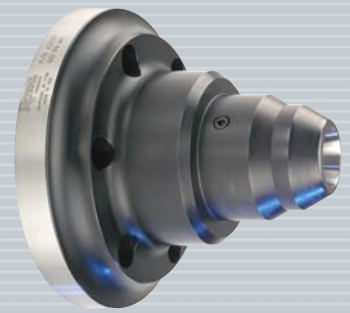


ROYAL PRODUCTS

Low-Profile CNC Collet Chucks

*All Chucks
In Stock
For Immediate
Delivery!*



Most CNC lathes come equipped with a three-jaw power chuck as standard equipment. Although three-jaw chucks are versatile and can handle most workholding tasks reasonably well, there are a number of applications where **a collet chuck is a much better choice:**

Smaller Diameter Work

Collet chucks are well suited for part diameters ranging from 1/16" – 3" because they offer better tool clearance, run at higher speeds, and provide superior grip force.

Bar Feeding

Collet chucks minimize vibration, and bar stock remains close to centerline for accurate re-gripping.

High Speed Turning

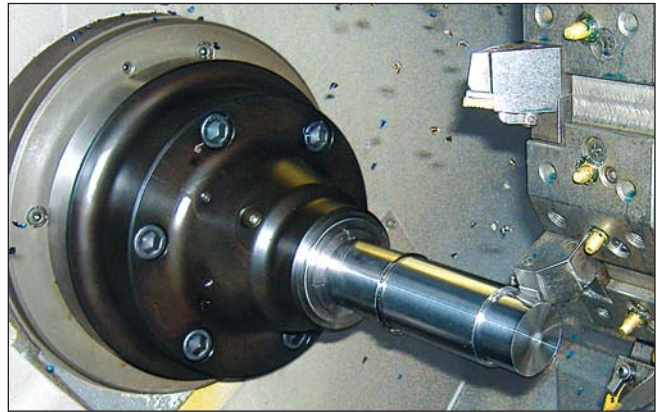
Collet chucks are less prone to the negative effects of centrifugal force, enabling them to run at higher speeds and maintain more consistent grip force.

Short Workpieces

Low-profile design provides better tool clearance and allows machining to take place very close to the chuck face.

Thin Workpieces

Ability to work closer to the chuck prevents thin parts from sagging/bending.



Pipe and Tube Work

Collet chucks distribute the gripping force evenly over the entire workpiece circumference, reducing the risk of crushing or distorting thin-walled parts.

Odd Shaped Parts

Collets can be easily customized to hold odd-shaped or off-center parts. A wide selection of standard collets is readily available to handle round, square, and hex stock.

Low-Volume Runs

Collet changes typically take less than one minute and there is no wasted time boring soft jaws.

Accu-Length™ or Pullback?



Royal Products manufactures two basic types of collet chucks – the pullback style and the Accu-Length™ style. Using a pullback chuck may cause a slight variation in z-axis positioning of the workpiece. This is usually acceptable for first operations and can be remedied with a slight facing cut. However, there are several situations where such z-axis movement is not desirable. In these cases, a **Royal Accu-Length™ Collet Chuck with dead-length operation** is the correct choice.

Common applications where an Accu-Length™ chuck is the best solution:

- Bar feeding
- Jobs where the workpiece OD is not consistent
- Any secondary operation where an accurate length relationship must be maintained with first-op features
- All sub-spindles. Using a pullback chuck on a sub-spindle can overload the machine's servo drive.

For additional information on which collet chuck is best suited to your specific needs, please contact one of our applications engineers at 1-800-645-4174.

WHY DO TOP MANUFACTURERS CHOOSE ROYAL CNC COLLET CHUCKS?



Outstanding Product Quality

Royal Products is an ISO-registered company dedicated to continuous improvement. Over the past ten years we have invested heavily in state-of-the-art CNC equipment that enables us to machine and grind most chuck components complete in one setup, eliminating the accuracy and quality issues often associated with multiple setups/operations. Because of these manufacturing advantages, we produce extremely rigid collet chucks that run virtually dead-true when mounted to the lathe spindle, so there is no need to waste valuable machining time fiddling with jack screws and indicators in an effort to reduce runout.



