



MODEL T10459 5-C COLLET CHUCK D1-4 INSTRUCTIONS

For questions or help with this product contact Tech Support at (570) 546-9663 or techsupport@grizzly.com

Introduction

The T10459 Collet Chuck is made of high-quality steel forgings. The simple key-operated scroll provides uniform, distortion-free clamping and low collet cycle times.

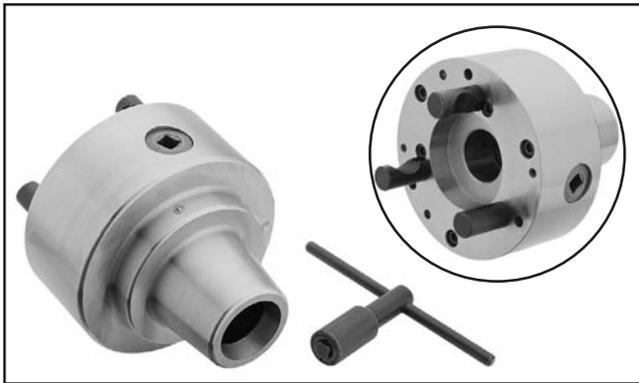


Figure 1. Model T10459.

Chuck Installation

To ensure accurate work, it is extremely important to make sure the spindle nose, chuck mating surfaces, and tapers are clean. Even a small amount of lint or debris can affect accuracy.

The chuck is properly installed when all the spindle camlocks are tight, the spindle and chuck tapers firmly lock together, and the back of the chuck is firmly seated against the face of the spindle all the way around—without any gaps.

⚠ WARNING

Always make sure the chuck is properly secured to the spindle before starting spindle rotation. Otherwise, the chuck could come loose during operation and be thrown at the operator with deadly force.

To install the chuck:

1. DISCONNECT LATHE FROM POWER!
2. Clean and lightly oil the chuck camlock studs, then thoroughly clean the mating surfaces of the spindle and chuck.
3. Install the chuck by inserting the camlock studs straight into the spindle cam holes.

Note: Avoid inserting the studs at an angle (see **Figure 2**)—this can damage the studs or cam holes.

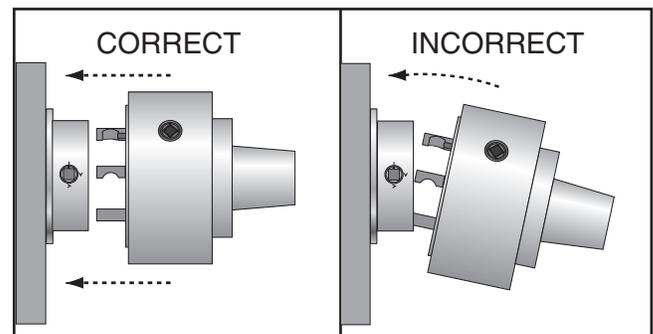


Figure 2. Inserting chuck camlock into spindle cam holes.

4. Incrementally tighten the spindle camlocks in an alternating pattern to ensure that the chuck seats evenly against the spindle.

NOTICE

DO NOT use an extension or "cheater bar" on the chuck key. The excessive force could damage the working parts of the spindle or chuck.

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- When the chuck is fully seated and all the spindle camlocks are tight, verify that the cam lines are between the two "V" marks, as shown in **Figure 3**.

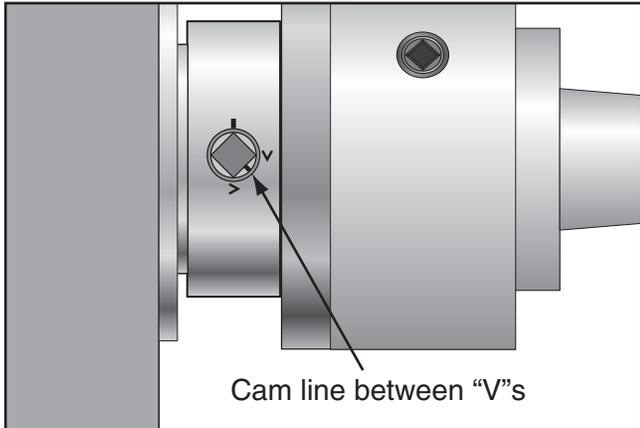


Figure 3. Cam line properly positioned between the two "V"s.

