2014-2018 4X4 Ram 2500 | 2013-2018 4X4 Ram 3500 ProSteer Ball Joint Kit

Dynatrac Ball Joint Installation Instructions V1.0

⚠ **WARNING: This product is designed for use in specified axles and should not be used for custom applications. Any non-approved application will risk your safety and the safety of others around you. Any non-approved use will void the warranty of the product.**

⚠ **WARNING: Improper use or installation of this product can cause major failures that could lead to injury or death.**

⚠ **WARNING: Do not use Dynatrac Lower Ball Joints with use of a camber adjusted upper ball joint.**

⚠ **WARNING: There are knock off axle products that are not made to AAM OEM specifications. Dynatrac will not be accountable for the tolerances of non AAM OEM products on the market.**

ⓘ **INFORMATION**: Dynatrac ball joints are sold in a fully assembled condition, ready to install in your vehicle. Install the ball joints as if they are standard OEM replacement parts. Refer to your vehicle or axle service manual or contact a competent auto repair or alignment shop to properly install the ball joints on your vehicle. Specialty press tools are required when installing ball joints and it is recommended that you use the listed tools or a competent shop.

For the do it yourself guy, Dynatrac recommends using Miller Ball Joint removal and installation tools.

Tools and Supplies Required

- Ball Joint Removal and Installation Equipment
  - C-Clamp (Miller C-4212F)
  - Press Tools (Miller: 105109A, 10510B, 8975B-3, 8975-4, 6761A, 8975B-5, 8445A-3)
- Socket and wrench for the C-Clamp
- 1-5/16” socket
- 1-1/8” socket
- Calibrated Torque Wrench
- Brake Cleaner
- Wire Brush and/or Scotch-Brite pad
- Anti-Seize Compound

Installation Instructions

WARNING: Only perform this installation if you are an experienced, fully equipped mechanic.

WARNING: Always wear proper safety equipment including safety glasses and gloves while working with tools. Improper use of tools and equipment can cause injury or death.

Preparation and Inspection

1. As stated above, only perform the installation if you are a fully equipped mechanic. Using the attached bill of materials (Figure 11), verify that the kit is complete. Contact Dynatrac at (714) 596-4461 if the kit does not include all of the listed parts. Installation will take anywhere between 4 to 10 hours depending on your experience, so allow plenty of time. If you are performing the installation at home, Dynatrac strongly recommends using the miller ball joint tools with the supplied Dynatrac installation kit.

Removing the Knuckle

2. Because there are multiple axle configurations, it is recommended a service manual specific to the vehicle is used. Begin by removing the wheel hub assembly, brakes, tie rod and all other miscellaneous hardware as outlined in the service manual. Once the knuckle is exposed, loosen the two nuts located on the shaft of the upper and lower ball joint. Loosen the lower ball joint nut until 3-5 threads are still on the nut, this will prevent the knuckle from falling off. Since the ball joints have a tapered stud they will be firmly seated in the knuckle. To remove the ball joint stud from the knuckle, use a 5Lb metal hammer to hit the side of the end forging. Several hard, well directed blows should cause the knuckle to fall from the ball joint stud. At this point you will have the end forging with the ball joints still pressed inside of them (Figure 1).

Figure 1. End Forging with OEM ball joints

Removing the Upper and Lower Ball Joints

3. Using Miller Tools C-4212F, 6761A, and 8445A-3, remove the upper ball joint first. Use tool 8445A-3 to push the ball joint and 6761A to receive the ball joint (Figure 2).

4. After the upper ball joint has been removed, the lower ball joint may be pressed out using the Miller Tools, C-4212F, 8975-4, and 10510B. Use tool 8975-4 to push the ball joint and 10510B to receive the ball joint (Figure 3). Repeat steps 3 and 4 on the opposite side.

