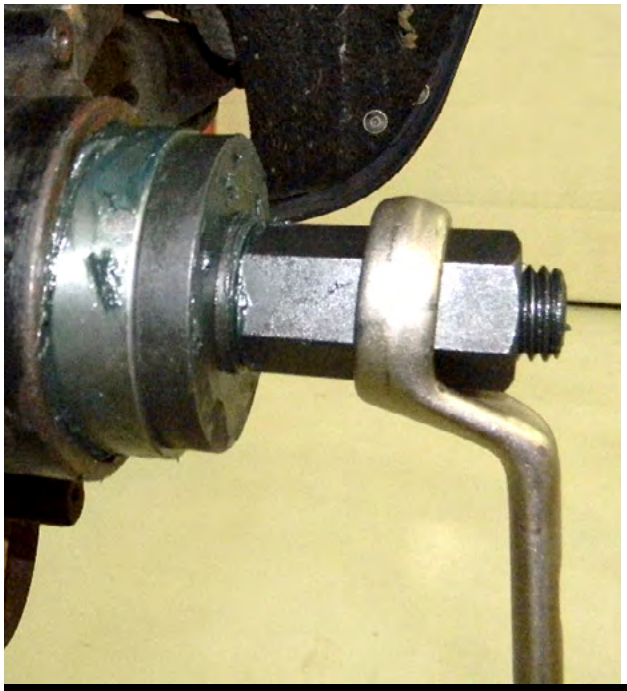
Audi Quattro Rear Wheel Bearing Installation



ES2561175

Schwaben®

Audi Quattro Rear Wheel Bearing Service Kit

B6/A4 and B7/A4

This tutorial is provided as a courtesy by ECS Tuning.

Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

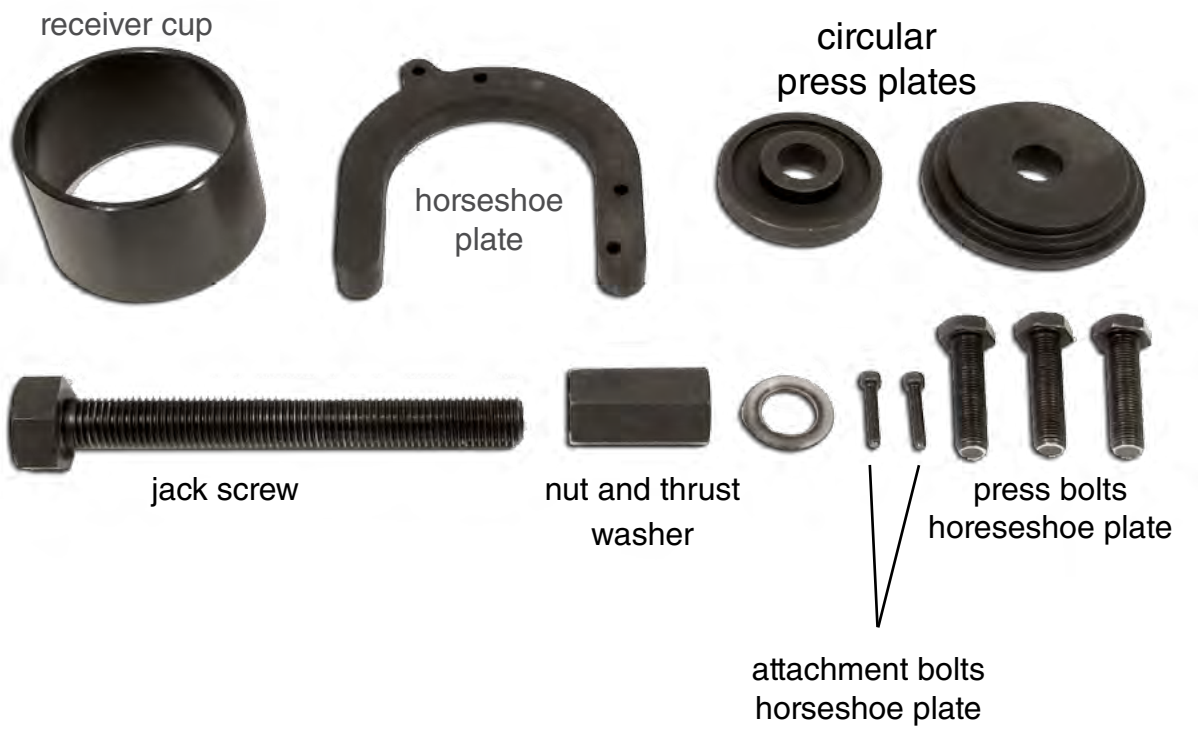
Product Description

The Schwaben® Audi Quattro Rear Wheel Bearing Service kit removes and installs rear wheel bearings on B6 and B7 Audi Quattro models that use a pressed-in bearing. The tool may be used with the rear knuckle (bearing holder) installed in the car, or with the holder removed from the vehicle and mounted in a special jig or vise.

This tutorial demonstrates general procedures on an Audi B6 A4.

The bearing removal kit includes a large, threaded jack screw, large and small circular press plates, and a hollow receiver cup, plus press plate attachment screws and press bolts.

The horseshoe-shaped press plate is a special addition to this kit, allowing you to remove the drive hub from the wheel bearing, on or off the car.



