AXLE SHAFTS - FRONT

1991-92 DRIVE AXLES FWD Axle Shafts

DESCRIPTION

Axle shafts transfer power from transaxle to drive wheels. Axle shafts consist of a shaft and flexible Constant Velocity (CV) joint at each end. See **Fig. 1** . Inner CV joint is splined to transaxle. Outer CV joint is splined to hub assembly and secured by wheel bearing lock nut.

Inner CV joint is a plunging tripod joint. The plunging action allows for axle shaft length change as suspension moves up and down.

Inner and outer CV joints are enclosed by a CV joint boot. The boot maintains lubrication in the joint and prevents contamination of CV lubricant. Boots must be replaced when leakage or cracks are present. The inner CV joint can be repaired without replacing assembly. The outer CV joint must be replaced as an assembly.

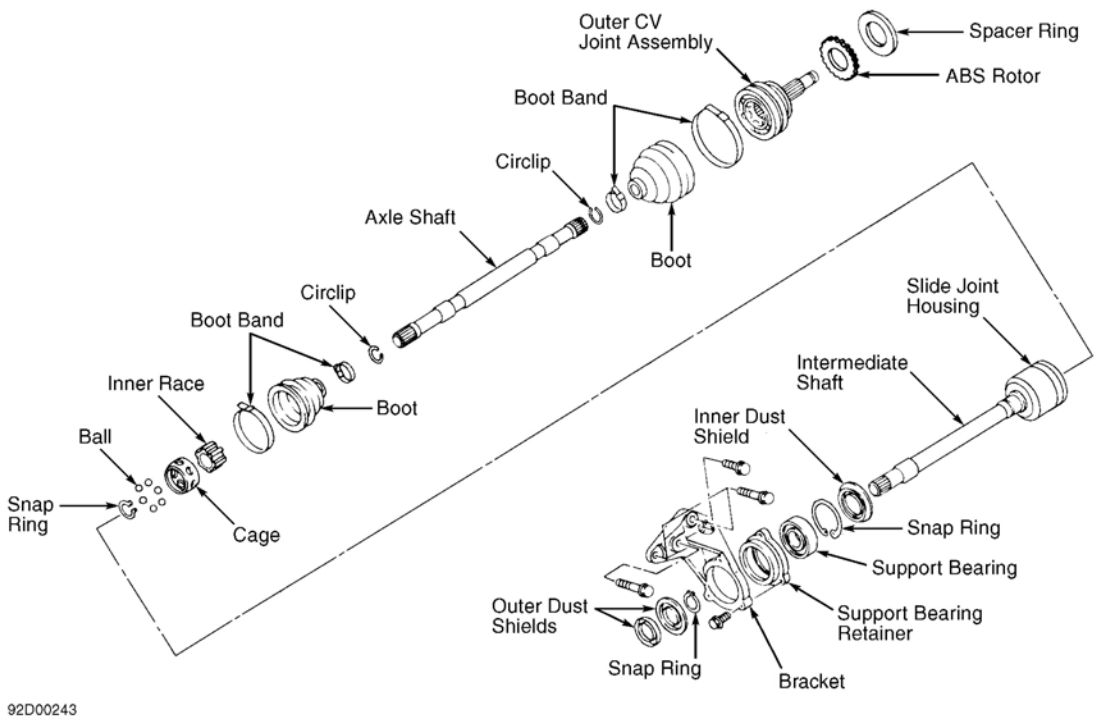

Fig. 1: Exploded View of Axle Shaft
Courtesy of NISSAN MOTOR CO., U.S.A.