Same-Day Shipping

Royal Products maintains a huge collet chuck inventory of 600–800 chucks at any given time. We also stock a large array of drawtube connectors to suit hundreds of the most common machine/chuck combinations. For orders requiring non-standard connectors, we set up a special cell that quickly machines the connectors from semi-finished blanks.

This dedication to outstanding service has enabled Royal Products to achieve a same-day shipping performance rating of 94%, with all other orders shipping either the next day or as specified by our customers. We know of no other company in the industry that comes close to this level of service on an engineered product.



Save!
\$

Unbeatable Pricing

Not only does Royal Products build the highest quality collet chucks, for the most demanding applications, and deliver them immediately, but we do it all for a price that is significantly lower than the competition. Fair pricing has always been one of Royal's core philosophies, and we pursue it aggressively.

**Risk-Free
PERFORMANCE
Guarantee**

Risk-Free Performance Guarantee

All Royal CNC Collet Chucks carry an exclusive risk-free performance guarantee, giving you 45 days to try one out on the toughest jobs in your shop. If you are not completely satisfied with the chuck's performance, we will take it back and arrange for a full refund to be issued by your distributor.

LOW-PROFILE PULLBACK CNC COLLET CHUCKS

Simple Design

Royal Pullback CNC Collet Chucks provide a simple, low-cost method for utilizing collets on all CNC lathes and turning centers.

Wide Range

Royal manufactures a **wide range of chucks** to fit all popular spindle noses and collet styles. Gripping capacities range from 1/64" to 4" diameter.

High Accuracy

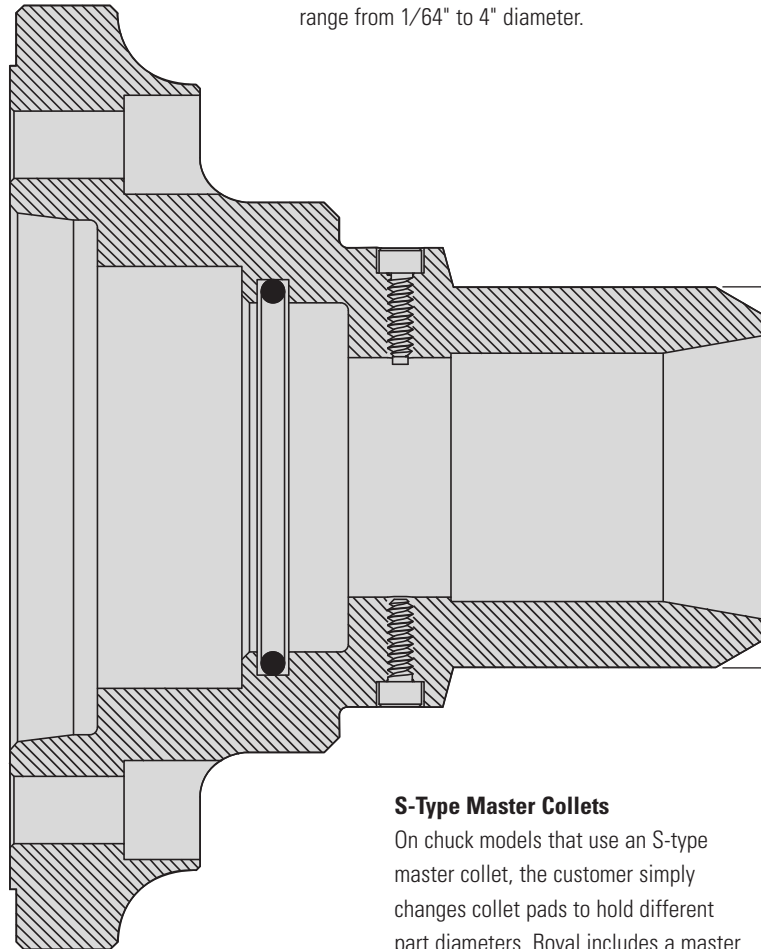
All Royal Pullback CNC Collet Chucks are guaranteed to run within 0.0003" TIR.