—If a cam line is NOT between the "V" marks when the spindle camlock is tight, the camlock stud may be at an incorrect height. To fix this, adjust the stud height as shown in **Figure 4**. Make sure to re-install the stud cap screw afterward.

—If adjusting the stud height does not correct the problem, try swapping stud positions on the chuck.

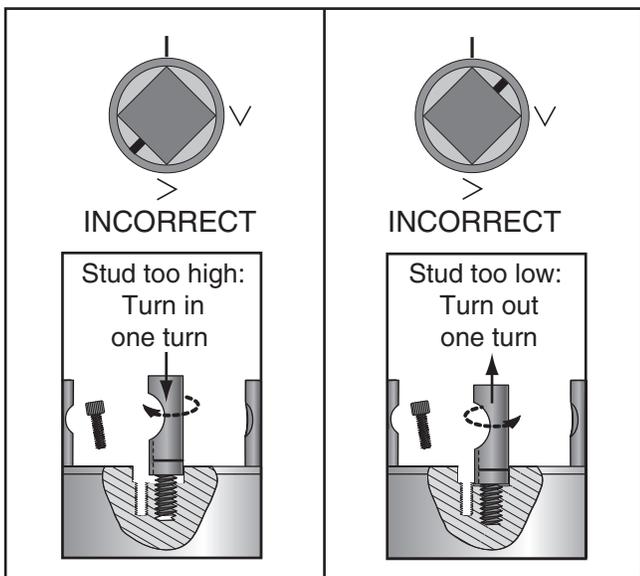


Figure 4. Adjusting camlock stud height.

- Verify that the chuck fits the spindle properly by checking for any gaps between the mating surfaces.

—If there are no gaps, proceed to **Step 7**.

—If there is a gap, remove the chuck, re-clean the mating surfaces carefully, and re-install. If the problem persists, contact our Tech Support.

- Verify that the chuck and spindle tapers are seated firmly together by removing the chuck, per the following **Chuck Removal** instructions, and pay close attention to how easily the tapers release.

—If it was necessary to bump the chuck or use a mallet to release the tapers, then they are seating together properly.

—If the tapers released easily with little intervention, they are not seating together firmly as required. Remove the chuck, re-clean the mating surfaces carefully, and re-install. If the problem persists, contact our Tech Support.

Chuck Removal

- DISCONNECT LATHE FROM POWER!
- Loosen the spindle camlocks by using the key to turn them counterclockwise until each of the cam lines are aligned with its corresponding spindle mark, as shown in **Figure 5**.

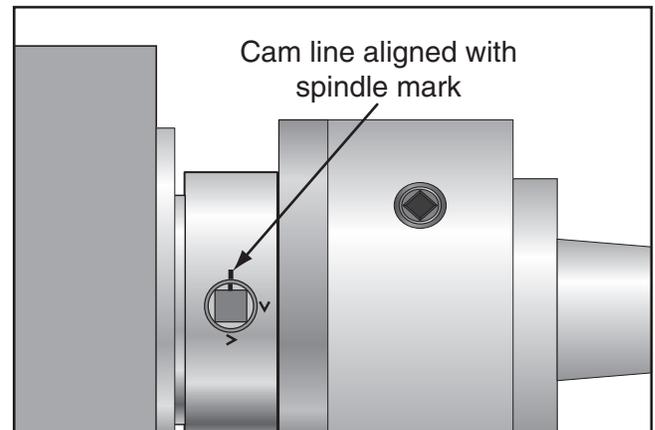


Figure 5. Spindle camlock fully loosened when cam line is aligned with the spindle mark.



3. Using a dead blow hammer or other soft mallet, lightly tap around the outer circumference of the chuck body to loosen the taper from the spindle.
4. Remove the chuck from the spindle, using a light rocking motion to carefully slide the studs out of the cam holes.

—If the chuck does not immediately come off, rotate it approximately 60° and tap it again. Make sure all the cam lines and spindle marks are aligned for removal.

Collet Installation & Removal

5-C collets have an alignment slot machined into the shank that aligns with a guide pin inside the collet chuck when inserted (see **Figures 6–7** for examples). The guide pin keeps the collet from turning when the chuck scroll threads rotate to pull the collet in and tighten around the workpiece.

