

INSTALLING R200B DIFFERENTIAL in TR4A-IRS, TR250, TR6

NOTE: Installation of Good Parts Rear Nylatron Bushing Kit (SKU 037) is strongly recommended when installing the R200B 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 R200B 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 the viscous LSD uses no clutches. Use moderate torque on the oil plugs to avoid cracking the aluminum housing.
- 3) Remove the muffler, rear exhaust pipes, differential, driveshaft and axles/hubs. If replacing the half shafts with Good Parts CV axles the CV axles should be installed while the diff is removed.
- 4) Check the differential mounting area of the frame for cracks. Check if the front mounting studs have broken loose from their weld on top of the bracket. Since it is not possible to weld on top of the brackets with the body in place, a plate may be welded from the stud to the sidewalls inside the bracket. 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 on the front of the R200 differential will be positioned approximately 2” farther forward than the pinion flange of the original diff. This places the yoke of the driveshaft over the rear of the upper frame “tee-shirt” plate. The driveshaft yoke may interfere with or be close to contacting the hump in the middle of the frame plate. To provide more clearance I recommend bending the rear 2” of the hump in the frame plate down about $\frac{3}{8}$ ” to $\frac{1}{2}$ ”. This can be done with a large C-clamp and a heavy steel bar across the bottom of the frame. See Photo 1 with arrow indicating where to bend.
- 6) Since the R200 pinion flange will be approximately 2” farther forward than the original pinion flange, a shorter driveshaft is required. Good Parts offers new, shorter driveshafts. If you would like to use your original driveshaft, it will need to be shortened and re-balanced. The recommended length 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) Install the differential portion of the rear mounting bracket to the differential with aluminum spacers as shown in Photo 2. One of the rear cover bolts will have to be removed to fit the top right bracket bolt. The hardware required is one 14mm x 30mm flat head bolt, one 10mm x 95mm flat head bolt and two 8mm x 75mm bolts with lock and flat washers. Medium strength thread locking compound is recommended on these bolts. Torque the 14mm countersunk bolt to 70 ft/lb. with a 10mm hex driver. Torque the 10mm bolt to 40 ft/lb. with a 6mm hex driver and the 8mm bolts to 25 ft/lb.
- 8) Bolt the frame portion of the rear mounting bracket onto the differential portion as shown in Photos 3 and 4 using the $\frac{7}{16}$ -20 x $3\frac{1}{2}$ ” bolt and nylon stop nut. Do not tighten the nut at this time.

- 9) Bolt the machined aluminum front mounting bracket onto the differential as shown in Photo 5 using two $\frac{1}{2}$ -20 x 4" countersunk bolts, flat washer and nylon stop nuts. The mounting bracket goes directly on top of the factory Nissan rubber isolator that is pressed into the mounting ear. Below the mounting ear, place the rubber washer included with the differential then the machined aluminum washer with the smooth side turned down followed by the steel flat washer and nylon stop nut. See Photos 6 and 7. Hold the bolt with a 5/16" hex wrench and torque the nuts to 70 ft/lb.
- 10) Before installing the differential, the brake lines in the area of the front of the differential will need to be moved forward to avoid interference with the front mounting bracket and differential mounting ears. Photo 8 shows the original position of the brake lines on the left side of the car and the use of an adjustable wrench to twist the brake line fitting and the frame bracket it is bolted onto to move the brake lines on the differential side of the fitting forward. Photo 9 shows the new position of the fitting and brake lines. The same should be done on the right side of the car.
- 11) Lubricate the threads of the frame mounting studs to prevent galling when threading on the nuts.
- 12) Raise the differential into place, aligning the front and rear mounting brackets over the frame studs. The mounting brackets go directly onto the frame with no isolators between the frame and bracket. Hold the differential in place with a jack and check clearance to the brake lines. Adjust the brake lines as needed to avoid contact with the differential or mounting bracket. Also check clearance between the top of the diff and the frame. Hold the driveshaft in place against the diff pinion flange and check clearance between the driveshaft and the top of the frame beneath the driveshaft. Minimum recommended clearance is $\frac{1}{4}$ ". When satisfied with all clearances, fasten the differential mounting brackets to the frame by placing an aluminum spacer over the frame stud followed by a $\frac{3}{8}$ " SAE extra thick washer and a nylon stop nut. The shorter spacers go on the front frame studs. The spacer with a flat side goes on the right front frame stud so it can clear the differential ear. Torque the four nuts on the frame mounting studs to 22 – 24 ft/lb. Photo 10 shows the installed differential.
- 13) Torque the bolt and nut holding the two pieces of the rear mounting bracket together to 45 ft/lb.
- 14) Tie the loose end of the vent hose to the frame above the differential with the end pointing downward. The hose may be cut to an appropriate length if it is too long.
- 15) Bolt the driveshaft to the differential using the $\frac{3}{8}$ -24 x $1\frac{1}{8}$ " bolts and nylon locking nuts. Make sure the driveshaft does not contact the body or frame when it rotates.
- 16) **Good Parts CV Joint Axles Only:** Attach the axles to the differential per the axle installation instructions using hardware provided with the axle kit then skip to step 20.
- 17) **U-joint Axles Only:** Check the fit of the inner axle flange over the studs of the axle adapter. It may be necessary to enlarge the holes in the flange a little to fit over the fixed studs. Prep the axles by removing the wire holding the large 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 and slide the half-shafts back together. The shorter spring is 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 welding a few spots around the edge of the cap.
- 18) **U-joint Axles Only:** Bolt the adapters to the diff flanges. The 3.538:1 and most 3.357:1 ratio R200B differentials have non-threaded holes in the flanges. For these differentials you will attach the adapters using the flanged head 10mm

