

WELLS

DENTAL, INC.

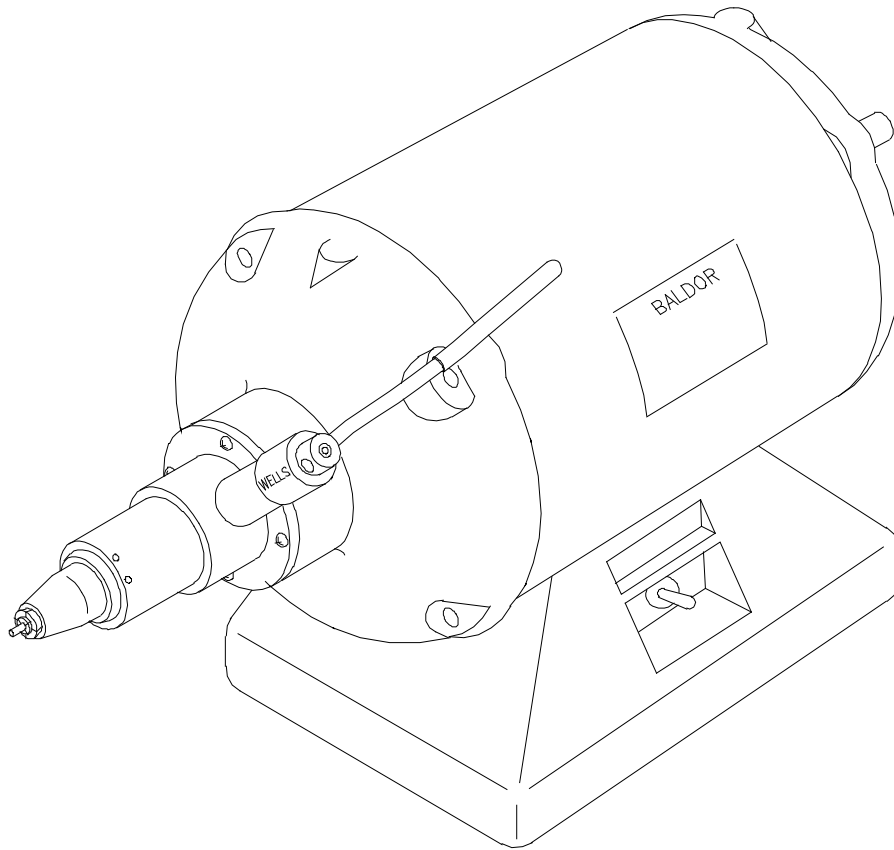
TECHNICAL BULLETIN
Q832-022510

5860 FLYNN CREEK ROAD
P.O. BOX 106
COMPTCHE, CALIFORNIA, U.S.A. 95427

**READ ALL INSTRUCTIONS
BEFORE PROCEEDING
SAVE THIS FOR FUTURE REFERENCE**

THIS PRODUCT IS FOR PROFESSIONAL LABORATORY USE ONLY

INSTALLATION OF WELLS SUPER QUICK CHUCK LEFT HAND ON BALDOR LATHE



SUPER QUICK CHUCK LEFT HAND
Product No. Q011

SALES CUSTOMER SERVICE TECHNICAL ASSISTANCE
CALL TOLL-FREE: 1 800 233-0521

PHONE: (707) 937-0521, FAX: (707) 937-2809
MONDAY-FRIDAY, 8:00 a.m.- 4:30 p.m. P.S.T.

DENTAL EQUIPMENT FOR TECHNICIANS WHO VALUE TIME AND QUALITY

NOTE: Because of the many Baldor lathe models and attachment configurations, this manual may not apply in every detail to your specific application. If you have any difficulty or questions, please call Wells Dental, Inc. at 1-800-233-0521.