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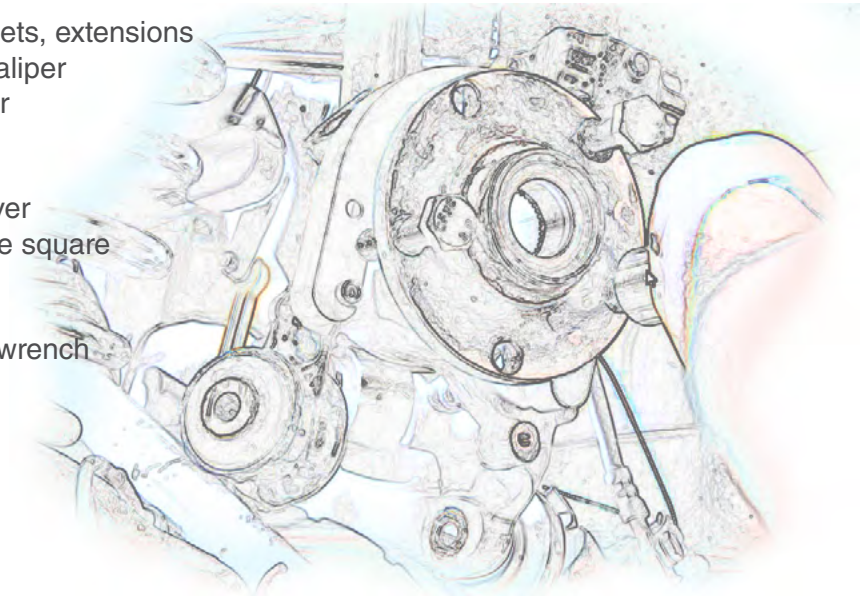
Tools We Used

- long breaker bar
- miscellaneous ratchets, extensions
- hanger to support caliper
- common screwdriver
- 5mm hex driver
- 8mm hex driver
- 17mm hex head driver
- M10 long reach triple square
- 17mm socket
- 18 mm socket
- 18mm combination wrench
- 22mm socket
- 32mm box wrench
- 32mm socket
- T27 Torx bit
- impact gun
- wire brush
- hammer
- pry bar



Tightening Specifications

- shoulder bolt - M14 - 115Nm; M16 - 200 Nm (Both to be torqued, then turned an additional 180 degrees with vehicle resting on wheels)
- CV joint-to-drive axle hub (M8 - 40Nm; M10 - 70Nm)
- caliper carrier to bearing housing (70Nm (+90 degrees) always replace bolt.
- bearing housing lower bolts/nuts (65Nm)

Note: This tutorial is broken into two sections: a photo pictorial starting on the next page and a Quick Reference section showing how the press tool is installed on the bearing housing, beginning on page 12. Final assembly procedures are listed on page 16.

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Step 1

Use a small prying tool, remove the wheel center cap.

Apply the hand brake so the car cannot move.

Step 2

With the car sitting on the wheels, reach in with a 17mm hex-head driver and loosen the axle bolt.

The axle bolt is a torque-to-yield bolt and should be very tight. Use a long-handled breaker bar; be prepared to apply significant force to loosen the bolt.

Note: The axle bolt is a one-time-use fastener and must be replaced.

Step 3

Remove the lug bolts.

Remove the wheel.

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Step 4

Remove the rotor set screw. If your old set screw is corrosion-damaged, you may need an impact driver and Phillips bit to remove it.

(ECS stocks replacement stainless steel screws.)

Note the wheel stud at the 12 o'clock position. This handy tool screws into a bolt hole by hand. It supports the wheel to make wheel removal and installation much easier and safer.

Step 5

Reach around to the backside of the brake caliper and unbolt it from the bearing holder.

There are two bolts with 8mm hex heads.

(**Note:** If you want to remove the brake caliper and rotor as an assembly, leave the hand brake applied, locking the caliper and rotor together.)

Step 6

Remove the brake rotor and caliper; hang them off to the side, out of your way.

> **Caution:** Support the brake assembly with a strong hanger. Do not use a weak hanger that may slip, allowing the weight of the brake assembly to hang from the brake hydraulic hose. Doing so may stress the hose and damage it, rendering it unsafe.

Unbolt and remove the brake rotor metal shield from the bearing holder.

Step 7

Use a 5mm hex driver to remove the screw from the wheel speed sensor.

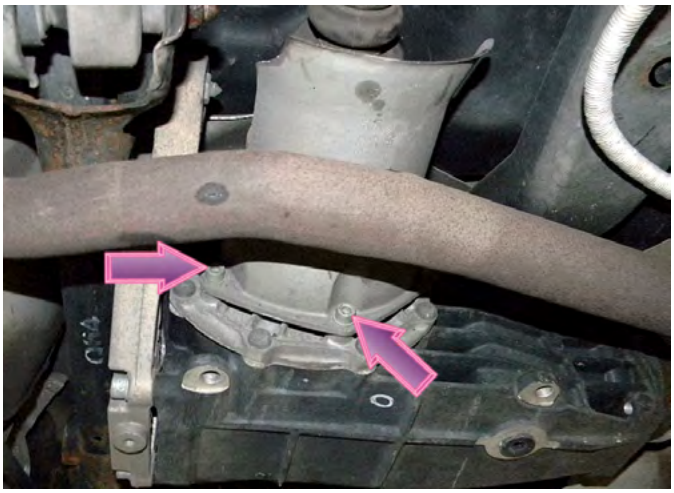
Pull the sensor out of the bearing holder housing. (Some twisting may be needed if the sensor is corroded in place; be careful not to damage the sensor or its wiring.)

