

AXLE SHAFTS - FRONT

Article Text

1993 Honda Prelude

For Cadi Centre Nsk CA 95051

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Sunday, July 08, 2001 11:21AM

ARTICLE BEGINNING

1993 DRIVE AXLES

Honda Motors FWD Axle Shafts

Honda; Prelude

DESCRIPTION & OPERATION

Axle shafts transfer power from the transaxle to the driving wheels. Axle shafts consist of a shaft with a flexible Constant Velocity (CV) joint at each end. Inner CV joint is splined to transaxle. Outer CV joint is splined to hub assembly and secured by spindle shaft nut.

CV joint boots protect CV joints by maintaining proper lubrication and preventing contaminants from entering joint. Boots must be replaced when leakage or cracks are present. Inner CV joint can be repaired without replacing the assembly. Outer CV joint must be replaced as an assembly.

Inner CV joint is a plunging Tripod Joint (TJ), sometimes referred to as a tripod. The plunging action allows axle shaft length to change as suspension moves up and down. Outer CV joint, which is either a Double-Offset Joint (DOJ) or Birfield Joint (BJ), cannot be rebuilt.

TROUBLE SHOOTING

NOTE: See TROUBLE SHOOTING - BASIC PROCEDURES article in GENERAL INFORMATION.

REMOVAL, DISASSEMBLY, REASSEMBLY & INSTALLATION

FWD AXLE SHAFT

Removal

1) Raise and support vehicle. Remove front wheels. Drain transaxle if removing right or both axle shafts. Draining transaxle is unnecessary if removing left axle shaft only. Spread locking tab on spindle nut and remove nut. Remove damper fork bolt and damper pinch bolt. Remove damper fork. See Fig. 1.

2) Remove lower ball joint cotter pin, and loosen castle nut half length of ball joint threads. Using a ball joint puller, separate ball joint from front hub. Remove ball joint castle nut. Lower control arm and steering knuckle. Pull steering knuckle outward and remove axle shaft from hub assembly. If necessary, use a plastic hammer to drive axle shaft out of hub.

NOTE: DO NOT pull on inner CV joint or disassembly may occur. Be careful not to damage seals.

3) Using a large screwdriver, carefully pry inner CV joint and shaft assembly about .5" (12.7 mm) out of transaxle, dislodging retaining ring from its groove at end of drive axle. Grip both sides of inner CV joint and remove axle shaft and CV joint from vehicle.

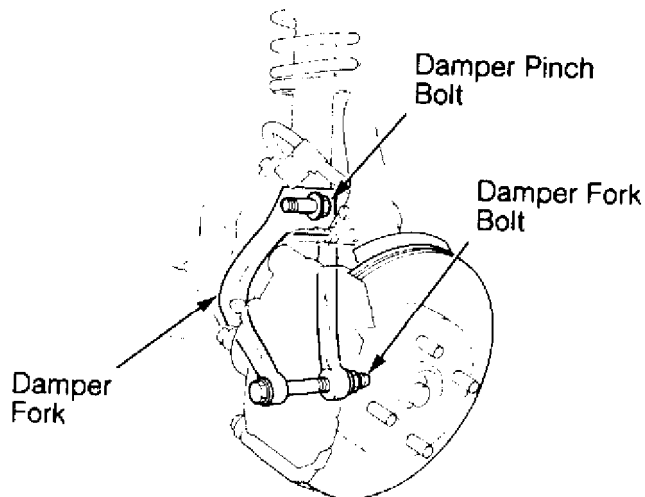


Fig. 1: Locating Damper Fork & Pinch Bolts
Courtesy of American Honda Motor Co., Inc.

NOTE: DO NOT attempt to disassemble outer CV joint; it must be replaced as an assembly. On inner CV joint, mark rollers and roller grooves for reassembly reference.

Disassembly

1) Remove axle shaft from vehicle, and place it on work bench. Remove and discard inner CV joint boot clamps. Slide boot toward outer CV joint to access inner CV joint. See Fig. 2.

2) Index axle shaft, inner CV joint housing and spider roller to ensure reassembly in original positions. Remove housing from spider assembly. Index rollers and spider to ensure reassembly to original locations. Remove rollers from spider.

3) Remove snap ring securing spider to axle shaft, and remove spider. Remove snap ring, and slide boot off axle shaft. Remove outer CV joint boot clamps. Slide boot off axle shaft inner CV joint end. DO NOT attempt to disassemble outer CV joint. Replace outer CV joint as an assembly only.

