**ROYAL 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.

**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.

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

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

**Bolt & Go™**
Our exclusive Bolt & Go™ mounting feature is standard on all Royal Low-Profile Collet Chuck models. Bolt & Go™ enables chucks to be mounted very quickly and ensures maximum accuracy and rigidity. See page 8 for additional information.

**Completely Sealed**
Lubricated for life, these chucks incorporate multiple O-ring seals to keep contaminants out and prevent chip pack-up on bore-thru applications.

**Easy Installation**
All Royal Low-Profile Collet Chucks include a collet wrench, lubricator, mounting hardware, mounting wrenches, and a custom-machined drawtube connector for hassle-free installation.

**High Accuracy**
All Royal Accu-Length™ CNC Collet Chucks are guaranteed to run within 0.0002” TIR.

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**Specials**
If you have a special application that goes beyond the scope of our standard line, we will be happy to design and build a custom system to meet your needs. Please contact a Royal applications engineer to discuss your requirements.

**Wide Range**
Royal manufactures a wide range of Accu-Length™ Collet Chucks to fit all popular spindle noses and collet styles.

Note – Collets sold separately
### Royal Low-Profile Accu-Length™ CNC Collet Chucks

- These chucks utilize spring-type collets and therefore do not provide the parallel grip functionality or wide gripping range of our Quick-Grip™ models.
- Dead-length operation – sleeve pushes forward to compress the collet, providing precise z-axis part positioning.
- Low-profile nose offers outstanding tool clearance.
- In-stock for same-day shipping.

![Image of Royal Low-Profile Accu-Length™ CNC Collet Chucks](image)

#### For capacities greater than 1.75", choose the appropriate Royal Quick-Grip™ CNC Collet Chuck from the preceding pages.
**Quick-Grip™ CNC Collet Chucks offer many advantages over Low-Profile Collet Chucks, including superior tool clearance, parallel-grip functionality, and better price-points.**

If you would like to continue utilizing older technology S-type collet pads, you can do so with the use of our Quick-Grip™ master collets – see page 28 for additional information.

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<th>Spindle Type</th>
<th>Collet Type</th>
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<th>B</th>
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ROYAL LOW-PROFILE PULLBACK 
CNC COLLET CHUCKS

- Traditional pullback design – collet is drawn into chuck for closing, pushed out for opening.
- Typically used on first-operation where holding precise axial positioning is not required.
- In-stock for same-day shipping.

![Diagram of collet chuck]

Royal Low-Profile Pullback CNC Collet Chucks

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*Threaded-nose collet chucks are for use with 5C step collets that close on the head, not the 10-degree angle. Never exceed the manufacturer’s rpm and drawbar force limits for any threaded accessories.

For capacities greater than 1.75", choose the appropriate Royal Quick-Grip™ CNC Collet Chuck from the preceding pages. Quick-Grip™ CNC Collet Chucks offer many advantages over Low-Profile Collet Chucks, including superior tool clearance, parallel-grip functionality, and better price-points.

If you would like to continue utilizing older technology S-type collet pads, you can do so with the use of our Quick-Grip™ master collets – see page 28 for additional information.
ROYAL LOW-PROFILE
COLLET CHUCK ACCESSORIES

Ejectors

- Ejectors are used in sub-spindle applications to push finished workpieces into the part catcher upon completion.
- Spring is encased inside of body for protection.
- A hardened plunger rod and a bronze bearing work together to provide smooth, consistent operation.

For an alternative solution to an ejector, check out the Royal Grippex Coolant-Actuated Bar Puller. 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.
- Assembly screws directly into rear of collet.

Heavy-Duty Collet Wrenches

- Heavy-duty one-piece head – pins won’t shear off.
- Comfortable knurled handle offers superior grip and makes collet installation a breeze.
- Cross-drilled hole in handle allows a screwdriver to be used as a lever for hard-to-remove collets.
FREQUENTLY ASKED COLLET CHUCK QUESTIONS

When is a Collet Chuck a Better Choice than a Three-Jaw Chuck?

Bar Feeding
A collet chuck is almost always the best workholding choice for machines equipped with bar feeders. Collet chucks help minimize vibration, open and close faster than three-jaw chucks, and, most importantly, provide full 360° contact to ensure that the bar stock remains on centerline for accurate re-gripping after being advanced.

Small Diameter Work
Collet chucks are best suited for parts ranging in size from 1/16” to 4” in diameter because they offer much better tool clearance, can be run at higher speeds than jaw chucks, and provide superior grip force.

Short / Thin Parts
A collet chuck’s low-profile design provides better tool clearance and allows machining to take place very close to the chuck face. This ability to work closer to the chuck can also help prevent thin parts from sagging or bending.

High Speed Operation
Collet chucks are much less vulnerable to the negative effects of centrifugal force, enabling them to run at higher speeds while maintaining consistent grip force.

Reduced Setup Times
Changing a collet is much faster than changing chuck jaws, and there is no boring required. Collet chucks keep your machines making chips – and profits!

Pipe and Tube Work
The 360° contact provided by a collet distributes the gripping force evenly around the entire part 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.

Better Tool Life
The paddlewheel-like shape of a 3-jaw chuck can deflect coolant before it reaches the cutting tool tip, shortening tool life, whereas the streamlined shape of a collet chuck enables precise coolant delivery. Collet chucks also produce significantly less mist than 3-jaw chucks.

What is the Difference Between a Pullback Chuck and an Accu-Length™ Chuck?

With a pullback collet chuck, closing the collet is accomplished by pulling it back into the chuck body, whereas with an Accu-Length™ chuck, the collet is rigidly fixed to the chuck body and a tapered sleeve pushes forward over the collet to compress it.

Using a pullback chuck will result in a slight variation in z-axis positioning of the workpiece. This happens due to the fact that as the collet draws back and closes down, it begins to grip the workpiece and pull it back too. Typically the movement is just a few thousandths of an inch, and remains consistent as long as the part diameter doesn’t vary.

This slight z-axis movement is often acceptable for first operation work and can be easily remedied with a facing cut. However, there are several situations where z-axis movement is not desirable. In these cases, using a Royal Accu-Length™ collet chuck with dead length operation will protect against workplace movement.

IMPORTANT – For machines with two spindles, it is always necessary for the secondary spindle (right-hand) to be equipped with an Accu-Length™ collet chuck, and it is strongly recommended that the main spindle (left-hand) use an Accu-Length™ chuck as well.