Remove the axle bolt (arrow).

Step 8

Raise the car and move to the differential.

Using a 6mm hex driver, unbolt and remove the metal axle shield from the side of the differential.



Step 9

With the axle shield out of the way, use an M10 triple-square driver to unbolt the inner constant velocity joint from the differential drive hub.

After removing the axle from the hub, pull the axle off to the side. This makes it easier to slide the outboard end of axle assembly out of the wheel hub.

(Note: The press tool cannot be mounted until the axle shaft is removed from the wheel bearing.)

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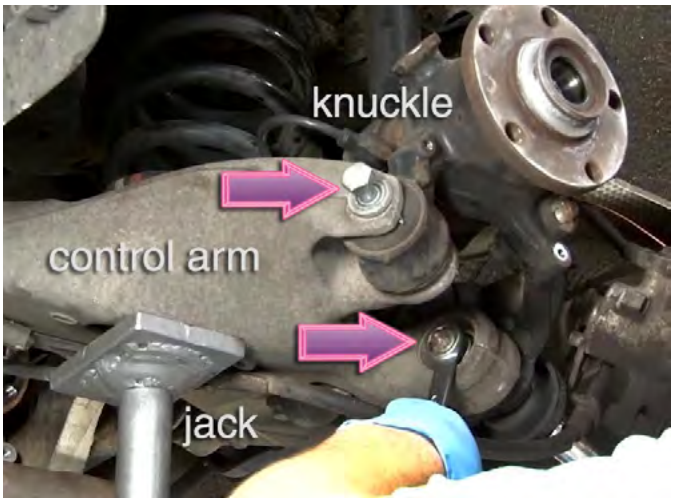
Step 10

Place a jack under the control arm and raise it slightly.

Loosen and remove the fasteners connecting the control arm to the bearing holder (knuckle). Use two 18mm wrenches.

CAUTION: Do not lift the car off the jack or jack stands.



Step 11

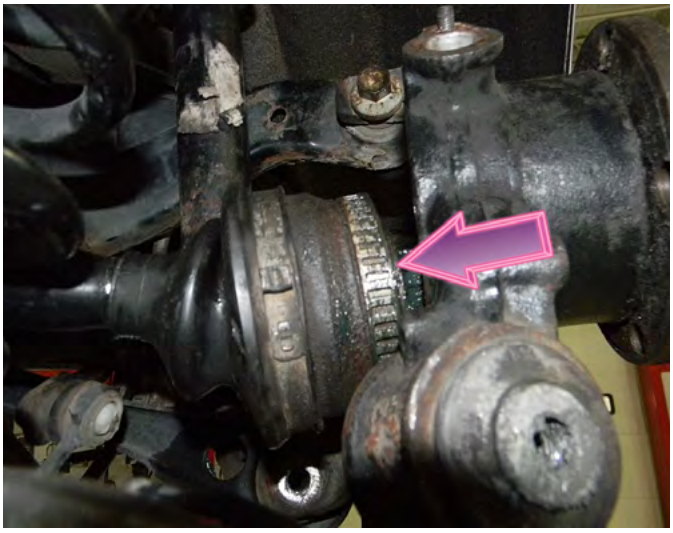
Pry the bearing holder (knuckle) up and away from the control arm far enough that you can slide the outer CV joint out of the hub.

See the next photo for an important caution.

Step 12

Careful! Remove the outer drive joint carefully. Do not damage the square windows in the tone ring cage (arrow). This is the reluctor that generates the signal in the ABS (Anti-Lock Braking system) speed sensor.

(FYI: The speed signal is used by the ABS and other onboard controllers. If it is bent or otherwise damaged, it will illuminate the ABS dashboard warning light, and disable Anti-Lock braking.)



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Step 13

Slide the open end of the horseshoe press plate over the neck of the hub.

Take the two small machine screws from the kit case. Using the brake rotor shield threaded holes, bolt the press plate onto the bearing holder (knuckle).

Step 14

- Apply clean grease liberally to the three large press bolts in the kit.
- Thread the bolts into the hub by hand until all three contact the horseshoe press plate.
- Using a wrench, alternately tighten each bolt to apply even pressure against the press plate.

Step 15

- Continue to tighten the bolts until the hub is pressed from the wheel bearing.
- Remove the bolts from the hub.
- Clean the hub and inspect it for signs of wear or damage.

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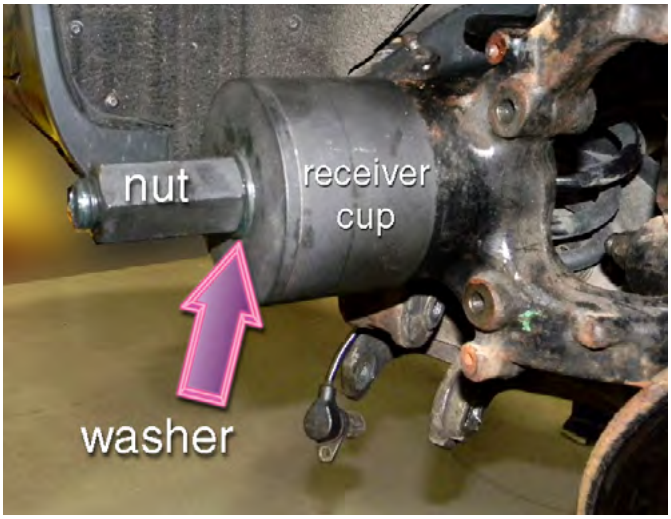
Step 16

Slide the jack screw through the hole in the small press plate; then slide the assembly through the bearing hole.