1.0 MATERIALS REQUIRED

- 1.1 The lathe should be in good running condition. If it has noisy bearings, a worn switch, starting problems or excessive end play (greater than 1/32"), the condition should be corrected before proceeding with the installation. The condition of the tapered shaft is not important because it is not used.
- 1.2 Adapter kits are available for most Baldor lathes. Refer to the table below for the correct adapter kit. If you have a Baldor No. 221 or 240, you must find out if it has the older 35mm bearing or the newer 40mm bearing. To do this, unplug the power cord first, then remove the four screws that hold the chuck ejector. Remove the ejector assembly. Remove a steel washer from inside the end plate and measure its outside diameter for the bearing size.

WELLS SUPER QUICK CHUCK ADAPTER KITS		
Part No.	Description	Fits these lathes. For others, call Wells Dental, Inc.
Q209	ADAPTER BALDOR 210/211	Baldor 210 & 211 (35mm bearing)
Q212	ADAPTER BALDOR 221/240 35MM	Baldor 221 & 240 with 35mm bearing
Q215	ADAPTER BALDOR 221/240 40MM	Baldor 221 & 240 with 40mm bearing
Q218	ADAPTER BALDOR 300 SERIES	Baldor 350, 353, 357, 359, 370, 380 and 350T or 353T if it has the end plate in Figure 4.
Q237	ADAPTER BALDOR END PLATE	Baldor 357T, 359T, 380T, WELLS R051, R052, R053 350T or 353T if it has the end plate in Figure 3.
Q239	ADAPTER BALDOR 340 END PLATE	Baldor 340

NOTE: Q508 ADAPTER RING 40MM is supplied with Q209 and Q212 adapters so they can be used with lathes that have 40mm bearings.

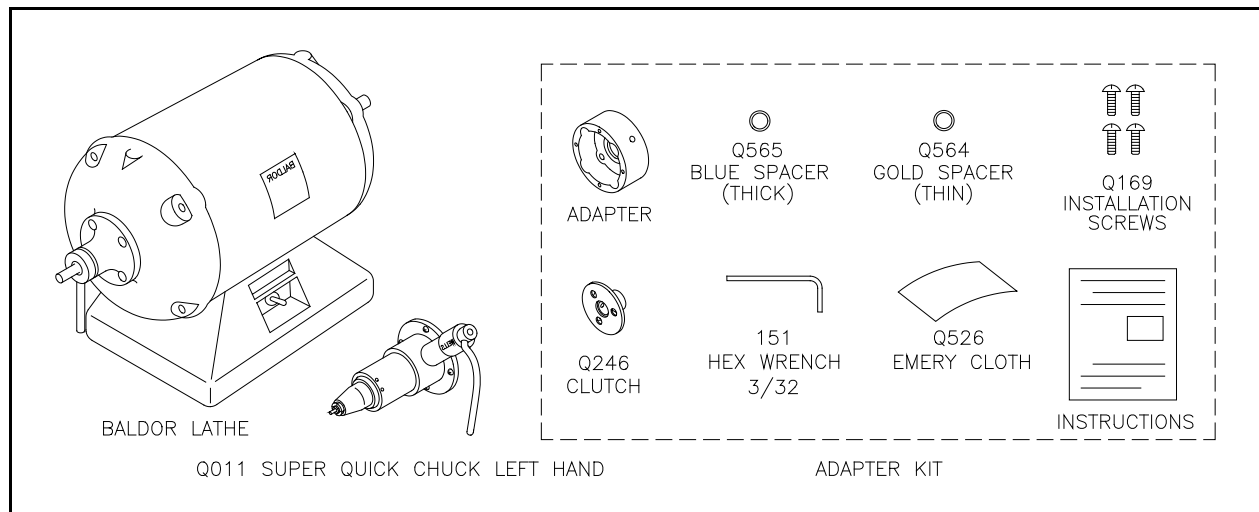


Figure 1. Materials

2.0 TOOLS NEEDED

1/4" straight blade screwdriver, pliers, file and rule

3.0 PREPARE THE LATHE

3.1 If you have a lathe with a chuck ejector similar to the one pictured in Figure 3, you must replace the whole end plate using a Q237 or Q239 adapter. Go to section 8.0, REPLACE THE END PLATE, before continuing. If you have the removable ejector assembly pictured in Figure 4, you may continue to the next step.