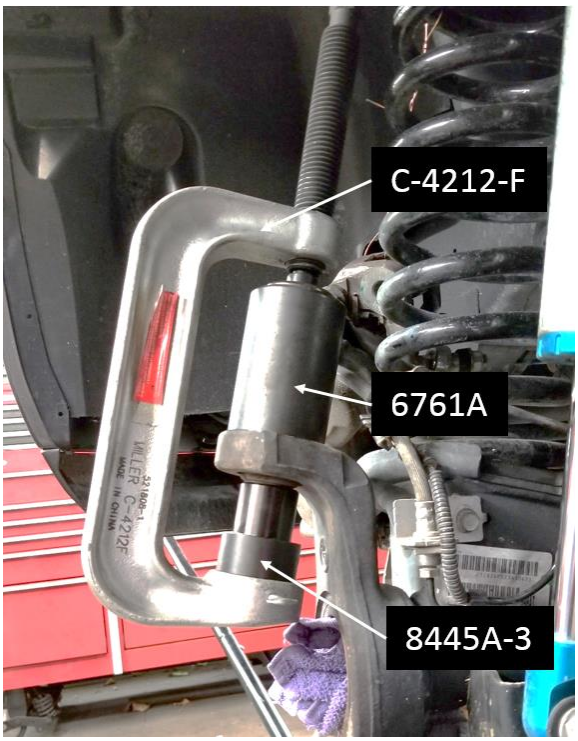

Figure 2. Pressing out Upper Ball Joint

Figure 3. Pressing out OEM Lower Ball Joint

Prepping the Ball Joint Bores

5. Once all of the ball joints have been removed, use brake cleaner or an equivalent solvent to clean the bores in the knuckles and end forgings. It is extremely important to clean any rust or sediment build up off of the end forging faces where the ball joints will seat. This can be done using a wire wheel, Scotch-Brite or 100 grit sand paper. Cleaning of the end forging bores is extremely important to make sure the ball joints seat correctly.

Installing Dynatrac Ball Joints

Preparation

6. After the end forgings have been cleaned, use a paint or permanent maker to draw some reference marks on the end forging. Draw lines on the driver side end forging at 1:30 and 3:00 o'clock as shown in Figure 4. The hatched area illustrates the target location for the driver side lower ball joint grease fitting. Placing the grease fitting in this location will ensure good access for service in the future. The images below show the driver side end forging. The passenger side end forging should be a mirror image of this with lines drawn at 9:00 o'clock and 10:30.

Figure 4. Driver Side Lower Ball Joint grease fitting orientation

7. After the end forgings have been marked with the reference lines, apply Anti-Seize on all the ball joint bodies (Figure 5). A significant amount of force is required to install the ball joints, the Anti-Seize will help prevent galling and damage to the axle components when installed.

Figure 5. Applying Anti-Seize to Ball Joint Body

Installation of Lower Ball Joint

Note: Only press on the rim of the ball joint. Pressing on the seal or ball joint stud will result in permanent damage to the parts (*Figure 6*). The Dynatrac installation tool ensures safe and proper load placement when installing the lower ball joint.

8. Start by installing the lower ball joint first with the press tools using tools C-4212F, 8975B-3, 10509A and DA60-3050-N (Figure 7). Make sure to line up the grease fitting per the marks made in step 6. Press until the flange on the ball joint is fully seated on the end forging.

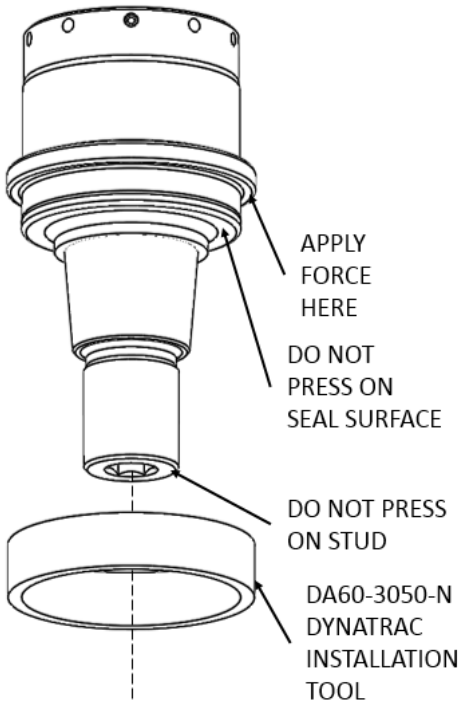

Figure 6. Proper Press Tool Location

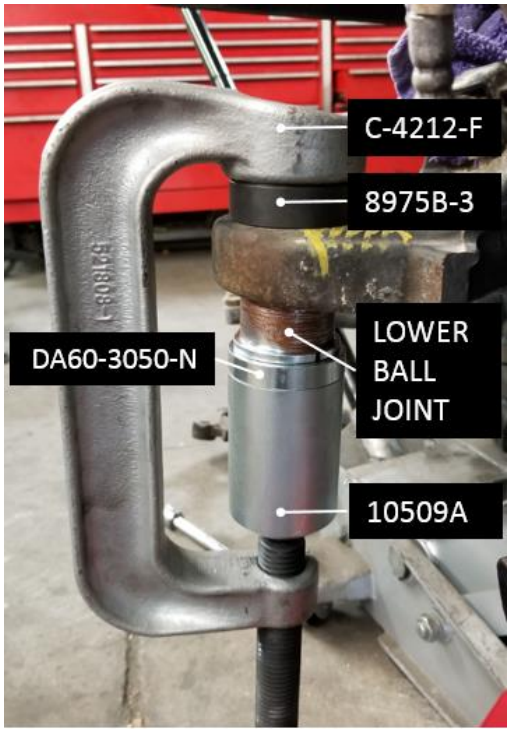

Figure 7. Pressing in Dynatrac Upper Ball Joint

Installation of Upper Ball Joint

9. Using a flat-tip screw driver, pry the E-Clip off of the upper ball joint (Figure 8) and remove the thread locking washer. It is necessary to remove the E-clip and thread locking washer to attain a flat surface for pressing the upper ball joint.