The bolt head should be inboard, with the threaded end facing outward, as shown.

Step 17

- Install the hollow bearing receiver cup onto the bearing holder. The cup should centered on the face of the bearing holder.
- Lube the jack screw threads liberally with clean grease.
- Install the thrust washer and large jack screw nut.



Step 18

- Turn the nut with a 32mm open or box wrench. As you do, the inner press plate will draw the bearing out of the bearing holder (knuckle), into the hollow receiver cup.
- When the bearing is fully removed, back off the nut, and separate the parts of the press tool.
- Remove the old bearing from the receiver cup.

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Step 19

- Clean the bearing bore. Remove all rust and dirt. The bore should be shiny clean and free from nicks or burrs. Polish away small imperfections with emery paper or an abrasive cleaning disc (Roloc™ or similar).

- Apply a thin film of grease to the bore.

Note: The inner ledge in the bore (arrow) limits bearing penetration when pressing in the new bearing.

Step 20

The wheel bearing assembly contains two bearings. One of the inner bearing races has a larger inside diameter.

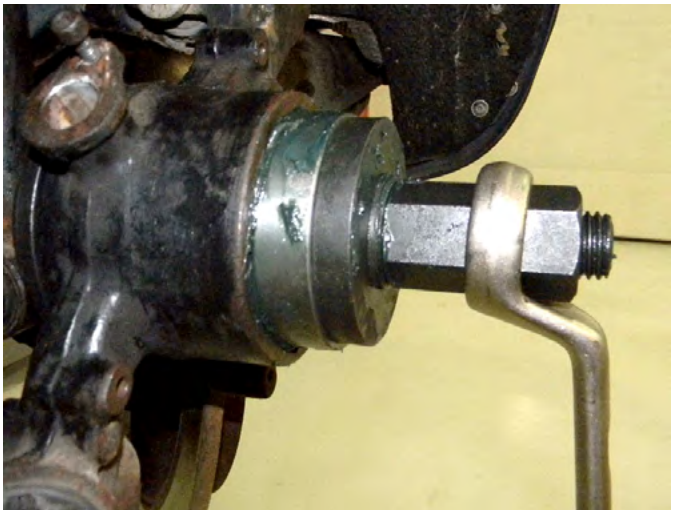
The larger diameter race must face **outward** when installing the bearing assembly to accept the stepped neck on the drive hub.

Step 21

To install the new bearing, reverse the positions of the two round press plates. This time, install the larger plate inboard. Install the smaller plate outboard, as shown.

Slide the thrust washer over the screw jack.

Thread the large nut onto the screw by hand until it contacts the press plate. Then turn the nut with the wrench to draw the bearing into the bore.



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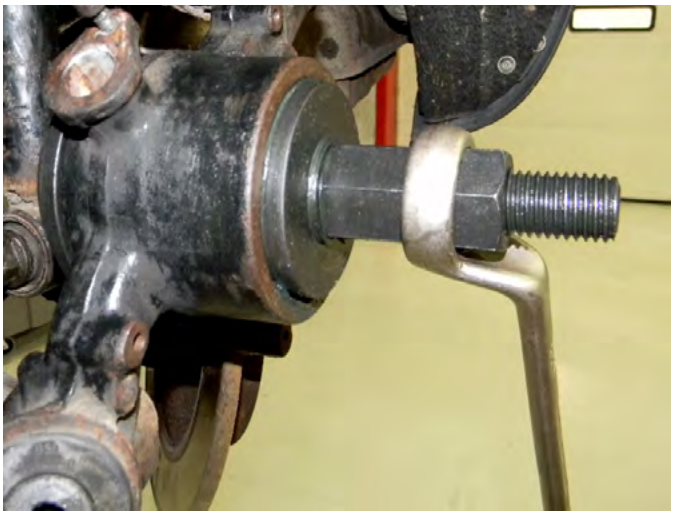
Step 22

When the bearing bottoms in the hole against the ledge (see photo step 19), the nut will become hard to turn.

Stop.

The bearing is now installed.



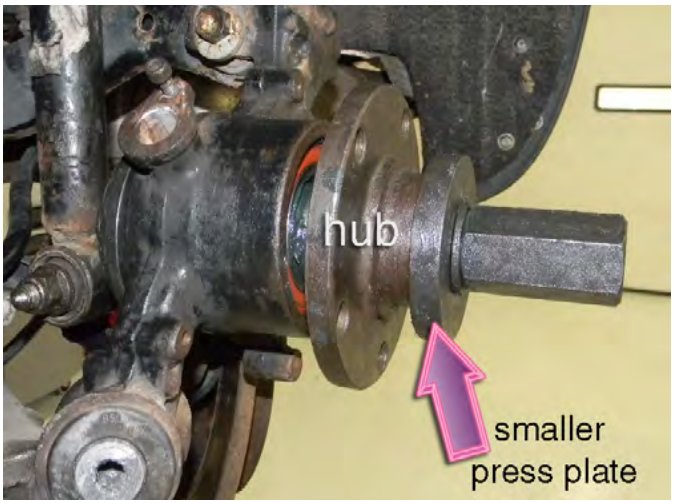
Step 23

Apply clean grease to the hub snout and inner bearing races.