TROUBLE SHOOTING

DRIVE AXLE (FWD)

None		

DRIVE AXLE (FWD) TROUBLE SHOOTING

PROBLEM	Possible Cause/Action
GREASE LEAKING	
Ripped CV Boot	Replace Boot
CLICKING NOISE WHILE CORNERING	
Dry/Worn CV Joints	Replace Outer CV Joints
CLUNK ON ACCELERATION	
Dry/Worn CV Joints	Replace Inner CV Joints
Worn Transmission Gears/Bearings	Inspect Transmission
VIBRATION/SHUDDER ON ACCELERATION	
Dry/Worn CV Joints	Replace CV Joints
Alignment Out	Check Alignment
Incorrect Spring Height	Check Spring Height
SQUEALING OR HUMMING	
Dry/Worn CV Joints	Lube/Replace CV Joints
Faulty Wheel Bearing	Replace Wheel Bearing

REMOVAL & INSTALLATION

FWD AXLE SHAFT

Removal (Axle Shaft)

1. Raise and support vehicle. Remove front wheel assembly. Remove wheel bearing lock nut. Remove brake caliper, and support aside. Remove brake rotor.

NOTE: DO NOT allow brake caliper to hang from brake hose.

2. Disconnect tie rod end. Remove upper knuckle nut, and separate knuckle assembly from third link assembly. Push axle shaft through hub, and separate axle assembly from knuckle assembly.
3. Insert screwdriver blade between transaxle case and right axle inner CV joint. Pry out on joint until joint pops free. Use care not to damage axle boot or axle seal.
4. On M/T vehicles, remove left axle in same manner. On A/T vehicles, insert screwdriver through differential, and drive axle out of transaxle case using a hammer. See **Fig. 2** .

CAUTION: Use care not to damage pinion mate shaft or side gear while driving out axle.

