DIFFERENTIAL AND DRIVELINE

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GENERAL INFORMATION

FRONT DRIVESHAFTS

Vehicles equipped with either an automatic or manual transmission use the unequal–length driveshaft system.

Vehicles equipped with automatic transaxles use a solid short interconnecting shaft on the left side. The right side of the vehicle uses a longer solid interconnecting shaft (Fig. 1).

Vehicles equipped with manual transaxles use a larger diameter (32 mm) short interconnecting shaft on the left side. The right side uses a longer interconnecting damper (Fig. 1).

Driveshafts used on both the right and left sides of the vehicle use a tuned rubber damper weight. The damper weight applications vary by which side of the vehicle the driveshaft is located on and the transmission application of the vehicle. When replacing a driveshaft, be sure the replacement driveshaft has the same damper weight as the original.

Both driveshaft assemblies use the same type of inner and outer joints. The inner joint of both driveshaft assemblies is a tripod joint, and the outer joint of both driveshaft assemblies is a Rzeppa joint. Both tripod joints and Rzeppa joints are true constant velocity (C/V) joint assemblies. The inner tripod joint allows for the changes in driveshaft length through

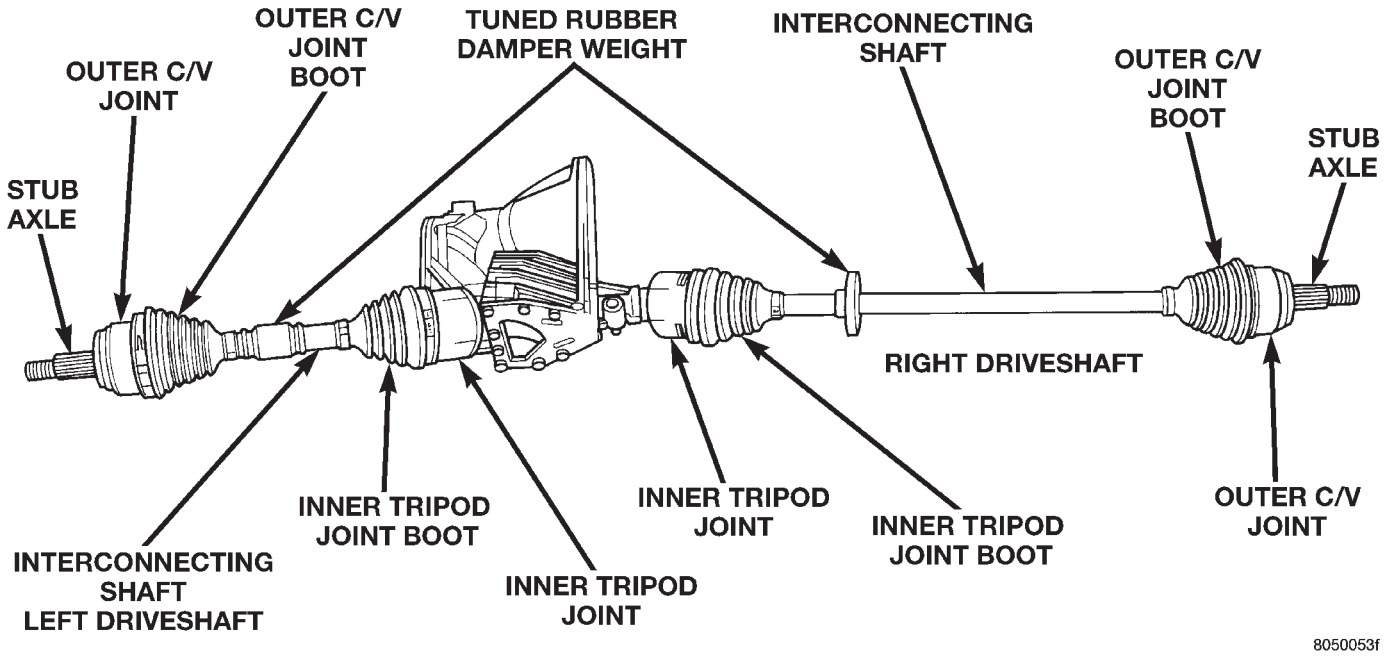


Fig. 1 Unequal Length Driveshaft System

GENERAL INFORMATION (Continued)

the jounce and rebound travel of the front suspension.

On vehicles equipped with ABS brakes, the outer C/V joint is equipped with a tone wheel used to determine vehicle speed for ABS brake operation.

The inner tripod joint of both driveshafts is splined into the transaxle side gears. The inner tripod joints are retained in the side gears of the transaxle using a snap ring located in the stub shaft of the tripod joint. The outer C/V joint has a stub shaft that is splined into the wheel hub and retained by a hub nut using a nut lock and cotter pin.

NOTE: This vehicle does not use a rubber–lip bearing seal as on previous front–wheel–drive cars to prevent contamination of the front wheel bearing. On these vehicles, the face of the outer C/V joint fits deeply into the steering knuckle, using a close outer C/V joint–to–steering knuckle fit. This design deters direct water splash on bearing seal while allowing any water that gets in, to run out the bottom of the steering knuckle bearing bore. It is important to thoroughly clean the outer C/V joint and the wheel bearing area in the steering knuckle before it is assembled after servicing.

FRONT DRIVESHAFT IDENTIFICATION

Driveshafts and driveshaft inner and outer boots can be identified as shown in (Fig. 2). Driveshaft boot location on the driveshaft assemblies is determined by the number of convolutions on the driveshaft boot. Refer to (Fig. 2) for the correct location of the sealing boots.

DIAGNOSIS AND TESTING

DRIVESHAFT DIAGNOSIS

VEHICLE INSPECTION

(1) Check for grease in the vicinity of the inboard tripod joint and outboard C/V joint; this is a sign of inner or outer joint seal boot or seal boot clamp damage.

(2) A light film of grease may appear on the right inner tripod joint seal boot; this is considered normal and should not require replacement of the seal boot. The right inner tripod joint seal boot is made of silicone rubber; which will allow the weeping (sweating) of the joint lubricant to pass through it while in operation.

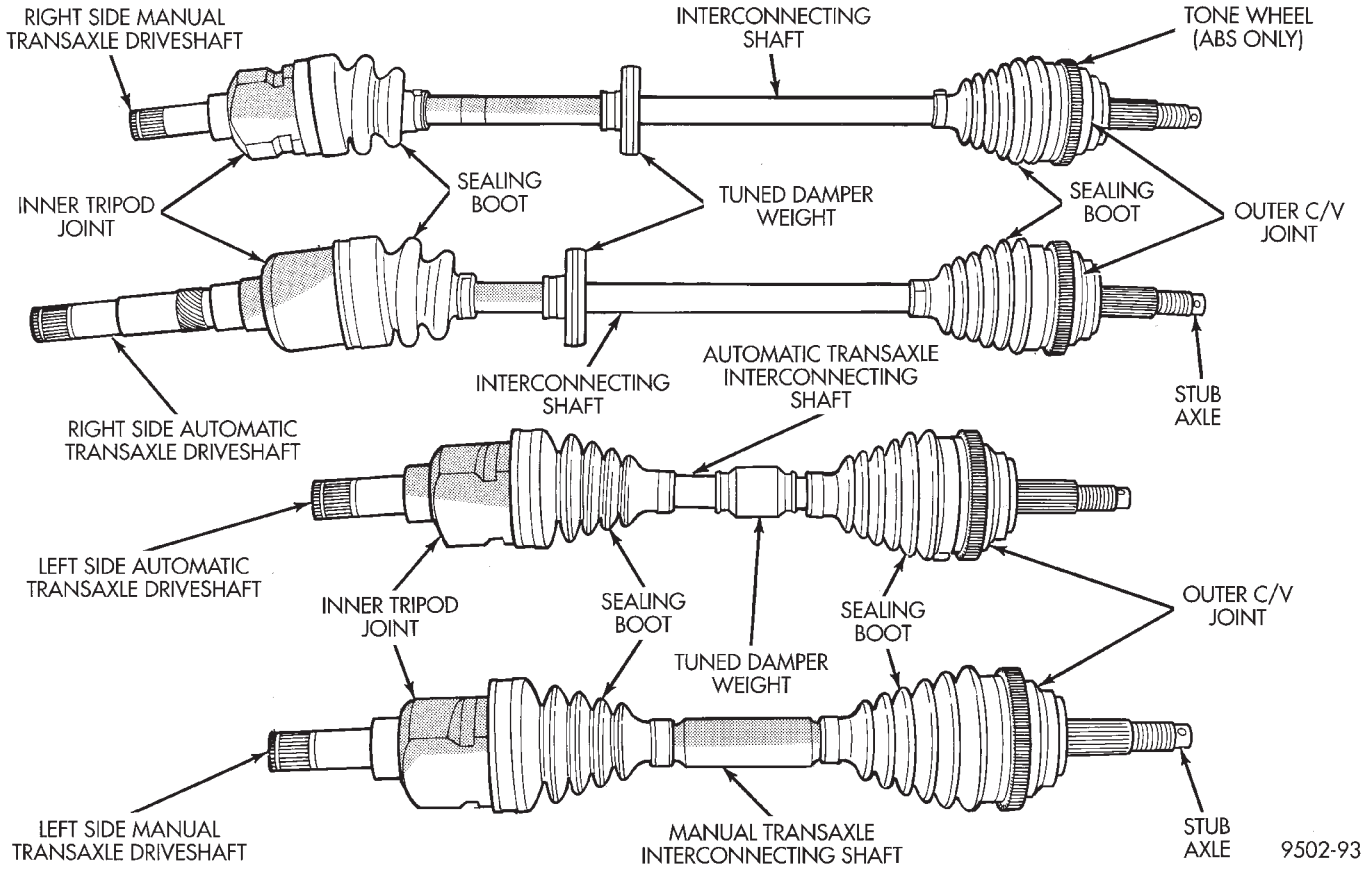


Fig. 2 Driveshaft Identification

DIAGNOSIS AND TESTING (Continued)

NOISE AND/OR VIBRATION IN TURNS

A clicking noise and/or a vibration in turns could be caused by one of the following conditions.

(1) Damaged outer C/V or inner tripod joint seal boot or seal boot clamps. This will result in the loss and/or contamination of the joint grease, resulting in inadequate lubrication of the joint.

(2) Noise may also be caused by another component of the vehicle coming in contact with the driveshafts.

CLUNKING NOISE DURING ACCELERATION

This noise may be a result of one of the following conditions:

(1) A torn seal boot on the inner or outer joint of the driveshaft assembly.

(2) A loose or missing clamp on the inner or outer joint of the driveshaft assembly.

(3) A damaged or worn driveshaft C/V joint.

SHUDDER OR VIBRATION DURING ACCELERATION

(1) A worn or damaged driveshaft inner tripod joint.

(2) A sticking tripod joint spider assembly (inner tripod joint only).

(3) Improper wheel alignment. See Wheel Alignment in this group for alignment checking and setting procedures and specifications.

VIBRATION AT HIGHWAY SPEEDS

(1) Foreign material (mud, etc.) packed on the backside of the wheel(s).

(2) Out of balance front tires or wheels. See Group 22, Wheels And Tires for the required balancing procedure.

(3) Improper tire and/or wheel runout. See Group 22, Wheels And Tires for the required runout checking procedure.

REMOVAL AND INSTALLATION

FRONT DRIVESHAFTS

CAUTION: Boot sealing is vital to retain special lubricants and to prevent foreign contaminants from entering the C/V joint. Mishandling, such as allowing the assemblies to dangle unsupported, or pulling or pushing the ends can cut boots or damage C/V joints. During removal and installation procedures, always support both ends of the driveshaft to prevent damage.

