.35)	5.250" (133.35)	2.440" (61.98)

Millimeters in parentheses.

Work Stop Dimensions

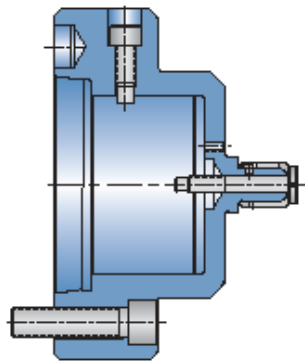
	AA	BB	CC	DD	EE	Part Number	Screw PN
A2-5 - #200	.437" (11.11)	1.437" (36.51)	.530" (13.46)	2.250" (57.15)	3.375" (85.73)	1855-00-00-000200	0100306
A2-5 - #250	.437" (11.11)	1.687" (42.84)	.765" (19.43)	2.250" (57.15)	3.375" (85.73)	1855-00-00-000250	0100306
A2-5 - #300	.437" (11.11)	2.078" (52.78)	1.030" (26.19)	2.250" (57.15)	3.375" (85.73)	1855-00-00-000300	0100308
A2-5 - #400	.437" (11.11)	2.543" (64.59)	1.671" (42.44)	4.202" (106.73)	5.250" (133.35)	1855-00-00-000400	0100308
A2-5 - #500	.437" (11.11)	3.187" (80.95)	2.280" (57.91)	4.202" (106.73)	5.250" (133.35)	1855-00-00-000500	0100308
A2-5 - #600	.437" (11.11)	3.187" (80.95)	3.032" (77.01)	4.202" (106.73)	5.250" (133.35)	1855-00-00-000600	0100308

Note: No work stop required for #100 Collet Assembly – collet does not move when closed on bore.
Millimeters in parentheses.

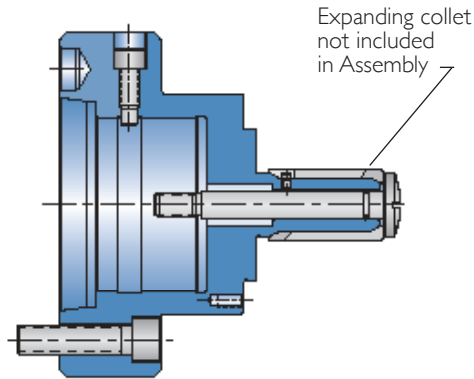


A2-5 Spindle-Mount Sure-Grip® Expanding Collet Systems

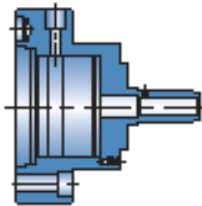



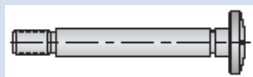





Parts List



Model #100

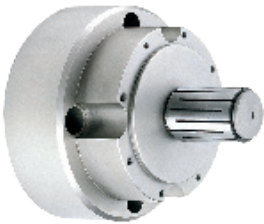
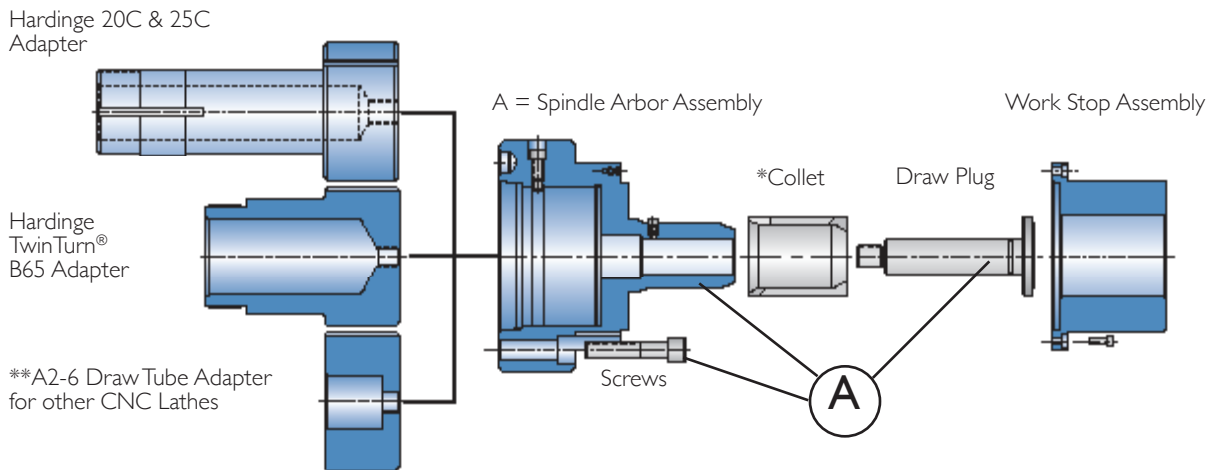