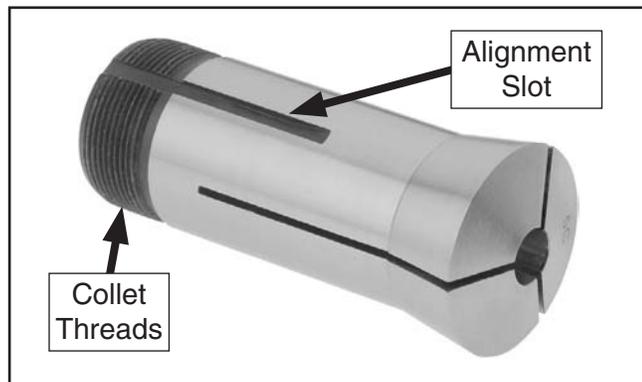


Figure 6. Example of a 5-C collet.

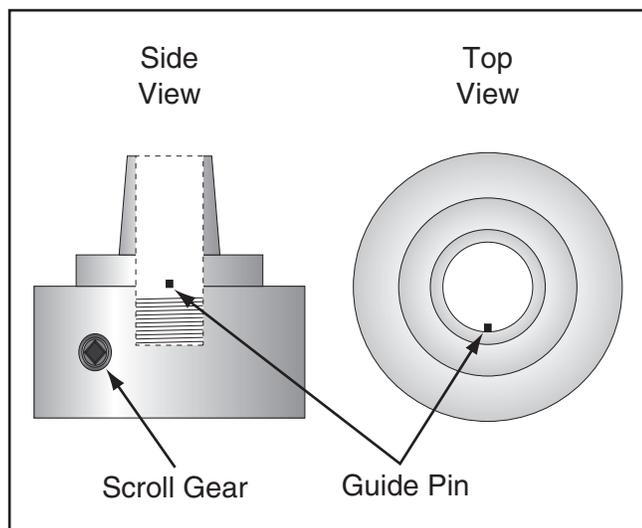


Figure 7. Guide pin location for collet alignment slot.

To install the collet:

1. DISCONNECT LATHE FROM POWER!
2. Thoroughly clean and dry the mating surfaces of the collet and chuck, making sure that no lint or oil remains on the tapers.

Note: This helps ensure that the collet seats properly and has minimal runout.

3. As you insert the collet into the chuck, align the collet alignment slot with the guide pin inside the throat of the chuck.

Note: To ensure the collet will properly hold the workpiece, select a collet size that is no more than 0.005" larger than the workpiece diameter

4. When the collet is fully seated, insert the workpiece into the collet a distance that is at least ½ the length of the collet. This will ensure a safe gripping surface of the collet around the workpiece.
5. Use the chuck key to rotate the chuck scroll gear clockwise to pull the collet into the chuck (see **Figure 8** for example photo) until the gear is tight.

Note: As the scroll gear rotates, the scroll threads rotate inside the chuck and mate with the collet threads, which pulls the collet farther into the chuck and forces the collet walls to tighten around the workpiece.



Figure 8. Example photo of collet and workpiece installed in the chuck.



To remove the collet:

1. DISCONNECT LATHE FROM POWER!
2. Use the chuck key to rotate the scroll screw counterclockwise until the workpiece is loose, then remove the workpiece.
3. Continue to rotate the scroll screw counterclockwise until the collet is released from the chuck threads, then remove the collet.

Lubrication

Every 8 Hours of Operation: Clean the grime or debris from the chuck ball oiler (see **Figure 9**) and the immediate area. Use a plastic or rubberized cone-tip oil gun and lubricate with Mobil Vectra 2 oil or an ISO 68 equivalent. Push the oil gun tip against the ball oiler to form a hydraulic seal, then pump the gun 1–2 times. Clean away any excess oil.



Figure 9. Ball oiler location.

Every 2000 Hours of Operation: Completely disassemble the chuck, then clean and lubricate all the parts.

Items Needed

	Qty
Hex Wrench 5mm.....	1
Mineral Spirits.....	As Needed
Shop Rags.....	As Needed
Light Machine Oil.....	As Needed
Moly-Disulphide Chuck Grease.....	As Needed
Dead-Blow Hammer or Wooden Mallet.....	1

To disassemble the chuck:

1. DISCONNECT LATHE FROM POWER!
2. Remove the chuck from the lathe and place it upside down on a stable surface.
3. Loosen the three cap screws shown in **Figure 10**, but do not fully disengage them from the threaded holes in the chuck body—this will protect the threads in the next step.



Figure 10. Loosen these three cap screws (camlock studs removed for photo clarity).