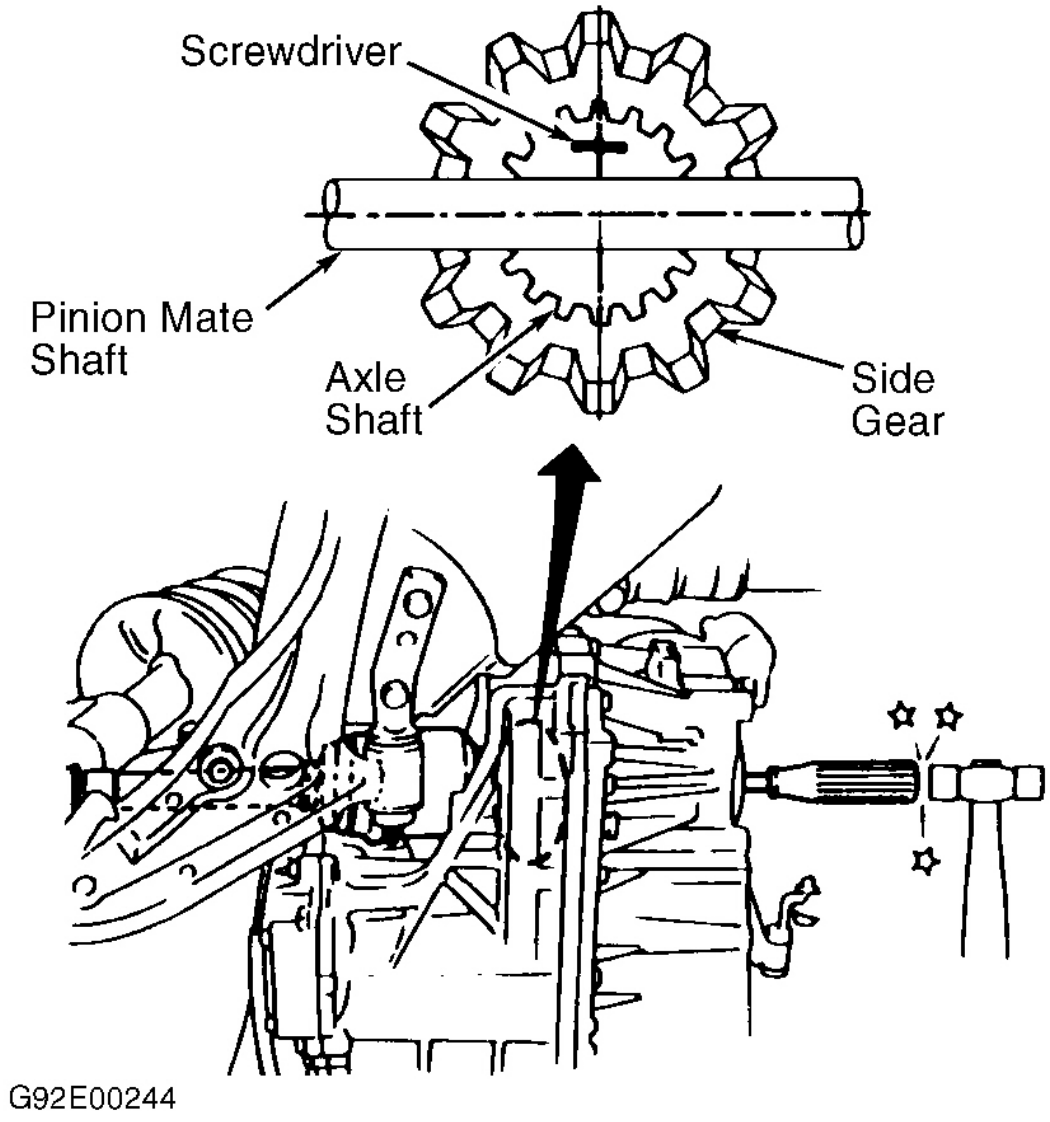

Fig. 2: Removing Left Drive Axle (A/T Vehicles)
Courtesy of NISSAN MOTOR CO., U.S.A.

NOTE: Outer joint cannot be disassembled. Remove and inspect joint and replace if damaged or worn.

Removal (Outer CV Joint)

1. Remove and discard boot bands. Slide boot off joint housing. Thread wheel bearing lock nut onto joint. Using a slide hammer and bearing puller, remove joint from axle shaft. See **Fig. 3** .

2. Remove circlip from end of axle, and remove boot. If boot is being reused, take care not to cut boot on axle splines during removal. Clean CV joint in suitable solvent. Inspect components, and replace joint if necessary.

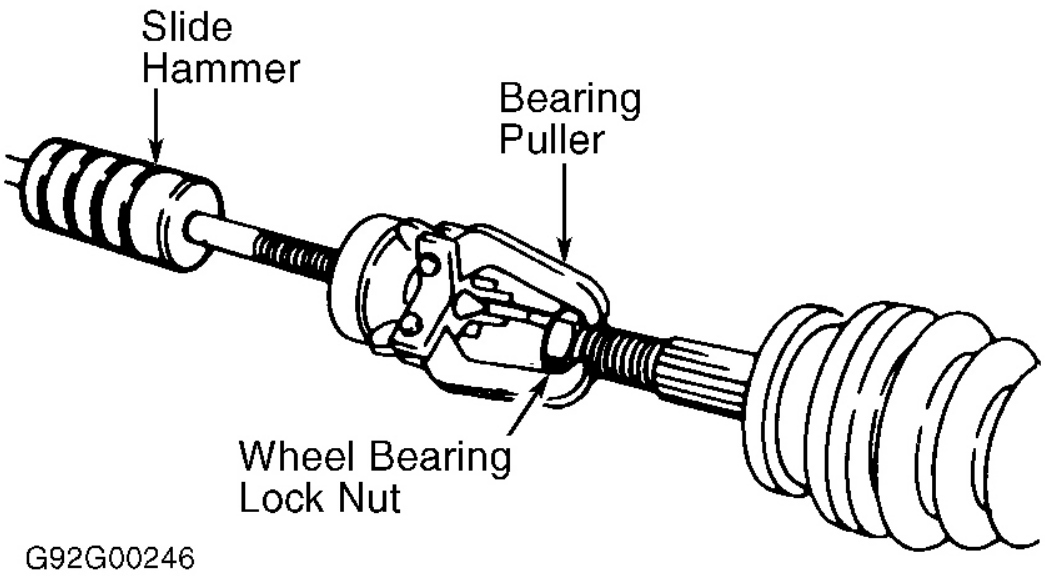

Fig. 3: Removing Outer CV Joint
Courtesy of NISSAN MOTOR CO., U.S.A.