Spindle Bearing Protection

An **oversized flange** acts as a coolant slinger to protect lathe spindle bearings from contaminants. An internal O-ring protects sliding components from chips.

High RPM

All Royal CNC Collet chucks are balanced by design for high-speed operation, and can often be run at higher speeds than conventional 3-jaw chucks because they are less prone to the negative effects of centrifugal force.



Low-Profile

All external dimensions have been optimized to provide **outstanding tool clearance** and rigidity.

S-Type Master Collets

On chuck models that use an S-type master collet, the customer simply changes collet pads to hold different part diameters. Royal includes a master collet with each S-type collet chuck.

Easy Installation

All Royal CNC Collet Chucks include a collet wrench, mounting hardware, mounting wrenches, and a custom-machined drawtube connector to ensure **hassle-free installation**. S-type models also include the master collet. S-type collet pads can be ordered separately through your local tooling supplier.

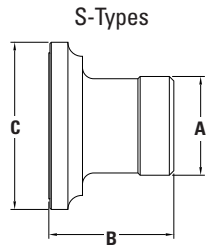
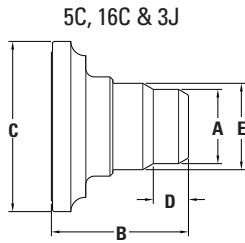
Heavy-Duty Construction

All chuck components, except for the drawtube connector, are hardened to Rc 61-63 for rigidity and durability.

Adjustability

Dual collet retaining screws ensure easy collet installation and adjustability.

LOW-PROFILE PULLBACK CNC COLLET CHUCKS



*All Chucks In Stock for
Immediate Delivery!*

Royal Low-Profile Pullback CNC Collet Chucks

SPINDLE TYPE	COLLET TYPE	CAPACITY	THREADED NOSE	A	B	C	D	E	CHUCK WEIGHT (lbs.)	MAX DRAWBAR FORCE (lbs.)	MAX CLAMPING FORCE (lbs.)	MAX RPM	CATALOG NO.	PRICE
A2-5	5C	1 ¹ / ₁₆ "	N	2.63	5.00	6.45	1.05	3.14	12	4,490	15,750	6,000	42053	\$763
A2-5	5C	1 ¹ / ₁₆ "	Y	2.187-10	5.00	6.45	1.22	3.14	10	4,490 ¹	15,750	6,000 ¹	42054	849
A2-6	5C	1 ¹ / ₁₆ "	N	2.63	5.00	7.45	1.05	3.14	17	4,490	15,750	6,000	42055	898
A2-6	5C	1 ¹ / ₁₆ "	N	2.63	6.00	7.45	1.05	3.14	19	4,490	15,750	6,000	42057	998
A2-6	5C	1 ¹ / ₁₆ "	Y	2.187-10	6.00	7.45	1.22	3.14	17	4,490 ¹	15,750	6,000 ¹	42058	1,087
A2-8	5C	1 ¹ / ₁₆ "	N	2.63	6.00	9.45	1.05	3.14	31	4,490	15,750	4,500	42059	1,058
A2-8	5C	1 ¹ / ₁₆ "	Y	2.187-10	6.00	9.45	1.22	3.14	29	4,490 ¹	15,750	4,500 ¹	42060	1,137
A2-5	16C	1 ⁵ / ₁₆ "	N	3.00	6.00	6.45	1.85	3.31	12	5,390	19,800	6,000	42067	949
A2-6	16C	1 ⁵ / ₁₆ "	N	3.25	6.00	7.45	1.54	3.78	20	5,390	19,800	6,000	42069	1,028
A2-8	16C	1 ⁵ / ₁₆ "	N	3.25	6.00	9.45	1.54	3.78	30	5,390	19,800	4,500	42071	1,103
A2-5	3J	1 ³ / ₄ "	N	3.08	6.00	6.45	1.16	3.33	13	5,390	26,340	6,000	42061	976
A2-6	3J	1 ³ / ₄ "	N	3.25	6.00	7.45	1.05	3.87	20	5,390	26,340	6,000	42063	1,058
A2-8	3J	1 ³ / ₄ "	N	3.25	6.00	9.45	1.05	3.87	32	5,390	26,340	4,500	42065	1,247
A2-5	S-20 Master ²	2"	N	4.40	5.63	6.45	-	-	23	9,500	21,300	6,000	45108	2,236
A2-6	S-20 Master ²	2"	N	4.40	5.57	7.45	-	-	29	9,500	21,300	6,000	45110	2,384
A2-6	S-26 Master ²	2 ⁵ / ₈ "	N	5.75	6.25	7.45	-	-	33	11,500	25,700	6,000	45112	2,559
A2-8	S-26 Master ²	2 ⁵ / ₈ "	N	5.75	6.25	9.45	-	-	49	11,500	25,700	4,500	45114	2,667
A2-6	S-30 Master ²	3"	N	5.75	6.50	7.45	-	-	34	13,500	30,200	6,000	45115	2,897
A2-8	S-30 Master ²	3"	N	5.75	6.53	9.45	-	-	49	13,500	30,200	4,500	45116	2,766
A2-8	S-35 Master ²	3 ¹ / ₂ "	N	7.00	6.75	9.45	-	-	52	13,500	30,200	4,500	45118	3,894
A2-11	S-40 Master ²	4"	N	7.90	7.50	11.50	-	-	75	13,500	54,900	3,000	45120	5,273