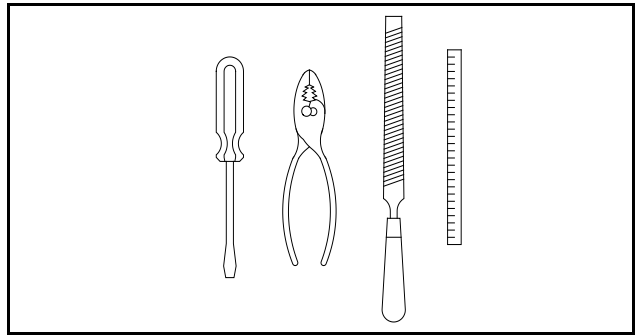


Figure 2. Tools

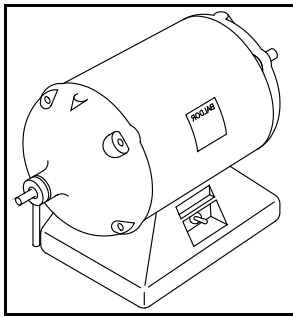


Figure 3.

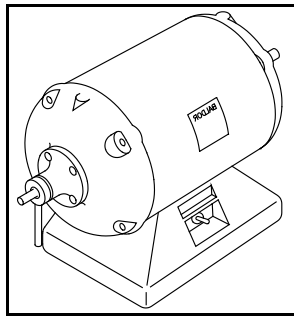


Figure 4.

- 3.2 Unplug the power cord. Remove the four screws that hold the **left** chuck ejector and remove the ejector assembly.
- 3.3 Remove all the washers from inside the end plate. Some washers may be stuck to the ejector assembly.
- 3.4 Examine the washers you removed. If one of them is a spring washer (wavy or finger type) go on to step 3.5. If no spring washer was found on the left side of the rotor, it is on the right side. If a Super Quick Chuck is **not** installed on the right side, the spring washer must be moved over to the right side. Remove the right ejector assembly and remove the spring washer. To keep the spacing the same, move two flat washers from the left side over to the right side in exchange. Replace the **right** ejector assembly.

3.5 With the left chuck ejector removed, check that the shaft is free to move at least 1/8" end to end. **CAUTION:** Do not move the shaft more than 1/8" because the rotor could fall out of place. If the shaft does not move end to end, the bearings are frozen inside the end plate and the lathe must be serviced.

- 3.6 Remove burrs from the 1/2" dia. shaft with the emery cloth.
- 3.7 **IMPORTANT:** A flat must be filed on the shaft where the clutch set screw contacts the shaft. If this is not done, the set screw will raise a burr on the shaft and it will be very difficult to remove the clutch. File a flat on the right shaft about 3/8" from the end plate. See Figure 5.

