

LONGFIELD NISSAN PATROL Y60 BIRFIELD KIT

300795-KIT 1987-1997 NISSAN PATROL GR(Y60)
1988-1994 FORD MAVERICK
1987-1997 NISSAN PATROL GO
1987-1997 NISSAN PATROL SAFARI
1987-1997 NISSAN SAFARI

KIT CONTENTS



303897-INS

RECOMMENDED TOOLS

Ratchet & Socket Set

Torque Wrench

Nissan Special Service Tool #KV40105400 (Wheel Bearing Lock Nut Wrench)

Floor Jack

Jack Stand

Flat Head Screwdriver

Pull Scale (For Bearing Preload)

CAUTION

1. Read all instructions completely and carefully before you begin. If anything is not clear, please call our tech support line at 1.877.4X4.TOYS or 559.252.4950 before proceeding.
2. Check to make sure the kit is complete and that no parts are missing (refer to the Kit Contents Section on the first page of these instructions). If anything is missing, please contact Trail-Gear at 1.877.4X4.TOYS or 559.252.4950.
3. Park vehicle on a clean, dry, flat, level surface and block the tires so the vehicle cannot roll in either direction.
4. This kit is for off-road use only. It is recommended that the installation steps below be performed by a competent mechanic. Buyers and users of this product hereby expressly assume all risks associated with the installation and use of this kit.



INSTALLATION INSTRUCTIONS



STEP 1

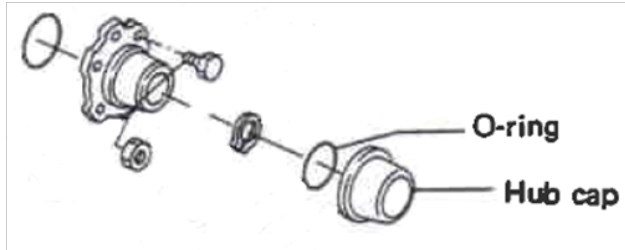
Raise one side of the front end of the vehicle using a floor jack. Place a jack stand under the frame.

STEP 2

Remove the front wheel on the side of the vehicle that has been raised.

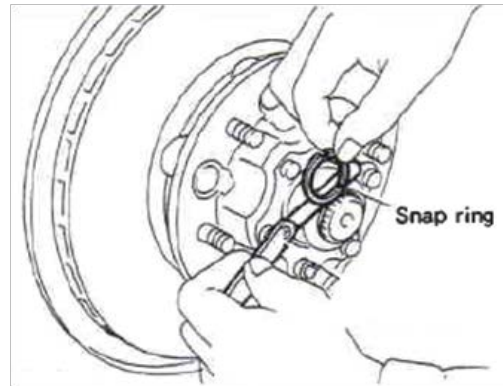
STEP 3

Steps 3-5 are for Drive Flanges. If you have Manual Locking Hubs, skip to Step 6. If you have Automatic Locking Hubs, skip to Step 10. Otherwise, remove the Hub Cap and O-Ring. Save both parts for reinstallation.



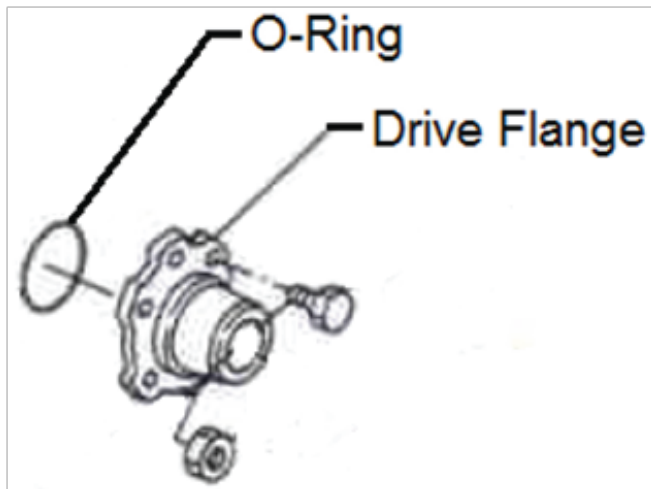
STEP 4

Remove the Snap Ring from the Axle shaft. Save the Snap Ring for reinstallation.