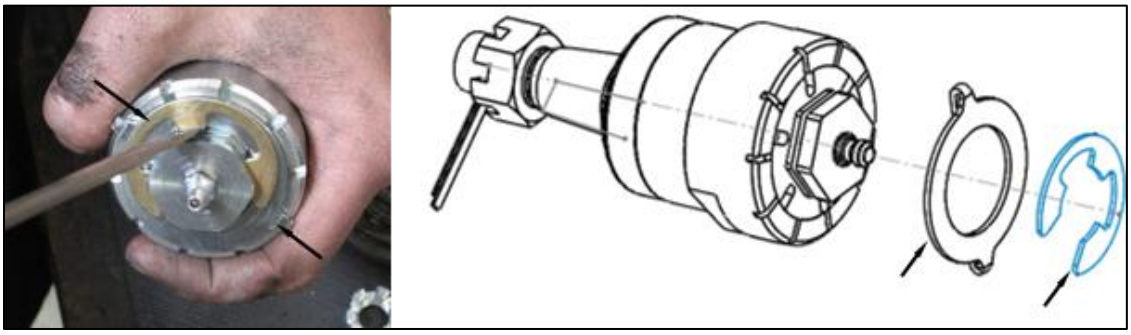

Figure 8. Removing E-Clip and thread locking washer

10. Use Miller tools C-4212F, 8975B-5, 10509A, and CR92-3049-K (Dynatrac upper ball joint installation tool) to begin the installation of the upper ball joint (Figure 9). Make sure that the notch on tool 8975B-5 is aligned with the inside corner radius of end forging. Begin pressing and stop when the gap between the shoulder of the ball joint and the end forging is about 1/4". Loosen the C-Clamp and install tool DA60-3050-N (Figure 10). With tool DA60-3050-N installed, finish pressing the ball joint until the shoulder is flush with the end forging. After the ball joint has been installed place the E-Clip and thread locking washer back on the upper ball joint. Repeat the lower and upper ball joint installation procedure for the opposite side.

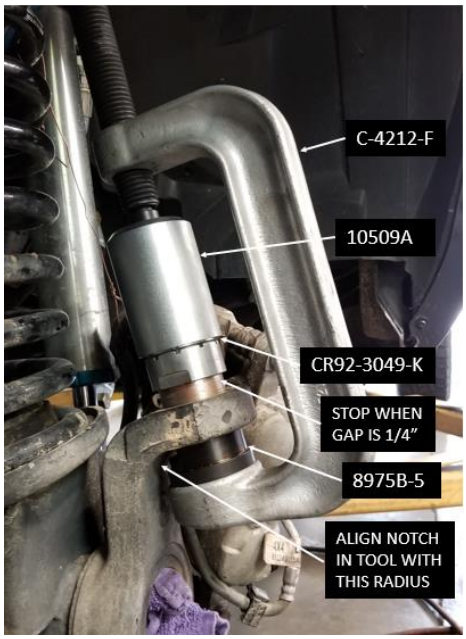

Figure 9. Installing Dynatrac Upper Ball Joint, first half

Figure 10. Installing Dynatrac Upper Ball Joint, second half

Installation of Knuckle

11. The knuckle is now ready for installation. Begin by cleaning the tapered ball joint studs with brake cleaner or acetone; this will help prevent the shaft from spinning during assembly. Place the knuckle into the end forging and lightly screw on the ball joint nuts, preventing the knuckle from sliding out.

12. Once the knuckle has been lightly fastened to the end forging, begin to tighten the upper ball joint. The upper ball joint has a stud that plunges. Use the upper ball joint nut to pull the upper ball joint shaft into the knuckle. This will pull the lower ball joint into the bottom of the knuckle. After the upper ball joint nut has been lightly tightened the lower ball joint nut can be tightened. A 1-5/16" socket and a 15/16" socket are required to tighten the ball joint nuts.