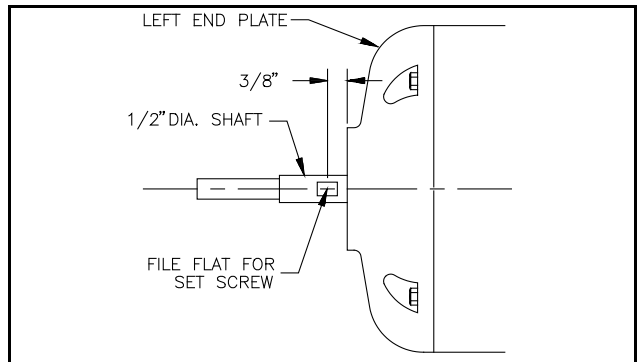


Figure 5. Flat for set screw

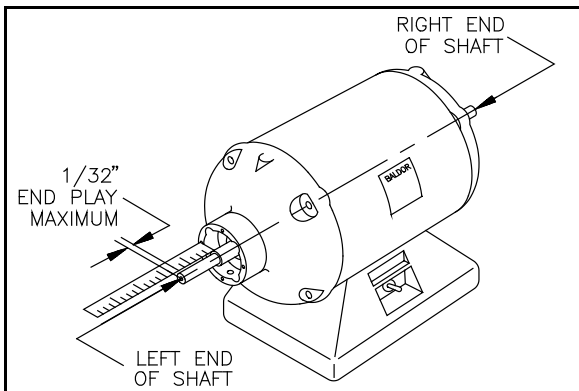


Figure 6. Shaft end play

- 3.8 The clutch should slide freely onto the shaft all the way to the bearing without binding. Use the emery cloth to remove any high spots.
- 4.0 **ADJUST THE SHAFT END PLAY**
- 4.1 Place the spring washer next to the bearing on the left side. If it has fingers, face the fingers **TOWARD** the bearing. Leave the other washers out for now.
- 4.2 Temporarily attach the adapter with two 10-32 x 1/2 screws. Put a folded shop towel in the palm of your hand a push firmly (50 lbs. force) on the right end of the shaft while measuring the protrusion of the left end. See Figure 6. You may need an assistant to push the shaft while you measure.

- 4.3 If there is no end play and the shaft does not rotate freely, remove the ejector assembly or Quick Chuck from the **right** end of the lathe and remove one flat washer. Replace the right ejector assembly or Quick Chuck and measure the end play again.
- 4.4 If the end play is greater than 1/32", remove the adapter and install one or more of the flat washers. Replace the adapter and check the end play again. If a Quick Chuck is **not** installed on the right side of the lathe, the end play is properly adjusted when the spring washer is on the left side, the shaft rotates freely and the end play is 1/32" or less. If a Quick Chuck is installed on the right side, there should be less than 1/64" or **NO** end play. The shaft should rotate freely.
- 4.5 Check that the 1/4" hole in the side of the adapter is facing down. See Figure 8. Install the other two screws and firmly tighten all four. Go to paragraph 5.0 to install the clutch.