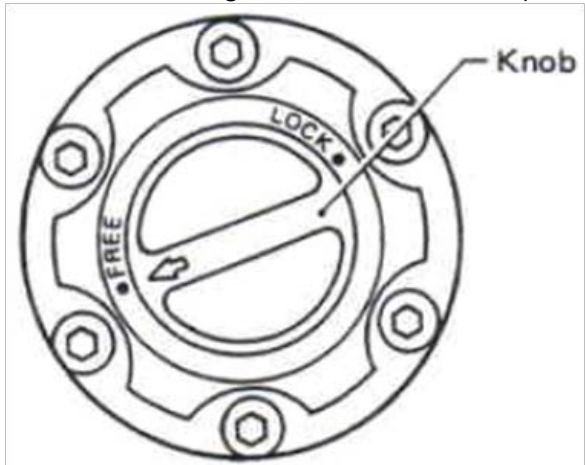
STEP 5

Unbolt the Drive Flange from the Wheel Hub. Save all parts for reinstallation. Skip to Step 12.



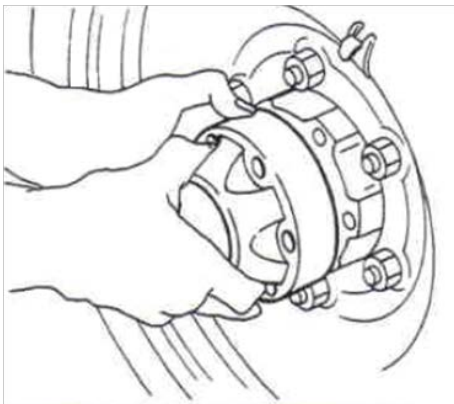
STEP 6

Steps 6-9 are for Manual Locking Hubs. If you have Automatic Locking Hubs, skip to Step 10. Otherwise, set the Manual Locking Hub dial to the "Free" position.



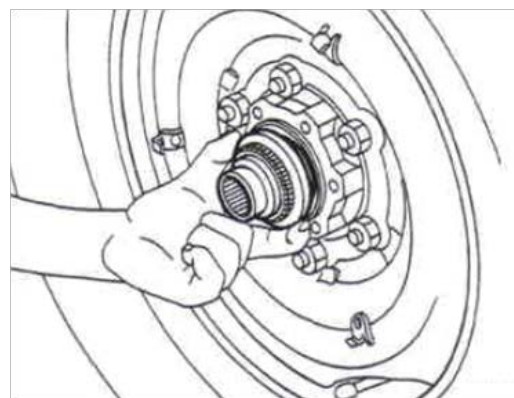
STEP 7

Loosen and remove the Locking Hub bolts and the Locking Hub assembly. Save all parts for reinstallation.



STEP 8

Remove the Snap Ring, and then remove the Drive Clutch. Save both parts for reinstallation.

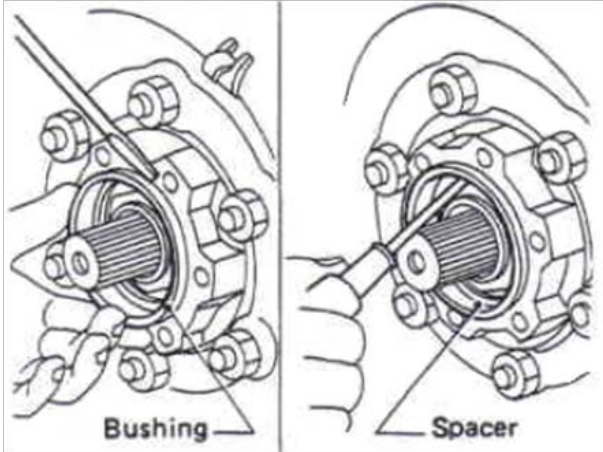


INSTALLATION INSTRUCTIONS



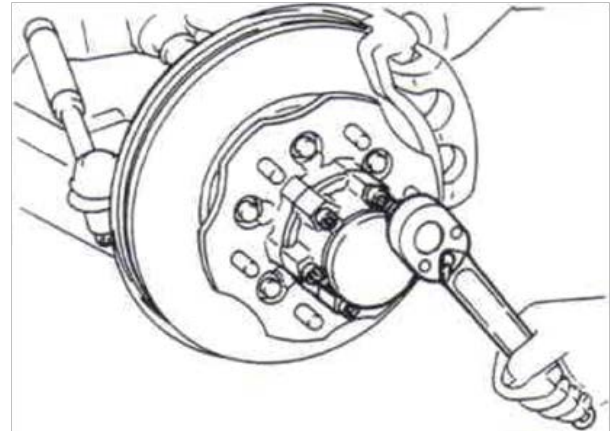
STEP 9

Using a small flat-head screwdriver, remove the Bushing and Spacer from the wheel hub. Save both parts for reinstallation.