axle bolts and nuts supplied. The 3.692:1 and late model 3.357:1 ratio have threaded holes in the axle flanges so shorter axle bolts with lock washers and no nuts are required. Use medium strength thread locker on the threads and torque to 46 ft/lb.

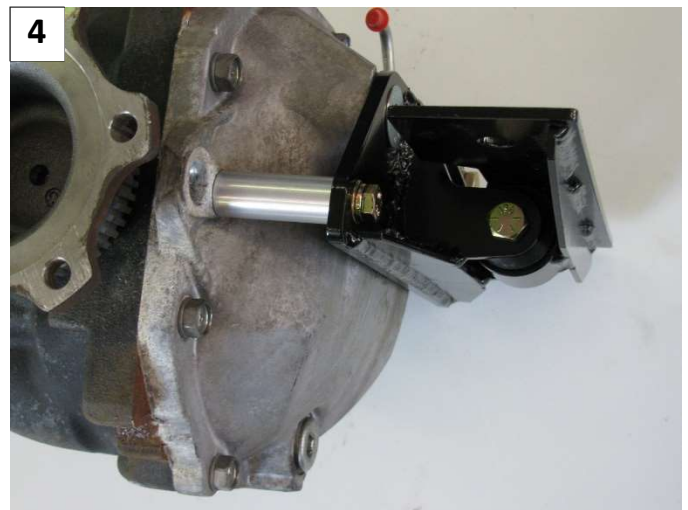
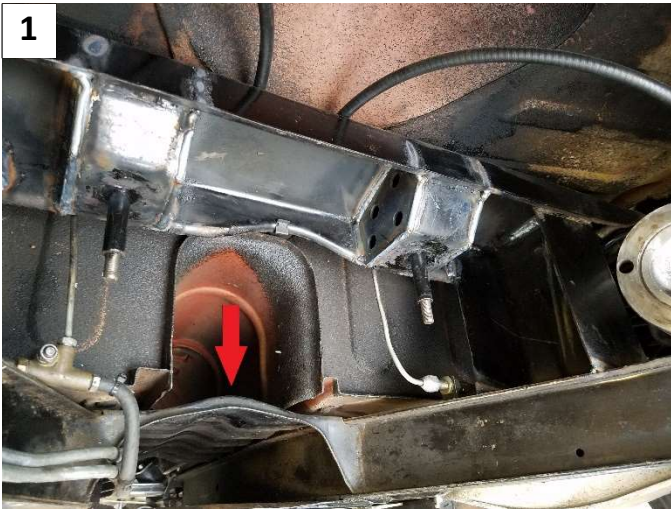
- 19) **U-joint Axles Only:** Install the axle assemblies through the trailing arm and bolt the inner axle flange to the axle adapter using the nylon locking nuts and torque to 34 ft/lb. Push the bearing hub into place in the trailing arm, compressing the spring, and bolt the hub to the trailing arm 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.