REMOVAL

CAUTION: The driveshaft, when installed, acts as a bolt and secures the front hub/bearing assembly. If vehicle is to be supported or moved on its wheels with a driveshaft removed, install a PROPER–SIZED BOLT AND NUT through front hub. Tighten bolt and nut to 183 N·m (135 ft. lbs.). This will ensure that the hub bearing cannot loosen.

(1) Remove cotter pin, nut lock, and spring washer (Fig. 3) from the end of the outer C/V joint stub axle.

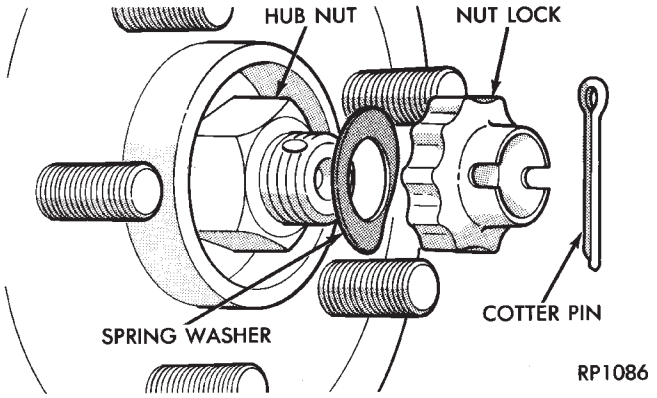


Fig. 3 Cotter Pin, Nut Lock and Spring Washer

(2) Loosen (but do not remove) stub axle–to–hub/bearing retaining nut (Fig. 4). Loosen hub nut while vehicle is on the floor with the brakes applied. The front hub and driveshaft are splined together and retained by the hub nut.

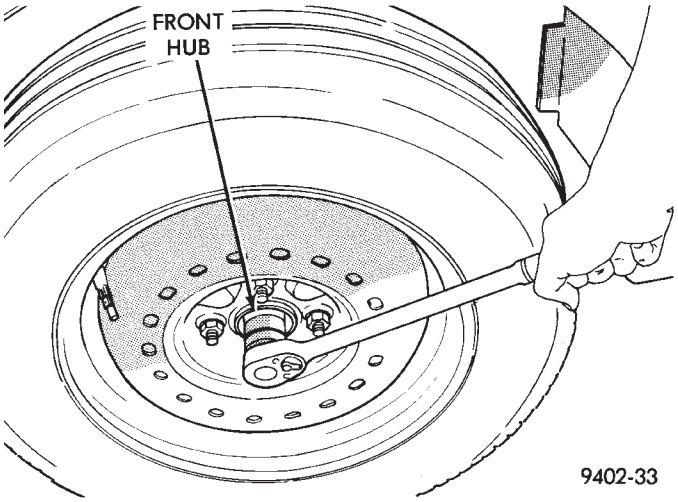


Fig. 4 Loosening Front Hub Retaining Nut

(3) Raise vehicle on jack stands or centered on a frame contact–type hoist. See Hoisting in the Lubrication and Maintenance section for required lifting procedure to be used for this vehicle.

(4) Remove front tire and wheel assembly from the hub.

REMOVAL AND INSTALLATION (Continued)

(5) Remove front disc brake caliper assembly to steering knuckle bolts (Fig. 5).

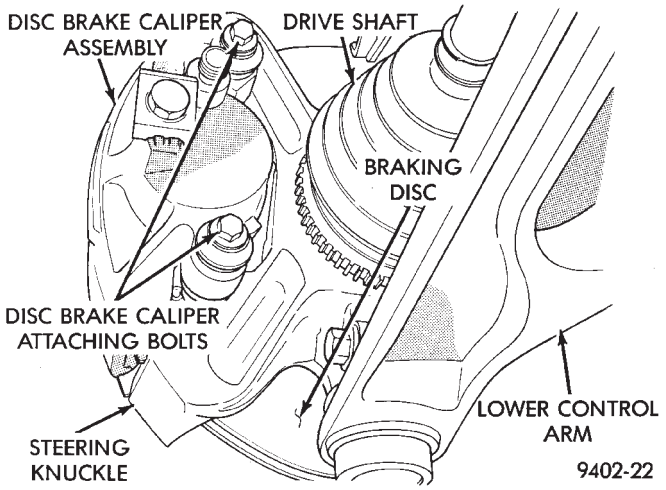


Fig. 5 Front Disc Brake Caliper Assembly Bolts

(6) Remove disc brake caliper assembly from steering knuckle. Caliper is removed by first lifting bottom of caliper away from steering knuckle, and then removing top of caliper out from under steering knuckle (Fig. 6).

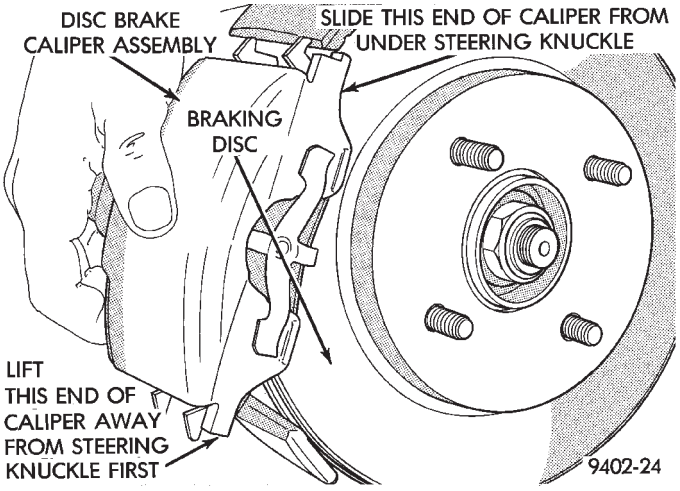


Fig. 6 Brake Caliper Assembly Removal

(7) Support brake caliper/adapter assembly using a wire hook, **not by the brake flex hose** (Fig. 7).

(8) Remove braking disc from front hub (Fig. 8).

(9) Remove nut attaching outer tie rod end to steering knuckle. **Nut is to be removed from tie rod end using the following procedure: Hold tie rod end stud with a 11/32 socket while loosening and removing nut.**

(10) Remove the tie rod end stud from steering knuckle arm using Special Tool MB-990635 (Fig. 9).

(11) Remove nut and bolt (Fig. 10) retaining ball joint stud into steering knuckle.

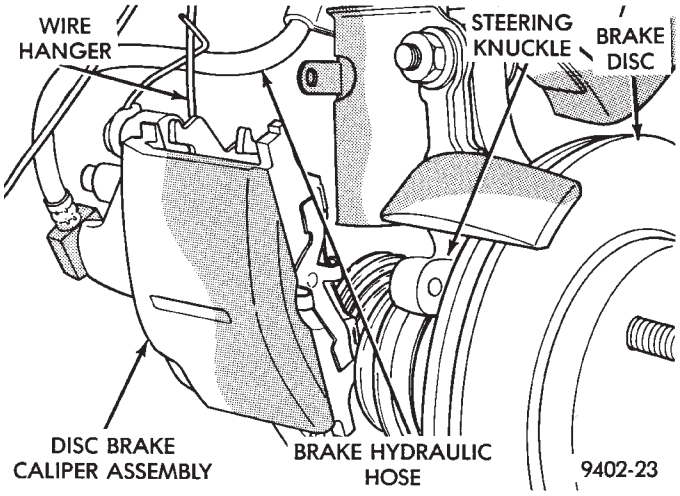


Fig. 7 Supporting Brake Caliper

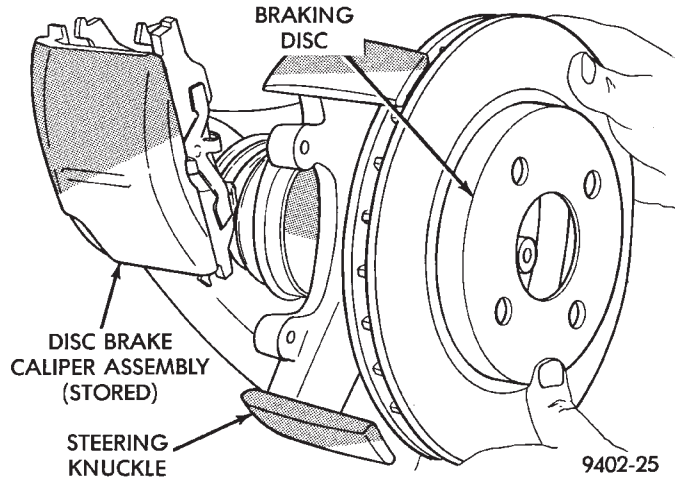


Fig. 8 Removing Front Braking Disc

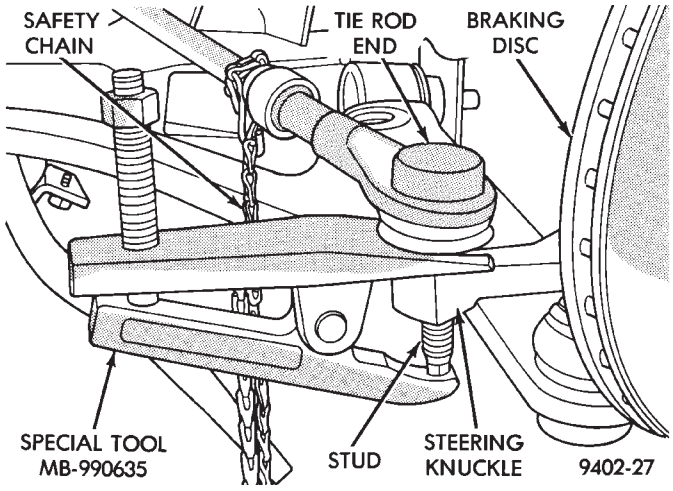


Fig. 9 Tie Rod End Removal from Steering Knuckle

NOTE: Use caution when separating ball joint stud from steering knuckle, so ball joint seal does not get damaged.

REMOVAL AND INSTALLATION (Continued)

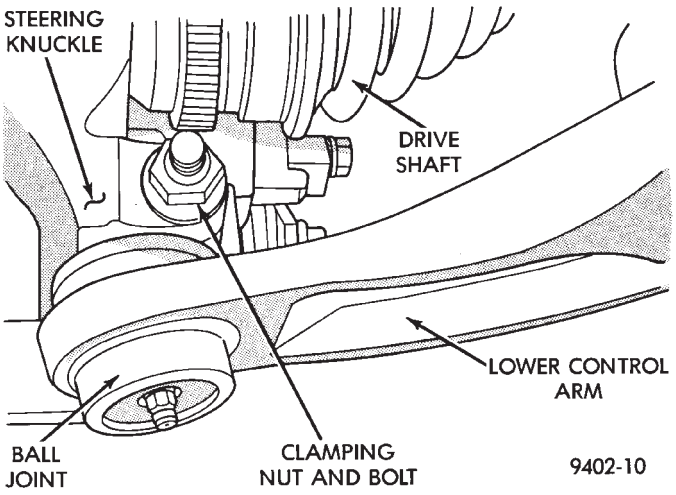


Fig. 10 Removing Steering Knuckle Clamp Bolt

(12) Separate ball joint stud from steering knuckle by prying down on lower control arm (Fig. 11).