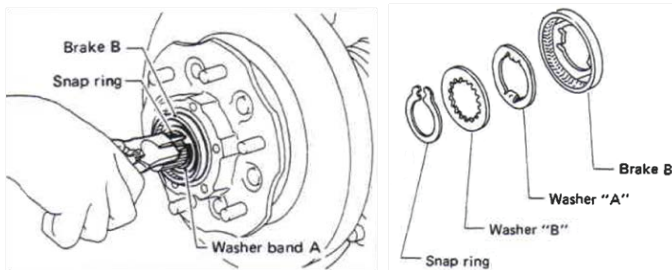
STEP 10

Steps 10-12 are for Automatic Locking Hubs. If you have Drive Flanges or Manual Locking Hubs, skip to Step 12. Otherwise, set the Automatic Locking Hub control to the "Free" position. Remove the (6) bolts holding the Housing to the Hub. Save all parts for reinstallation.



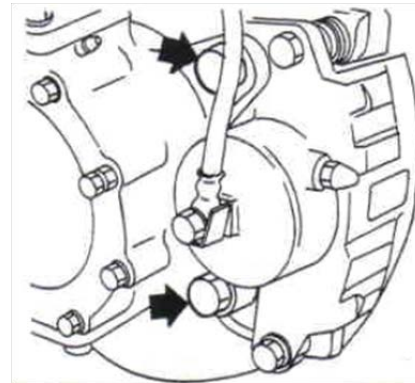
STEP 11

Remove the Snap Ring from the Axle Shaft, Washer B, Washer A, and Brake B. Save all parts for reinstallation.



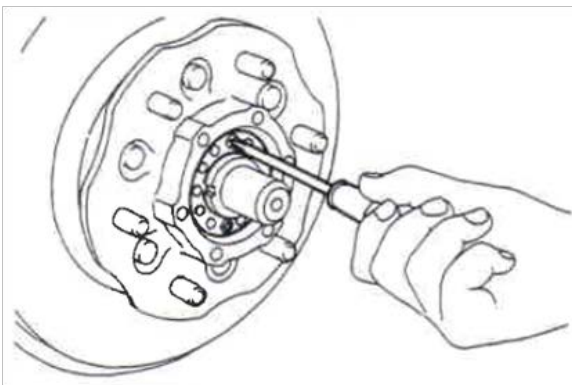
STEP 12

Remove the Brake Caliper Assembly. Note: The brake hose does not need to be disconnected from the caliper. Use care to make sure that the brake hose does not get twisted. DO NOT depress the brake pedal, or the piston will pop out of the caliper. Save all mounting hardware for reinstallation.



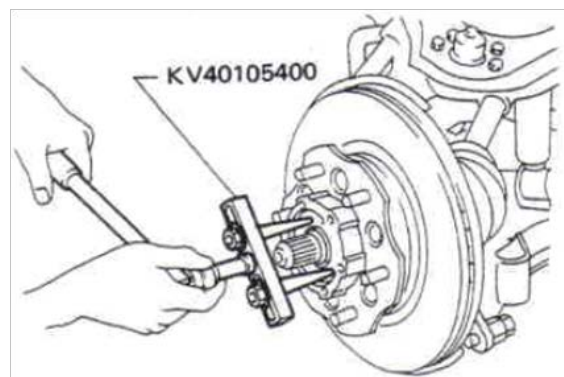
STEP 13

For Automatic Locking Hubs, use a small screwdriver to remove the screws holding the Lock Washer to the Lock Nut. Remove the Lock Washer. Save all parts for reinstallation.



STEP 14

For Automatic Locking Hubs, remove the Lock Nut. Note: Nissan Special Service Tool #KV40105400 is the recommended tool for this step. Save Lock Nut for reinstallation.