Model #200 - 600

	Part	Style	Part Number
	Collet Arbor:	#100	1847-00-00-000100
		#200	1847-00-00-000200
		#250	1847-00-00-000250
		#300	1847-00-00-000300
		#400	1847-00-00-000400
		#500	1847-00-00-000500
		#600	1847-00-00-000600
	Key:	#100/200/250	7869-00-00-100200
		#300	7869-00-00-000300
		#400/500/600	7869-00-00-000400
	Key (cap screw):	#100 to #600	7871-00-00-000000
 	Draw Plug:	#100	1853-00-00-000100
		#200	1853-00-00-000200
		#250	1853-00-00-000250
		#300	1853-00-00-000300
		#400	1853-00-00-000400
		#500	1853-00-00-000500
		#600	1853-00-00-000600
	Cap Screw:	#100 to #600	MS-0104023 and 0101228
	O-Ring:	#300	6-0009431
		#400	OR-0000810
		#500/600	OR-0001416
	Hex Key:	#100 Only	W-0011864
	Expander:	A2-5 - #100 Only	1849-00-00-000100
	Limit Ring:	A2-5 - #100 Only	1851-00-00-000100

* Expanding collets not included in the collet arbor assembly.

A2-6 Spindle-Mount Sure-Grip® Expanding Collet Systems Assemblies



A2-6 Spindle-Mount Style, #300 - 600

Collet Model	Working Range	Part No.*	CNC Lathe Adapter**	Hardinge GS200, SV200 and Talent 8/52 Adapter	Hardinge QUEST 65 20C Adapter 25C Adapter	Hardinge TT B65 Adapter	"A" Spindle Arbor Assembly	Work Stop Assembly***
A2-6-300	1" to 1.515" (25.40 to 38.48mm)	1837-00-19	7879-00-00-000300	7879-00-90-852300	7877-00-00-000300 7919-00-00-000300	7917-00-00-000300	1857-00-00-000300	1855-00-00-000300
A2-6-400	1½" to 2.265" (38.10 to 57.53mm)	1839-00-19	7879-00-00-000400	7879-00-90-852400	7877-00-00-000400 7919-00-00-000400	7917-00-00-000400	1857-00-00-000400	1855-00-00-000400
A2-6-500	2¼" to 3.015" (57.15 to 76.58mm)	1841-00-19	7879-00-00-500600	7879-00-90-852600	7877-00-00-500600 7919-00-00-500600	7917-00-00-500600	1857-00-00-000500	1855-00-00-000500
A2-6-600	3" to 4.015" (76.20 to 101.98mm)	1843-00-19	7879-00-00-500600	7879-00-90-852600	7877-00-00-500600 7919-00-00-500600	7917-00-00-500600	1857-00-00-000600	1855-00-00-000600

Note: Collets are available in 1/64" increments within the above stated ranges. Each collet will hold a workpiece with a bore of -.001" (.025mm) under the size of the collet to +.015" (.381mm) over the size of the collet.

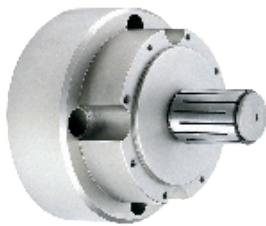
* Expanding collets not included in the collet arbor assembly—see page 27 for complete list.** Draw Tube Adapters can be machined by the customer or by Hardinge – please provide make, model and serial number of machine tool

*** Cap Screws for Work Stop – Part Number: 0100308

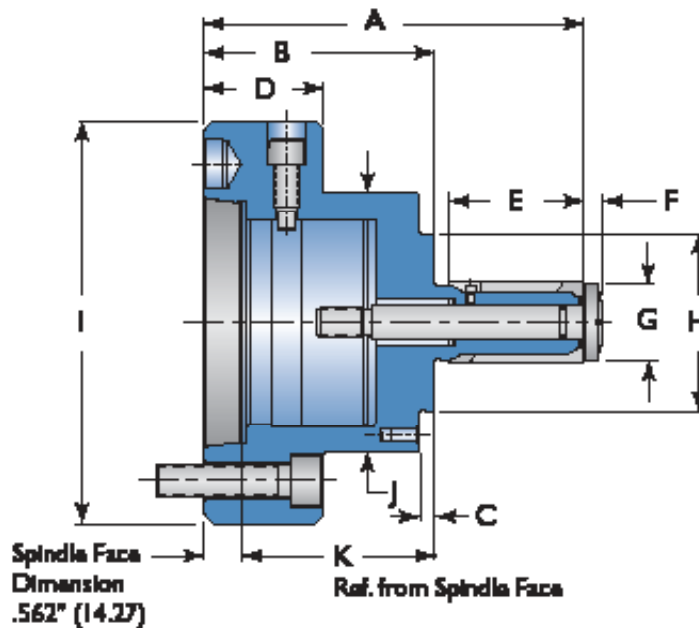
This product can be used on Hardinge and all other brands of CNC Lathes with an A2-6 spindle.