¹ Warning — for threaded nose collet chucks, do not exceed manufacturer's rpm and drawbar force recommendations for any threaded accessories.

² For additional information on Royal Master Collets and S-Type Pads, please see page 26.

LOW-PROFILE ACCU-LENGTH™ CNC COLLET CHUCKS

High RPM

All Royal CNC collet chucks are **balanced by design** for high-speed operation, and can often be run at higher speeds than conventional 3-jaw chucks because they are less prone to the negative effects of centrifugal force.

Spindle Bearing Protection

An oversized flange acts as a coolant slinger to protect lathe spindle bearings from contaminants.

Wide Range

Royal manufactures a wide range of Accu-Length™ Collet Chucks to fit all popular spindle noses and collet styles. Gripping capacities range from 1/64" to 3" diameter.

Complete Package

All Royal Accu-Length™ Collet Chucks include a collet wrench, lubricator, mounting hardware, mounting wrenches, and a custom-machined drawtube connector for hassle-free installation. S-type models also include the master collet. S-type collet pads can be ordered separately through your local tooling supplier.

Dead-Length Operation

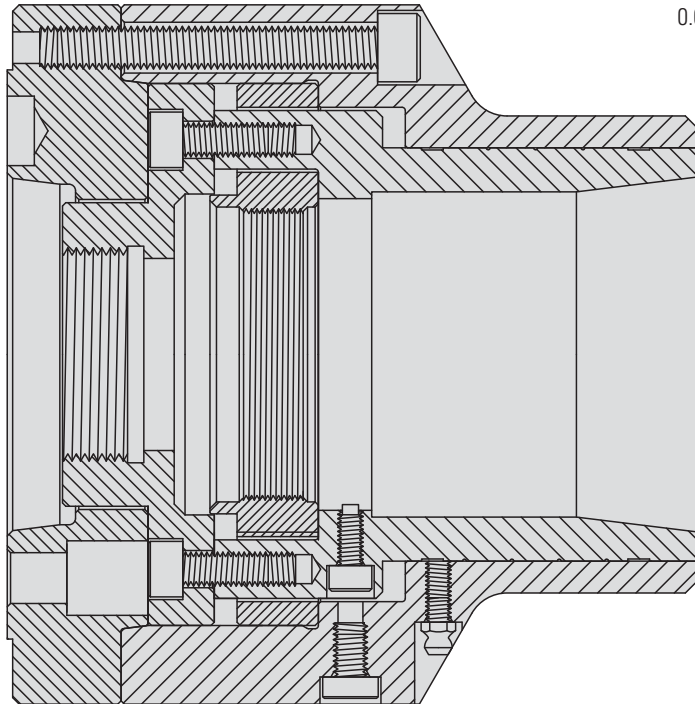
Royal Accu-Length™ CNC Collet Chucks incorporate dead-length operation to eliminate part pullback. With this design, a tapered sleeve pushes forward over the collet to compress it, resulting in precise z-axis positioning.

