

insider info.

Replacing AWD Rear Wheel Bearings on Legacy, Impreza and SVX

When replacing rear wheel bearings on all wheel drive Legacy, Impreza, and SVX vehicles, be certain not to over-torque the lateral link bolt that secures the two transverse suspension arms to the wheel bearing housing. Do not use air tools to tighten the nut. The proper torque is probably less than you think. Since the torques are different for the different models and years, refer to the appropriate manuals for the proper specs for the vehicle you are working on. If this bolt is overtorqued, it can deform the housing and may lead to a repeat failure of the wheel bearing.

If you encounter a repeat failure of a rear wheel bearing occurring in an unreasonably short amount of miles, the housing may have been deformed during the first repair. Replacement of the bearing and the housing may be required.

There are some other things to remember when working on the wheel bearings. Never loosen or tighten the axle nut with the weight of the vehicle on the wheel. The vehicle should be in the air with the wheel removed prior to loosening or tightening the axle nut. If this precaution is not taken, damage to the wheel bearing may occur. The axle nuts are not reusable. A new nut should be used with the new bearing. Always insure that the new bearing is properly packed with suitable wheel bearing grease. The grease that the bearing is shipped with is not sufficient. Always use the proper special tools to install the bearing and torque the axle nut to the correct specifications.

Noise From Rear Axle Oil Seal — Legacy Models

If you encounter a high pitched noise coming from the rear of Legacy vehicles, the cause may be rear axle oil seal number 2 coming loose from its mounting. This noise can often be duplicated by placing the vehicle on a lift and rotating the tire on the side suspected of causing the noise.

It has been determined that too much

pressure during the seal installation process might be responsible for the seals becoming loose.

A modified installation procedure has been instituted at SIA and applies to the following VIN range:

Sedan:	V7209190
Wagon:	V7312934
Outback:	V7624830

If you encounter this noise, inspect the above-mentioned seal for proper installation. If you need to install a new seal, be certain you do not apply too much pressure when installing it. Otherwise, the seal may be deformed and work loose at a future date.

Rear Differential Modifications

Rear differentials with an updated style pilot bearing and AKA pinion bearing are available. This is a counter-measure for a high pitched whine noise (sometimes described as a turbine jet engine winding up) from the rear differential that can start at a relatively slow speed (25 mph) and rises in pitch and volume to about 50 mph. This can be distinguished from the characteristic differential ring and pinion noise by the fact that pilot bearing noise will be unaffected by installing the front wheel drive fuse, whereas the ring and pinion noise will effectively disappear with the fuse installed. The slight ring and pinion noise occurs in the 40-60 mph range and is considered a normal characteristic of the rear differential. However, the pilot bearing noise can be corrected.

Order the updated assembly by looking up the appropriate part number and changing the last digit to a 2. If you have a question regarding the part number or its availability, please consult your Subaru parts department.

Please note that these modifications and part number changes only pertain to Nissan-produced differentials. These can be identified by part numbers starting with 27011AA***. Physically, the differentials can be identified by the fact that the side covers for setting case preload are bolted on as opposed to the Fuji-produced differential (38300AA***), which have side covers that screw in similar to



the side covers on Subaru front differentials.

All Subaru Models With Stepped and Flat Flywheels

During clutch replacement, carefully examine the flywheel where the clutch surface engages. If heated spots (blue colored) and/or cracks are found, replace the flywheel; Subaru does not recommend resurfacing a stepped or flat style flywheel because the surface depth for pressure plate throw is critical. Also, the 1.8 liter OHC and OHV engines use the flywheel as a crankshaft vibration dampener. Removing metal material during resurfacing may affect engine/drivetrain vibrations. The pulley on the front of the crankshaft does not serve as a harmonic balancer.

Remember, when installing the clutch cover on the flywheel, posi-

tion the pressure plate and flywheel alignment stamped marks ("0") 120 degrees apart (or as far apart as possible). If the flywheel was replaced on a 1.8 liter or 1.6 liter OHV engines, the retaining bolt threads must be sealed or engine oil could leak past the bolt threads onto the flywheel, affecting the clutch operation. Also, always check the pressure plate (clutch cover), throwout bearing, pilot bearing and cable linkage according to the applicable Service Manual to ensure proper operation of the clutch and the hillholder (if equipped).