Ball Joint Torque Procedure

- Torque upper ball joint to 35ft. lbs.
- Torque lower ball joint to 70 ft. lbs.
- Torque upper ball joint to 70Ft/ lbs., then rotate the castle nut to the next available slot
- Insert cotter pin and fold the tab over
- Re-torque lower ball joint to 150 ft. lbs.

Reassembly of Wheel end

13. At this point the knuckle should be properly bolted to the end forging. Refer to the service manual and reassemble the wheel end. After everything has been installed check the wheel alignment. Make sure the axle is filled with gear oil if the differential was drained prior to disassembly. It is normal for the knuckle to feel stiff as you move it from side to side.

⚠ **WARNING: Failure to properly refill the axle with Gear Oil can cause serious gear and bearing failure which could result in serious injury or death.**

⚠ **WARNING: Failure to check bolt and lug nut torque can cause serious accident, component failure, serious injury or death.**

Bill of Materials

2014-2018 Dodge 2500 4x4, 2013-2018 Dodge 3500 4x4 ProSteer Ball Joint

Part Number	*Description*	*Quantity*
CR92-1X3049-A	Upper Ball Joint	2
DA60-3049-K	Cotter Pin, Upper Ball Joint	2
CR92-3049-E	Castle Nut, Upper Ball Joint	2
DA60-3050-F	Lock Nut, Lower Ball Joint	2
CR92-1X3050-E	Lower Ball Joint	2
CR92-3049-K	Upper Ball Joint Installation Tool	1
DA60-3050-N	Lower Ball Joint Installation Tool	1

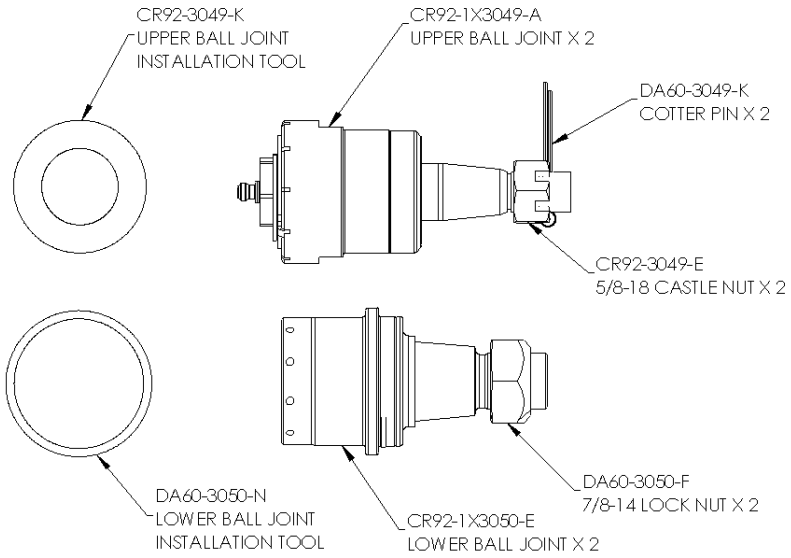

Figure 11. RAM HD Dynatrac Ball Joint BOM

FREQUENTLY ASKED QUESTIONS

1) My ball joints feel very stiff. Is this normal?

In some cases the ball joints can feel stiff when steering. Because the tolerances are so tight on the components and the bore diameters in the axles may vary, the fitment can occasionally be extra tight. It will not affect the durability of the ball joints. After a few hundred miles the ball joints generally loosen up and the steering will return to normal. If you feel the steering is unsafe for any reason we will warranty the ball joints. If the steering still feels stiff after 500 miles please give us a call so we can work through any problems.

2) How often do I grease my ball joints?

The primary lubrication for the ProSteer Ball Joints is a Teflon coated liner inside the joint. However, testing has shown that lubricating the ProSteer Ball Joints with an automotive hi-temp red grease once a year will maximize the life.

Dynatrac Ball Joints use two types of grease fittings; a standard ¼" zerk fitting and a needle grease fitting. The ¼" zerk will fit most standard grease guns. For the needle grease fitting on the lower ball joint, there are many needlepoint adapters from companies such as Legacy Manufacturing (Figure 12).

Figure 12. Lower Ball Joint grease gun needlepoint adapter

3) What if my ball joints are loose in the housing?

The ball joints are designed to have a tight press fit between the ball joint body and the housing on the axle. In some cases, ball joints have been replaced multiple times which can wear the bore diameter. In other cases, a set of non-OEM ball joints with a knurled body has damaged the bore. Dynatrac does have an optional knurled body for the cases when the bore diameter has been damaged. The best option is always to go with the smooth body and proper press fit. As a last resort, Dynatrac can provide you with a knurled body.