Outstanding Rigidity

All Royal Accu-Length™ Collet Chucks have been **optimized for maximum rigidity**, and all components are hardened for strength and durability.

High Accuracy

All Royal Accu-Length™ CNC Collet Chucks are guaranteed to run within 0.0003" TIR.



Low-Profile

All external dimensions have been **optimized to provide maximum tool clearance**.

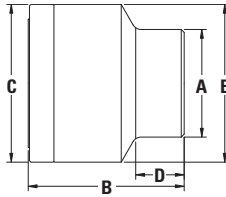
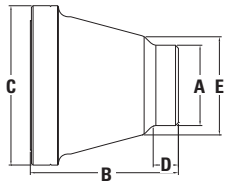
Fast Mounting

Exclusive Bolt & Go™ mounting feature is standard on all Royal Accu-Length™ Collet Chucks. See page 26 for additional information.

Fine Adjustability

Royal Accu-Length™ master collets contain **multiple keyways for fine adjustability**. This is an especially useful feature for second-spindle applications.

LOW-PROFILE ACCU-LENGTH™ CNC COLLET CHUCKS



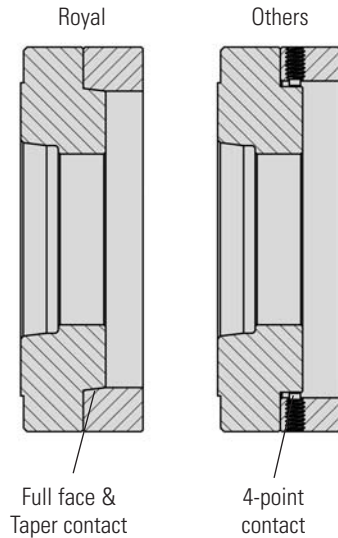
*All Chucks In Stock for
Immediate Delivery!*