INSTALLATION INSTRUCTIONS



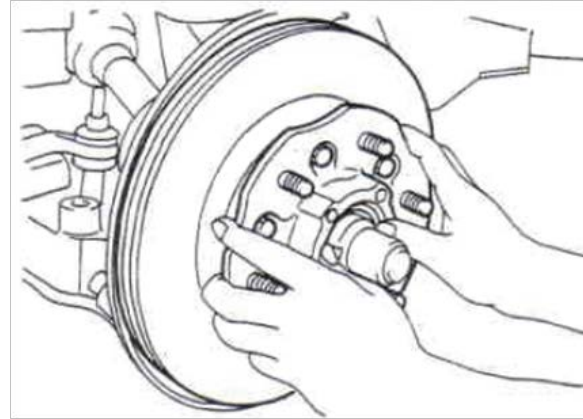
STEP 15

For Manual Locking Hubs & Drive Flanges, remove the Lock Nut, Lock Washer, Adjusting Nut, and Washer from the Spindle. Save all parts for reinstallation.



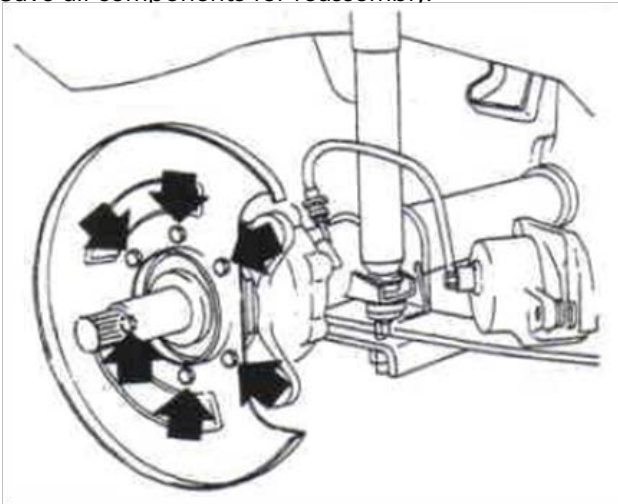
STEP 16

Remove the Wheel Hub & Wheel Bearing. Note: Use care to not drop the outer bearing when removing the Hub. Save all parts for reinstallation.



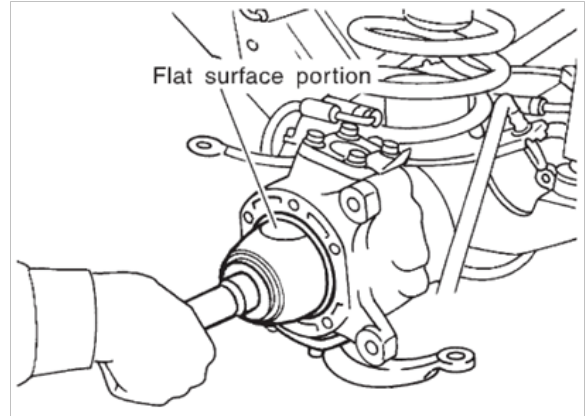
STEP 17

Completely drain the oil from the differential. Remove the (6) bolts holding the Baffle Plate to the Knuckle. Save all components for reassembly.



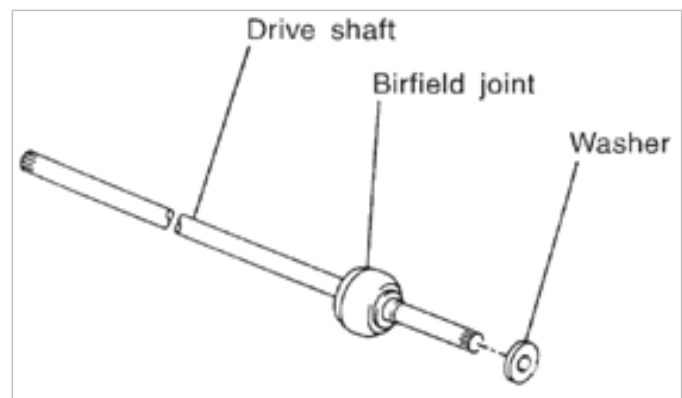
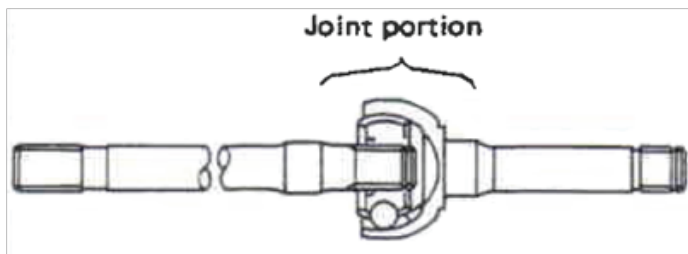
STEP 18

Remove the Birfield/Axle assembly from the Knuckle and discard. When removing the Birfield/Axle assembly, make sure one of the flats is oriented parallel to the top of the knuckle, and pull the assembly straight out of the Knuckle. Make sure to remove the Washer from the Birfield and save it for reinstallation.