Disassembly (Inner CV Joint)

1. Remove and discard boot bands. Slide boot off slide joint housing. Mark slide joint housing, inner race and axle shaft for reassembly reference. Using a screwdriver, pry out slide joint retaining ring. See **Fig. 4** .
2. Remove snap ring, ball cage, inner race and balls. Remove circlip from end of axle, and remove boot. If boot is being reused, take care not to cut boot on axle splines during removal. Inspect components, and replace as required.

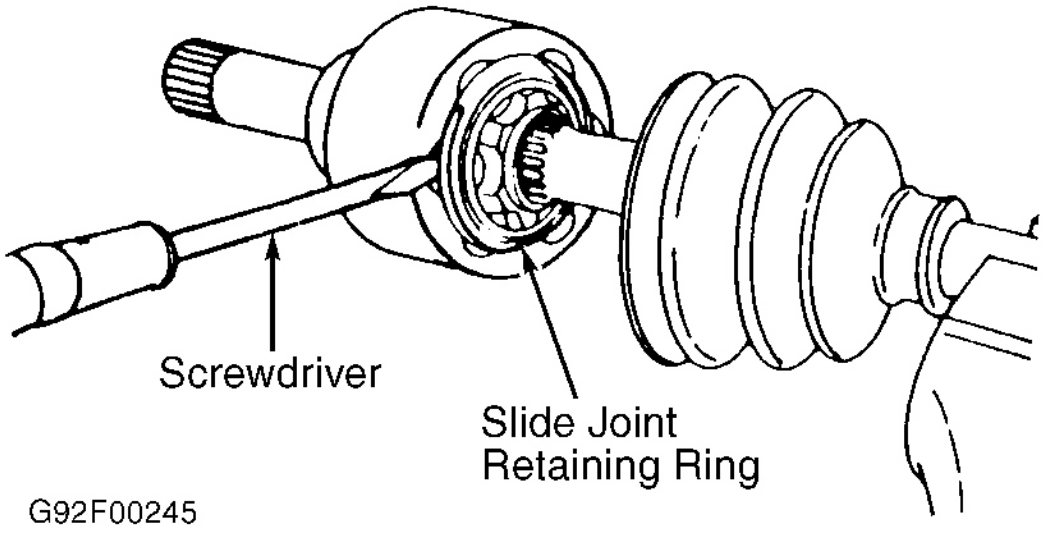

Fig. 4: Removing Slide Joint Retaining Ring
Courtesy of NISSAN MOTOR CO., U.S.A.

Reassembly (Inner CV Joint)

To reassemble inner CV joint, reverse disassembly procedure. Pack joint assembly and boot with appropriate grease. Before securing boot bands, measure distance "L1" between small and large ends of boot. See **Fig. 5** . Distance should be 3.86" (98 mm). With boot set to proper length, tighten clamps using suitable tool. See **Fig. 6** .

