

## **INSTALLING GOOD PARTS TR6 CV JOINT AXLES AND HUBS**

The CV joint axles do not fit in through the hole in the semi-trailing arm so it will be necessary to install them from the inside. Due to limited space, it is difficult to maneuver the CV axle into place with the trailing arm and the differential installed, especially with the R200 or R200B differential. Installation is easier with either the semi-trailing arms or the differential removed. These instructions include steps for the removal of either the differential or the trailing arms.

**NOTE:** Steps 22 and 23 deal with confirming the inner CV joint is working within its plunge range. Rear wheel toe should be properly set before completing these steps because it effects the length of the axle. If toe is properly set prior to the installation, it should not be necessary to re-set it before step 22 as long as the trailing arms are re-installed with the same number of shims behind the brackets.

### **OPTION A: INSTALLING CV JOINT AXLES WITH DIFFERENTIAL IN PLACE**

- 1) Raise and properly support the rear of the car, then remove the rear wheels and brake drums.
- 2) Remove the wire clamping the inner end of the axle boot to the axle.
- 3) Remove the six nuts holding the hub to the trailing arm then pull the hub and outer axle from the trailing arm.
- 4) Remove the four bolts holding the inner axle flange to the differential flange and remove the inner axle half.
- 5) Disconnect the brake hose and parking brake cable from their anchor points on the trailing arm and pull the brake plate away from the trailing arm.
- 6) Raise the rear of the trailing arm slightly with a jack, disconnect the shock link then slowly release the jack to lower the trailing arm and remove the suspension spring.
- 7) Remove the outer pivot bolt and loosen the inner bracket from the frame and pull the semi-trailing arm and inner bracket away from the frame. Be sure to note the number of shims between the bracket and frame for replacement.
- 8) Inspect the six studs that hold the hub onto the trailing arm and replace studs and/or repair threads as needed.
- 9) Temporarily insert the new hub into the trailing arm and bolt it in place with three non-locking nuts to test the fit of the axle in the trailing arm. It's best to have the brake plate between the hub and trailing arm to accurately test fit.
- 10) Axles for the stock differential are both the same length. They are marked "left" and "right" because of the direction the boot clamps are installed. Axles supplied for use with the Good Parts R200(B) differential are two different lengths. Use the longer axle on the right side.

- 11) Slide the end of the axle into the trailing arm and out through the hub. Check if it will slide fully into place in the hub and rotate without scraping. Put the washer and non-locking nut on the axle and lightly tighten the nut. Check the clearance around the CV joint and boot.
- 12) A minimum of 0.050" or 1.25 mm clearance is recommended around the steel part of the CV joint. This is the area between 1.75" and 3.25" from the face of the trailing arm. The CV joint measures about 3.75" diameter so the diameter inside the trailing arm in this area should be minimum 3.85". The largest diameter part of the boot which is located from 3.25" to 3.75" inboard from the face of the trailing arm measures about 3.775" diameter. Clearance in this area should be minimum .090" or 2.3mm. Trailing arms that I have measured provide enough clearance except for the area toward the front of the car where the hole is not quite fully round. Generally the required grinding is limited to rounding out the flat area to the front and smoothing off the ribs. Just making sure the diameter of the hole is sufficient is not enough because in rare cases, the machined hub pilot is not aligned very well to the casting so the CV joint will be closer to one side of the cast hole. In this case, more grinding is required on one side of the trailing arm hole to compensate for the misalignment. Remove the axle and hub to do the grinding. Only grind inside the cast hole in the trailing arm. Never grind the machined hub pilot surface.
- 13) When you are satisfied with the fit and the clearance around the CV joint and boot, unbolt and remove the axle and hub from the trailing arm.
- 14) **Stock Differential Only:** Bolt the axle adapter to the differential flange using four  $\frac{3}{8}$ -24 x  $1\frac{3}{16}$  bolts and lock washers. The lock washers must be used to prevent the bolts from bottoming out. Medium strength thread locker is recommended. Torque spec for these bolts is 34 ft/lb but it is difficult to get a torque wrench on them so a good "mechanic's feel" may have to be sufficient.
- 15) Put the axle in place in the car and bolt the inner CV joint to the R200(B) diff flange or the stock diff adapter using 10 mm flanged head bolts, serrated flange nuts. Apply medium strength thread locker to the threads and torque the bolts to 46 ft/lb. Some of the 3.692:1 ratio R200B differentials have threaded holes in the axle flanges so shorter bolts and lock washers are supplied and nuts are not required.
- 16) Put the trailing arm into place, insert the axle into the trailing arm. Insert the inner bracket frame bolts through the frame and the outer end of the trailing arm into the outer bracket. Install the pivot bolt in the outer bracket, insert any shims between the inner bracket and frame and bolt the bracket in place.
- 17) Torque the frame bolts to 28 – 30 ft/lb. And the pivot bolt to 45 – 50 ft/lb.
- 18) Do not install the suspension spring but raise the trailing arm and connect the shock link.
- 19) Put the brake plate into place and reconnect the parking brake cable and brake hose to the trailing arm.
- 20) Install the hub in the trailing arm using the new nylon stop nuts. Torque to 14 - 16 ft/lb. only.
- 21) Push the outer CV joint out through the hub and temporarily install the washer and non-locking nut. Do not torque. Just lightly tightened is fine at this point.