Royal Low-Profile Accu-Length™ CNC Collet Chucks

SPINDLE TYPE	COLLET TYPE	CAPACITY	A	B	C	D	E	CHUCK WEIGHT (lbs.)	MAX DRAWBAR FORCE (lbs.)	MAX CLAMPING FORCE (lbs.)	MAXIMUM RPM	CATALOG NUMBER	PRICE
A2-5	5C	1 ¹ / ₁₆ "	2.43	5.75	6.45	1.00	4.00	21	4,000	13,600	6,000	42330	\$2,876
A2-6	5C	1 ¹ / ₁₆ "	2.43	5.75	7.45	1.00	4.00	21	4,000	13,600	6,000	42332	2,988
110mm	5C	1 ¹ / ₁₆ "	2.43	5.55	6.45	1.00	4.00	21	4,000	13,600	6,000	42334	2,876
140mm	5C	1 ¹ / ₁₆ "	2.43	4.45	6.45	1.00	4.00	13	4,000	13,600	6,000	42336	2,988
A2-5	16C	1 ⁵ / ₈ "	3.25	6.50	6.45	1.03	3.80	25	5,400	18,300	6,000	42338	3,143
A2-6	16C	1 ⁵ / ₈ "	3.25	6.25	7.45	1.03	3.80	24	5,400	18,300	6,000	42340	3,243
A2-8	16C	1 ⁵ / ₈ "	3.25	7.25	9.45	1.03	3.67	51	5,400	18,300	4,500	42342	3,352
A2-5	3J	1 ³ / ₄ "	3.25	6.23	6.45	1.03	3.97	24	5,400	26,300	6,000	42344	3,243
A2-5*	3J	1 ³ / ₄ "	3.25	5.47	5.20	1.03	4.06	22	5,400	26,300	6,000	42345	3,243
A2-6	3J	1 ³ / ₄ "	3.25	6.25	7.45	1.03	3.97	25	5,400	26,300	6,000	42346	3,352
A2-8	3J	1 ³ / ₄ "	3.25	7.00	9.45	1.03	3.97	49	5,400	26,300	4,500	42348	3,467
110mm	3J	1 ³ / ₄ "	3.25	6.03	6.45	1.03	3.97	25	5,400	26,300	6,000	42350	3,243
110mm*	3J	1 ³ / ₄ "	3.25	5.42	5.20	1.03	4.06	22	5,400	26,300	6,000	42351	3,243
115mm	3J	1 ³ / ₄ "	3.25	6.03	6.45	1.03	3.97	25	5,400	26,300	6,000	42352	3,277
140mm	3J	1 ³ / ₄ "	3.25	6.03	6.45	1.03	3.97	23	5,400	26,300	6,000	42354	3,352
A2-5	S-20 Master	2"	4.81	6.38	6.45	1.80	6.45	38	6,000	29,300	6,000	42360	3,614
A2-6	S-20 Master	2"	4.81	6.63	7.45	1.80	6.45	41	6,000	29,300	6,000	42362	3,874
A2-5	S-26 Master	2 ⁵ / ₈ "	5.50	6.63	7.45	1.62	7.45	45	8,000	39,100	6,000	42363	3,937
A2-6	S-26 Master	2 ⁵ / ₈ "	5.50	7.00	7.45	1.50	6.75	53	8,000	39,100	6,000	42364	3,978
A2-8	S-26 Master	2 ⁵ / ₈ "	5.50	7.30	9.45	1.50	6.75	57	8,000	39,100	4,500	42366	4,092
A2-6	S-30 Master	3"	6.00	6.62	8.45	1.63	8.45	67	10,000	48,800	6,000	42368	4,329
A2-8	S-30 Master	3"	6.00	6.87	9.45	1.63	8.45	69	10,000	48,800	4,500	42370	4,329

* Ultra-compact design.

Exclusive Bolt & Go™ Mounting Feature

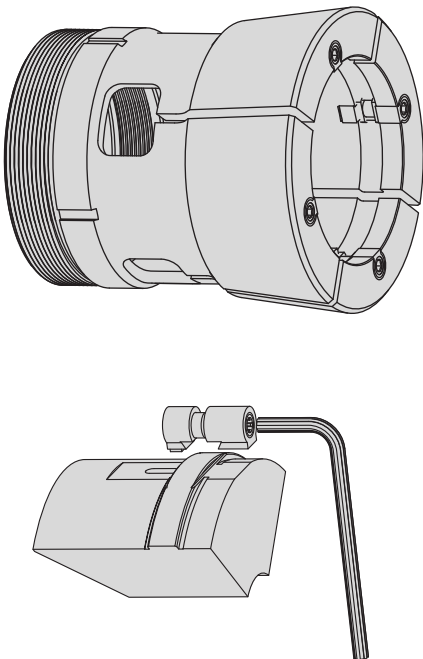


All Royal CNC Collet Chucks are super quick and easy to mount. Many chuck models mount directly to the lathe spindle without the need for an adapter plate, and for those chucks that do use a plate, a precision-ground tapered fit between the pilot and rear chuck body ensures a consistent, near-perfect fit without any need for adjustment. This tapered fit also enhances the overall system rigidity.

With competitors' chucks, the interface between the chuck body and adapter plate is a straight pilot and bore with built-in clearance, forcing the installer to waste valuable machining time using an indicator and jack-screws to true-up the chuck each time it is mounted. This design also reduces rigidity due to the limited support of the screws against the pilot.