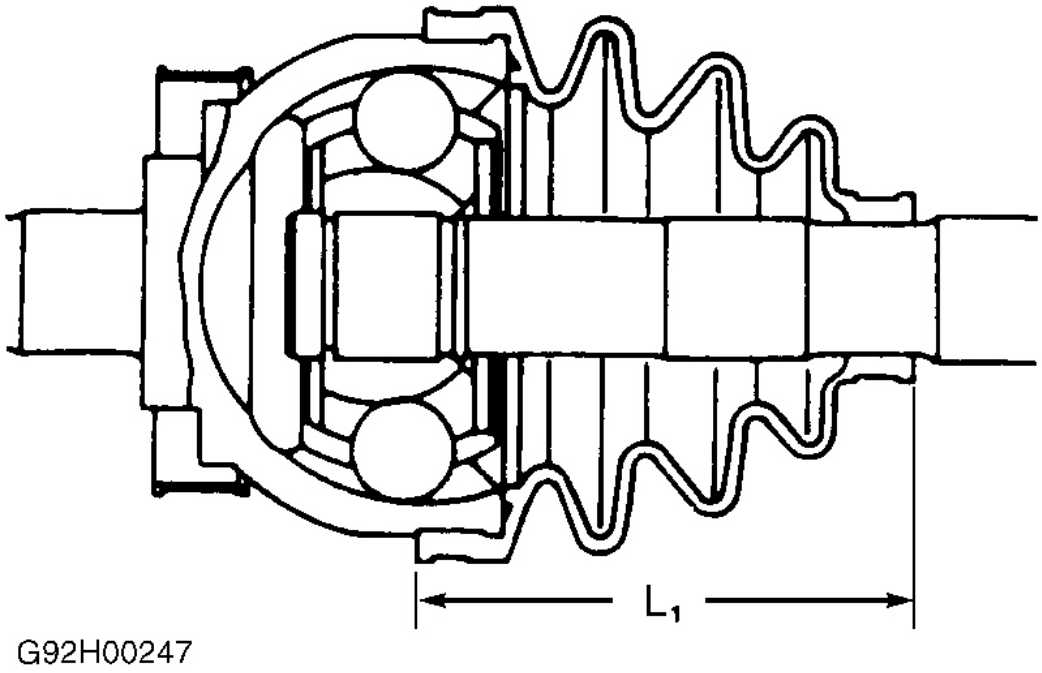

Fig. 5: Measuring Installed CV Joint Boot Length
Courtesy of NISSAN MOTOR CO., U.S.A.

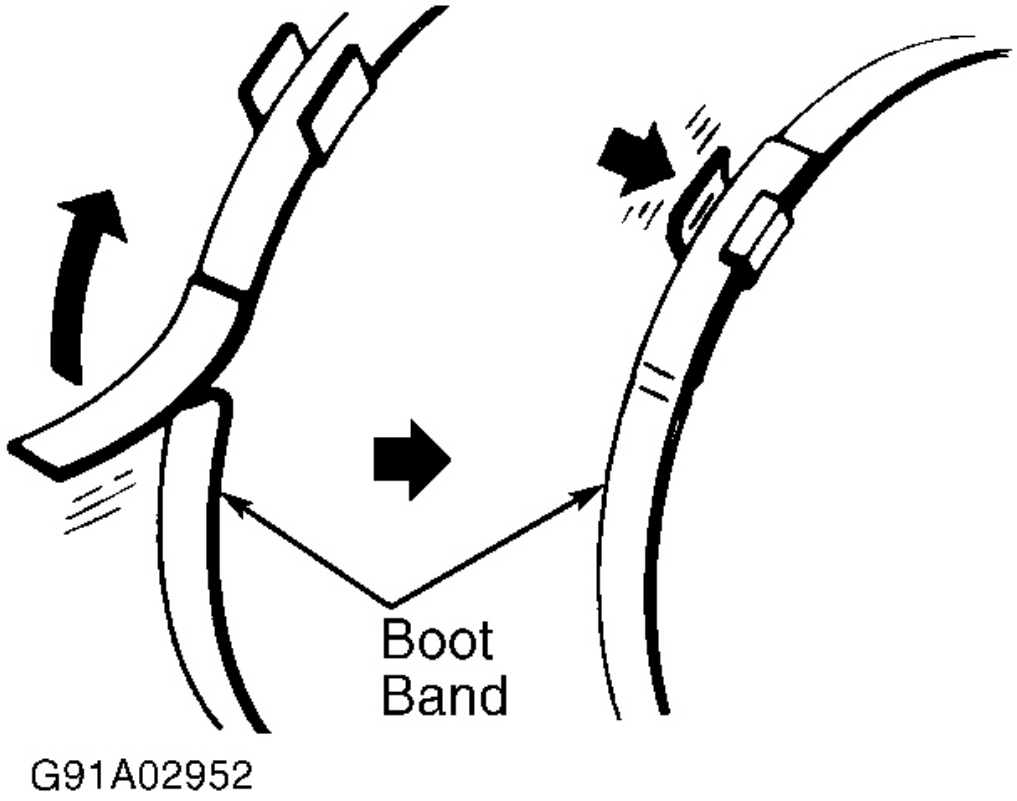

Fig. 6: Installing Boot Bands
Courtesy of NISSAN MOTOR CO., U.S.A.