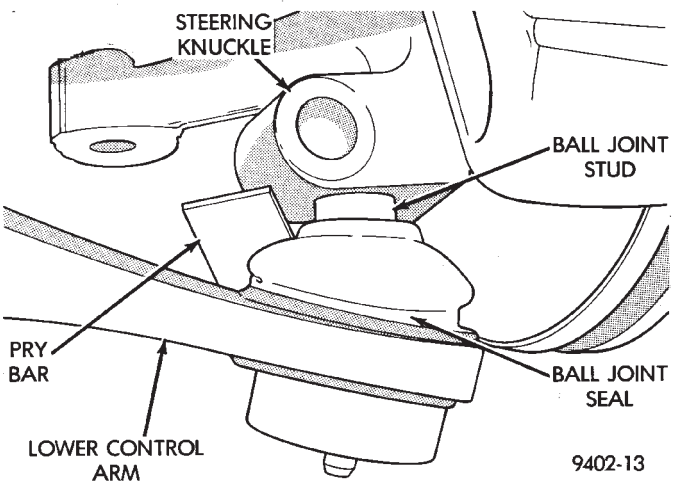


Fig. 11 Separate Ball Joint Stud from Steering Knuckle

NOTE: Care must be taken not to separate the inner C/V joint during this operation. Do not allow driveshaft to hang by inner C/V joint, driveshaft must be supported.

(13) Pull steering knuckle assembly out and away from outer C/V joint of the driveshaft assembly (Fig. 12).

(14) Support outer end of the driveshaft assembly.

NOTE: Removal of the inner tripod joints is made easier if you apply outward pressure on the joint as you strike the punch with a hammer.

(15) Remove the inner tripod joints from the side gears of the transaxle using a punch to dislodge the inner tripod joint retaining ring from the transaxle side gear. If removing the right side inner tripod

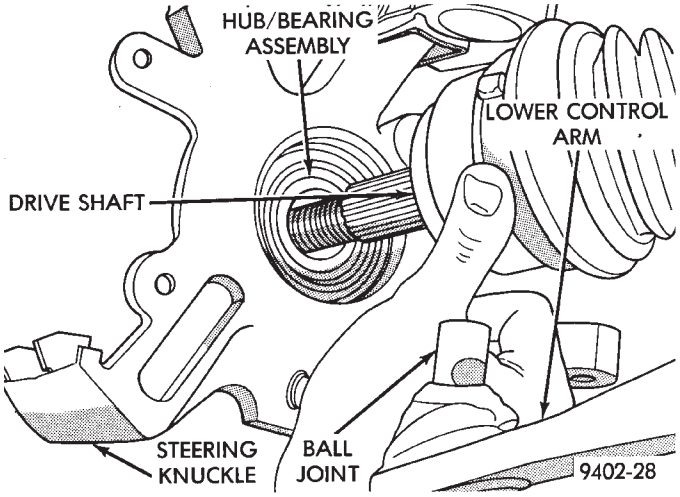


Fig. 12 Steering Knuckle Separation from Driveshaft

joint, position the punch against the inner tripod joint (Fig. 13). Strike the punch sharply with a hammer to dislodge the right inner joint from the side gear. If removing the left side inner tripod joint, position the punch in the groove of the inner tripod joint (Fig. 14). Strike the punch sharply with a hammer to dislodge the left inner tripod joint from the side gear.

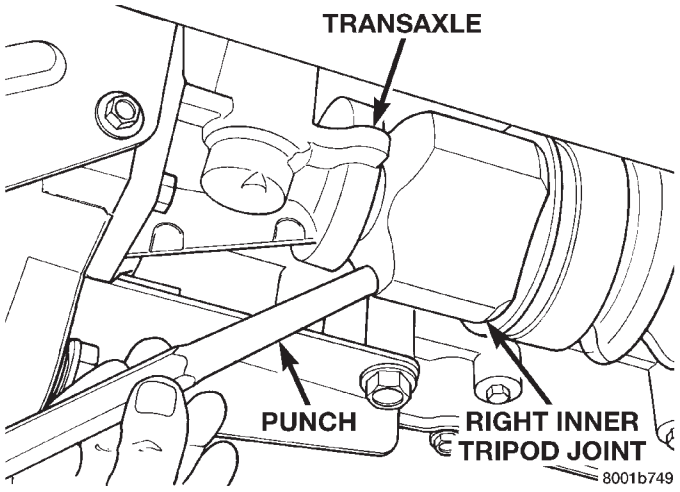


Fig. 13 Disengaging Right Inner Tripod Joint from Transaxle

(16) Hold inner tripod joint and interconnecting shaft of driveshaft assembly (Fig. 15). Remove inner tripod joint from transaxle by pulling it straight out of transaxle side gear and transaxle oil seal. **When removing tripod joint, do not let spline or snap ring drag across sealing lip of the transaxle to tripod joint oil seal.**

REMOVAL AND INSTALLATION (Continued)

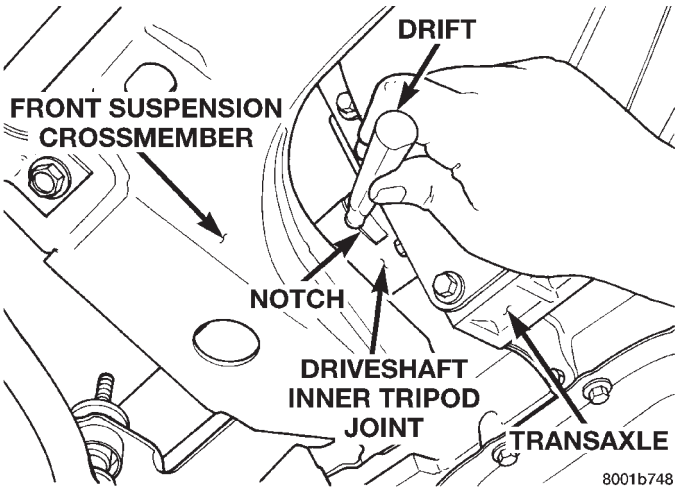


Fig. 14 Disengaging Left Inner Tripod Joint from Transaxle

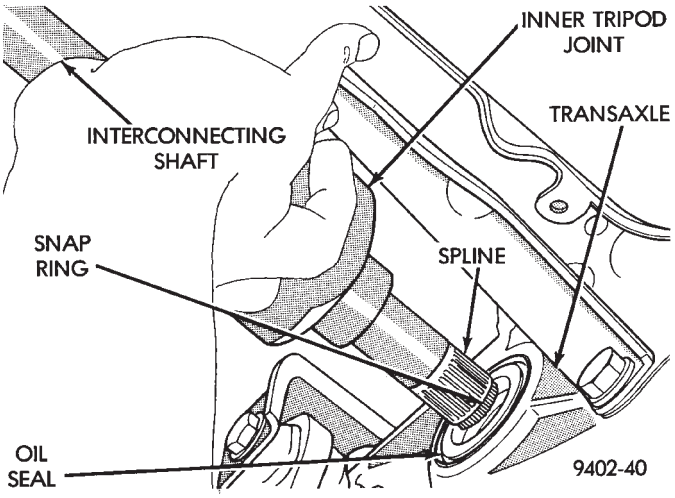


Fig. 15 Tripod Joint Removal from Transaxle

CAUTION: The driveshaft, when installed, acts as a bolt and secures the front hub/bearing assembly. If vehicle is to be supported or moved on its wheels with a driveshaft removed, install a PROPER–SIZED BOLT AND NUT through front hub. Tighten bolt and nut to 183 N·m (135 ft. lbs.). This will ensure that the hub bearing cannot loosen.

INSTALLATION

(1) Thoroughly clean spline and oil seal sealing surface, on tripod joint. Lightly lubricate oil seal sealing surface on tripod joint with fresh clean transmission lubricant.

(2) Holding driveshaft assembly by tripod joint and interconnecting shaft, install tripod joint into transaxle side gear as far as possible by hand.

(3) Carefully align tripod joint with transaxle side gears. Then grasp driveshaft interconnecting shaft and push tripod joint into transaxle side gear until fully seated. **Test that snap ring is fully engaged with side gear by attempting to remove tripod joint from transaxle by hand. If snap ring is fully engaged with side gear, tripod joint will not be removable by hand.**

(4) Clean all debris and moisture out of steering knuckle (Fig. 16).

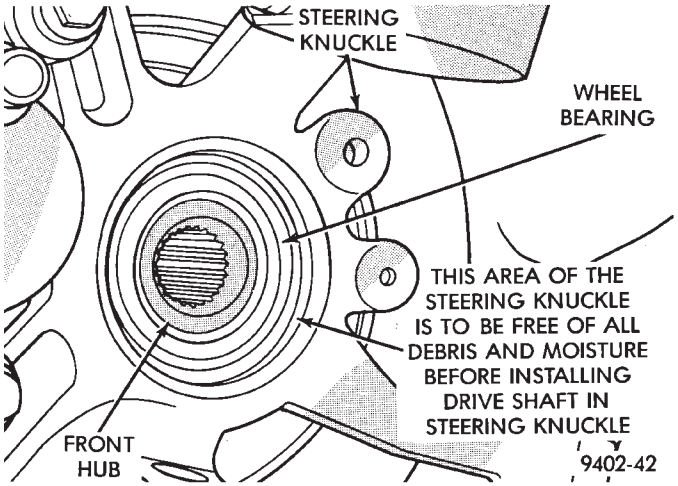


Fig. 16 Steering Knuckle to C/V Joint Sealing Area

(5) Ensure that front of outer C/V joint, which fits into steering knuckle (Fig. 17), is free of debris and moisture before assembling into steering knuckle.

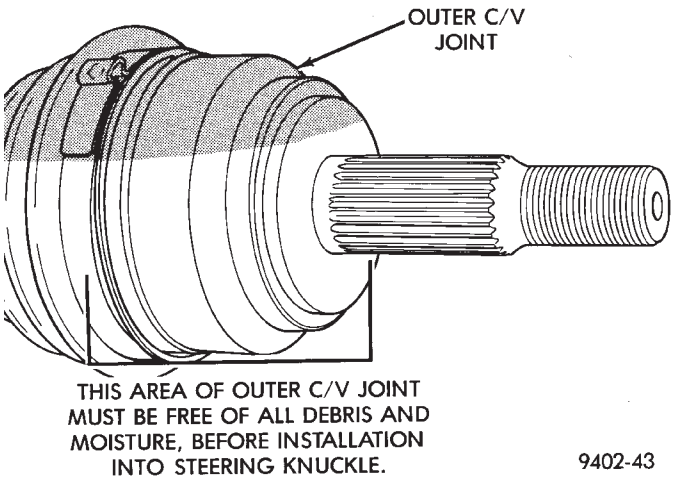


Fig. 17 Outer C/V Joint Inspection

(6) Slide driveshaft back into front hub. Install steering knuckle onto the ball joint stud (Fig. 18).

(7) Install a **NEW** steering knuckle to ball joint stud bolt and nut (Fig. 19). Tighten the nut and bolt to 95 N·m (70 ft. lbs.).