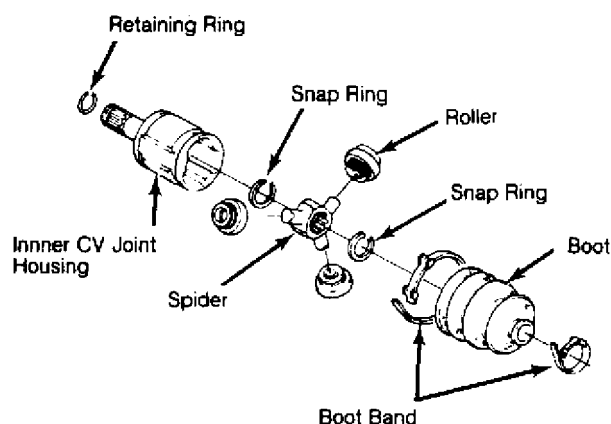


Fig. 2: Exploded View Of Inboard CV Joint Assembly (Typical)
 Courtesy of American Honda Motor Co., Inc.

Reassembly

- 1) Thoroughly clean and inspect axle shaft for wear. Replace all defective parts. Wrap axle shaft splines using vinyl tape to prevent damage to dynamic damper and CV joint boots.
- 2) Install outer CV joint boot, dynamic damper and inner CV joint boot. Remove vinyl tape from axle shaft. DO NOT install CV joint boot clamps yet.
- 3) Install snap ring in groove on axle shaft. Install spider on axle shaft by aligning marks made at disassembly. Install snap ring into groove. Pack outer CV joint boot with molybdenum disulfide grease. Lube spider and inside bores of rollers.
- 4) Ensure rollers are aligned with marks made at disassembly and high side of rollers face outward. Install rollers. Pack inner CV joint and boot with molybdenum disulfide grease. Align housing marks made at disassembly and install housing on spider assembly.
- 5) Adjust standard length of axle shaft. See Fig. 3. Refer to AXLE SHAFT LENGTH SPECIFICATIONS table. Position boots halfway between full compression and full extension and install NEW boot clamps.

AXLE SHAFT LENGTH SPECIFICATIONS TABLE

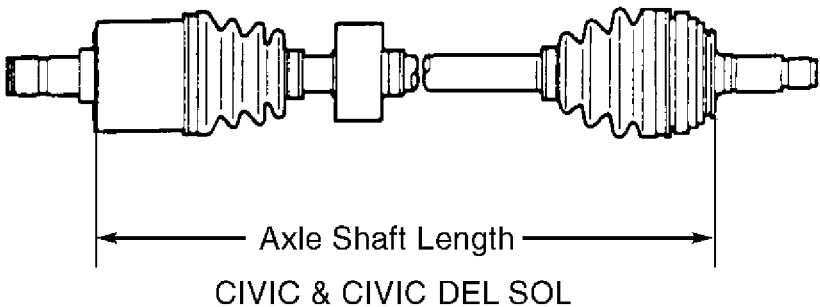
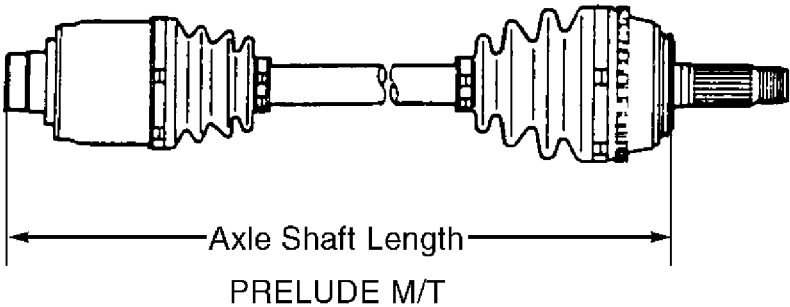
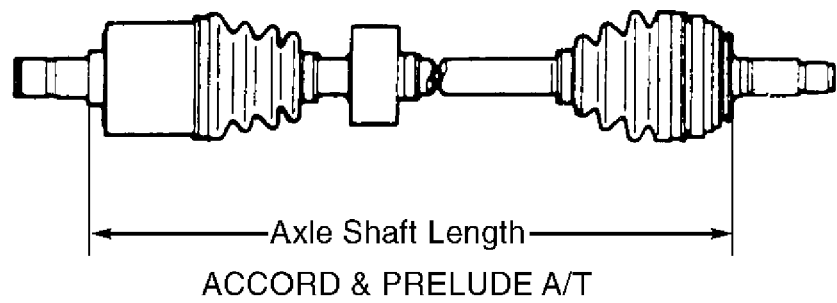
Application	In. (mm)
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Left	
M/T	20.50-20.70 (520.9-525.9)
A/T	33.97-34.17 (862.9-867.9)
Right	
	20.00-20.20 (507.9-512.9)

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 CAUTION: Always use a NEW retaining ring when installing axle shaft.

- 6) Position dynamic damper to correct distance from edge of boot. See Fig. 4. See DYNAMIC DAMPER DISTANCE SPECIFICATIONS table.