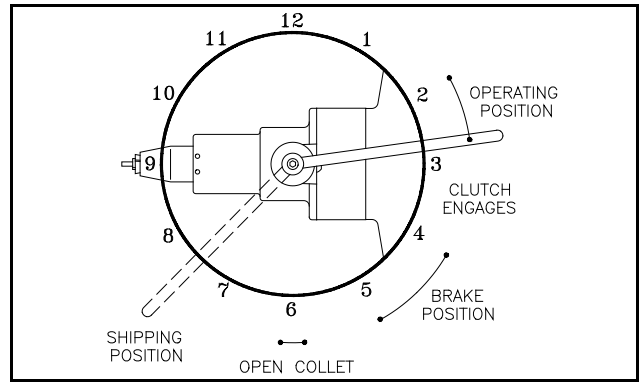


Figure 7. Handle position

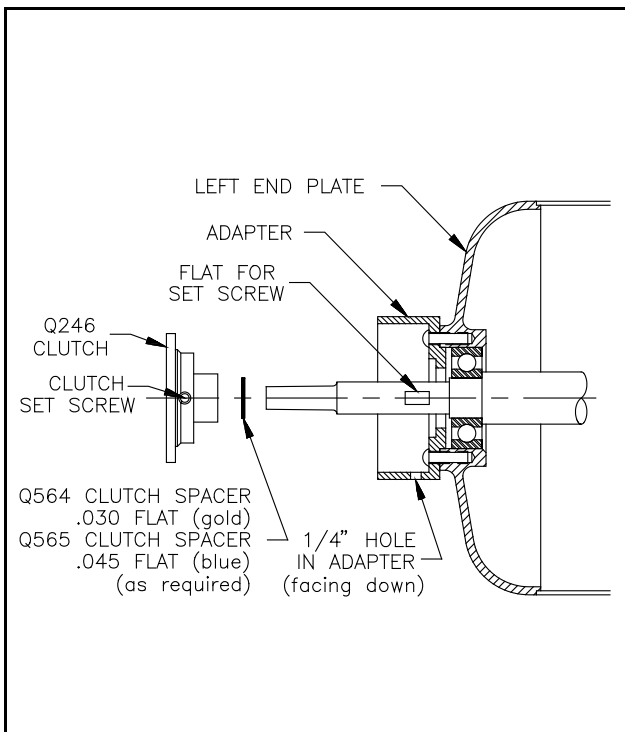


Figure 8. Cross section view

5.0 INSTALL THE CLUTCH

- 5.1 With the fiber side facing out, slide the clutch onto the shaft until it stops. Do not tighten the set screw yet.
- 5.2 Confirm that the Quick Chuck handle is in the shipping position. See Figure 7. Temporarily fasten the Quick Chuck to the adapter with two installation screws.
- 5.3 **CAUTION:** Always have a tool or shipping rod in the collet before moving the handle to the operating position. Move the handle counterclockwise until it stops. If the handle rests between 2:00 and 2:45, no adjustment is necessary; go to step 5.6. If the handle position is higher than 2:45, add spacers; go to step 5.4. If the handle position is lower than 2:00, file the clutch hub; go to step 5.5.
- 5.4 **To add spacers,** move the handle back to the shipping position. Remove the Quick Chuck. Insert the hex wrench into the 1/4" hole and pry out the clutch. (If the clutch is stuck, go to step 7.1.1.) Place the thinner gold spacer on the shaft. Slide the clutch onto the shaft. Fasten the Quick Chuck to the adapter again and move the handle counterclockwise until it stops. If the handle is still higher than 2:00, replace the thinner gold spacer with the blue thicker one. Again, check the handle position. If it is still too high, place both spacers on the shaft. When the handle rests between 2:00 and 2:45, go to step 5.6.

- 5.5 **To file the clutch hub,** move the handle back to the shipping position. Remove the Quick Chuck. Insert the hex wrench into the 1/4" hole and pry out the clutch. (If the clutch is stuck, go to step 7.1.1.) File or grind the end of the clutch hub a little to shorten it. See Figure 9. Slide the clutch onto the shaft. Fasten the Quick Chuck to the adapter again and move the handle counterclockwise until it stops. If the handle is still too low, shorten the clutch hub some more. You must add a spacer if you shorten it too much. When the handle rests between 2:00 and 2:45, go to step 5.6.

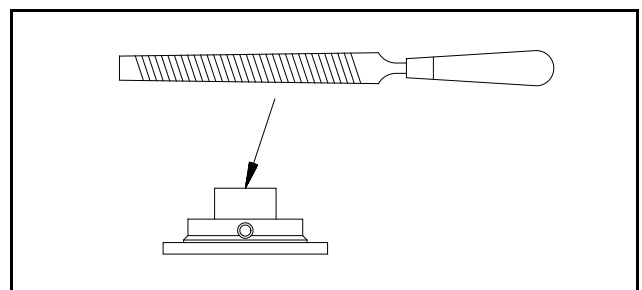


Figure 9.

5.6 Move the handle to the shipping position and remove the Quick Chuck. Insert the hex wrench into the 1/4" hole and pry out the clutch. (If the clutch is stuck, go to step 7.1.1.) Put a very thin film of grease on the shaft and install the clutch **so the set screw will tighten on the flat** that was filed. Hold the clutch all the way on and tighten the set screw securely with the hex wrench through the hole in the adapter.

6.0 INSTALL THE SUPER QUICK CHUCK

6.1 Confirm that the handle is in the shipping position. Fasten the Quick Chuck to the adapter using the four installation screws. See Figure 10.

6.2 Again, check that the handle returns to the operating position between 2:00 and 2:45.

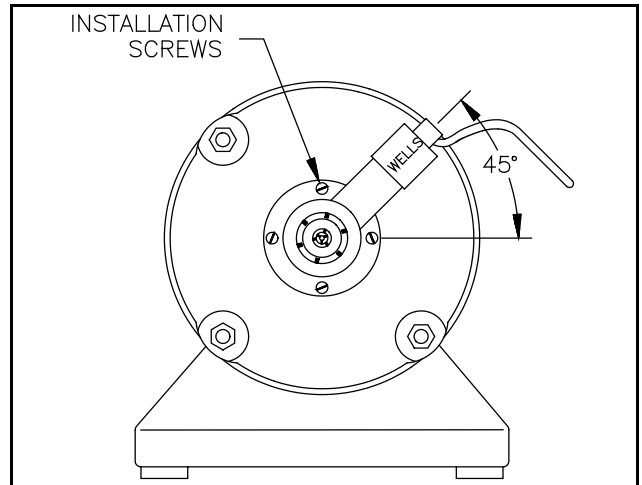


Figure 10. End view

CONGRATULATIONS! You have just completed the installation of the WELLS Super Quick Chuck.