(8) Install tie rod end into steering knuckle. Start tie rod end to steering knuckle nut onto stud of tie rod end. While holding stud of tie rod end stationary, tighten tie rod end to steering knuckle nut. Then,

REMOVAL AND INSTALLATION (Continued)

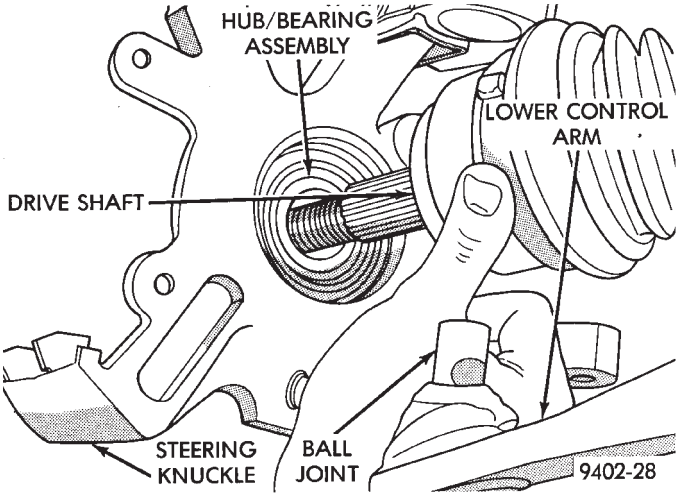


Fig. 18 Driveshaft Installation Into Hub And Steering Knuckle

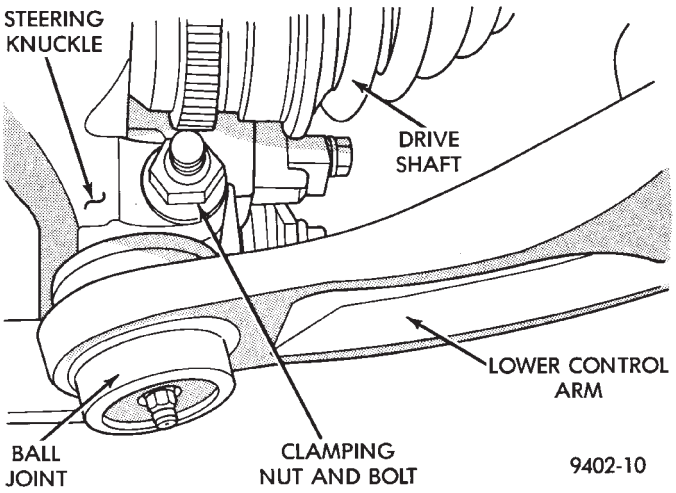


Fig. 19 Tighten Steering Knuckle Clamp Bolt

using a crowfoot and 11/32 socket, tighten tie rod end nut to 61 N·m (45 ft. lbs.).

(9) Install braking disc back on hub and bearing assembly (Fig. 20).

(10) Install disc brake caliper assembly on steering knuckle. Caliper is installed by first sliding top of caliper under top abutment on steering knuckle. Then installing bottom of caliper against bottom abutment of steering knuckle (Fig. 21).

(11) Install caliper assembly to steering knuckle bolts (Fig. 22). Tighten to 31 N·m (23 ft. lbs.).

(12) Clean all foreign matter from threads of outer C/V joint stub axle. Install hub nut and washer onto the threads of the stub axle and tighten nut (Fig. 23).

(13) With vehicle brakes applied to keep axle shaft from turning, tighten hub nut to 183 N·m (135 ft. lbs.).

(14) Install spring washer, nut lock, and cotter pin on outer C/V joint stub axle (Fig. 24).

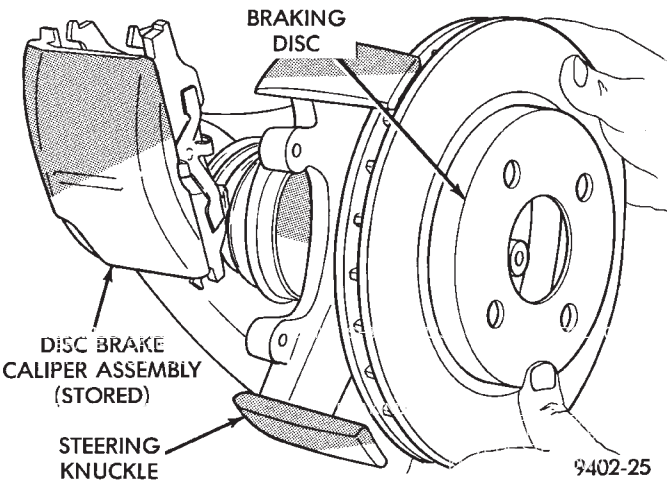


Fig. 20 Installing Braking Disc

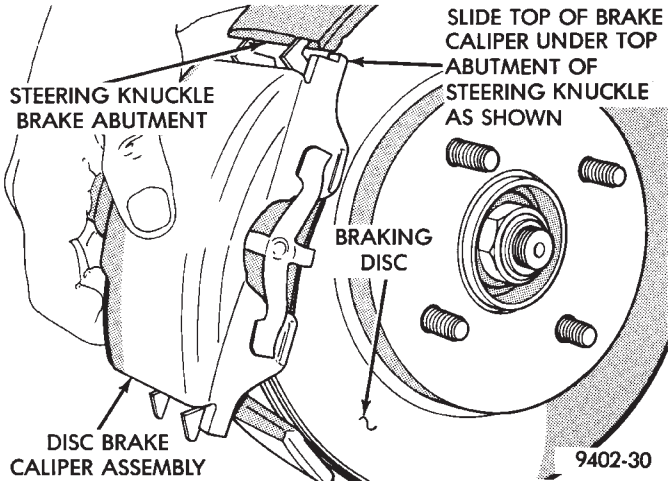


Fig. 21 Disc Brake Caliper Assembly Installation

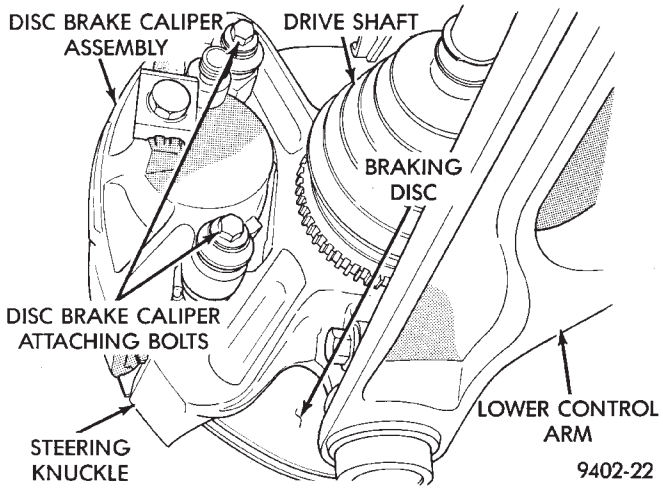


Fig. 22 Front Disc Brake Caliper Assembly Bolts

(15) Install front wheel and tire assembly. Install front wheel lug nuts and tighten to 135 N·m (100 ft. lbs.).

REMOVAL AND INSTALLATION (Continued)

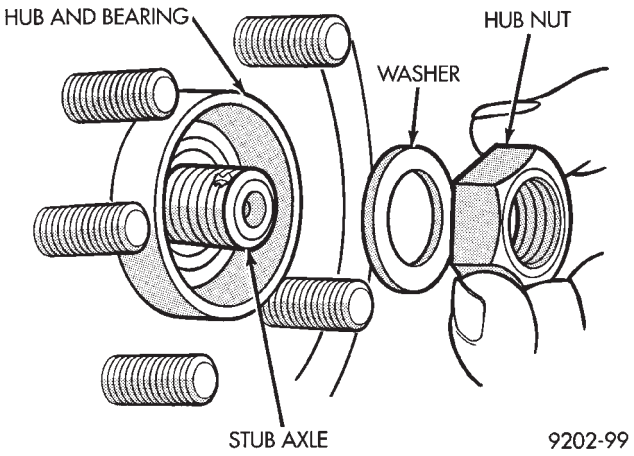


Fig. 23 Front Hub To Stub Shaft Nut Installed

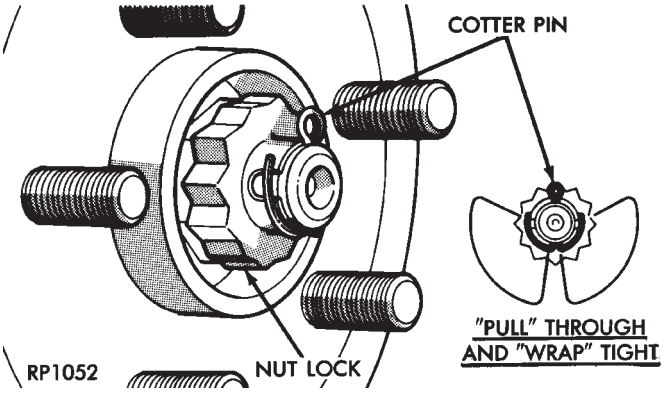


Fig. 24 Spring Washer, Nut Lock And Cotter Pin Installation

(16) Check for correct fluid level in transaxle assembly. Refer to Group 21 Transaxle, for the correct fluid level checking procedure for the type of transaxle being checked.

(17) Lower vehicle.

DISASSEMBLY AND ASSEMBLY

DRIVESHAFT RECONDITION

NOTE: The only service that is to be performed on the driveshaft assemblies is the replacement of the driveshaft seal boots.

If any failure of internal driveshaft components is diagnosed during a vehicle road test or disassembly of the driveshaft, the driveshaft will need to be replaced as an assembly.

NOTE: Lubricant requirements and quantities are different for inner joints than for outer joints. Use only the recommended lubricants in the required quantities when servicing driveshaft assemblies.

See (Fig. 25) for the exploded view of the front driveshaft components.

INNER TRIPOD JOINT SEAL BOOT

REMOVAL

To remove sealing boot from driveshaft for replacement, the driveshaft assembly must be removed from the vehicle. See Servicing Driveshaft in this section for the required driveshaft removal and replacement procedure.

The inner tripod joints use no internal retention in the tripod housing to keep the spider assembly in the housing. Therefore, do not pull on the interconnecting shaft to disengage tripod housing from transmission stub shaft. Removal in this manner will cause damage to the inboard joint sealing boots.

(1) Remove the driveshaft requiring boot replacement from the vehicle. See Servicing Driveshaft in this section for the required driveshaft removal procedure.

(2) Remove large boot clamp that retains inner tripod joint sealing boot to tripod joint housing (Fig. 26) and discard. Then remove small clamp that retains inner tripod joint sealing boot to interconnecting shaft and discard. Remove the sealing boot from the tripod housing and slide it down the interconnecting shaft.

CAUTION: When removing the spider joint from the tripod joint housing, hold the rollers in place on the spider trunions to prevent the rollers and needle bearings from falling away.