- 22) Raise the trailing arm fully against the upper bump stop and prop it in place. The inner CV joint will be compressed at this point but it should not be compressed against the end of its plunge range. To check how much plunge range is left, loosen the big nut and with a firm steady push, move the outer CV joint and axle inward until the inner CV joint bottoms and note how far it was able to move. There should be a minimum of  $\frac{3}{16}$ " movement.
- 23) Now check the plunge reserve at the other end of travel. Snug up the washer and non-locking nut again. Lower the trailing arm onto the lower bump stop (on shock lever with stock shocks or full extension of tube shocks). Since the suspension spring is not in place, the rubber bump stop and shock link bushings will not be compressed so loosen the shock link nut to allow the trailing arm to drop another  $\frac{1}{2}$ " to simulate compression of the rubber. This should be the limit of suspension droop during operation. Now, back off the shock link nut further or remove it completely to see if the trailing arm is able to drop at least  $\frac{1}{2}$ " further indicating that the CV joint has sufficient plunge reserve.
- 24) Remove the axle nut and push the axle in through the hub to lower the trailing arm enough to install the suspension spring. After installing the spring, raise the trailing arm and connect the shock link.
- 25) After installing the suspension spring you are ready to bolt the CV joint into the hub with the locking nut. Good Parts applies a very small amount of anti-seize to the threads inside the locking nut but only at the three areas where the threads are crimped to help prevent the crimps from galling the threads of the CV joint. Slide the CV joint fully out through the hub and slide the washer over the threads. Apply high strength thread locker such as red Loctite to the threads within approximately  $\frac{1}{2}$ " of the washer, then thread the locking nut on and torque to 250 ft/lb. The hub may be held from rotating by temporarily bolting up a wheel, lowering the car to the ground and chocking the wheel. Be sure to install the brake drum before bolting up the wheel to prevent lug nuts from bottoming on the threads. If the nut needs to be removed later, apply anti-seize to the exposed threads before removing the nut. Before installing a new nut, thoroughly clean the threads then install as described above.
- 26) Repeat steps 2 - 25 on the other side of the car
- 27) Install the brake drums.
- 28) The factory wheel stud length for standard steel wheels is  $1\frac{3}{16}$ " measuring from the flange of the hub without the brake drum in place. Shorter studs are needed for wire wheel adapters. Longer studs may be necessary some alloy wheels or if wheel spacers are used. Test fit your lug nuts by hand without the wheel in place to make sure they will thread on a little past where they will be positioned when the wheel is in place. Be sure to have the brake drum installed when you do the test. For the original steel wheels the lug nut must be able to thread on by hand to within  $\frac{1}{16}$ " of the brake drum. If the nut does not thread on far enough by hand, tap the threads a little deeper in the nut with a  $\frac{7}{16}$ -20 plug or bottoming type tap.
- DO NOT** install the wheel without first testing the lug nuts. **DO NOT** wrench the lug nut against a bottoming thread.