IMPORTANT: READ ALL INSTRUCTIONS IN THE USER'S MANUAL BEFORE OPERATING THE WELLS SUPER QUICK CHUCK. FAILURE TO COMPLY WITH THESE INSTRUCTIONS COULD RESULT IN SEVERE PERSONAL INJURY AND/OR PROPERTY DAMAGE.

7.0 TROUBLE-SHOOTING

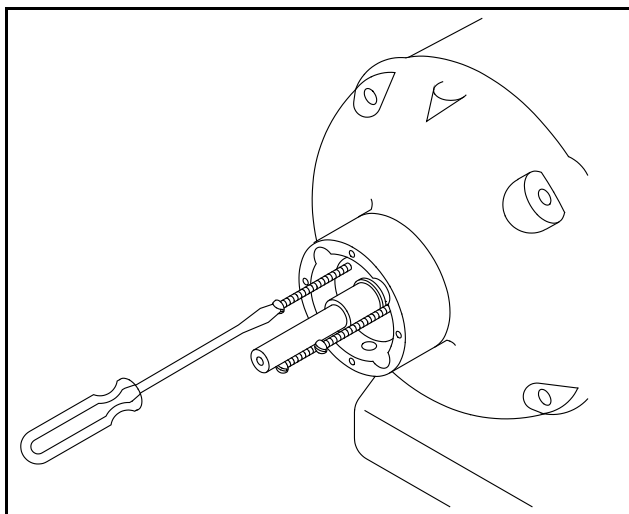


Figure 11. Removing a stuck clutch

7.1 REMOVING A STUCK CLUTCH

- 7.1.1 If you cannot remove the clutch by inserting the hex wrench into the 1/4" hole in the adapter and prying it out, obtain three 6-40x1" (or longer) machine screws.
- 7.1.2 Make sure that the clutch set screw is loose and is backed away from the shaft. Remove the three screws that hold the clutch lining and remove the clutch lining.
- 7.1.3 Thread the three 6-40x1" screws into the holes in the clutch hub. Tightening these screws in an alternating pattern will back out the clutch hub. See Figure 11.
- 7.1.4 Before assembly, make sure a flat for the set screw has been filed. See Figure 5. Use emery cloth to remove burrs and high spots from the 1/2" shaft. Make sure that the clutch will slide freely onto the shaft all the way to the bearing without binding. Tighten the set screw onto the flat when installing the clutch.

THIS SECTION IS FOR Q237 AND Q239 ADAPTERS ONLY.

8.0 REPLACE THE END PLATE

8.1 ADDITIONAL TOOLS NEEDED

- 5/16" end wrench (or socket)
- 3/8" end wrench (or socket)
- Soft faced mallet

8.2 REMOVE THE OLD END PLATE

- 8.2.1 Unplug the power cord.
- 8.2.2 Remove the four nuts on the right end of the lathe with a 3/8" (or 5/16") end wrench or socket.
- 8.2.3 Remove the thru-bolts.
- 8.2.4 Remove the **right** side end plate first. Place the screw driver blade against the raised lip of the right end plate and tap gently with a mallet. Alternate tapping on all four raised lips. See Figure 13.