STEP 19

Make sure the new Birfield/Axle assembly is packed with grease. If not, pack the joint with NLGI No. 2 molybdenum disulfide lithium soap base grease. Make sure the axle is completely seated in the Birfield Joint. Test by pulling on the axle shaft. There should be approximately 1mm (.04") of axial end play. Install the Washer that was removed in the previous step onto the new Birfield shaft.

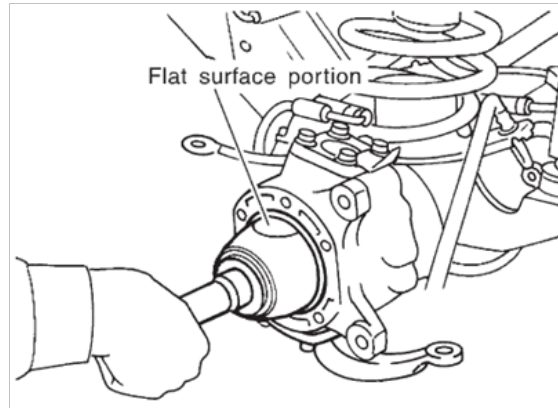


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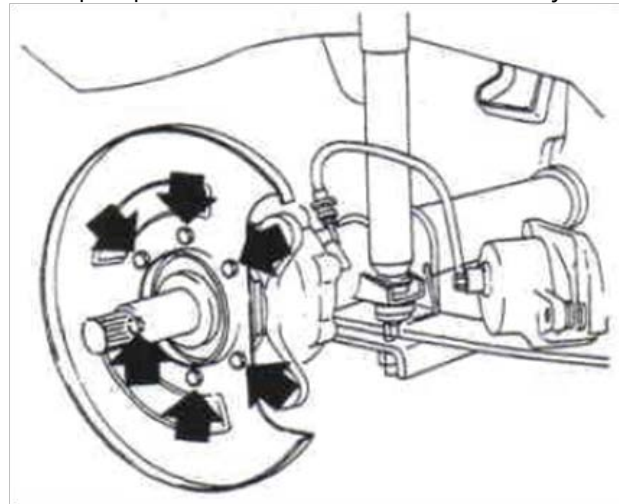
STEP 20

Insert the new Axle/Birfield assembly back into the axle. Make sure one of the flats is oriented parallel to the top of the knuckle, and keep the assembly straight while pushing it into the Knuckle. Note: On some aftermarket lockers, the differential side of the axle shaft may have to be trimmed slightly in order to fit. It is highly recommended that you have a thrust block installed on your aftermarket locker if it did not come with one. Thrust blocks can be obtained from the locker manufacturer or your local offroad parts store.



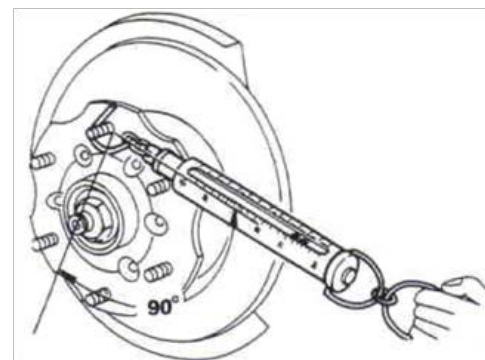
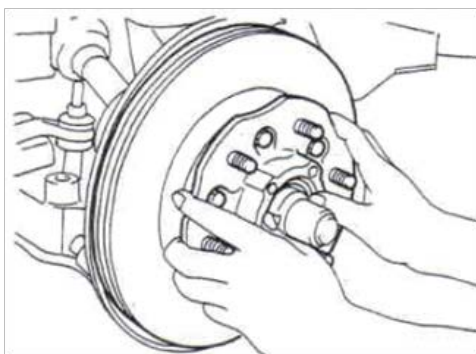
STEP 21

Install the Baffle Plate and Spindle back onto the axle using the (6) bolts removed in Step 17. Torque all (6) bolts to 22-30 N-m (30-40 ft-lbs) or to the torque specified in the Nissan Patrol Factory Service Manual.