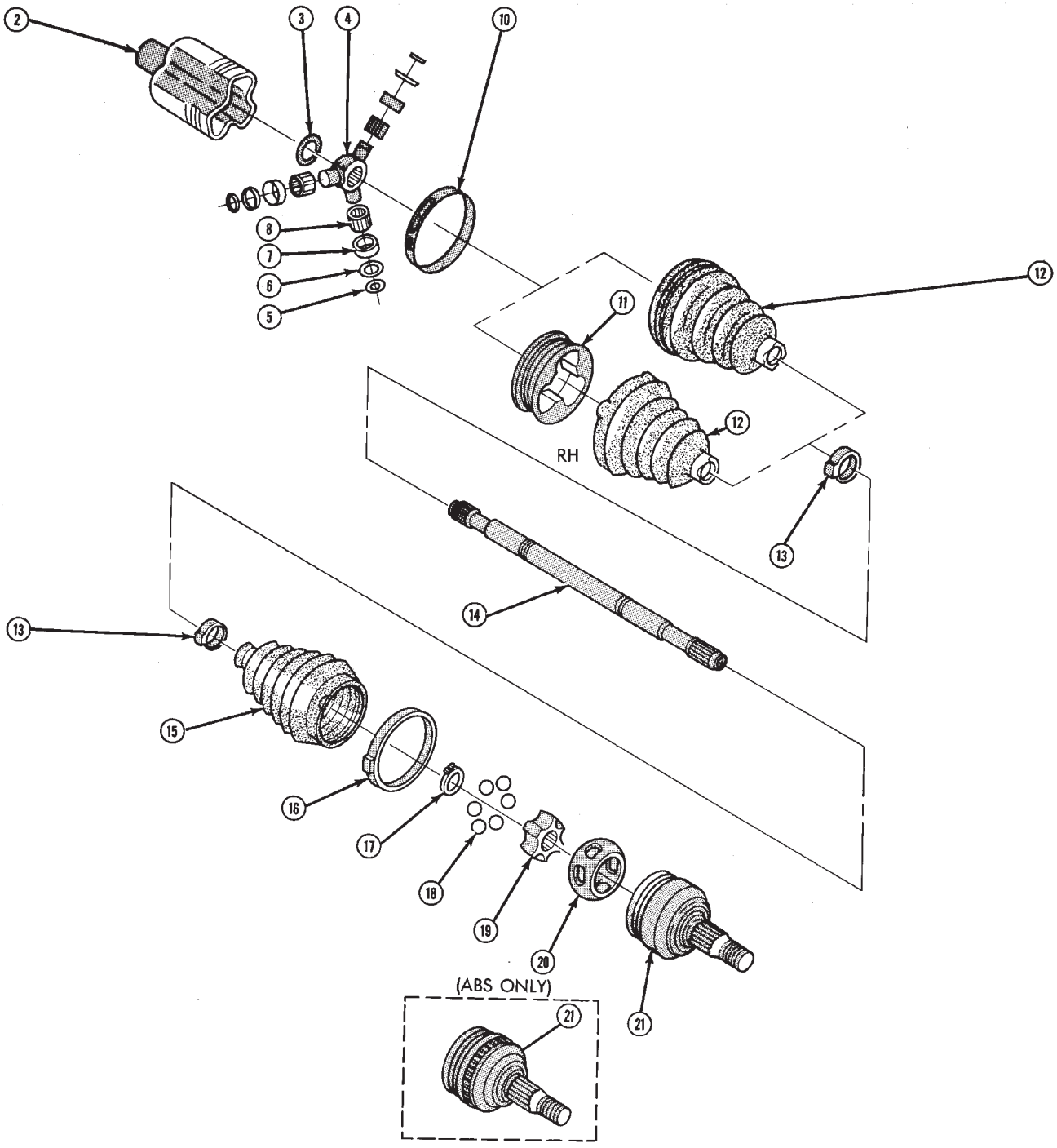
(3) Slide the interconnecting shaft and spider assembly out of the tripod joint housing (Fig. 27).

(4) Remove snap ring that retains spider assembly to interconnecting shaft (Fig. 28). Remove the spider assembly from interconnecting shaft. If spider assembly will not come off interconnecting shaft by hand, it can be removed by tapping spider assembly with a brass drift (Fig. 29). **Do not hit the outer tripod bearings in an attempt to remove spider assembly from interconnecting shaft.**

(5) Slide sealing boot off interconnecting shaft.

(6) Thoroughly clean and inspect spider assembly, tripod joint housing, and interconnecting shaft for any signs of excessive wear. **If any parts show signs of excessive wear, the driveshaft assembly will require replacement. Component parts of these driveshaft assemblies are not serviceable.**

DISASSEMBLY AND ASSEMBLY (Continued)



2. – HOUSING ASM, RETAINER &
3. – RING, SPACER
4. – SPIDER, TRIPOT JOINT
5. – RING, RETAINING
6. – RETAINER, BALL & ROLLER
7. – BALL, TRIPOT JOINT
8. – ROLLER, NEEDLE
10. – CLAMP, SEAL RETAINING
11. – BUSHING, TRILOBAL TRIPOT
12. – SEAL, DRIVE AXLE INBOARD
13. – CLAMP, SEAL RETAINING
14. – SHAFT, AXLE (RH SHOWN, LH SIMILAR)
15. – SEAL, DRIVE AXLE OUTBOARD
16. – CLAMP, SEAL RETAINING
17. – RING, RACE RETAINING
18. – BALL, CHROME ALLOY
19. – RACE, C/V JOINT INNER
20. – CAGE, C/V JOINT
21. – RACE, C/V JOINT OUTER

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Fig. 25 Driveshaft Assembly Components (Exploded View)

DISASSEMBLY AND ASSEMBLY (Continued)

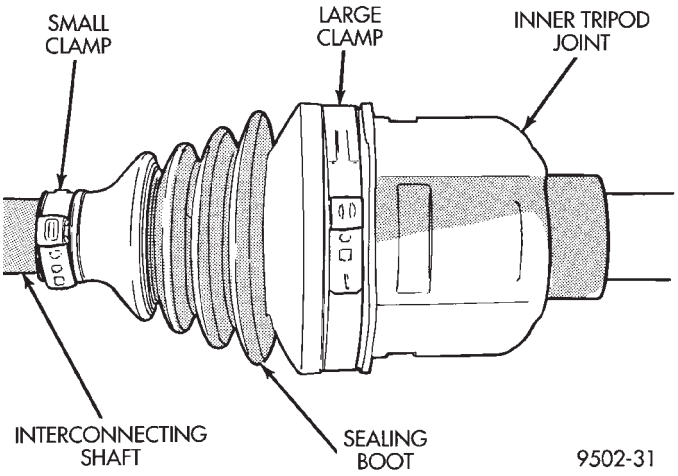


Fig. 26 Inner Tripod Joint Sealing Boot Clamps

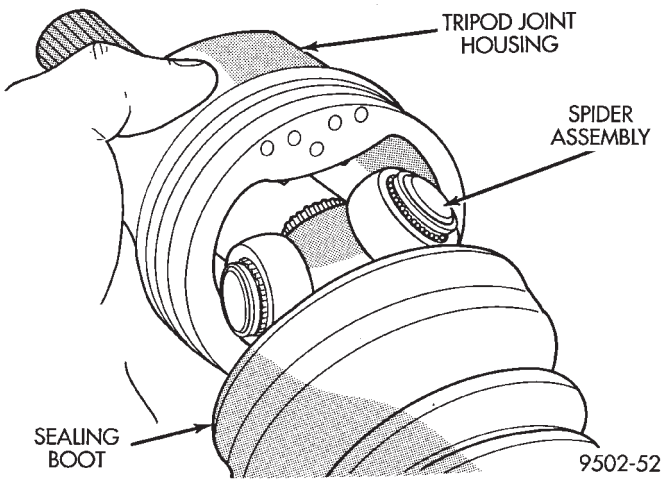


Fig. 27 Spider Assembly Joint Removal from Housing

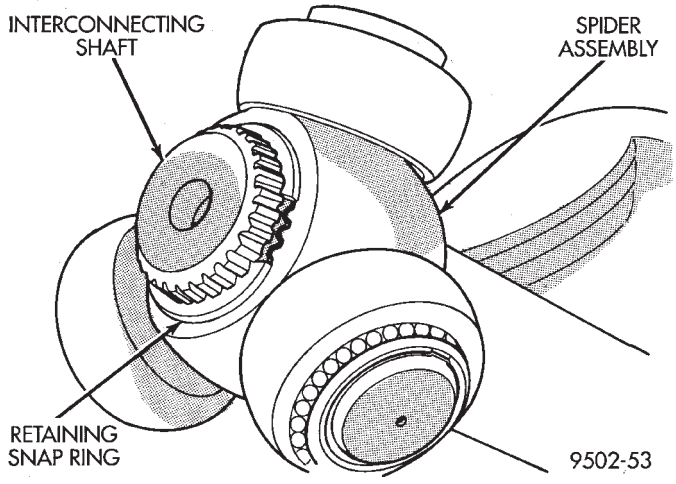


Fig. 28 Spider Assembly Retaining Snap Ring

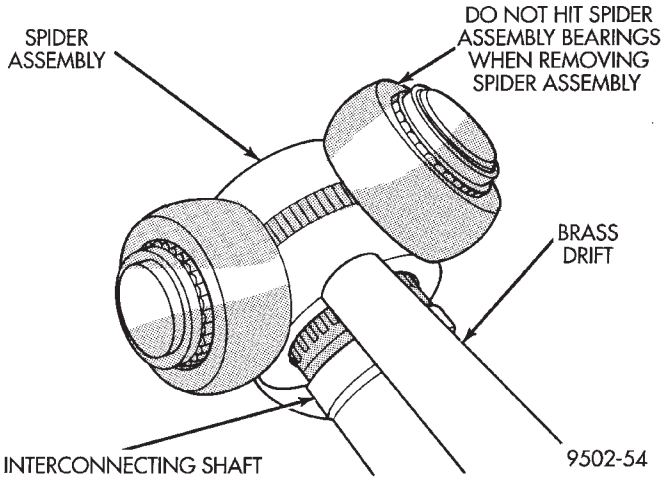


Fig. 29 Spider Assembly Removal from Interconnecting Shaft

INSTALLATION

NOTE: The inner tripod joint sealing boots are made from two different types of material. High–temperature applications use silicone rubber whereas standard temperature applications use Hytrel plastic. The silicone sealing boots are soft and pliable. The Hytrel sealing boots are stiff and rigid. The replacement sealing boot MUST BE the same type of material as the sealing boot that was removed.

(1) Slide inner tripod joint seal boot retaining clamp, onto interconnecting shaft. Then slide the replacement inner tripod joint sealing boot onto interconnecting shaft. **Inner tripod joint seal boot MUST be positioned on interconnecting shaft, so the raised bead on the inside of the seal boot is in groove on interconnecting shaft (Fig. 30).**

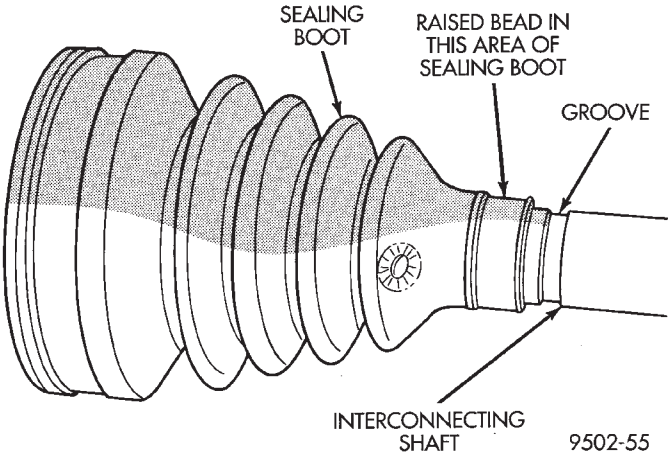


Fig. 30 Sealing Boot Installation on Interconnecting Shaft

DISASSEMBLY AND ASSEMBLY (Continued)

(2) Install spider assembly onto interconnecting shaft with chamfer on spider assembly toward interconnecting shaft (Fig. 31). Spider assembly must be installed on interconnecting shaft far enough to fully install spider retaining snap ring. If spider assembly will not fully install on interconnecting shaft by hand, it can be installed by tapping the spider body with a brass drift (Fig. 32). **Do not hit the outer tripod bearings in an attempt to install spider assembly on interconnecting shaft.**