A2-6 Spindle-Mount Sure-Grip® Expanding Collet Systems

Dimensions



Model #200 - 600



Collet Assembly Dimensions (Expanding collets are not included in assemblies)

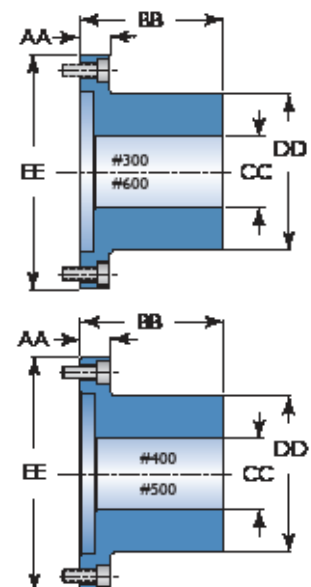
	A	B	C	D	E	F	G	H	I	J	K
A2-6 - #300	5.565" (141.35)	3.625" (92.07)	.187" (4.75)	2.120" (53.85)	1.750" (44.45)	.250" (6.35)	.990" (25.15)	2.312" (58.75)	6.500" (165.10)	4.620" (117.35)	3.000" (76.20)
A2-6 - #400	5.995" (152.27)	3.625" (92.07)	.187" (4.75)	2.120" (53.85)	2.182" (55.42)	.250" (6.35)	1.393" (35.38)	4.124" (104.75)	6.500" (165.10)	5.254" (133.45)	3.000" (76.20)
A2-6 - #500	6.671" (245.64)	3.625" (92.07)	.187" (4.75)	2.120" (53.85)	2.78" (70.64)	.312" (7.938)	2.185" (55.50)	4.124" (104.75)	6.500" (165.10)	5.254" (133.45)	3.000" (76.20)
A2-6 - #600	6.671" (245.64)	3.625" (92.07)	.187" (4.75)	2.120" (53.85)	2.78" (70.64)	.374" (9.252)	2.968" (75.39)	4.124" (104.75)	6.500" (165.10)	5.254" (133.45)	3.000" (76.20)

Millimeters in parentheses.

Work Stop Dimensions

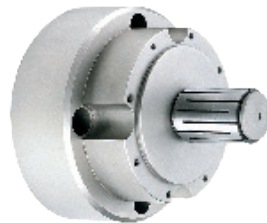
	AA	BB	CC	DD	EE	Part Number
A2-6 - #300	.437" (11.11)	2.078" (52.78)	1.030" (26.19)	2.250" (57.15)	3.375" (85.73)	1855-00-00-000300
A2-6 - #400	.437" (11.11)	2.543" (64.59)	1.671" (42.44)	4.202" (106.73)	5.250" (133.35)	1855-00-00-000400
A2-6 - #500	.437" (11.11)	3.187" (80.95)	2.280" (57.91)	4.202" (106.73)	5.250" (133.35)	1855-00-00-000500
A2-6 - #600	.437" (11.11)	3.187" (80.95)	3.032" (77.01)	4.202" (106.73)	5.250" (133.35)	1855-00-00-000600

Note: Cap Screws for Work Stop - Part Number: 0100308.
Millimeters in parentheses.