4. Lay the chuck on its side, then gently tap each cap screw with a dead blow hammer or wooden mallet in an alternating pattern until the backing plate and chuck body separate.
5. As you remove the internal parts, take note of their positions so that you can properly re-install them (see **Figure 11**).



Figure 11. Chuck disassembled.

6. Thoroughly clean all parts and surfaces with mineral spirits, then allow them to dry.
7. Except for the internal mating surface of the chuck and the gears, wipe down all surfaces with an lightly-oiled rag.
8. Apply a thin coat of chuck grease to the scroll and bevel gear teeth.

9. Re-install the internal parts, align the pins and curved surfaces over the scroll gears, then bring the backing plate and chuck body together.

Note: *If necessary, use gentle taps from a dead-blow hammer or wooden mallet to help bring the parts together.*

DO NOT use a metal hammer or any other tool that could cause damage. If the parts are not easily joined, take them apart and try again, making sure they are properly aligned.

10. Add lubricant to the ball oiler, as directed in the beginning of the **Lubrication** section.
11. Use the chuck key to test the scroll gears. If the gears are hard to move or do not move at all, repeat this procedure until scroll movement is smooth.



Guide Pin Alignment

If you are having difficulty matching the collet alignment slot with the chuck guide pin, the pin may be turned from the vertical position. Perform the following procedure to return the guide pin to the proper alignment.

To adjust the chuck guide pin:

1. Remove the chuck from the lathe.
2. Use a 5mm hex wrench to remove the guide pin set screw shown in **Figure 12**.

Note: Take care that the guide pin does not drop out of the hole. If it does, insert it with the slotted tip toward the chuck throat.

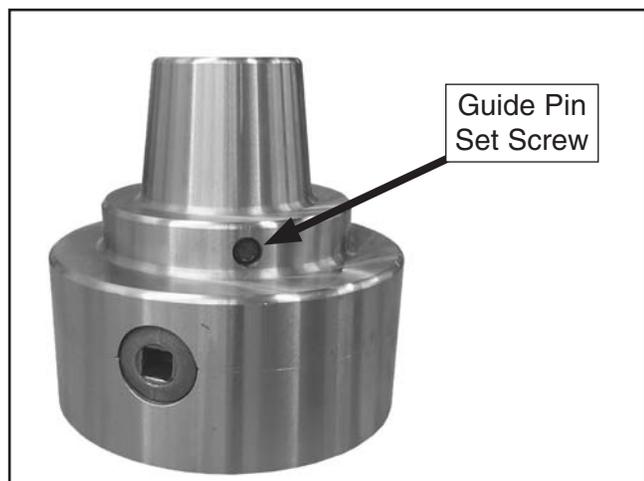


Figure 12. Guide pin set screw.

3. Using a standard #1 screwdriver, rotate the guide pin back and forth as you insert a collet until the collet can be fully inserted. This means the guide pin is in the vertical position.
4. Move the collet up and down slightly to make sure the guide pin is not binding, then fully thread the set screw against the guide pin to hold it in place.
5. Remove and re-insert the collet to verify the proper alignment of the guide pin. If necessary, repeat this procedure.

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TOOL WEBSITE

Accessories

Precision 5C Collets

Made from high-grade collet steel and precision-ground to exacting tolerances.

G1223— $\frac{1}{8}$ "	G1231— $\frac{5}{8}$ "
G1224— $\frac{3}{16}$ "	G1232— $\frac{1}{4}$ "
G1225— $\frac{1}{4}$ "	G1233— $\frac{3}{4}$ "
G1226— $\frac{5}{16}$ "	G1234— $\frac{13}{16}$ "
G1227— $\frac{3}{8}$ "	G1235— $\frac{7}{8}$ "
G1228— $\frac{7}{16}$ "	G1236— $\frac{15}{16}$ "
G1229— $\frac{1}{2}$ "	G1237—1"
G1230— $\frac{9}{16}$ "	

G1238—15 Pc. Set



Figure 13. Precision 5C Collet.

T23739—Pratt Burnerd Chuck Lubricant

This specially formulated high-pressure chuck lubricant is recommended for all chucks that require grease-type lubricant. Dramatically improves chuck operation, withstands pressure up to 500,000 PSI, contains rust and oxidation inhibitors, and resists displacement from centrifugal force. Fits standard grease guns.



Figure 14. T23739 Pratt Burnerd Chuck Lubricant.

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