Step 24

- Align the hub with the center bore of the bearing. Install the large press plate on the screw jack bolt, then slide the bolt through the bearing hole, from the back.
- Place the smaller press plate on the hub.
- Slide the thrust washer onto the threaded shaft and screw the large nut all the way down by hand.
- Use a 32mm open end to turn the nut, drawing the hub into the bearings.

The Quick Reference Guide on the next few pages describes basic tool setups. For final assembly steps, see page 16.



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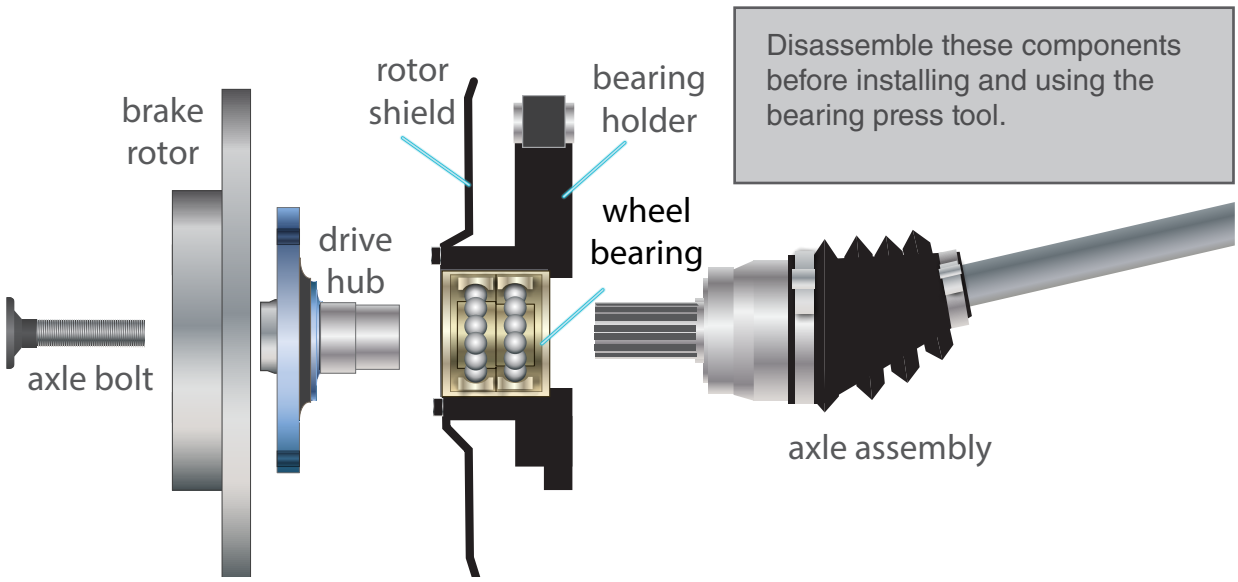
Main Suspension Components

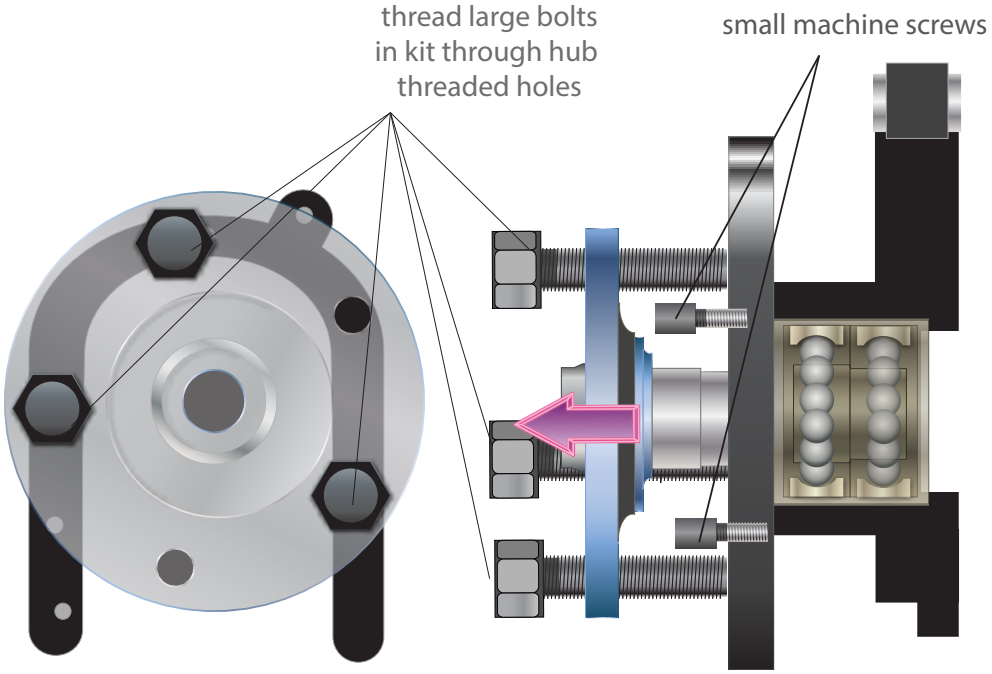


Disassemble these components before installing and using the bearing press tool.

Press off Wheel Hub

The horseshoe tool slides behind the hub to create three press points.

