

DRIVE AXLE - REAR

1993 Toyota Celica

1993 DRIVE AXLES
Toyota RWD Axle Shafts
Toyota; Celica All-Trac

*** PLEASE READ THIS FIRST ***

NOTE: Information in this article only applies to models with independent rear suspension. For other models, see appropriate DRIVE AXLE - INTEGRAL HOUSING article.

DESCRIPTION & OPERATION

Axle shafts transfer power from differential or transaxle to driving wheels. All axle shafts consist of a shaft and flexible Constant Velocity (CV) joint at each end. Inner CV joint is bolted or splined to differential or transaxle. Outer CV joint is splined to hub assembly and secured by axle shaft 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. Boot maintains lubrication in joint and prevents contamination of CV lubricant. Boots must be replaced if leaking or cracked. Inner CV joint can be repaired without replacing assembly; outer CV joint must be replaced as an assembly.

TROUBLE SHOOTING

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

REMOVAL, DISASSEMBLY, REASSEMBLY & INSTALLATION

REAR AXLE SHAFT

Removal

Raise and support vehicle. Remove rear wheels. From center of disc brake hub, remove cotter pin and lock nut. See Fig. 1. Place match marks on inboard axle shaft flange and differential flange. Remove nuts (4) securing axle shafts to differential flange. Disconnect axle shaft from differential. Slide axle shaft out of wheel hub and remove from vehicle.