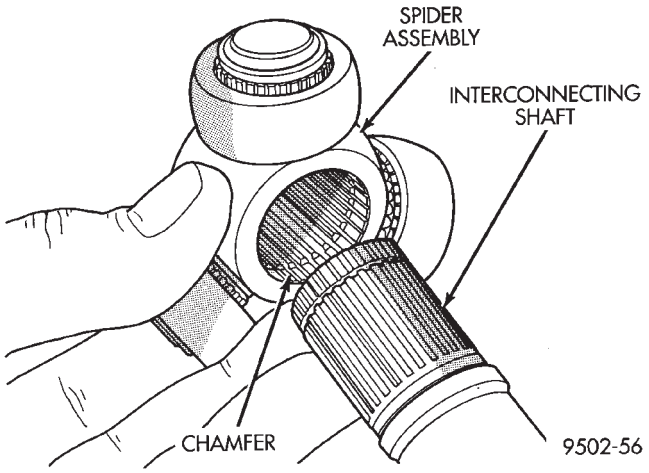


Fig. 31 Spider Assembly Installation on Interconnecting Shaft

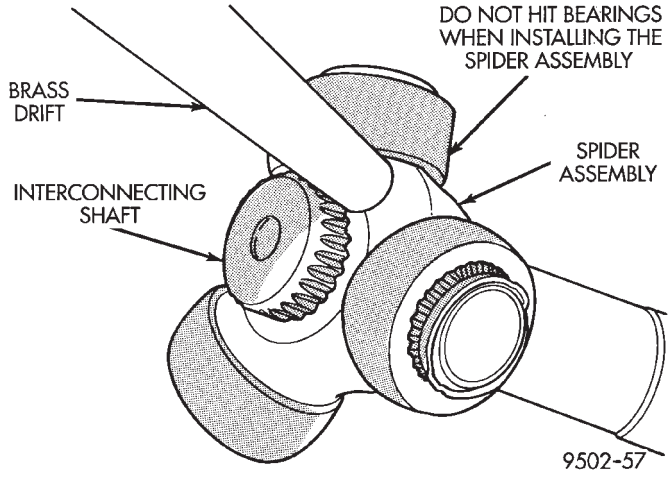


Fig. 32 Installing Spider Assembly On Interconnecting Shaft

(3) Install the spider assembly to interconnecting shaft retaining snap ring into groove on end of interconnecting shaft (Fig. 33). Be sure the snap ring is fully seated into groove on interconnecting shaft.

(4) Distribute 1/2 the amount of grease provided in the seal boot service package (DO NOT USE ANY OTHER TYPE OF GREASE) into tripod housing. Put the remaining amount into the sealing boot.

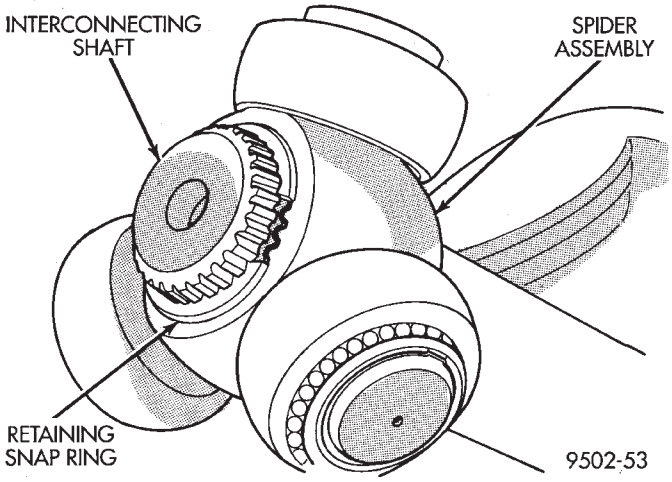


Fig. 33 Spider Assembly Retaining Snap Ring Installed

(5) Align tripod housing with spider assembly and then slide tripod housing over spider assembly and interconnecting shaft (Fig. 34).

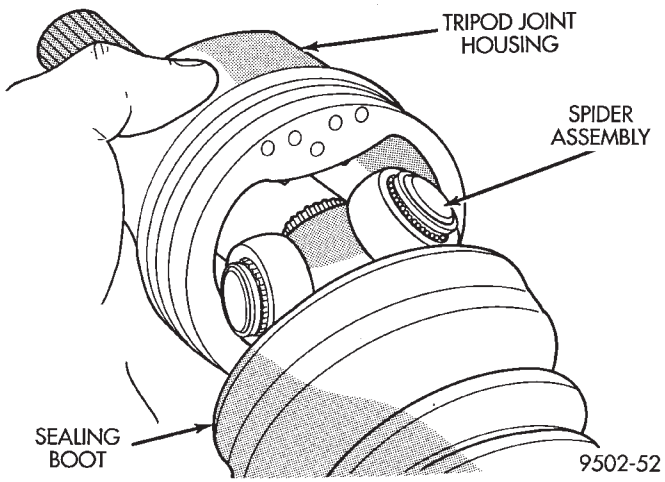


Fig. 34 Installing Tripod Housing on Spider Assembly

(6) Install inner tripod joint seal boot to interconnecting shaft clamp evenly on sealing boot.

(7) Clamp sealing boot onto interconnecting shaft using crimper, Special Tool C-4975-A and the following procedure. Place crimping tool C- 4975-A over bridge of clamp (Fig. 35). Tighten nut on crimping tool C- 4975-A until jaws on tool are closed completely together, face to face (Fig. 36).

CAUTION: Seal must not be dimpled, stretched, or out–of–shape in any way. If seal is NOT shaped correctly, equalize pressure in seal and shape it by hand.

(8) Position sealing boot into the tripod housing retaining groove. Install seal boot retaining clamp evenly on sealing boot.

DISASSEMBLY AND ASSEMBLY (Continued)

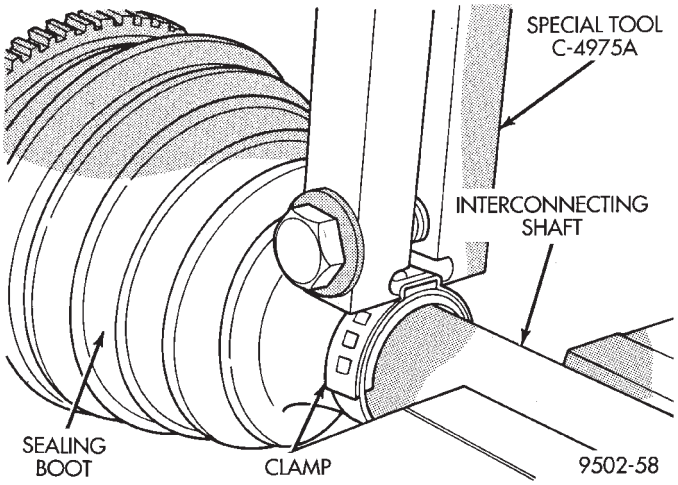


Fig. 35 Crimping Tool Installed on Sealing Boot Clamp

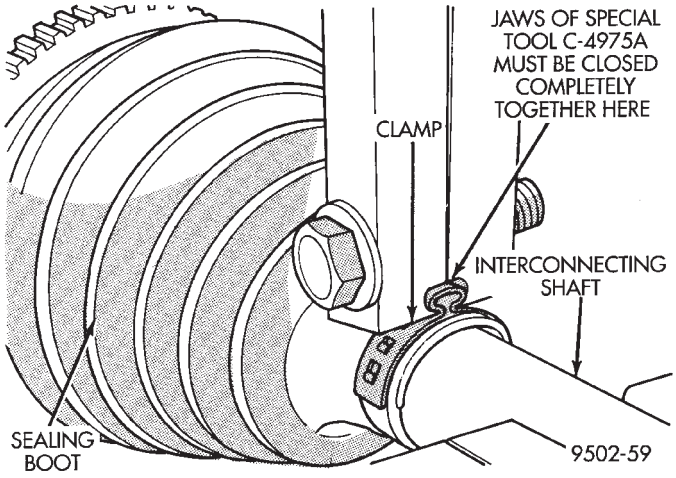


Fig. 36 Sealing Boot Retaining Clamp Installed

CAUTION: The following positioning procedure determines the correct air pressure inside the inner tripod joint assembly prior to clamping the sealing boot to inner tripod joint housing. If this procedure is not done prior to clamping sealing boot to tripod joint housing, boot durability can be adversely affected.

CAUTION: When venting the inner tripod joint assembly, use care so inner tripod sealing boot does not get punctured or, in any other way, damaged. If sealing boot is punctured or damaged while being vented, the sealing boot can not be used.

(9) Insert a trim stick between the tripod joint and the sealing boot to vent inner tripod joint assembly (Fig. 37). **When inserting trim stick between tripod housing and sealing boot, ensure trim stick is held flat and firmly against the tripod housing. If this is not done, damage to the sealing boot can occur.** If inner tripod joint has a Hytrel (hard plastic) sealing boot, be sure trim stick is inserted between soft rubber insert and tripod housing, and not the hard plastic sealing boot and soft rubber insert.

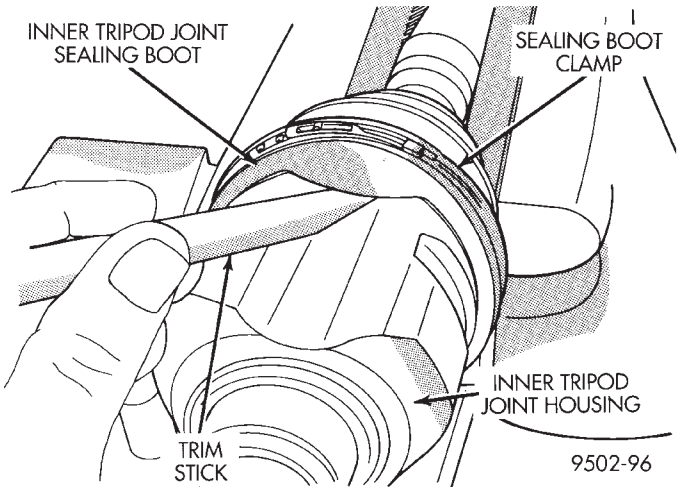


Fig. 37 Trim Stick Inserted for Venting Tripod Joint

(10) With trim stick inserted between sealing boot and tripod joint housing, position inner tripod joint on driveshaft until correct sealing boot edge to edge length is obtained for type of sealing boot material being used (Fig. 38) (Fig. 39). Then remove the trim stick.

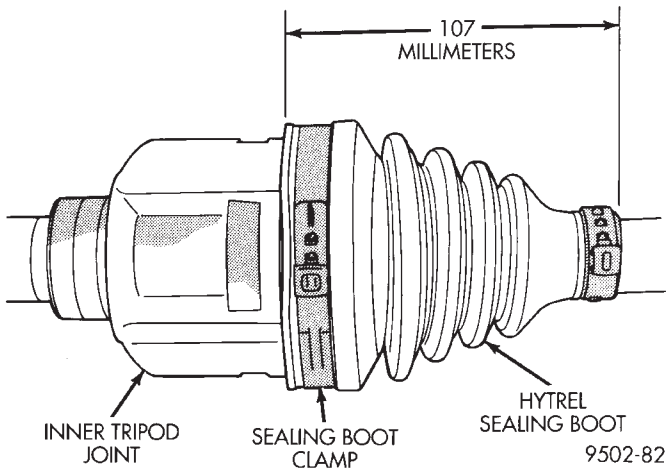


Fig. 38 Sealing Boot End to End Length with Hytrel Boot

(11) Clamp tripod joint sealing boot to tripod joint using required procedure for type of boot clamp application. If seal boot uses crimp type boot clamp, clamp sealing boot onto tripod housing using crimper, Special Tool C-4975-A. Place crimping tool C- 4975-A over bridge of clamp (Fig. 40). Tighten nut on crimping tool C- 4975-A until jaws on tool are closed completely together, face–to–face (Fig. 41).