## **OPTION B: INSTALLING CV JOINT AXLES BY REMOVING DIFFERENTIAL**

- 1) Raise and properly support the rear of the car then remove the rear wheels and brake drums.
- 2) Remove the muffler and rear exhaust pipes and under frame rear sway bar if installed.
- 3) Remove the four bolts connecting the driveshaft flange to the differential flange.
- 4) Remove the wire clamping the inner end of the axle boot to the axle.
- 5) Remove the six nuts attaching the hubs to the trailing arms and pull the hub and outer axle out of the trailing arm. Leave the brake plate in place
- 6) Remove the four bolts holding the inner axle flange to the differential flange and remove the inner axle half.
- 7) Inspect the six studs that hold the hub onto the trailing arm and replace studs and/or repair threads as needed.
- 8) Raise the rear of the trailing arm slightly with a jack, disconnect the shock link, lower the trailing arm and remove the suspension spring. Then raise the trailing arm and connect the shock link.
- 9) Support the differential, remove the four nuts and washers under the isolators and lower the differential out of the frame.
- 10) If the differential is a Good Parts R200 or R200B, remove the adapter flanges that adapted the stock axles to the R200(B) axle flanges. These adapters will not be needed for CV joint axles.
- 11) Follow steps 9 - 12 of OPTION A: INSTALLING CV JOINT AXLES WITH DIFFERENTIAL IN PLACE.
- 12) When you are satisfied with the fit and the clearance around the CV joint and boot, install the hub in the trailing arm using the new nylon stop nuts. Torque to 14 - 16 ft/lb. only.
- 13) Put the axle in place, push the outer CV joint out through the hub and temporarily install the washer and non-locking nut. Do not torque. Just lightly tightened is fine at this point.
- 14) **Stock Differential Only:** bolt the axle adapter to the inner CV joint using the five 10 mm flanged head bolts and serrated flange nuts. Apply medium strength thread locker to the threads and torque the bolts to 46 ft/lb.
- 15) Repeat steps 3 - 14 on the other side of the car.
- 16) Re-install the differential and bolt it to the driveshaft.
- 17) **Stock Differential Only:** Bolt the axle adapter to the differential flange using four  $\frac{3}{8}$ -24 x  $1\frac{3}{16}$  bolts and lock washers. The lock washers must be used to prevent the bolts from bottoming out. Medium strength

thread locker is recommended. Torque spec for these bolts is 34 ft/lb but it is difficult to get a torque wrench on them so a good “mechanic’s feel” may have to be sufficient.

18) **R200(B) Differential Only:** The CV joint bolts directly onto the differential flange using 10 mm flanged head bolts and serrated flange nuts. Apply medium strength thread locker to the threads and torque the bolts to 46 ft/lb. Some of the 3.692:1 ratio R200B differentials have threaded holes in the axle flanges so shorter bolts and lock washers are supplied and nuts are not required.

19) Follow steps 22 - 25 of OPTION A: INSTALLING CV JOINT AXLES WITH DIFFERENTIAL IN PLACE for both sides of the car.

20) Re-install the exhaust and sway bar if fitted.

21) Install the brake drums.

22) The factory wheel stud length for standard steel wheels is  $1\frac{3}{16}$ " measuring from the flange of the hub without the brake drum in place. Shorter studs are needed for wire wheel adapters. Longer studs may be necessary some alloy wheels or if wheel spacers are used. Test fit your lug nuts by hand without the wheel in place to make sure they will thread on a little past where they will be positioned when the wheel is in place. Be sure to have the brake drum installed when you do the test. For the original steel wheels the lug nut must be able to thread on by hand to within  $\frac{1}{16}$ " of the brake drum. If the nut does not thread on far enough by hand, tap the threads a little deeper in the nut with a  $\frac{7}{16}$ -20 plug or bottoming type tap.

**DO NOT** install the wheel without first testing the lug nuts. **DO NOT** wrench the lug nut against a bottoming thread.



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