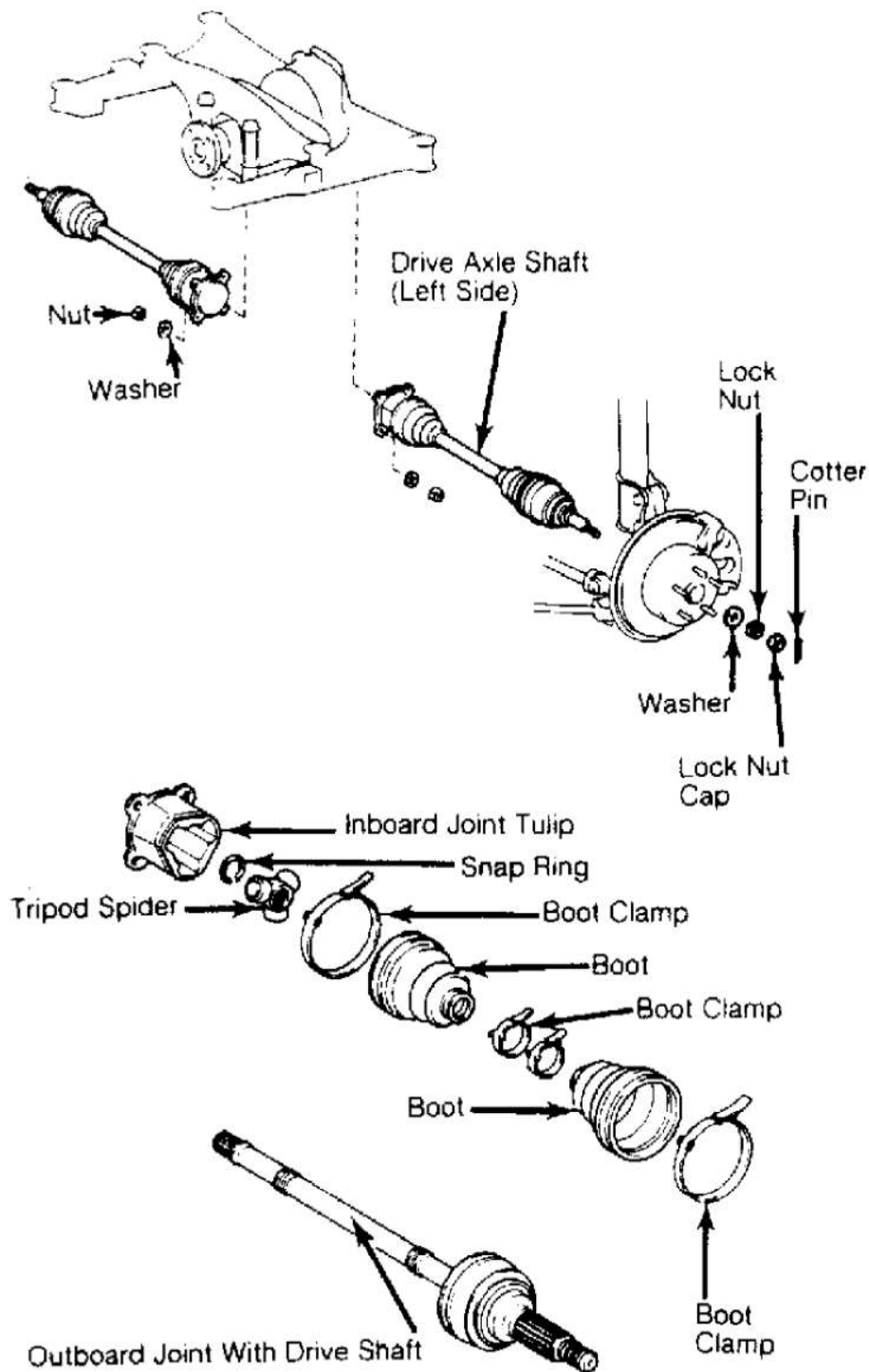


Fig. 1: Identifying Rear Axle Shaft Components
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

Inspection

Ensure no play exists in inboard and outboard joints. Inboard

joint must slide smoothly in thrust direction and be free from excessive play in radial direction. Check for torn or damaged boots.

Disassembly

1) Remove inboard joint boot clamps and slide boot off of inboard joint tulip. See Fig. 1. Paint match marks on inboard joint tulip and axle shaft. Remove inboard tulip from axle shaft.

CAUTION: When removing tripod joint, DO NOT use brass drift on tripod roller.

2) Remove snap ring from tripod spider. Paint matching marks on tripod spider and axle shaft. Drive tripod spider from axle shaft using hammer and brass drift. Remove inboard boot. Remove outboard boot clamps and slide boot from joint.

NOTE: Toyota does not recommend overhaul of outboard CV joint assembly.

Reassembly

1) Wrap axle shaft splines with vinyl tape. Temporarily install new boots and clamps. Inboard and outboard boots are not the same design. Outboard joint boot and clamp are smaller than inboard boot and clamp. See Fig. 2.