STEP 22

Reinstall the Wheel Hub & Wheel Bearing. Using a pull scale, record the pull force when the Wheel Hub begins to rotate. Install the Washer and Adjusting Nut and record the pull force when the Wheel Hub begins to rotate. Subtract the first pull force from the second pull force. That value is the Wheel Bearing preload. The Wheel Bearing preload should be 0-18.6 N (0-4.5 lbs). Loosen or tighten the Adjusting Nut as required until the Wheel Bearing preload is in the 0-18.6 N (0-4.5 lbs) range.

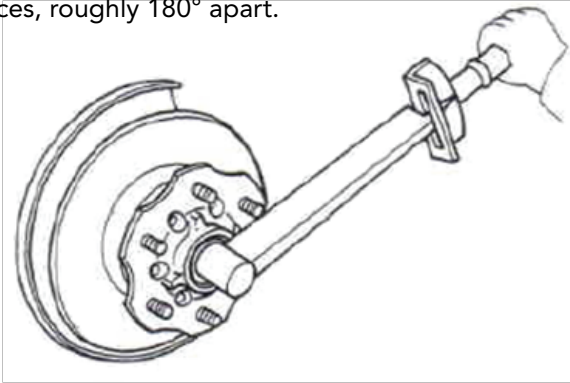


INSTALLATION INSTRUCTIONS



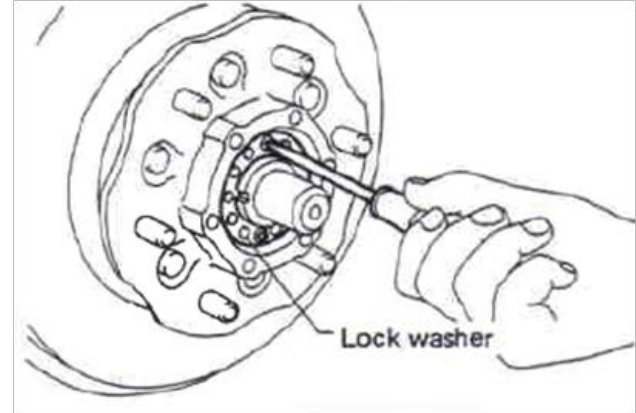
STEP 23

On vehicles with Manual Locking Hubs or Drive Flanges, reinstall the Lock Washer and Lock Nut. Torque the Lock Nut to 167-196 N-m (123-145 ft-lbs) or to the torque specified in the Nissan Patrol Factory Service Manual. Bend the tabs on the Lock Washer in (2) places, roughly 180° apart.



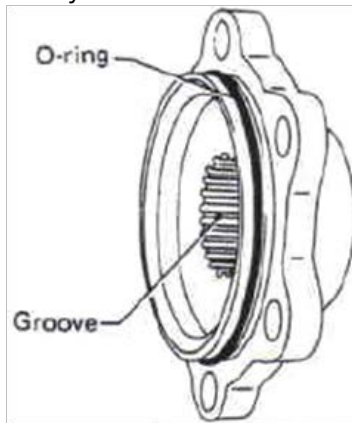
STEP 24

On vehicles with Automatic Locking Hubs, reinstall the Lock Washer. Install the screws back onto the Lock Washer and torque to 1.2-1.6 N-m (0.9-1.2 ft-lbs) or the torque specified in the Nissan Patrol Factory Service Manual.



