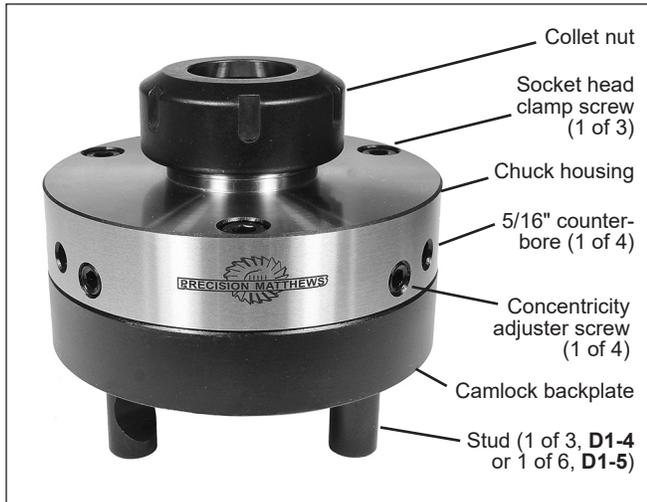


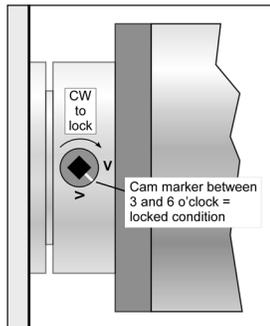
ER40 COLLET CHUCK for D1-4 and D1-5 Camlock lathe spindles

The Camlock D1-4 version is shown here. The D1-5 version is larger, with 6 studs, but otherwise similar.



1. Detach the chuck housing from the Camlock backplate (3 clamp screws).

2. If supplied loose, install studs on the Camlock backplate. Screw the studs in to the register groove about 3/16" above the shoulder. Install the three anti-rotation M6 socket head screws.



3. Install the backplate on the spindle nose, then tighten the Camlocks securely, cam markers as shown. If this is not possible, unscrew the stud in question one full turn, then re-install its anti-rotation screw.

4. If the spindle has a datum (such as a "0") scratch-mark the backplate alongside to ensure that it will always be installed in the same location. If no spindle datum, scratch-mark both items.

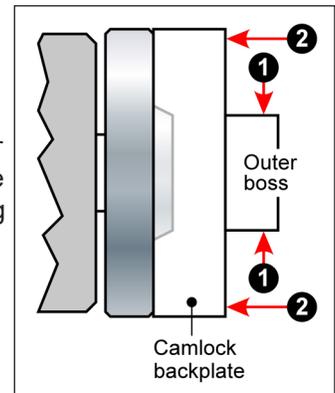
5. With a 0.001" feeler gauge check for flush fitting of the backplate on the spindle face. There should be no detectable gap. If there is a gap, it may be because the backplate bore* is bottoming on the tapered nose of the spindle. Shimming may be necessary.

* 2.5" for D1-4, 3.25" for D1-5

6. Test the fit the chuck housing on the outer boss of the backplate. There should be diametrical play of about ± 0.005 " or more. The exact amount is not important, because it will later be taken up by the concentricity adjuster screws.

! Steps 7 and 8 will make permanent changes to the Camlock backplate — call Precision Matthews for guidance. First, be sure the mating surfaces of spindle and backplate are clean, and the backplate is seated firmly, with the Camlocks properly tightened.

7. With a dial indicator, check radial runout on the outer boss. If this is excessive, beyond the point where the adjuster screws can compensate for it, consider skimming a minimum amount off the boss diameter, arrows #1.



8. Check runout on the face of the Camlock backplate. If this is ± 0.0005 " or more TIR, consider skimming a minimum amount off the face, arrows #2.

9. Install the housing on the backplate, holding it in place with the three socket head clamp screws. Snug the screws, but don't fully tighten.

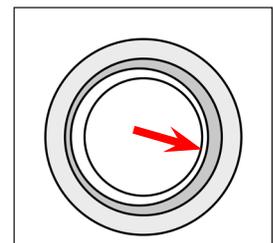
To check concentricity of the assembly, you will need a ground rod, say 1/2" diameter, and a matching ER40 collet.

Off-the-shelf raw bar stock is not reliably round enough for this test.

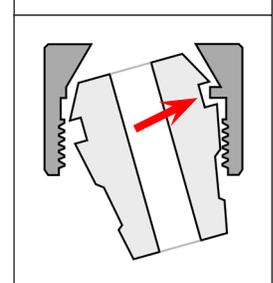
INSTALLING A COLLET

1. Remove the nut from the collet chuck.

2. With the threaded portion of the nut uppermost, observe the eccentric ring at the bottom of the threads. (This is referred to as the extractor ring, arrowed.)



3. Insert the ER collet into the nut, angled so that the annular groove near the outer end of the collet hooks over the extractor ring at its most prominent point, arrowed.



4. Push the collet further into the nut until it is properly seated in the nut's conical outer cavity, with the top of the collet aligned with the outer surface of the

nut. You should hear and feel a distinct click as the collet seats itself.

5. Screw the nut and collet assembly onto the collet housing.
6. Insert the ground rod into the collet, deep enough so that narrow end of the collet is also gripping the rod.
7. Tighten the nut with the supplied wrench.



8. Using a dial indicator, test for concentricity of the ground rod. (For initial tests, to minimize the effect of swashplate error — runout on the Camlock backplate face — set the dial indicator close to the collet.)
9. Make sure the three clamp screws securing the chuck housing to the backplate are not so tight that the concentricity adjuster screws cannot shift the housing.
10. Using an iterative procedure similar to centering a 4-jaw chuck, adjust the four adjuster screws for minimum runout.
11. Tighten the three clamp screws, then recheck runout. Repeat step (10) if necessary.



REMOVING A COLLET

1. Unscrew the nut and collet assembly from the housing. Remove anything retained within the collet.
2. Gripping the nut with one hand, tilt the collet over as far as it will go with the other. Then, while maintain-

ing tilting pressure on the collet, rotate the nut until you hear and feel a click indicating that the collet groove has snapped clear of the extractor ring.

If you have questions or concerns about any aspect of this product, please email us at service@precisionmatthews.com. Your feedback is welcomed.