Installation (Outer CV Joint)

Install boot and circlip onto axle shaft. Thread bearing lock nut onto joint, and install joint onto axle shaft. See **Fig. 7** . Pack joint assembly and boot with appropriate grease. Before securing boot bands, measure distance "L1" between small and large ends of boot. See **Fig. 5** . Distance should be 3.96" (100.5 mm). With boot set to proper length, tighten clamps using suitable tool. See **Fig. 6** .

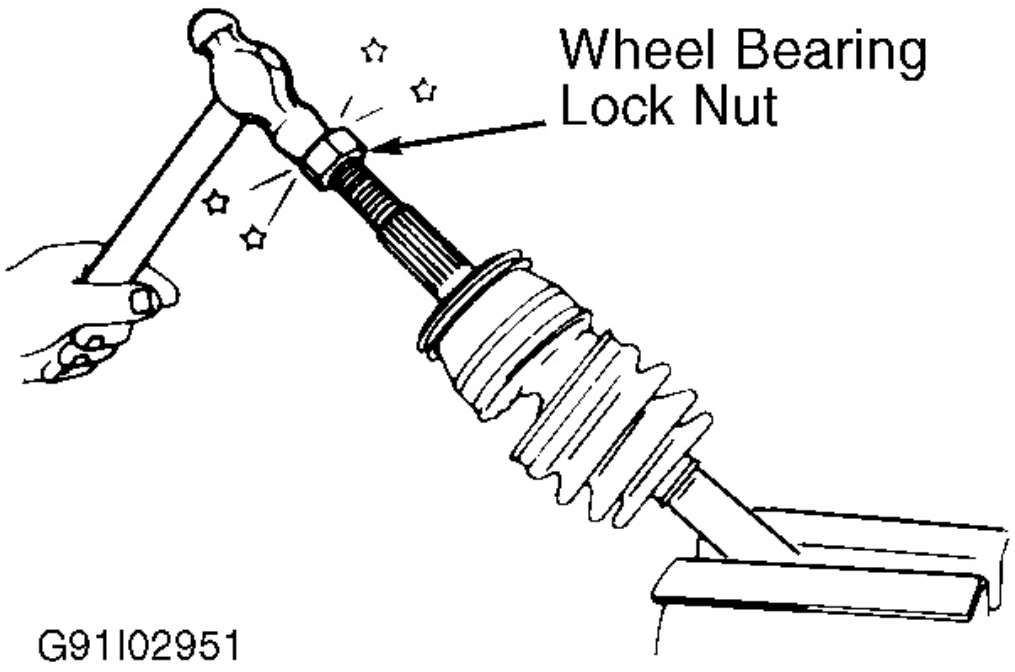

Fig. 7: Installing Outer CV Joint
Courtesy of NISSAN MOTOR CO., U.S.A.

Installation (Axle Shaft)

1. Install new oil seal in transaxle (if required). Install Seal Protector (KV38106800 or J34297) into seal. See **Fig. 8** . Insert axle shaft into transaxle and engage splines into side gear. Remove seal protector.
2. Seat axle fully into transaxle, ensuring circlip engages groove in side gear. Test for proper installation by pulling outward on CV joint. **DO NOT** pull on axle shaft. Axle is properly seated if CV joint will not pull free. To complete installation, reverse removal procedure.