Thread the bolts into the hub and screw them against the horseshoe plate to remove the hub from the bearing.



press plate and hub side view

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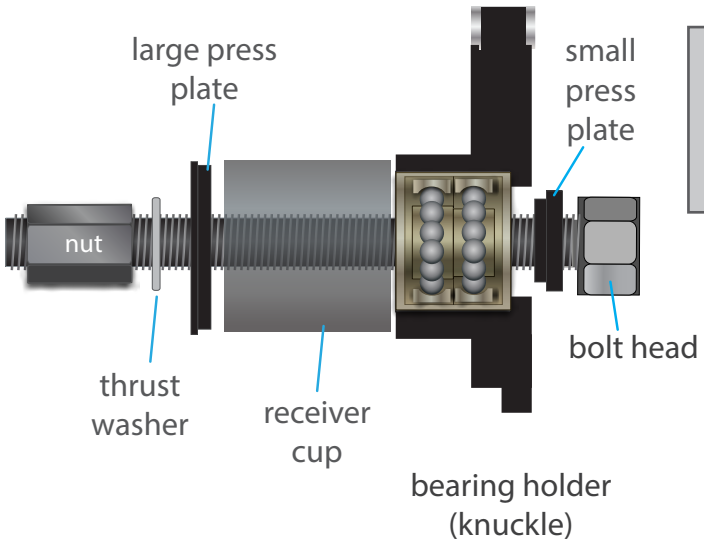
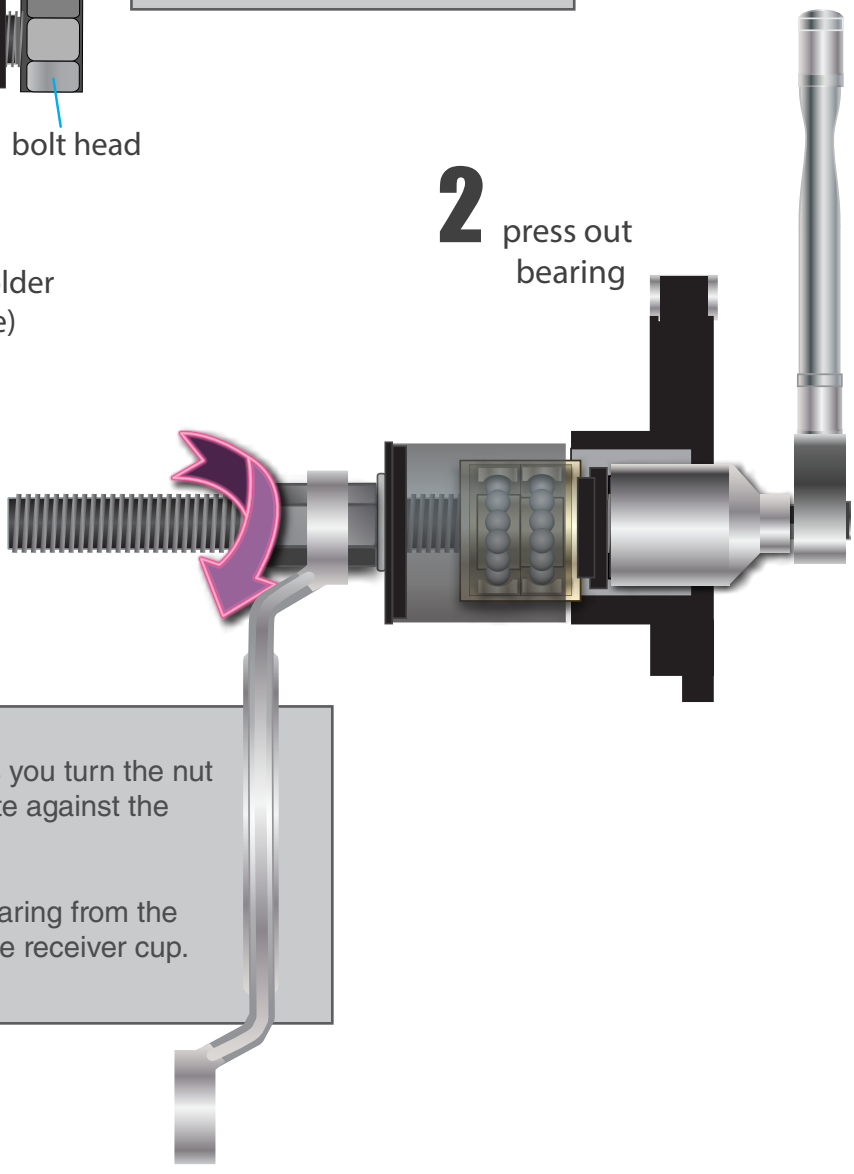
Remove Old Bearing

1 assemble tool



Assemble the tool as shown. Lube threads, nut, and washer with grease.

2 press out bearing



Hold the bolt head as you turn the nut to draw the press plate against the bearing.

This will press the bearing from the bearing holder into the receiver cup.