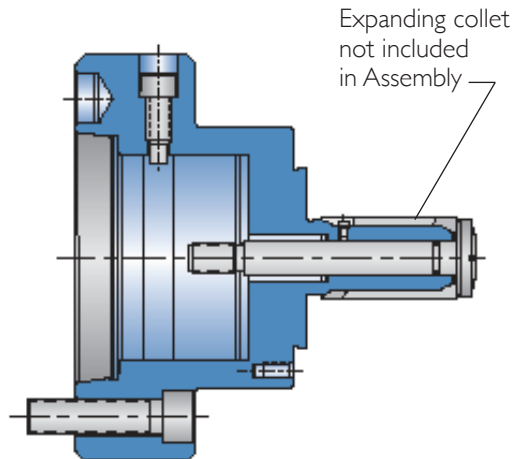


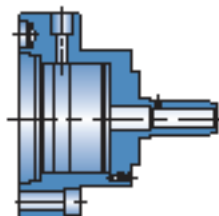


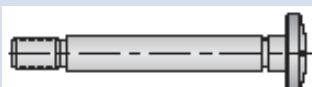


A2-6 Spindle-Mount Sure-Grip® Expanding Collet Systems

Parts List



Model #300, 400,
500, 600

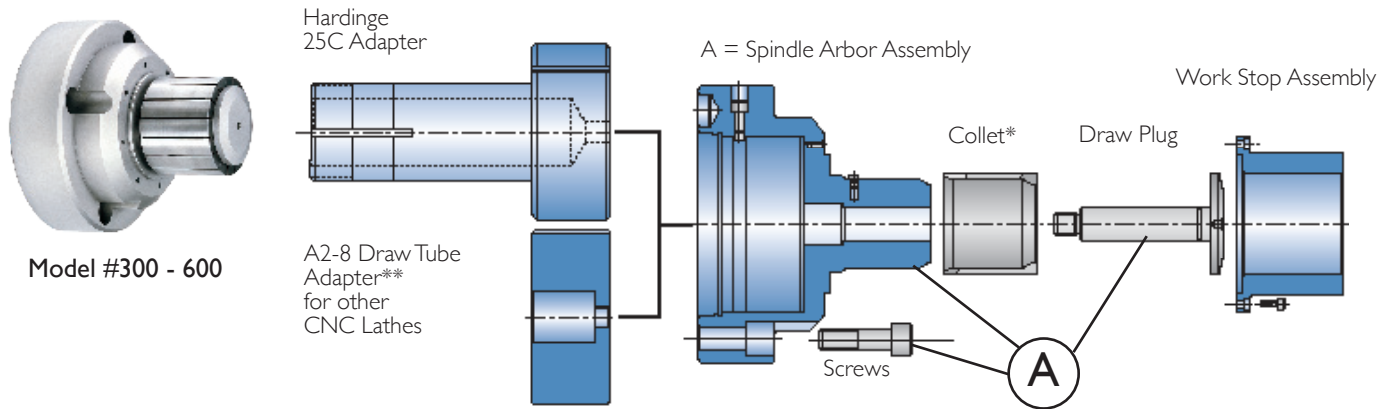


Part	Style	Part Number
	Collet Arbor:	
	#300	1859-00-00-000300
	#400	1859-00-00-000400
	#500	1859-00-00-000500
	#600	1859-00-00-000600
	Key:	
	#300	7869-00-00-000300
	#400/500/600	7869-00-00-000400
	Key (cap screw):	
	#300 to #600	7871-00-00-000000
	Draw Plug:	
	#300	1853-00-00-000300
	#400	1853-00-00-000400
	#500	1853-00-00-000500
	#600	1853-00-00-000600
	Cap Screw:	
	#300 to #600	MS-0104226
	O-Ring:	
	#300	6-0009431
	#400	OR-0000810
	#500/600	OR-0001416

Expanding collets not included in collet arbor assembly.

A2-8 Spindle-Mount Sure-Grip® Expanding Collet Systems

Assemblies



A2-8 Spindle-Mount Style, #300 - 600

Model	Working Range	Collet Part No.*	CNC Lathe Adapter**	Hardinge GS250 and Talent 10/78 Adapter	Hardinge 25C Adapter	"A" Spindle Arbor Assembly	Work Stop Assembly***
A2-8 - #300	1" to 1.515" (25.40 to 38.48mm)	1837-00-19	7883-00-00-000300	7875-00-90-107300	7881-00-00-000300	1879-00-00-000300	1855-00-00-000300
A2-8 - #400	1½" to 2.265" (38.10 to 57.53mm)	1839-00-19	7883-00-00-000400	7875-00-90-107400	7881-00-00-000400	1879-00-00-000400	1855-00-00-000400
A2-8 - #500	2¼" to 3.015" (57.15 to 76.58mm)	1841-00-19	7883-00-00-500600	7875-00-90-107600	7881-00-00-500600	1879-00-00-000500	1855-00-00-000500
A2-8 - #600	3" to 4.015" (76.20 to 101.98mm)	1843-00-19	7883-00-00-500600	7875-00-90-107600	7881-00-00-500600	1879-00-00-000600	1855-00-00-000600

- * Expanding collets not included in collet arbor assembly—see page 27 for complete list
- ** Draw Tube Adapters can be machined by the customer or by Hardinge – please provide make, model and serial number of machine tool.
- *** Cap Screws for Work Stop – Part Number: 0100308.

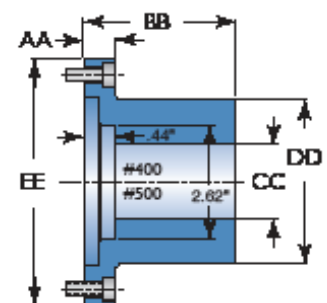
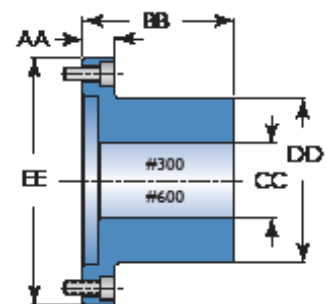
Note: Collets are available in 1/64" increments within the above stated ranges. Each collet will hold a workpiece with a bore of -.001" (.025mm) under the size of the collet to +.015" (.381mm) over the size of the collet.