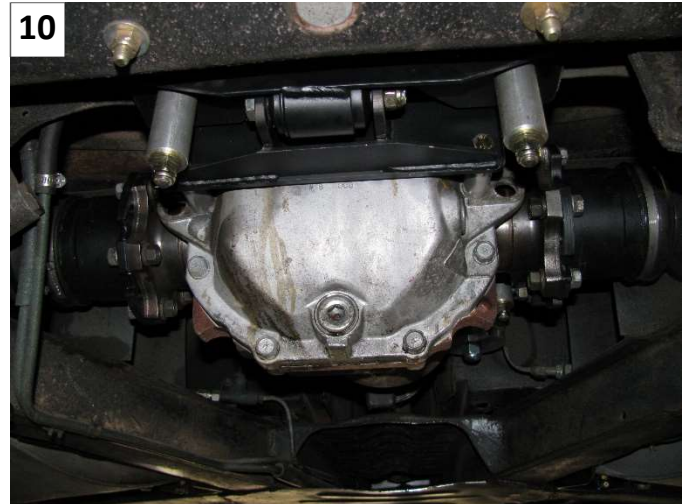
PARTS LIST

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|------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| 1 - Installation Instructions with Pictures | 2 - Hex Socket Flat Head Bolt, $\frac{1}{2}$ - 20 x 4" |
| 1 - Mounting Bracket, Front | 2 - Flat Washer, $\frac{1}{2}$ " SAE, Thru Hard |
| 1 - Mounting Bracket, Rear, Differential portion | 2 - Nylon Stop Nut, $\frac{1}{2}$ - 20 |
| 1 - Mounting Bracket, Rear, Frame Portion | 1 - Hex Socket Flat Head Bolt, 14mm - 2.0 x 30 |
| 2 - Washer, Front Bracket, Lower, Machined Aluminum | 1 - Hex Socket Flat Head Bolt, 10mm - 1.25 x 95 |
| 1 - Spacer, Right Front Frame Stud, Aluminum, $1\frac{5}{8}$ " long with flat side | 2 - Hex Head Bolt, 8mm - 1.25 x 75mm, 10.9 |
| 1 - Spacer, Left Front Frame Stud, Aluminum, $1\frac{5}{8}$ " long | 2 - Washer, Lock, Split, 8mm |
| 2 - Spacer, Rear Frame Stud, Aluminum, $2\frac{9}{32}$ " long | 2 - Washer, Flat, 8mm, Thru Hard |
| 1 - Spacer, Rear Bracket to Diff, Upper, Aluminum, $2\frac{1}{4}$ " long | 4 - Washer, Flat, $\frac{3}{8}$ " SAE, Extra Thick, Thru-Hard |
| 2 - Spacer, Rear Bracket to Diff, Lower, Aluminum, $1\frac{15}{16}$ " long | 1 - Hex Head Bolt, $\frac{7}{16}$ - 20 x $3\frac{1}{2}$ ", Grade 8 |
| | 1 - Nylon Stop Nut, $\frac{7}{16}$ - 20 |
| | 8 - Nylon Stop Nut, $\frac{3}{8}$ - 24 |
| | 4 - Hex Head Bolt, $\frac{3}{8}$ - 24 x $1\frac{1}{8}$ ", Grade 8 |

Differential installation kits for use with original half shafts also include:

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|----------------------------------------------------------|-------------------------------------------|
| 1 - Axle Adapter, Stock Axle to 6-bolt R200B, Left Side | 8 - Nylon Stop Nut, $\frac{3}{8}$ - 24 |
| 1 - Axle Adapter, Stock Axle to 6-bolt R200B, Right Side | 12 - Nylon Stop Nuts, $\frac{5}{16}$ - 24 |
| 12 - Axle Bolt, 10mm, Flanged Head | 1 - Spring, $1\frac{1}{2}$ " long |
| 12 - Hex Nut, 10mm (early 3.357:1 and 3.538:1 ratio) | 1 - Spring, 2" long |
| 12 - Lock washer, 10mm (3.692:1 and late 3.357:1) | |





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