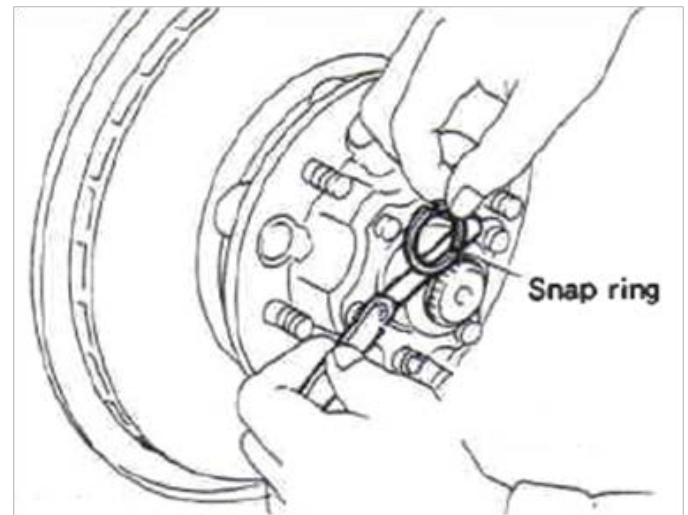
STEP 25

On Vehicles with Drive Flanges, pack the Drive Flange spline grooves with grease. Apply grease to the O-ring & mating surface of the Drive Flange, and reinstall the Drive Flange. Torque mounting hardware to 54-64 N-m (40-47 in-lbs) or to the torque specified in the Nissan Patrol Factory Service Manual.



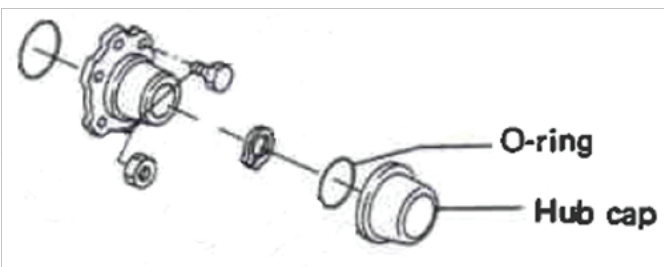
STEP 26

On Vehicles with Drive Flanges, reinstall the Snap Ring into the Axle shaft groove.



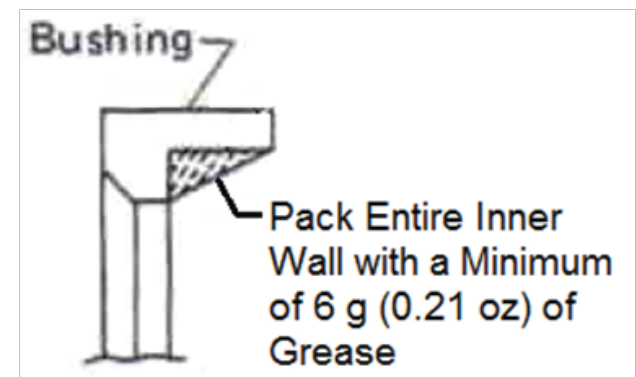
STEP 27

On Vehicles with Drive Flanges, reinstall the O-ring and Hub Cap onto the Drive Flange.



STEP 28

On Vehicles with Manual Locking Hubs, pack the inner wall of the Bushing with grease. Install the Bushing and Spacer onto the Wheel Hub.



INSTALLATION INSTRUCTIONS



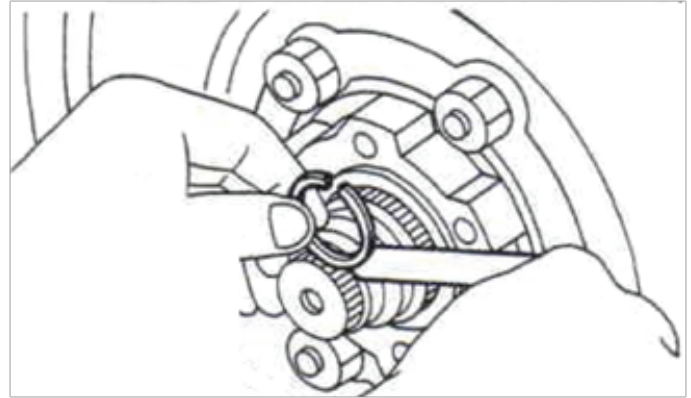
STEP 29

On Vehicles with Manual Locking Hubs, pack the outer wall of the Drive Clutch with grease. Install the Drive Cutch onto the Axle shaft.