Work Stop Dimensions

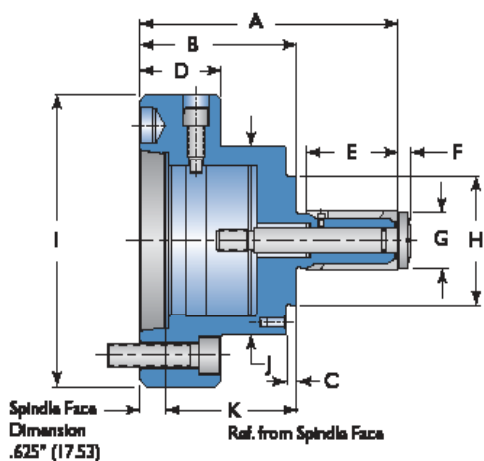
	AA	BB	CC	DD	EE	Part Number
A2-8 - #300	.437" (11.11)	2.078" (52.78)	1.030" (26.19)	2.250" (57.15)	3.375" (85.73)	1855-00-00-000300
A2-8 - #400	.437" (11.11)	2.543" (64.59)	1.671" (42.44)	4.202" (106.73)	5.250" (133.35)	1855-00-00-000400
A2-8 - #500	.437" (11.11)	3.187" (80.95)	2.280" (57.91)	4.202" (106.73)	5.250" (133.35)	1855-00-00-000500
A2-8 - #600	.437" (11.11)	3.187" (80.95)	3.032" (77.01)	4.202" (106.73)	5.250" (133.35)	1855-00-00-000600

Note: Cap Screws for Work Stop – Part Number: 0100308.
Millimeters in parentheses.

This product can be used on Hardinge and all other brands of CNC Lathes with an A2-8 spindle.



A2-8 Spindle-Mount Sure-Grip® Expanding Collet Systems Dimensions and Parts List



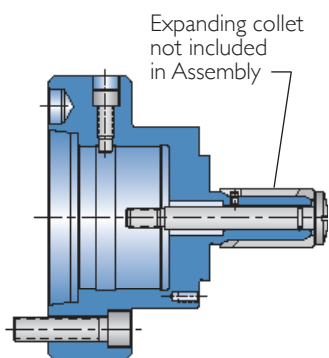
Model #200 - 600

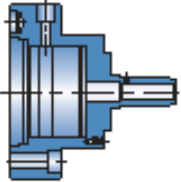





Collet Assembly Dimensions

	A	B	C	D	E	F	G	H	I	J	K
A2-8 - #300	5.862" (148.90)	3.922" (99.62)	.187" (4.75)	2.260" (57.40)	1.750" (44.45)	.250" (6.35)	.990" (25.15)	2.312" (58.75)	8.250" (209.55)	6.370" (161.80)	3.230" (82.04)
A2-8 - #400	6.293" (159.84)	3.922" (99.62)	.187" (4.75)	2.260" (57.40)	2.182" (55.42)	.250" (6.35)	1.393" (35.38)	4.124" (104.75)	8.250" (209.55)	6.370" (161.80)	3.230" (82.04)
A2-8 - #500	6.969" (177.01)	3.922" (99.62)	.187" (4.75)	2.260" (57.40)	2.781" (70.64)	.312" (7.938)	2.185" (55.50)	4.124" (104.75)	8.250" (209.55)	6.370" (161.80)	3.230" (82.04)
A2-8 - #600	6.969" (177.01)	3.922" (99.62)	.187" (4.75)	2.260" (57.40)	2.781" (70.64)	.374" (9.252)	2.968" (75.39)	4.124" (104.75)	8.250" (209.55)	6.370" (161.80)	3.230" (82.04)

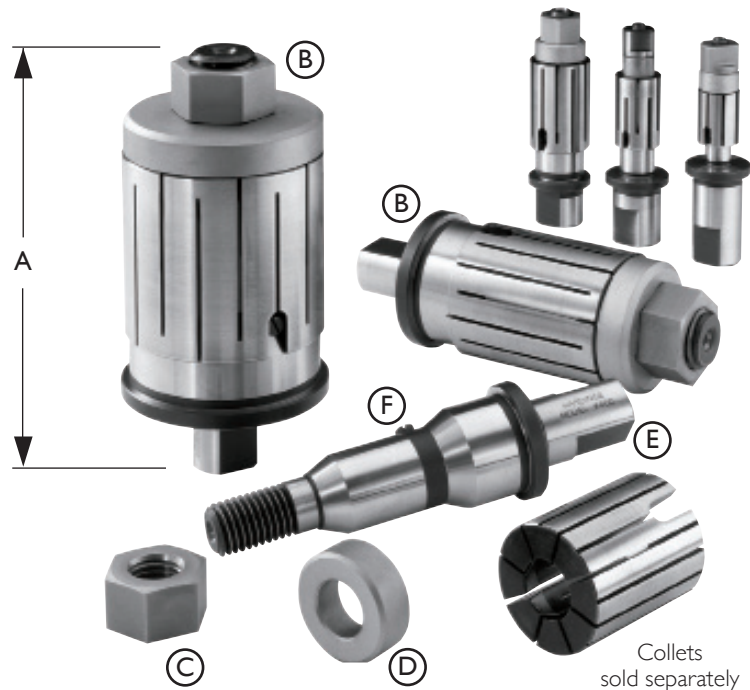
* Expanding collets not included in collet arbor assembly—see page 27 for complete list
Millimeters in parentheses.

