

INSTALLATION INSTRUCTIONS R200 DIFFERENTIAL in TR6 with STOCK AXLES

NOTE: Installation of Good Parts Rear Nylatron Bushing Kit (SKU 037) is strongly recommended when installing the R200 differential. The original type rubber bushings allow the trailing arm to shift sideways during hard cornering. This movement, combined with the axle splines binding during acceleration or deceleration has, on a few occasions, disengaged the internal snap ring retaining the differential axle stub. If the axle stub moves far enough out of the differential to disengage its splines, power cannot be transmitted to the wheels. Springs are supplied with the R200 installation kit to install between the axle half-shafts as an extra precaution.

- 1) If your R200B differential was not purchased from Good Parts, prepare the differential per Good Parts instructions found in the "Info Pages" section at www.goodparts.com. Differentials purchased from Good Parts will need no modification.
- 2) Fill the differential to the height of the level plug with 75W-90 or 80W-90 GL5 gear lube. No LSD additive is needed because there are no clutches. Use moderate torque on the oil plugs to avoid cracking the aluminum housing.
- 3) Remove muffler, rear exhaust pipes, differential, driveshaft and axles/hubs.
- 4) Check the differential mounting area of the frame for cracks. Check if the front mounting studs are broken loose from their weld at the top of the frame member. Since it is not possible to weld on top of the frame with the body in place, a plate may be welded from the stud to the sidewalls inside the frame. The frame can then be reinforced by welding in metal plates to "box in" the front mounting brackets. See photo 1.
- 5) The pinion flange in the front of the R200 differential will be positioned approximately 2" forward of the original pinion flange. This places the yoke of the driveshaft over the rear of the upper frame "tee-shirt" plate. The driveshaft yoke is close to hitting the hump in the middle of the frame plate. Raising the nose of the differential for more clearance may cause the top of the case to hit the frame crossmember above the differential. To provide more clearance I recommend pulling the rear 2" of the hump of the frame plate down about $\frac{3}{8}$ " to $\frac{1}{2}$ ". This can be done with a big C-clamp and a heavy iron bar across the bottom of the frame. See photo 1 with arrow pointing to area to be pulled down.
- 6) Since the R200 pinion flange will be approximately 2" forward of the original pinion flange, a shorter driveshaft is required. Good Parts offer new driveshafts of the correct length. If you would like to use your original driveshaft, it will need to be shortened and re-balanced. A recommended length measurement is 22.25" from center of U-joint to center of U-joint when the slider is fully collapsed. Install the shorter driveshaft and bolt the front flange to the transmission flange.
- 7) Test the fit of the axle adapter flange onto the four bolt inner axle flange. The bolt-holes in the axle flange may be enlarged to ease the fit if difficulty is encountered. The original axle flanges are not always drilled very accurately. Enlarging the holes will not cause any misalignment since the pilot in the face of the flange centers the axles.

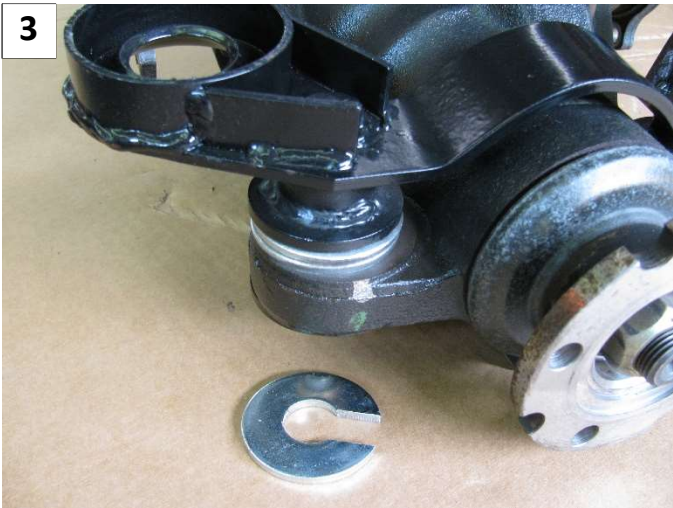
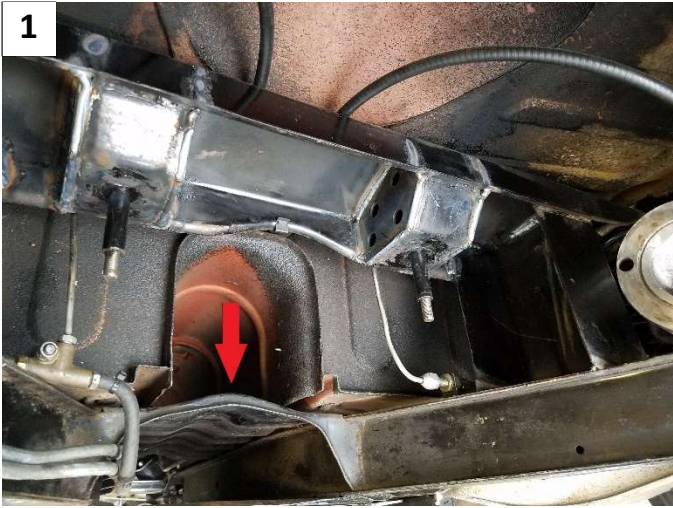
- 8) Bolt the axle adapter flanges to the differential using the $\frac{3}{8}$ -24 x $1\frac{3}{16}$ " hex head cap screws and nylon stop nuts and torque to 34 ft/lb. Place the bolt head on the differential side. The thicker adaptor flange is used on the right side.
- 9) Install the "L" shaped rear mounting bracket to the differential using the two 14mm countersunk bolts. This requires a 10mm hex wrench. Thread locking compound is recommended on these bolts. Torque the bolts to 70 ft/lb. The mounting bracket is turned so that it hangs down from the mounting bolts. See photo 2.
- 10) The 2" diameter plated washers are used as spacers to raise or lower the nose of the diff. Four washers are provided for use as needed. To facilitate inserting or removing the washer without dropping the diff you may cut a $\frac{1}{2}$ " wide slot in each washer with a hacksaw. See photo 3. For initial installation, place one washer on top of each of the differential front mounting ears then insert the studs of the front mounting bracket down through the washers and ears. The wings of the bracket will angle back as shown in photo 1. Place the 2" diameter black washers over the studs below the ears, lubricate the threads to prevent galling and thread on the nuts but do not tighten. NOTE: The original R200 isolator bushings must be removed from the differential mounting ears. The mounting bracket must be bolted solidly to the differential. No bushing is wanted between the bolt and large hole in the mounting ear. At this point in the installation, the two nuts on the bracket mounting bolts are left loose to allow the bracket to move in relation to the differential to find its preferred position while the four differential mounts are being tightened up. Inserting a bushing to take up the space between the bracket bolts and the large hole in the mounting ears or tightening the bracket to the diff before tightening the frame mounts may cause the frame mounts to be stressed and crack. See photo for positioning of the mounting bracket on the diff.
- 11) Place the four concave isolators on the frame mounting studs and hold in place with tape.
- 12) Lubricate the threads of the frame mounting studs to prevent galling.
- 13) Lift and hold the differential in place. Place the cone shaped isolators on the rear studs then the large washers with the welded on spacer turned down followed by a Nylock nut as shown in photo 4. Place the isolators on the front studs then the $2\frac{3}{8}$ " black washers and Nylon locking nuts. Use the washer with the notch cut out of the side on the right front stud with the notch turned toward the differential ear as shown in photo 5. Torque the four nuts on the frame mounting studs to 22 – 24 ft/lb.
- 14) Torque the two nuts holding the front bracket to the differential to 70 ft/lb.
- 15) Check that there is clearance between the differential and all frame and body members. Hold the driveshaft in place on the differential input flange and check that there is clearance to the frame and body when the driveshaft is rotated. If the driveshaft yoke contacts or is too close to the right side of the body tunnel, check that the diff is not skewed in the frame. Loosen the nuts on the four frame mounting studs and the two nuts holding the front bracket to the diff and re-position the diff if necessary. Re-tighten the two bracket nuts last. The diff is intended to be mounted $\frac{1}{2}$ " left of center in the frame in order to position the front input flange in the same lateral position as the original diff. The driveshaft will be closer to the right side of the body tunnel than it was originally because now the yoke is in the tunnel instead of just the