Grease Leaking From Inner Axle Joints

If you encounter a 1998 model year Subaru vehicle that has grease leaking out of the inner axle joint along the transmission splined stub shaft, the situation can be repaired using

the following procedure:

- Remove and disassemble both inner axle joints.
- Clean all the old grease from the joints.
- Inspect the freeze plug that covers the splined shaft area in the base of the inner joints to be sure that the plug has not fallen out.
- It is not necessary to replace the axles if the freeze plug in the axle has become displaced and cannot be reinstalled. Replacement of the inner DOJ assembly is all that is necessary.
- If you reinstall the plug, do not block the air bleed hole located at a point around the outer circumference of the seal plug. If the air bleed hole is blocked, there is a possibility that the axle boots may be damaged.
- Install new grease P/N 28093TA000. (This is the grease used on 1997 model year vehicles).
- Reassemble.

Production changes were made to subsequent models to remedy this condition.

Continued on page 24.

The Genuine Way To Stop A Subaru!

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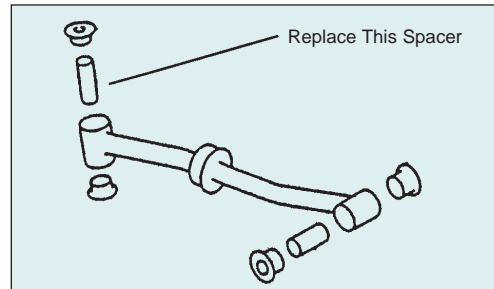
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Shifter Rattle

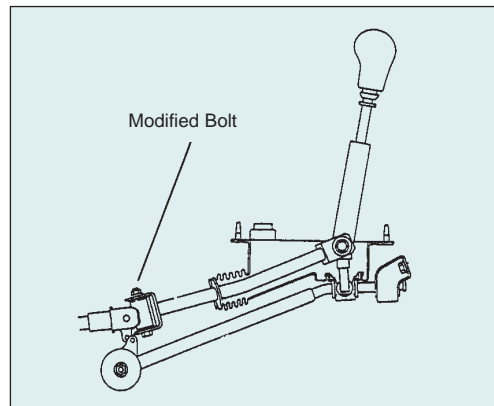
If you encounter a shifter rattle complaint on a 1996/97 Legacy Outback or on a 1998 Forester, the necessary parts are available to correct this symptom.

For the 1996 Legacy Outback, order a modified spacer, P/N 35045AC040.



1996 Legacy Spacer

For the 1998 Forester or 1997 Legacy, order a modified bolt, P/N 35045FC000.



1998 Forester/1997 Legacy Modified Bolt

Rear Differential Vent Oil Leakage

If you should encounter a rear differential leaking oil from the vent, please perform the following procedures:

1. Check to see if the rear differential has been over-filled with oil. If not, proceed to Step 2.
2. Drain the rear differential.
3. Remove the rear differential from the vehicle.
4. Remove the vent from the rear cover.
5. Turn the differential over and drain the vent chamber.
6. Reinstall the vent and rear differential assembly back into the vehicle.
7. Fill the rear differential with new fluid to the proper level.
8. Road test the vehicle and reinspect for leaks.

Note: If leakage is going to occur, it will usually happen on low mileage vehicles. If mileage is high, then check for other causes like improper gear ratio, improper tire match, wrong type of fluid, etc.

Manual Transmission Case Boss Wearing

We have been informed that some shops are replacing the transmission case because of wear found on the case boss. This has been a judgment call because the Service Manual does not provide specifications. Fuji Heavy Industries has provided information regarding the wear limit of this case area. It is not necessary for the case to be replaced if this area is not worn under 32.8 mm. Always measure this boss prior to ordering a new case.

1999 4EAT Transmission Operation

The shifting characteristics of the 1999 model year Second Generation 4EAT are different than on the previous 4EAT. This may lead to unnecessary confusion as to what is 'normal' operation of these transmissions.

There are seven different shift schedules/maps in the TCM logic control. They are Normal, Power, Slope, Hold 2nd, Cruise, Hot ATF, Cold ATF. The shift schedule/map will determine how and when the transmission shifts. For example, in the slope mode, when driving up a hill under certain engine load conditions, the TCM will shift the transmission back down to 3rd gear.

In most cases, the transmission will stay in 3rd gear until the vehicle reaches the top of the hill, then it will upshift. This is done to keep the transmission from upshifting/downshifting in and out of 4th gear needlessly. On the uphill control, the slope angle is estimated from the throttle opening angle and vehicle speed change. When the TCU detects that the vehicle is moving uphill, upshifting is restrained by selecting a special shift map, which prevent needless upshifting/downshifting.

When driving down hill, under coasting conditions, if the driver touches the brake pedal, the TCM will downshift the transmission into 3rd gear to provide

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