



PETROWORKS

OFF-ROAD PRODUCTS

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Phone (760) 731-9434

In purchasing a Petroworks "Gear Reduction System" (G.R.S.) for your Suzuki Samurai, you have acquired a quality product that has been proven to function well. We are confident that you will be very pleased with the performance of the G.R.S. both on on-road and off-road.

STEP-BY-STEP PROCEDURES

for the

REMOVAL, INSTALLATION AND OPERATION

of the

ASSEMBLED PETROWORKS G.R.S. TRANSFER CASE

REMOVAL of the stock transfer case from vehicle:

1. Lift up vehicle and remove securing bolts from each universal-joint flange, disconnecting drive shafts from transfer case.
2. Disconnect boot at base of shift lever by loosening clamp around boot.
3. Twist retaining cap at base of shift lever counterclockwise while pushing it down; this will allow lever to be removed from case.
4. Drain oil from transfer case by loosening drain plug. (Be environmentally conscious and dispose of properly.)
5. Disconnect speedometer drive cable from transfer case.
6. Disconnect 4WD switch wire at coupler.
7. Remove the three (3) mounting nuts which secure transfer case to chassis.
8. Lower transfer case carefully to avoid damage to case or injury to yourself.

REPLACEMENT of flanges.

If we were advised of the year of your vehicle, we have installed these flanges prior to shipping. If not, you will need to replace them.

The three (3) universal-joint yoke flanges from your transfer case must be replaced onto the input shaft and the front and rear output shafts of the assembled Petroworks G.R.S. transfer case. This is necessary because different model years of Suzuki Samurais had different sized flanges, and your flanges must remain consistent with the drive-shafts on your vehicle.

1. Using a pointed punch, uncrimp the large center nuts which secure the flanges.
2. Prevent the flange from turning; loosen and remove large nut holding the flange to the shaft.
3. Draw the flange off of the shaft, using gear-puller tool if necessary.
4. Install the respective flanges onto the shafts of the Petroworks G.R.S. transfer case. Tighten nuts to torque of 80-108 lb.-ft. DO NOT overtighten.
5. Recrimp to lock the nuts in place. When doing so place flange on solid surface, in order to avoid pounding against the bearings.

INSTALLATION of the **Petroworks** G.R.S. transfer case.

(Two plastic plugs have been supplied with your case. These plastic plugs will keep dirt out and oil in during the installation of the transfer case into your vehicle.)

1. Push the small plastic plug into the speedometer cable hole of the transfer
2. Fill the case with one (1) quart of gear oil. Petroworks has included one (1) quart of synthetic oil, but you may use any type of 75W-90 oil if your prefer.

NOTE: The most convenient means of filling the case is to pour the oil through the shifter lever opening.

3. Push the large plastic plug into the shifter lever opening.
4. Lift the transfer case into place and install the three (3) mounting nuts which secure the case to the chassis of the vehicle.
5. Reconnect the 4WD switch wire at coupler.
6. Remove plastic plug and reconnect speedometer drive cable.
7. Remove plastic plug and place shift-lever into case by pushing retaining cap down and turning clockwise.
8. Reattach boot to transfer case with clamp.
9. Attach drive shafts to flanges with the four (4) nuts and bolts on each shaft. Torque them from 17.0 - 21.5 lb.-ft. **DO NOT** overtighten.
10. Check the gear oil level while vehicle is in level position.
11. Be sure the fill and drain plugs are tight and secure.

NOTE: If your vehicle has been modified with a "body-lift," make sure that the transfer case lever does not hit against the body of the vehicle.

OPERATION of your **Petroworks** G.R.S. transfer case after installation in your vehicle.

1. DO NOT shift the transfer case while the vehicle is in motion.
2. Determine whether you wish to operate the vehicle in 2WD or 4WD.

2WD operation - Set the hubs in the FREE position.

4WD operation - Set the hubs in the LOCK position. DO NOT operate the vehicle in 4WD with the front hubs in the FREE position.

3. Disengage the clutch.
4. On the left hand of the "H" pattern, shift into either 2WD or 4WD position.
5. Move lever through "Neutral" position.
6. Shift into either Low or High range gears on the right hand side of the "H" pattern.

NOTE: When using Low range gears for the first time after installation of the Petroworks G.R.S. transfer case, be careful not to over-accelerate while engaging the clutch. With the lower gears in the transfer case, there is now a high level of engine torque. The vehicle can usually be put into motion by engaging the clutch while the engine is idling.

ENJOY your **PETROWORKS** G.R.S. transfer case!

NOTE: Petroworks Products recommends installation of a skid-plate mounted to the frame of your vehicle to protect your investment in the G.R.S. transfer case. These are available through Petroworks Products.

If you have additional questions feel free to call us at (760) 731-9434 or fax us at (760) 723-8685.