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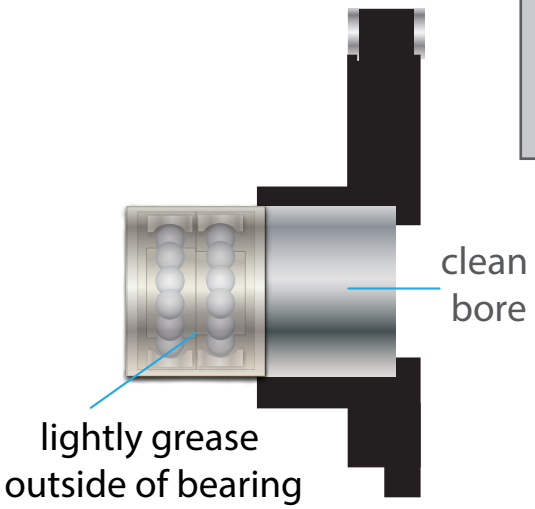
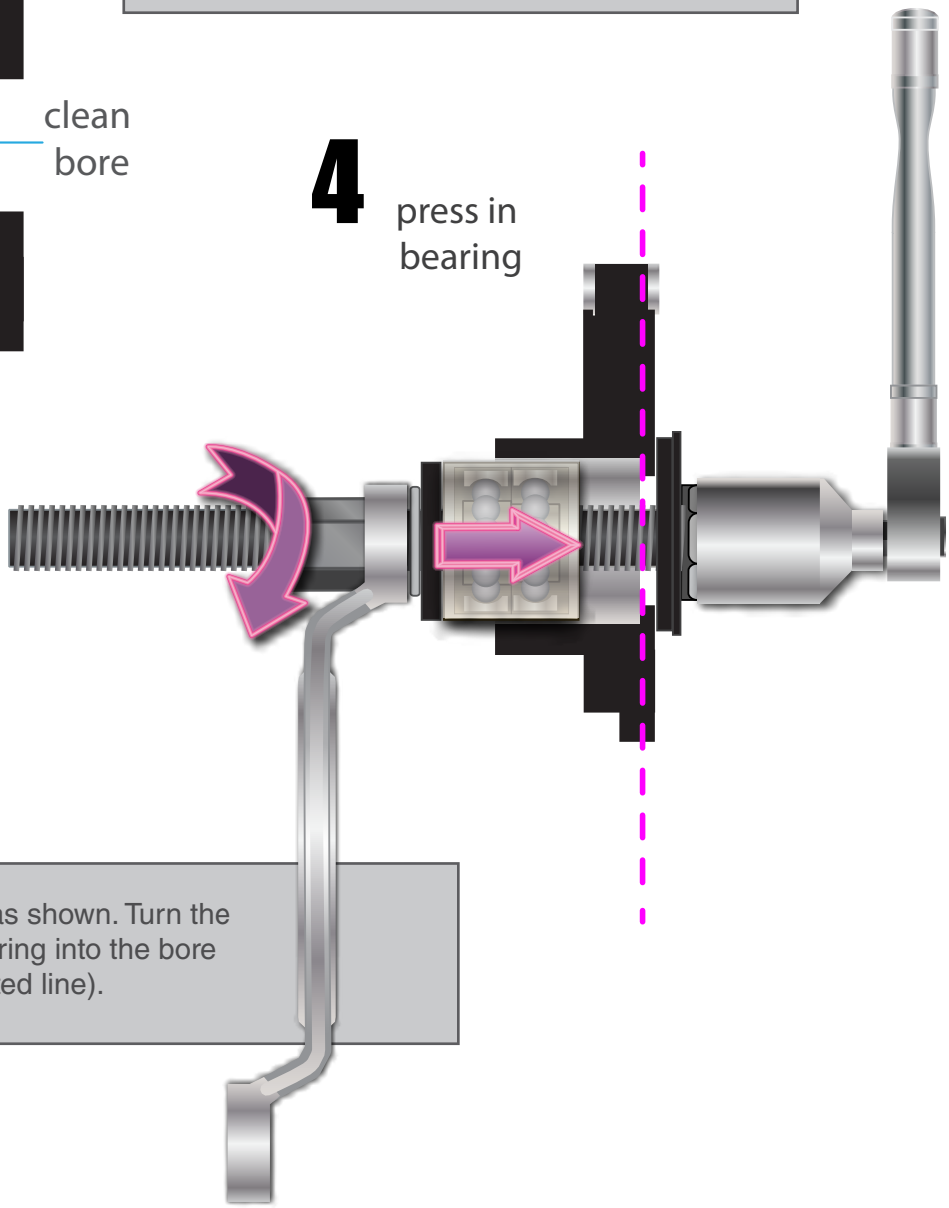
Press In New Bearing

3 clean and lube bore



Reverse the process to install the new bearing. Make sure the bearing and bore are clean and lubed with a film of clean grease.

4 press in bearing



Assemble the tool as shown. Turn the nut to draw the bearing into the bore until it bottoms (dotted line).