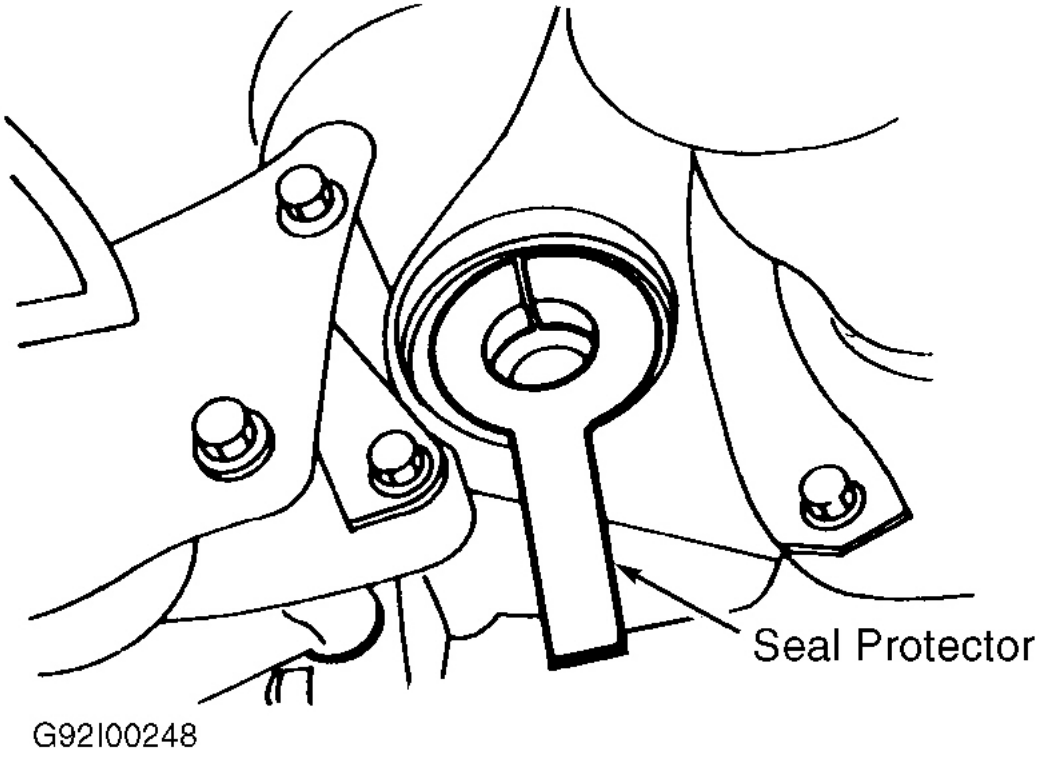

Fig. 8: Installing Seal Protector
Courtesy of NISSAN MOTOR CO., U.S.A.

INTERMEDIATE SHAFT R & I

Removal

1. Raise and support vehicle. Remove front wheel assembly. Remove wheel bearing lock nut. Remove brake caliper, and support aside. Remove brake rotor.

NOTE: DO NOT allow brake caliper to hang from brake hose.

2. Disconnect tie rod end. Remove upper knuckle nut, and separate knuckle assembly from third link assembly. Push axle shaft through hub, and separate axle assembly from knuckle assembly.
3. Insert screwdriver blade between transaxle case and right axle inner CV joint. Pry out on joint until joint pops free. Use care not to damage axle boot or axle seal.
4. On M/T vehicles, remove left axle in same manner. On A/T vehicles, insert screwdriver through differential, and drive axle out of transaxle case using a hammer. See **Fig. 2** .

CAUTION: Use care not to damage pinion mate shaft or side gear while driving out axle.

Disassembly

1. Using a hammer and punch, remove outer dust shield. See **Fig. 1** . Using a screwdriver, pry out inner dust shield. Remove snap ring. Mount intermediate shaft assembly in a hydraulic press, and press support bearing assembly off shaft.
2. Using a suitable bearing driver, drive support bearing from bearing retainer. Clean all parts in solvent, and inspect for wear. Replace bearing if noisy, rusty or worn.

Reassembly

To reassemble intermediate shaft, reverse disassembly procedure. Press intermediate shaft into support bearing using hydraulic press. Install new dust shields.

Installation

1. Install new oil seal in transaxle (if required). Install Seal Protector (KV38106800 or J34297) into seal. See **Fig. 8** . Insert axle shaft into transaxle, and engage splines into side gear. Remove seal protector.
2. Seat axle fully into transaxle, ensuring circlip engages groove in side gear. Test for proper installation by pulling outward on CV joint. **DO NOT** pull on axle shaft. Axle is properly seated if CV joint will not pull free. To complete installation, reverse removal procedure.

TORQUE SPECIFICATIONS

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Application	Ft. Lbs. (N.m)
Bearing Lock Nut	173-232 (235-314)
Support Bearing Retainer-To-Bracket Bolt	10-14 (13-19)
Tie Rod End Nut	21-29 (29-39)
Upper Knuckle Nut	72-87 (98-118)
Wheel Lug Nut	72-87 (98-118)