driveshaft tube. Washers mentioned in step 10 may be added or removed between the front bracket and differential mounting ears to lower or raise the front of the differential if needed to average out the clearance between the diff housing and the frame member above it vs. the clearance between the driveshaft yoke and the frame below it.

- 16) Some differentials have a vent fitting on top of the rear cover and others have a hose. If your differential has a vent hose, tie the loose end of the hose to the frame above the differential with the end pointing downward. The hose may be cut to an appropriate length.
- 17) Bolt the driveshaft to the differential using the $\frac{3}{8}$ " x $1\frac{3}{16}$ " bolts and nylon locking nuts. Make sure that the driveshaft flange clears the body.
- 18) Remove the wire holding the larger end of the rubber gaiter to the inner axle and pull the half shafts apart. Place a spring in the splined hole, grease the splines, slide the half-shafts back together. The shorter spring must be used in the axle on the left side of the car. The spring will be pushing against the cap in the end of the splined hole. Before re-assembly, it is recommended that steps be taken to ensure that the cap is held firmly in place. This can be done by center punching a few spots just outside of the cap or by welding a few spots around the edge of the cap.
- 19) Install the axle assemblies through the trailing arm and bolt the inner axle flange to the axle adapter using the nylon locking nuts and torque to 34 ft/lb. Push the bearing hub into place in the trailing arm, compressing the spring, and bolt the hub to the trailing arm using the new nylon stop nuts supplied. Take care to not exceed 12 ft/lb torque. Clamp the large end of the rubber gaiters back into place using a wire tie or mechanics wire.
- 20) Re-install the exhaust system.

PARTS LIST

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| 1 - Mounting Bracket, Front | 1 - Washer, $2\frac{3}{8}$ " x $\frac{3}{8}$ ", Black |
| 1 - Mounting Bracket, Rear | 4 - Washer, 2" x $\frac{7}{8}$ ", Plated |
| 4 - Isolator, Polyurethane, Upper, Concave | 26 or 28 - Nylon Stop Nut, $\frac{3}{8}$ -24 |
| 4 - Isolator, Polyurethane, Lower, Cone | 2 - Nylon Stop Nut, $\frac{1}{2}$ -20 |
| 1 - Axle Adapter Flange, Thin, Left side | 14 or 16 - Hex Head Cap Screw, $\frac{3}{8}$ -24 x $1\frac{3}{16}$ ", GR 8 |
| 1 - Axle Adapter Flange, Thick, Right side | 2 - Hex Socket Flat Head Cap Screw 14mm-2.0 X 30 |
| 2 - Washer, 2" x $\frac{1}{2}$ ", Black | 1 - Spring, $1\frac{1}{2}$ " long |
| 2 - Washer, $2\frac{3}{8}$ " with welded spacer, Black | 1 - Spring, 2" long |
| 1 - Washer, $2\frac{3}{8}$ " x $\frac{3}{8}$ ", Black, with notch | |



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