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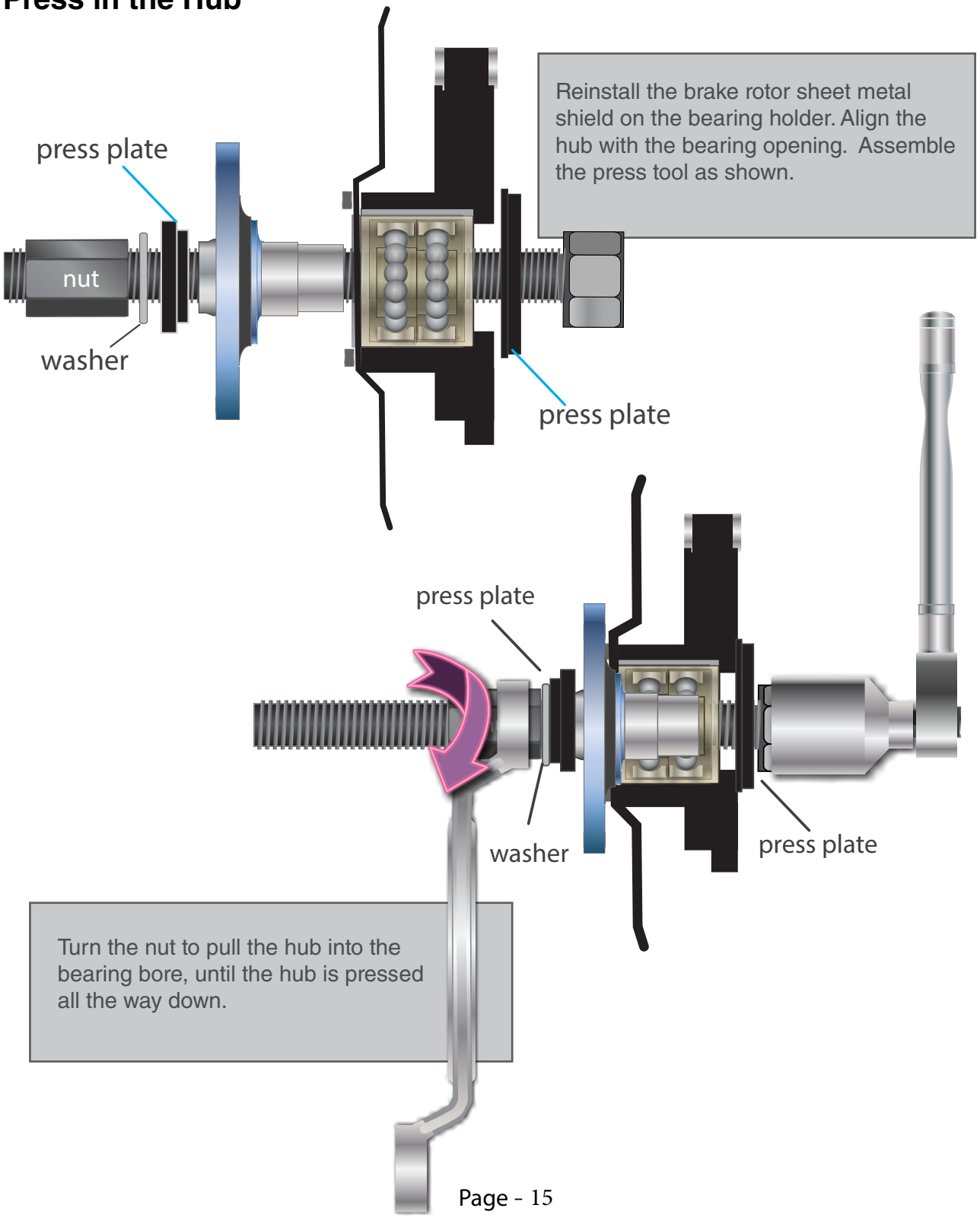
Press in the Hub



Reinstall the brake rotor sheet metal shield on the bearing holder. Align the hub with the bearing opening. Assemble the press tool as shown.

Turn the nut to pull the hub into the bearing bore, until the hub is pressed all the way down.

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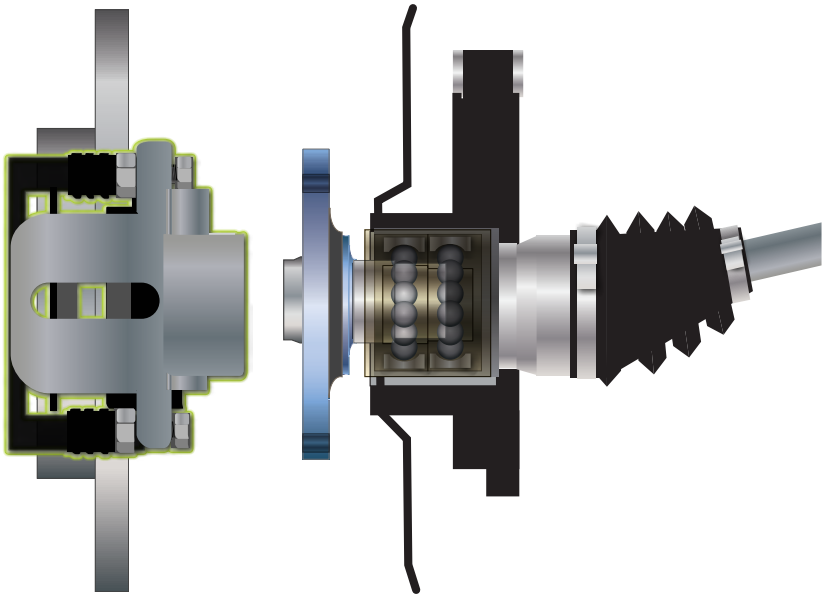
Final Reassembly

1) **Reinstall the axle.** Slide the splined end of the axle stub into the drive hub. Bolt the inner constant velocity joint to the drive axle hub. Replace and tighten all axle joint bolts.
2) **Reinstall the rotor shield.**
3) **Install a new shoulder (axle) bolt** and torque to specifications.
4) **Reinstall the brake rotor and caliper.**
5) **Reinstall the wheel speed sensor**
6) **Install the road wheel/tire** and torque the wheel bolts to specifications.



Thanks!

Thank you for purchasing the ECS Tuning Audi Quattro Rear Wheel Bearing Service Kit.

We appreciate your business, and hope this installation guide has been helpful.

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