Knock 30 minutes off your setup time

Master Collets and S-Type Pads



- ❑ For most collet chucks with a capacity greater than 1-3/4", a master collet and pad arrangement is used instead of dedicated solid collets. The primary reason for this is to reduce operating costs for the customer – collet pads are less expensive than large solid collets.
- ❑ Royal CNC Collet Chucks utilize proprietary master collets that accept industry-standard S-type collet pads.
- ❑ These S-type pads are available hardened and ground to a specific size, or in the soft state which enables them to be machined to size by the customer.
- ❑ The pads attach to the master collet via special clamp screws. As a clamp screw is tightened, the opposing ends draw together, engaging a dovetail on the back of the collet pad and seating it securely in the master collet.
- ❑ All Royal S-Type CNC Collet Chucks include a master collet with multiple keyways for fine adjustability – a feature that is especially useful on subspindle applications.
- ❑ S-type master collet and pad assemblies are usually less accurate than a hardened and ground solid collet due to the tolerances of the pad/collet interface. S-type pad manufacturers usually state an accuracy in the range of 0.0015" – 0.0025" TIR.
 - For first operation work, this accuracy is fine because all surfaces that are turned in the same chucking will always be concentric to each other.
 - For second-op and subspindle applications where accuracies of 0.0005" TIR or better are required, we recommend either boring a set of soft pads to size, or ordering one of our custom-made hardened and ground solid collets featured on the next page.

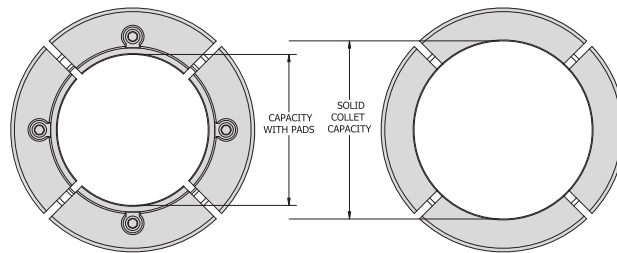
Custom Hardened and Ground Solid Collets



In addition to manufacturing all of our own master collets, Royal also manufactures custom hardened and ground solid collets for our CNC collet chucks. A solid collet provides several advantages over a master collet and pads, including:

- Higher accuracy – typically 0.0005" TIR or better
- Hardened to Rc 61–63 for strength and long life
- Excellent repeatability for use on future jobs
- Can be perfectly sized to grip any part diameter
- Can be made to hold odd-shaped parts
- Large capacity – by removing the pad clamps, the collet **capacity increases by as much as 3/8"**

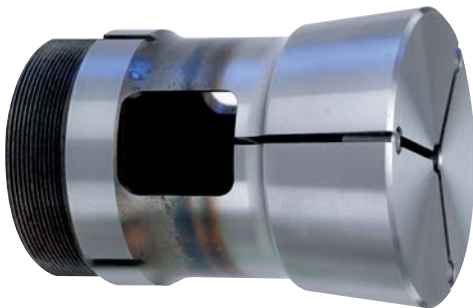
For additional information regarding custom solid collets, please contact a Royal Products applications engineer at 1-800-645-4174.



Master Collet with Pads

Solid Collet

Emergency Collets



- ❑ In addition to providing custom solid collets, we also stock emergency collets for our S-type Accu-Length™ collet chucks.
- ❑ These emergency collets are supplied semi-hard and are designed to be bored to size by the customer.
- ❑ Boring pins are included with each collet.

Royal Accu-Length Emergency Collets

FITS CHUCK MODEL	CATALOG NUMBER	PRICE
Accu-Length™ S-20	45142	\$398
Accu-Length™ S-26	45143	534
Accu-Length™ S-30	45144	664

Ejectors



- ❑ Ejectors are used in sub-spindle applications to push finished workpieces into the part catcher upon completion.
- ❑ Standard pusher head can be adjusted or modified as applications require.
- ❑ A hardened plunger rod and a bronze bearing work together to provide smooth, consistent operation.
- ❑ Spring is encased inside of body for protection.