Bend down lock tab of each boot clamp and lightly tap doubled-over portion of boot clamp to reduce clamp height. Install a NEW retaining ring on end of inner CV joint, and install axle shaft.



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Fig. 3: Measuring Drive Axle Shaft Assembled Length
Courtesy of American Honda Motor Co., Inc.

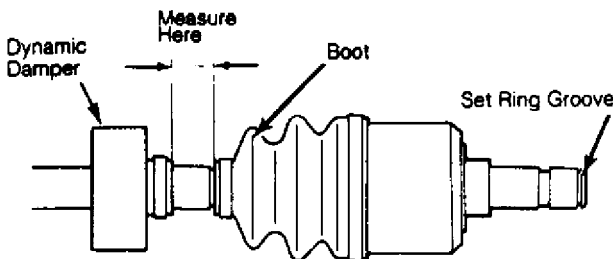


Fig. 4: Measuring Distance Between CV Boot & Dynamic Damper
Courtesy of American Honda Motor Co., Inc.

DYNAMIC DAMPER DISTANCE SPECIFICATIONS TABLE
AA

Application

In. (mm)

Prelude 6.10-7.70 (173.0-177.0)

AA

Installation

1) Slide axle into transaxle or intermediate shaft. Ensure inner joint housing locks into differential side gear groove and joint sub-axle bottoms in differential or intermediate shaft.

2) Install damper fork over drive shaft and onto lower control arm. Install damper in damper fork so aligning tab aligns with slot in damper fork. Loosely install damper pinch bolt using NEW damper fork nut.

3) Pull hub assembly away from axle shaft, and slide axle into hub assembly. Install and lightly tighten spindle shaft nut. Position ball joint in hub. Raise lower control arm using floor jack, and install ball joint nut. Tighten ball joint nut to specification. See TORQUE SPECIFICATIONS TABLE at the end of this article.

4) Install and secure cotter pin. Remove floor jack. Tighten spindle nut to specification. Install wheels. Lower vehicle. With vehicle weight on damper, tighten damper pinch bolt to specification. Refill transaxle.

INTERMEDIATE SHAFT

Removal

1) Drain fluid from transaxle. Remove outer axle shaft assembly from intermediate shaft assembly. See FWD AXLE SHAFT. Remove bolts attaching intermediate shaft bearing support.

2) Remove intermediate shaft from transaxle assembly. Use care not to damage seal in transaxle by holding shaft in a horizontal position when removing.

Disassembly

1) Remove heat shield (if equipped). Remove intermediate shaft outer seal. Remove 38-mm external circlip. Press intermediate shaft out of shaft bearing and support.

2) Remove intermediate shaft inner seal, and remove 58-mm internal circlip. Press intermediate shaft bearing out of bearing support. Inspect all components for wear and damage, and replace components if necessary. See Fig. 5.

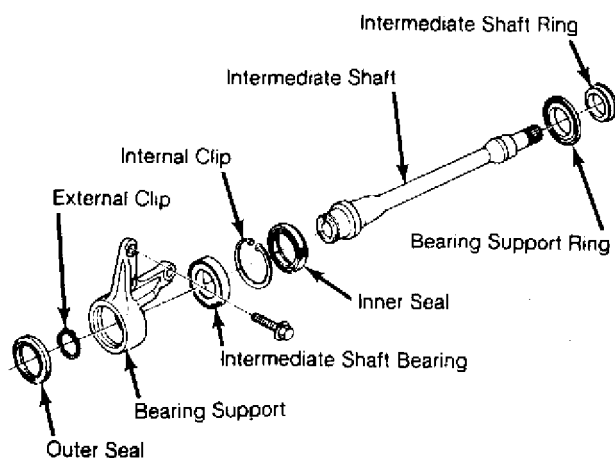


Fig. 5: Exploded View Of Intermediate Shaft Assembly (Typical)
 Courtesy of American Honda Motor Co., Inc.

CAUTION: Ensure internal circlip is installed with tapered end facing out.

Reassembly

- 1) Press intermediate shaft bearing into bearing support. Seat 58-mm circlip in groove of bearing support with tapered end facing out.
- 2) Press intermediate shaft inner seal into bearing support. Press intermediate shaft into shaft bearing. Seat 38-mm external circlip in groove of intermediate shaft with tapered end facing out. Press outer seal into bearing support.

Installation

To install intermediate shaft assembly, reverse removal procedure. Add fluid to transaxle.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS TABLE

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Application	Ft. Lbs. (N.m)
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Damper Fork Nut	48 (65)
Damper Pinch Bolt	33 (45)
Intermediate Bearing Support Bolts	29 (39)
Lower Ball Joint Nut	37 (50)
Radius Rod Bolts	81 (110)
Radius Rod Nut	41 (55)
Spindle Nut	184 (250)
Wheel Lug Nuts	81 (110)
AA	

END OF ARTICLE