Collet Assembly Parts List



Part	Style	Part Number
 Collet Arbor:	#300	1867-00-00-000300
	#400	1867-00-00-000400
	#500	1867-00-00-000500
	#600	1867-00-00-000600
 Key:	#300	7869-00-00-000300
	#400/500/600	7869-00-00-000400
 Key (cap screw):	#300 to #600	7871-00-00-000000
 Draw Plug:	#300	1853-00-00-000300
	#400	1853-00-00-000400
	#500	1853-00-00-000500
	#600	1853-00-00-000600
 Cap Screw:	#300 to #600	MS-0104625
 O-Ring:	#300	6-0009431
	#400	OR-0000810
	#500/600	OR-0001416

Sure-Grip® Expanding Center Arbors



Collets
sold separately

Grinding Arbor Assembly and Dimensions

Model	Collet Part Number	Arbor Assembly Part Number	Working Range	"A" Overall Length	Collet Length
#200	1835-00-19-	2231-00-00-000200	.500" - .765" (12.70 - 19.43)	4.25" (107.95)	1.000" (25.40)
#250	1861-00-19-	2231-00-00-000250	.750" - 1.015" (19.05 - 25.78)	4.25" (107.95)	1.375" (34.92)
#300	1837-00-19-	2231-00-00-000300	1.000" - 1.515" (25.40 - 38.48)	4.25" (107.95)	1.750" (44.24)
#400	1839-00-19-	2231-00-00-000400	1.500" - 2.265" (38.10 - 57.53)	4.25" (107.95)	2.182" (55.42)
#500	1841-00-19-	2231-00-00-000500	2.250" - 3.015" (57.15 - 76.58)	6.50" (165.10)	2.781" (70.63)
#600	1843-00-19-	2231-00-00-000600	3.000" - 4.015" (76.20 - 101.98)	6.50" (165.10)	2.781" (70.63)

Grinding Arbor Parts List

Description	#200	#250	#300	#400	#500	#600
B Complete Assembly	2231-00-00-000200	2231-00-00-000250	2231-00-00-000300	2231-00-00-000400	2231-00-00-000500	2231-00-00-000600
C Arbor Nut	2237-00-00-000200	2237-00-00-000250	2237-00-00-000300	2237-00-00-000400	2237-00-00-500600	2237-00-00-500600
D Arbor Spacer	2235-00-00-000200	2235-00-00-000250	2235-00-00-000300	2235-00-00-000400	2235-00-00-000500	2235-00-00-000600
E Grinding Arbor	2233-00-00-000200	2233-00-00-000250	2233-00-00-000300	2233-00-00-000400	2313-00-00-000500	2233-00-00-000600
F Locating Pin	7869-00-00-100200	7869-00-00-100200	7869-00-00-000300	7869-00-00-000400	7869-00-00-000400	7869-00-00-000400

Sure-Grip® Expanding Collet Size Range

Style	Size Range - Inch	Millimeter	Length
#100**	1/8" to 1/2" (Soft)	3.17 to 12.70	.875" (18.23mm)
#200*	1/2" to 3/4"*	12.70 to 19.05	1.000" (25.40mm)
#250	3/4" to 1"	19.05 to 25.40	1.375" (34.92mm)
#300	1" to 1 1/2"	25.40 to 38.10	1.750" (44.45mm)
#400	1 1/2" to 2 1/4"	38.10 to 57.15	2.182" (55.42mm)
#500	2 1/4" to 3"	57.15 to 76.20	2.781" (70.63mm)
#600	3" to 4"	76.20 to 101.60	2.781" (70.63mm)



* Collet range up to .999" still available in previous model 200 design for existing users, however model 250 will achieve better gripping with its longer collet length.