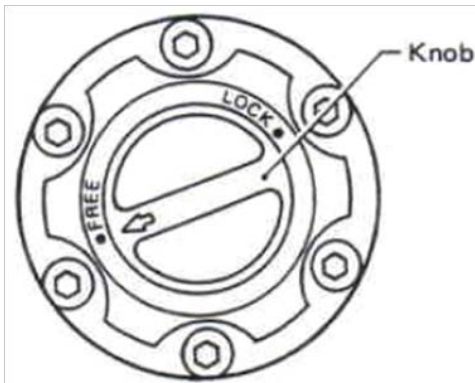
STEP 30

On Vehicles with Manual Locking Hubs, install the Snap Ring onto the Axle Shaft.



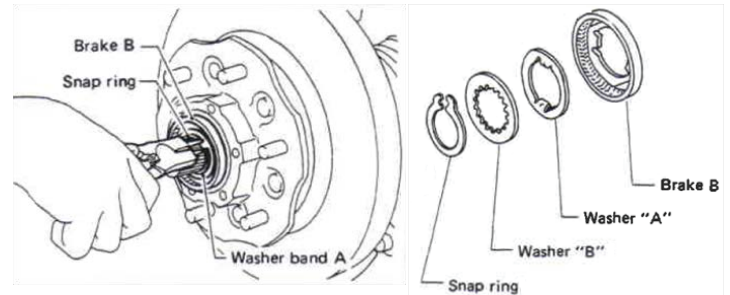
STEP 31

On Vehicles with Manual Locking Hubs, install the Manual Hub back onto the Wheel Hub. Make sure the dial is set to the "Free" position before installing the Manual Hub. Torque the mounting screws to 54-59 N-m (40-43 ft-lbs) or to the torque specified in the Nissan Factory Service Manual.



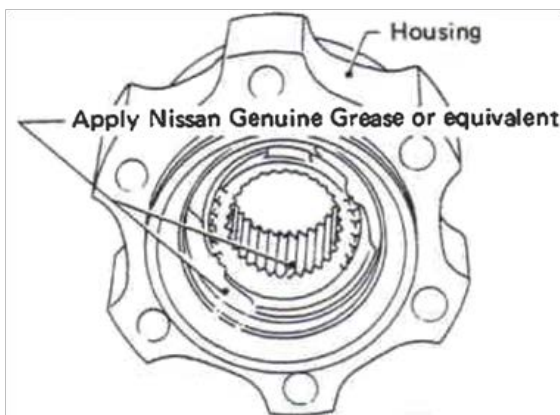
STEP 32

On Vehicles with Automatic Locking Hubs, reinstall Brake B, Washer A, and Washer B. Reinstall the Snap Ring onto the Axle Shaft.



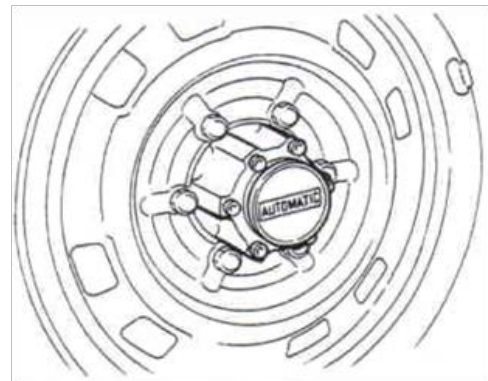
STEP 33

On Vehicles with Automatic Locking Hubs, apply grease to the inner splines and the end face of the Housing.



STEP 34

On Vehicles with Automatic Locking Hubs, install Housing back onto the Wheel Hub. Torque the mounting bolts to 54-64 N-m (40-47 in-lbs) or to the torque specified in the Nissan Patrol Factory Service Manual.



INSTALLATION INSTRUCTIONS



STEP 35

Install the wheel back onto the vehicle and torque the lug nuts to the torque specified in the Nissan Patrol Owner's Manual.

STEP 36

Lower the vehicle. Repeat Steps 1-35 for the other side of the vehicle.

STEP 37

Refill the differential with gear oil.

STEP 38

Take the vehicle for a short test drive. After the test drive, check the torque on the Locking Hub hardware and tighten as necessary.

CIRCLIP NOTE

Our Y60 axles are provided with wire circlips pre-installed. We recommend use of the wire circlips. However, if you experience issues with the axle shaft slipping out of the Birfield joint, we have provided Eaton-style circlips to better retain the axle shaft in the Birfield joint. The Eaton-style circlips are more difficult to install and it will be more difficult to remove the axle shaft from the Birfield joint. Always wear proper eye protection when installing or removing circlips.

REPLACEMENT PARTS