Royal Ejectors

FITS CHUCK MODEL	CATALOG NUMBER	PRICE
Accu-Length™ 5C	45145	\$198
Accu-Length™ 16C	45146	219
Accu-Length™ 3J	45147	219
Accu-Length™ S-20	45148	438
Accu-Length™ S-26	45149	449
Accu-Length™ S-30	45150	474

For an alternative solution to an ejector, check out the Royal Grippex Coolant-Actuated Bar Puller on pages 44–46. The Grippex, when fitted with special robot gripper jaws, can be used to **pull finished parts** from a sub-spindle, eliminating the need for an ejector and freeing up the spindle bore to **swallow longer parts**.

Collet Stops



- ❑ A collet stop is used for accurate z-axis positioning of short workpieces within a collet.
- ❑ Stop rod length is easily adjusted.
- ❑ All Royal Accu-Length™ master collets are internally threaded to accept a collet stop.

Royal Collet Stops

FITS CHUCK MODEL	CATALOG NUMBER	PRICE
Accu-Length™ 5C	20030	\$11
Accu-Length™ 16C	45151	108
Accu-Length™ 3J	45152	108
Accu-Length™ S-20	45153	108
Accu-Length™ S-26	45154	114
Accu-Length™ S-30	45155	121

ACCU-LENGTH™ COLLET CHUCK ACCESSORIES



Bar Seals



- ❑ A bar seal assembly can be fitted to Royal S-type collet chucks for applications that produce fines and dust, such as the **machining of brass or cast iron**.
- ❑ Standard Royal Accu-Length™ Collet Chucks must be modified to accept this bar seal assembly. This modification is free to customers who order the bar seal kit at the same time they order their collet chuck.
- ❑ Older Royal Accu-Length™ Collet Chucks that are already in service can be returned to Royal Products and retrofitted to accept the bar seal for a nominal charge.
- ❑ Assembly includes housing, hardware, and one blank bar seal. Order extra seals separately.

Royal Bar Seal Assemblies

FITS CHUCK MODEL	CATALOG NUMBER	PRICE
Accu-Length™ S-20	45160	\$398
Accu-Length™ S-26	45161	426
Accu-Length™ S-30	45162	462

Replacement Bar Seals – Package of 3

FITS CHUCK MODEL	CATALOG NUMBER	PRICE
Accu-Length™ S-20	45165	\$54
Accu-Length™ S-26	45166	62
Accu-Length™ S-30	45167	71

Hardened and Ground Adapter Plates

- ❑ Adapter plates offer the flexibility to mount collet chucks and 3-jaw chucks to a wider range of spindles:
 - Mount a larger chuck on a smaller spindle for **increased capacity**.
 - Mount a smaller chuck on a larger spindle for increased **tool clearance** and higher speeds.
- ❑ All Royal adapter plates are made from high carbon alloy steel hardened to Rc 48-52.
- ❑ High accuracy – 0.0003" TIR guaranteed.
- ❑ Metric screws included for mounting plate to spindle.
- ❑ Drive button included on all plates.



Royal Adapter Plates

SPINDLE MOUNT	CHUCK MOUNT	PLATE DIAMETER	PLATE THICKNESS	SPINDLE MOUNTING BOLTS	CHUCK MOUNT THREADS	CATALOG NUMBER	PRICE
A2-5	A2-6	6.68	1.00	M-10	M-12	44000	\$812
A2-5	170MM	6.68	1.00	M-10	M-12	44002	765
A2-6	A2-6	6.68	1.25	M-12	M-12	44009	723
A2-6	A2-8	8.68	1.00	M-12	M-16	44004	943
A2-8	A2-6	8.25	1.75	M-16	M-12	44010	943
A2-8	A2-8	8.69	2.00	M-16	M-16	44011	988
110MM	A2-5	5.31	0.75	M-10	M-10	44006	670
115MM	A2-5	5.31	0.75	M-10	M-10	44007	670
140MM	A2-6	6.68	1.00	M-10	M-12	44008	834

Other configurations available. Contact a Royal Products applications engineer at 1-800-645-4174 with your requirements.