** Style #100 collets are machined by the customer.

Hardinge Sure-Grip® Expanding Collets

Pilot	Part Number
#100 Soft Expanding Collet	
.312"	1833-00-00-000000
.718"	1833-00-00-100000
Size	Part Number
#200 Expanding Collet	
1/2"	1835-00-19-005000
3/4"	1835-00-19-005156
7/32"	1835-00-19-005312
35/64"	1835-00-19-005468
9/16"	1835-00-19-005625
37/64"	1835-00-19-005781
19/32"	1835-00-19-005937
39/64"	1835-00-19-006093
5/8"	1835-00-19-006250
41/64"	1835-00-19-006406
21/32"	1835-00-19-006562
43/64"	1835-00-19-006718
11/16"	1835-00-19-006875
45/64"	1835-00-19-007031
23/32"	1835-00-19-007187
47/64"	1835-00-19-007343
3/4"	1835-00-19-007500
#250 Expanding Collet	
3/4"	1861-00-19-007500
49/64"	1861-00-19-007656
25/32"	1861-00-19-007812
51/64"	1861-00-19-007968
13/16"	1861-00-19-008125
53/64"	1861-00-19-008281
27/32"	1861-00-19-008437
55/64"	1861-00-19-008593
7/8"	1861-00-19-008750
57/64"	1861-00-19-008906
29/32"	1861-00-19-009062
59/64"	1861-00-19-009218
15/16"	1861-00-19-009375
61/64"	1861-00-19-009531
31/32"	1861-00-19-009687
63/64"	1861-00-19-009843
1"	1861-00-19-010000
#300 Expanding Collet	
1"	1837-00-19-010000
1 1/64"	1837-00-19-010156
1 1/32"	1837-00-19-010312
1 3/64"	1837-00-19-010468
1 1/16"	1837-00-19-010625
1 5/64"	1837-00-19-010781
1 3/32"	1837-00-19-010937
1 7/64"	1837-00-19-011093
1 1/8"	1837-00-19-011250
1 9/64"	1837-00-19-011406
1 5/32"	1837-00-19-011562
1 11/64"	1837-00-19-011718
1 3/16"	1837-00-19-011875
1 13/64"	1837-00-19-012037
1 7/32"	1837-00-19-012187
1 15/64"	1837-00-19-012343
1 1/4"	1837-00-19-012500
1 17/64"	1837-00-19-012656
1 9/32"	1837-00-19-012812

Size	Part Number
#300 Expanding Collet (Cont'd)	
1 9/64"	1837-00-19-012968
1 5/16"	1837-00-19-013125
1 21/64"	1837-00-19-013281
1 11/32"	1837-00-19-013437
1 23/64"	1837-00-19-013593
1 3/8"	1837-00-19-013750
1 25/64"	1837-00-19-013906
1 13/32"	1837-00-19-014062
1 27/64"	1837-00-19-014218
1 7/16"	1837-00-19-014375
1 29/64"	1837-00-19-014531
1 15/32"	1837-00-19-014687
1 31/64"	1837-00-19-014843
1 1/2"	1837-00-19-015000
#400 Expanding Collet	
1 1/2"	1839-00-19-015000
1 33/64"	1839-00-19-015156
1 17/32"	1839-00-19-015312
1 35/64"	1839-00-19-015468
1 9/16"	1839-00-19-015625
1 37/64"	1839-00-19-015781
1 19/32"	1839-00-19-015937
1 39/64"	1839-00-19-016093
1 5/8"	1839-00-19-016250
1 41/64"	1839-00-19-016406
1 21/32"	1839-00-19-016562
1 43/64"	1839-00-19-016718
1 11/16"	1839-00-19-016875
1 45/64"	1839-00-19-017031
1 23/32"	1839-00-19-017187
1 47/64"	1839-00-19-017343
1 3/4"	1839-00-19-017500
1 49/64"	1839-00-19-017656
1 25/32"	1839-00-19-017812
1 51/64"	1839-00-19-017968
1 13/16"	1839-00-19-018125
1 53/64"	1839-00-19-018281
1 27/32"	1839-00-19-018437
1 55/64"	1839-00-19-018593
1 7/8"	1839-00-19-018750
1 57/64"	1839-00-19-018906
1 29/32"	1839-00-19-019062
1 59/64"	1839-00-19-019218
1 15/16"	1839-00-19-019375
1 61/64"	1839-00-19-019531
1 31/32"	1839-00-19-019687
1 63/64"	1839-00-19-019843
2"	1839-00-19-020000
2 1/64"	1839-00-19-020156
2 1/32"	1839-00-19-020312
2 3/64"	1839-00-19-020468
2 1/16"	1839-00-19-020625
2 5/64"	1839-00-19-020781
2 3/32"	1839-00-19-020937
2 7/64"	1839-00-19-021093
2 1/8"	1839-00-19-021250
2 9/64"	1839-00-19-021406
2 5/32"	1839-00-19-021562
2 11/64"	1839-00-19-021718
2 3/16"	1839-00-19-021875