DISASSEMBLY AND ASSEMBLY (Continued)

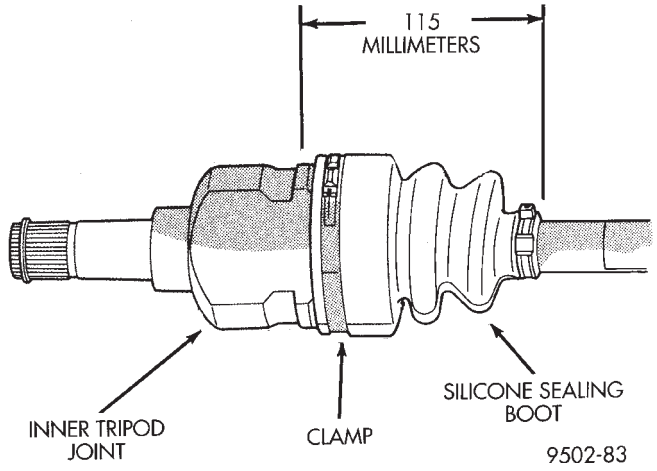


Fig. 39 Sealing Boot End to End Length with Silicone Boot

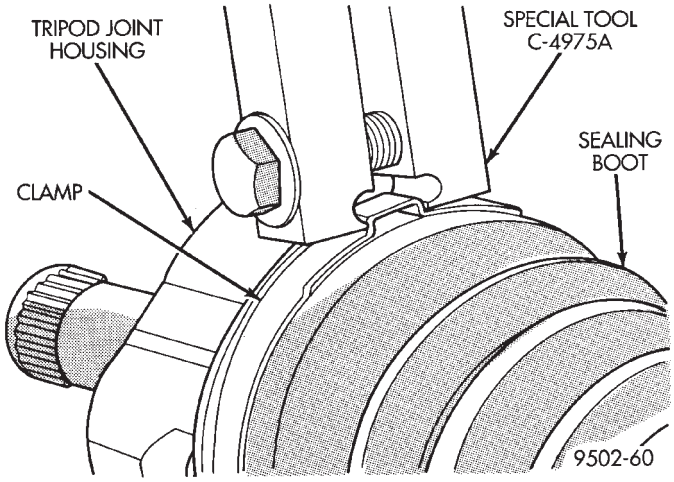


Fig. 40 Crimping Tool Installed on Sealing Boot Clamp

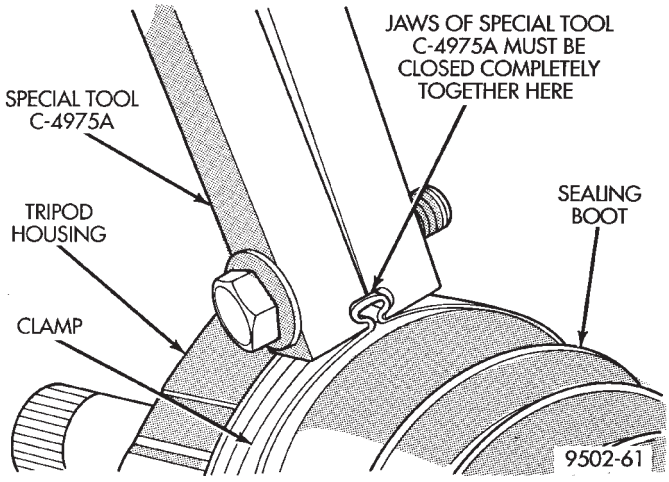


Fig. 41 Sealing Boot Retaining Clamp Installed

(12) If seal boot uses low profile latching type boot clamp, clamp sealing boot onto tripod housing using clamp locking tool, Snap-On® YA3050 (or an equivalent). Place prongs of clamp locking tool in the holes of the clamp (Fig. 42). Squeeze tool together until top band of clamp is latched behind the two tabs on lower band of clamp (Fig. 43).

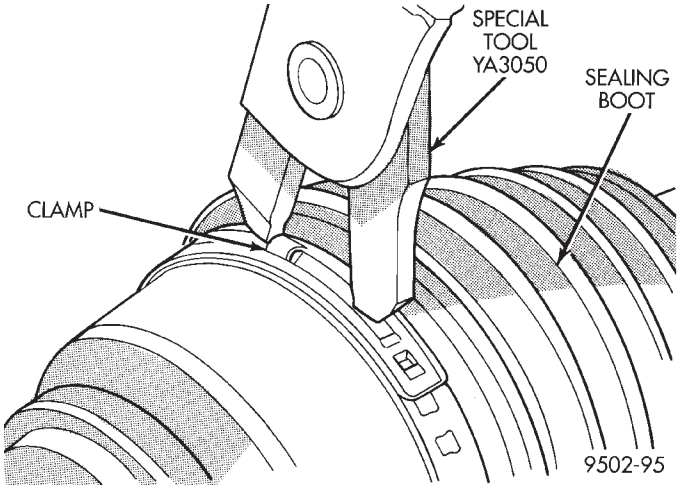


Fig. 42 Clamping Tool Installed on Sealing Boot Clamp

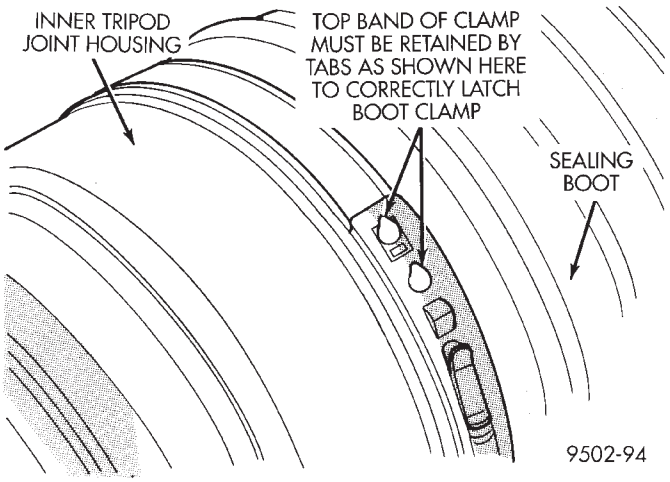


Fig. 43 Sealing Boot Clamp Correctly Installed

(13) Install the driveshaft requiring boot replacement back on the vehicle. See Servicing Driveshaft in this section for the required driveshaft installation procedure.

OUTER C/V JOINT SEAL BOOT

REMOVAL

To remove outer C/V joint sealing boot from a driveshaft for replacement, the driveshaft assembly must be removed from the vehicle. See Servicing Driveshaft in this section for the required driveshaft removal and replacement procedure.

(1) Remove driveshaft assembly requiring boot replacement from vehicle. See Servicing Driveshaft in

DISASSEMBLY AND ASSEMBLY (Continued)

this section for the required driveshaft removal procedure.

(2) Remove large boot clamp retaining C/V joint sealing boot to C/V joint housing (Fig. 44) and discard. Remove small clamp that retains outer C/V joint sealing boot to interconnecting shaft and discard. Remove sealing boot from outer C/V joint housing and slide it down interconnecting shaft.

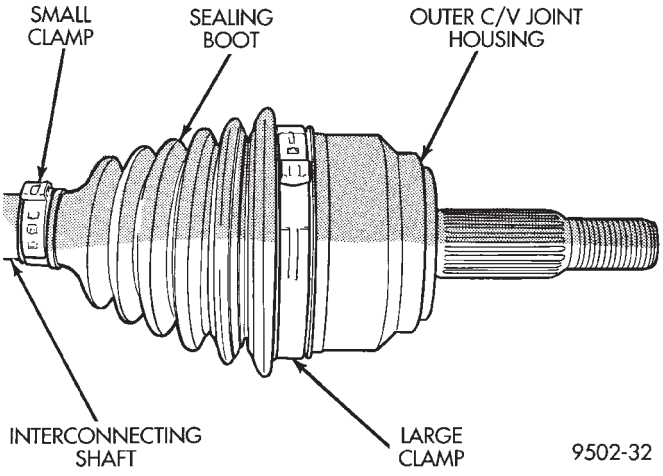


Fig. 44 Outer C/V Joint Seal Boot Clamps

(3) Wipe away grease to expose outer C/V joint and interconnecting shaft.

(4) Remove outer C/V joint from interconnecting shaft using the following procedure: Support interconnecting shaft in a vise **equipped with protective caps on jaws of vise to prevent damage to interconnecting shaft.** Then, using a **soft–faced hammer,** sharply hit the end of the C/V joint housing to dislodge housing from internal circlip on interconnecting shaft (Fig. 45). Then slide outer C/V joint off end of interconnecting shaft, joint may have to be tapped off shaft using a **soft–faced** hammer.

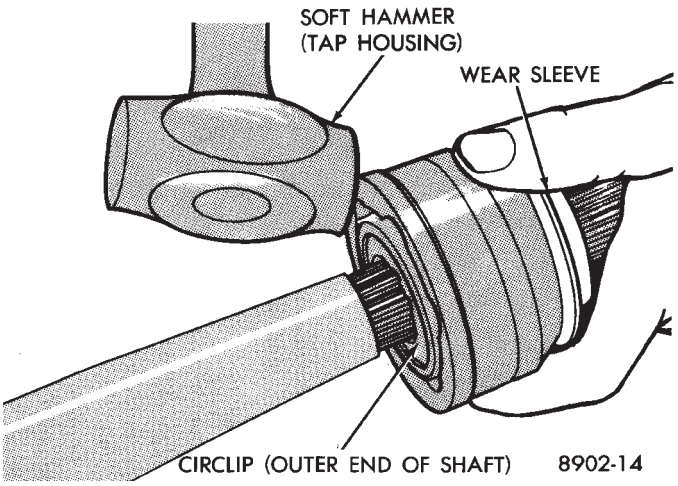


Fig. 45 Outer C/V Joint Removal from Interconnecting Shaft

(5) Remove large circlip (Fig. 46) from the interconnecting shaft before attempting to remove outer C/V joint sealing boot.

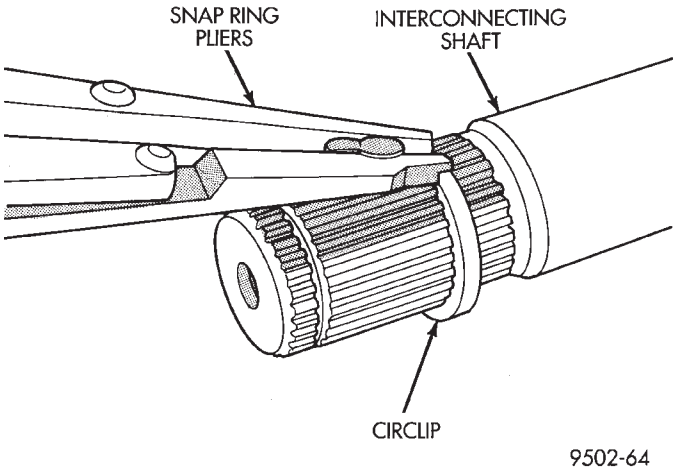


Fig. 46 Circlip Removal from Interconnecting Shaft

(6) Slide failed sealing boot off interconnecting shaft.