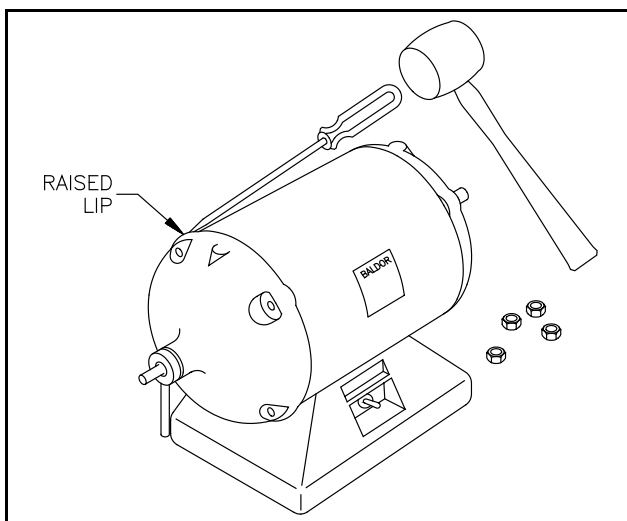


Figure 13. End plate removal

- 8.2.5 Remove the right end plate. **CAREFULLY** remove the rotor.
- 8.2.6 Keep the washers on the right side separate from the washers on the left side. Some may be stuck to the bearing and some may be in the end plate you just removed.
- 8.2.7 Remove the **left** side end plate. See Figure 13. Remove the hood switch from the left end plate.
- 8.3 **INSTALL THE NEW END PLATE**
- 8.3.1 Remove the four screws that fasten the adapter to the new end plate and remove the adapter. See Figure 14.
- 8.3.2 Fasten the hood switch to the inside of the new end plate so the wires will be toward the bottom when the end plate is properly positioned.
- 8.3.3 Install the end plate onto the left side of the lathe taking care to route the wires so they will be clear of the rotor. Tap the end plate with the palm of your hand or soft faced mallet to seat it into place.
- 8.3.4 Install the rotor. Make sure the rotating switch is on the left side so it will contact the hood switch.
- 8.3.5 If there is a spring washer (wavy or finger type) on the right side, move it to the left side. To keep the spacing the same, move two flat washers from the left side over to the right side in exchange. If a Quick Chuck is installed on the right side, leave the spring washer where it is. Place the rest of the flat washers for the right side into the right end plate.
- 8.3.6 Place the right end plate over the shaft and position the bearing while aligning the holes for the thru-bolts.
- 8.3.7 Insert the thru-bolts and start the four nuts. Tighten the nuts evenly in an alternating pattern. Do not over tighten. **Go to step 3.6** to prepare the lathe shaft.

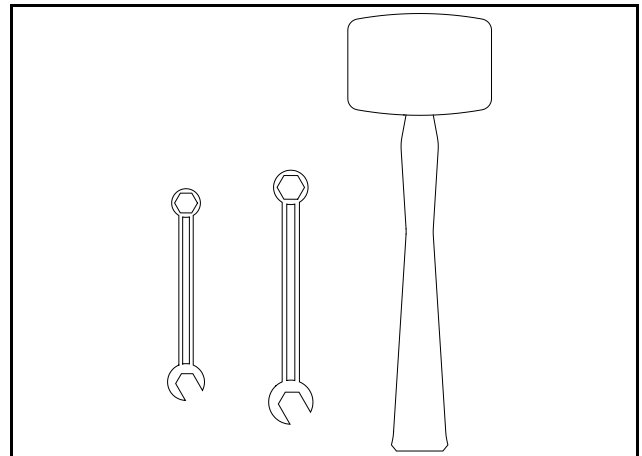


Figure 12. Additional tools

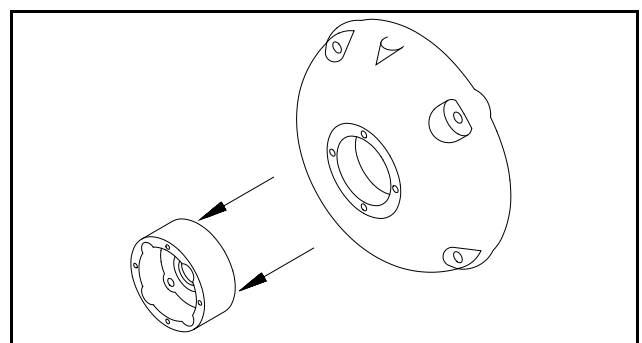


Figure 14. Remove the adapter

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