Size	Part Number
#400 Expanding Collet (Cont'd)	
2 13/64"	1839-00-19-022031
2 7/32"	1839-00-19-022187
2 15/64"	1839-00-19-022343
2 1/4"	1839-00-19-022500
#500 Expanding Collet	
2 1/4"	1841-00-19-022500
2 17/64"	1841-00-19-022656
2 9/32"	1841-00-19-022812
2 19/64"	1841-00-19-022968
2 31/64"	1841-00-19-023125
2 21/64"	1841-00-19-023281
2 11/32"	1841-00-19-023437
2 23/64"	1841-00-19-023593
2 3/8"	1841-00-19-023750
2 25/64"	1841-00-19-023906
2 13/32"	1841-00-19-024062
2 27/64"	1841-00-19-024218
2 7/16"	1841-00-19-024375
2 29/64"	1841-00-19-024531
2 15/32"	1841-00-19-024687
2 31/64"	1841-00-19-024843
2 1/2"	1841-00-19-025000
2 33/64"	1841-00-19-025156
2 17/32"	1841-00-19-025312
2 35/64"	1841-00-19-025468
2 9/16"	1841-00-19-025625
2 37/64"	1841-00-19-025781
2 19/32"	1841-00-19-025937
2 39/64"	1841-00-19-026093
2 5/8"	1841-00-19-026250
2 41/64"	1841-00-19-026406
2 21/32"	1841-00-19-026562
2 43/64"	1841-00-19-026718
2 11/16"	1841-00-19-026875
2 45/64"	1841-00-19-027031
2 23/32"	1841-00-19-027187
2 47/64"	1841-00-19-027343
2 3/4"	1841-00-19-027500
2 49/64"	1841-00-19-027656
2 25/32"	1841-00-19-027812
2 51/64"	1841-00-19-027968
2 13/16"	1841-00-19-028125
2 53/64"	1841-00-19-028281
2 27/32"	1841-00-19-028437
2 55/64"	1841-00-19-028593
2 7/8"	1841-00-19-028750
2 57/64"	1841-00-19-028906
2 29/32"	1841-00-19-029062
2 59/64"	1841-00-19-029218
2 15/16"	1841-00-19-029375
2 61/64"	1841-00-19-029531
2 31/32"	1841-00-19-029687
2 63/64"	1841-00-19-029843
3"	1841-00-19-030000
#600 Expanding Collet	
3"	1843-00-19-030000
3 1/64"	1843-00-19-030156
3 1/32"	1843-00-19-030312
3 3/64"	1843-00-19-030468
3 1/16"	1843-00-19-030625

Size	Part Number
#600 Expanding Collet (Cont'd)	
3 5/64"	1843-00-19-030781
3 3/32"	1843-00-19-030937
3 7/64"	1843-00-19-031093
3 1/8"	1843-00-19-031250
3 9/64"	1843-00-19-031406
3 5/32"	1843-00-19-031562
3 11/64"	1843-00-19-031718
3 3/16"	1843-00-19-031875
3 13/64"	1843-00-19-032037
3 7/32"	1843-00-19-032187
3 15/64"	1843-00-19-032343
3 1/4"	1843-00-19-032500
3 17/64"	1843-00-19-032656
3 9/32"	1843-00-19-032812
3 19/64"	1843-00-19-032968
3 5/16"	1843-00-19-033125
3 21/64"	1843-00-19-033281
3 11/32"	1843-00-19-033437
3 23/64"	1843-00-19-033593
3 3/8"	1843-00-19-033750
3 25/64"	1843-00-19-033906
3 13/32"	1843-00-19-034062
3 27/64"	1843-00-19-034218
3 7/16"	1843-00-19-034375
3 29/64"	1843-00-19-034531
3 15/32"	1843-00-19-034687
3 31/64"	1843-00-19-034843
3 1/2"	1843-00-19-035000
3 33/64"	1843-00-19-035156
3 17/32"	1843-00-19-035312
3 35/64"	1843-00-19-035468
3 9/16"	1843-00-19-035625
3 37/64"	1843-00-19-035781
3 19/32"	1843-00-19-035937
3 39/64"	1843-00-19-036093
3 5/8"	1843-00-19-036250
3 41/64"	1843-00-19-036406
3 21/32"	1843-00-19-036562
3 43/64"	1843-00-19-036718
3 11/16"	1843-00-19-036875
3 45/64"	1843-00-19-037031
3 23/32"	1843-00-19-037187
3 47/64"	1843-00-19-037343
3 3/4"	1843-00-19-037500
3 49/64"	1843-00-19-037656
3 25/32"	1843-00-19-037812
3 51/64"	1843-00-19-037968
3 13/16"	1843-00-19-038125
3 53/64"	1843-00-19-038281
3 27/32"	1843-00-19-038437
3 55/64"	1843-00-19-038593
3 7/8"	1843-00-19-038750
3 57/64"	1843-00-19-038906
3 29/32"	1843-00-19-039062
3 59/64"	1843-00-19-039218
3 15/16"	1843-00-19-039375
3 61/64"	1843-00-19-039531
3 31/32"	1843-00-19-039687
3 63/64"	1843-00-19-039843
4"	1843-00-19-040000



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