(7) Thoroughly clean and inspect outer C/V joint assembly and interconnecting joint for any signs of excessive wear. **If any parts show signs of excessive wear, the driveshaft assembly will require replacement. Component parts of these driveshaft assemblies are not serviceable.**

INSTALLATION

(1) Slide new sealing boot to interconnecting shaft retaining clamp onto interconnecting shaft. Slide the outer C/V joint assembly sealing boot onto the interconnecting shaft (Fig. 47). **Seal boot MUST be positioned on interconnecting shaft so the raised bead on the inside of the seal boot is in groove on interconnecting shaft.**

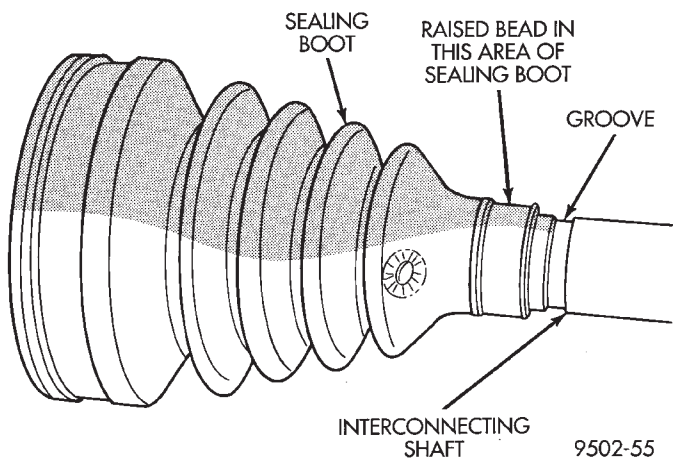


Fig. 47 Sealing Boot Installation on Interconnecting Shaft

DISASSEMBLY AND ASSEMBLY (Continued)

(2) Align splines on interconnecting shaft with splines on cross of outer C/V joint assembly and start outer C/V joint onto interconnecting shaft.

(3) Install outer C/V joint assembly onto interconnecting shaft by using a **soft–faced** hammer and tapping end of stub axle (with nut installed) until outer C/V joint is fully seated on interconnecting shaft (Fig. 48).

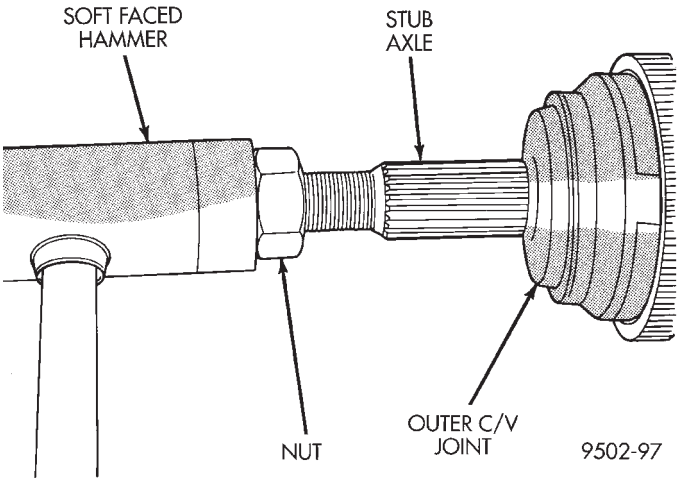


Fig. 48 Outer C/V Joint Installation on Interconnecting Shaft

(4) Outer C/V joint assembly must be installed on interconnecting shaft until cross of outer C/V joint assembly is seated against circlip on interconnecting shaft (Fig. 49).

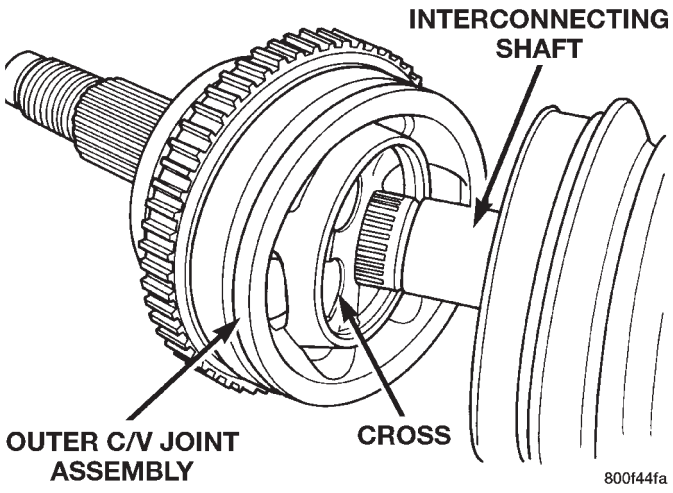


Fig. 49 Outer C/V Joint Correctly Installed on Interconnecting Shaft

(5) Distribute 1/2 the amount of grease provided in seal boot service package (DO NOT USE ANY OTHER TYPE OF GREASE) into outer C/V joint assembly housing. Put the remaining amount into the sealing boot.

(6) Install outer C/V joint sealing boot to interconnecting shaft clamp evenly on sealing boot.

(7) Clamp sealing boot onto interconnecting shaft using crimper, Special Tool C-4975-A and the following procedure. Place crimping tool C- 4975-A over bridge of clamp (Fig. 50). Tighten nut on crimping tool C- 4975-A until jaws on tool are closed completely together, face to face (Fig. 51).

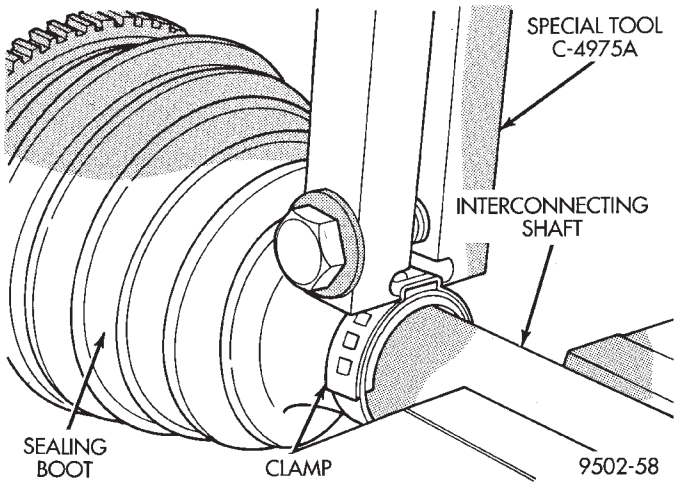


Fig. 50 Crimping Tool Installed on Sealing Boot Clamp

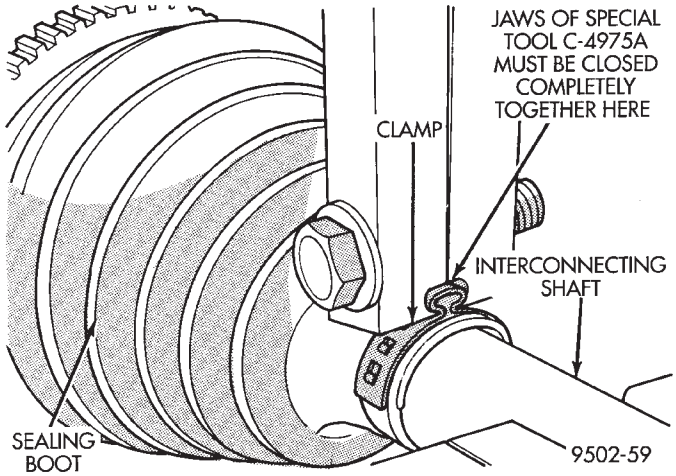


Fig. 51 Sealing Boot Retaining Clamp Installed

CAUTION: Seal must not be dimpled, stretched, or out–of–shape in any way. If seal is NOT shaped correctly, equalize pressure in seal and shape it by hand.

(8) Position outer C/V joint sealing boot into its retaining groove on outer C/V joint housing. Install sealing boot to outer C/V joint retaining clamp evenly on sealing boot.

(9) Clamp sealing boot onto outer C/V joint housing using Crimper, Special Tool C-4975-A and the following procedure. Place crimping tool C- 4975-A over bridge of clamp (Fig. 52). Tighten nut on crimping

DISASSEMBLY AND ASSEMBLY (Continued)

tool C- 4975-A until jaws on tool are closed completely together, face to face (Fig. 53).

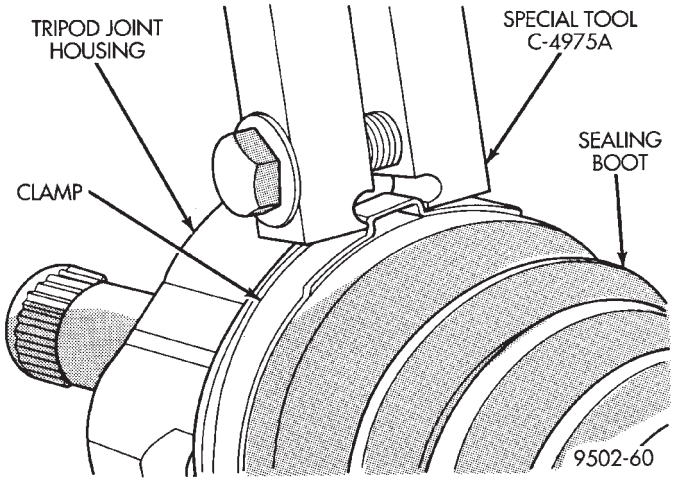


Fig. 52 Crimping Tool Installed on Sealing Boot Clamp

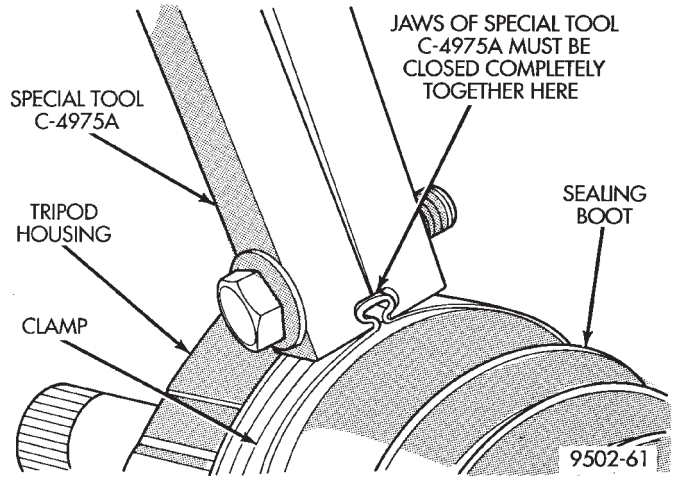


Fig. 53 Sealing Boot Retaining Clamp Installed

(10) Install the driveshaft requiring boot replacement back on the vehicle. See Servicing Driveshaft in this section for the required driveshaft installation procedure.

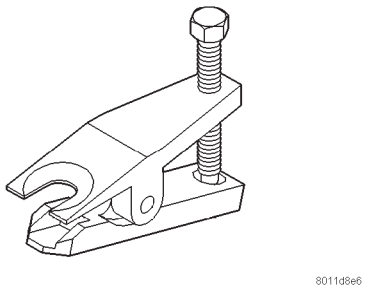
SPECIFICATIONS

TORQUE

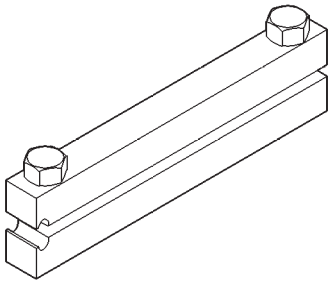
DESCRIPTION	TORQUE
Caliper To Knuckle Bolt	31 N·m (23 ft. lbs.)
Driveshaft Nut	183 N·m (135 ft. lbs.)
Front Wheel Lug Nuts	135 N·m (100 ft. lbs.)
Knuckle To Ball Joint Bolt	95 N·m (70 ft. lbs.)
Tie Rod End To Knuckle	61 N·m (45 ft. lbs.)

SPECIAL TOOLS

DRIVESHAFT



Tie Rod Remover MB-990635



Boot Clamp Installer C-4975A