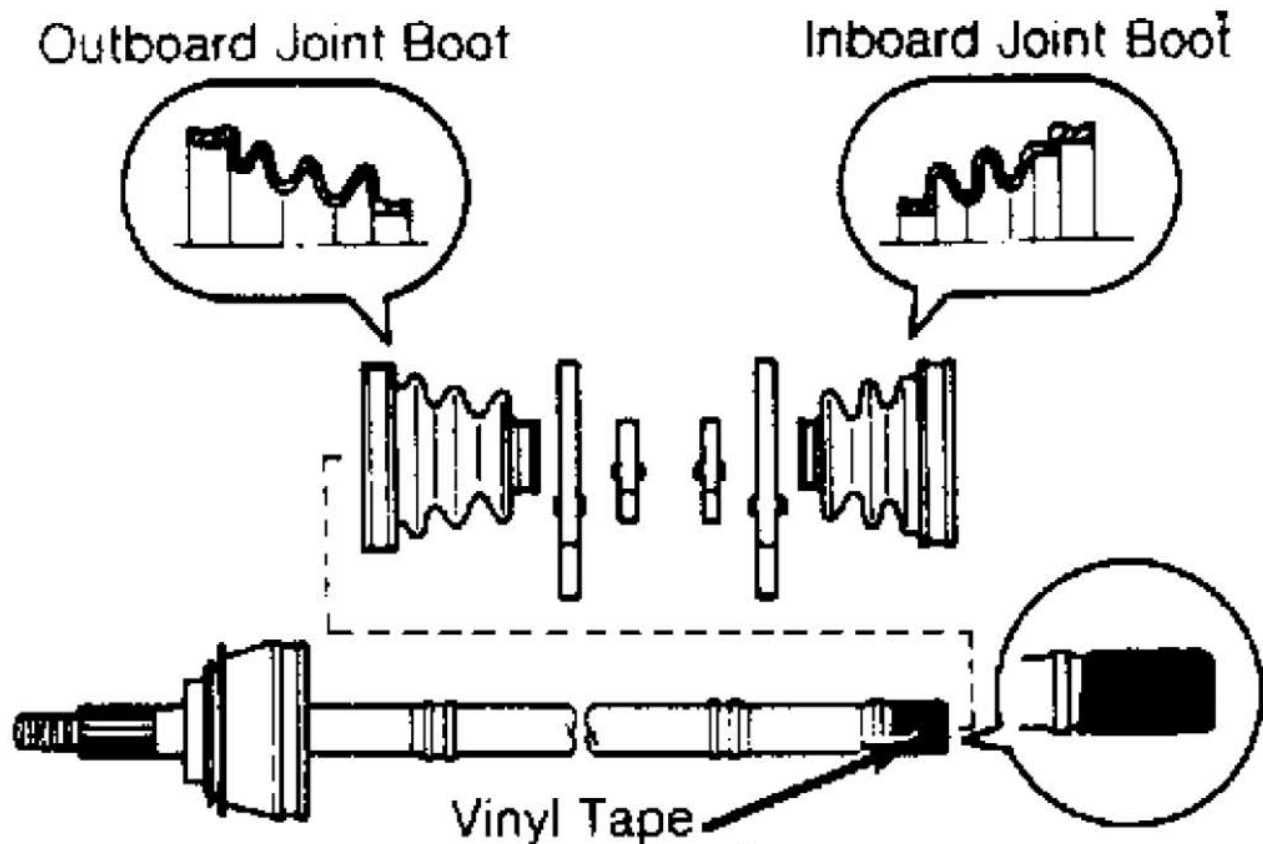
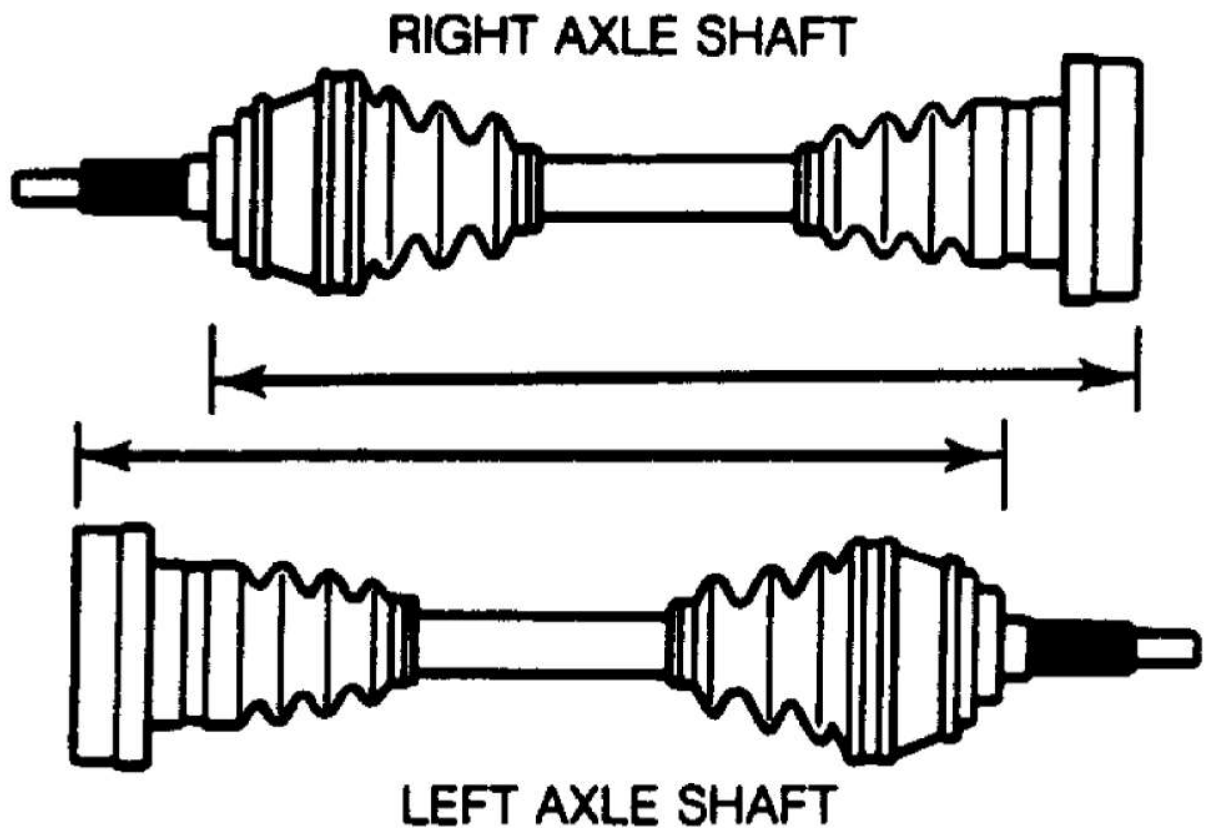


Fig. 2: Identifying CV Joint Boots
Courtesy of Toyota Motor Sales, U.S.A., Inc.

CAUTION: When installing tripod joint, DO NOT use brass drift on tripod roller.

2) Aligning matching marks made at disassembly, install tripod spider onto axle shaft. Install snap ring. Pack inboard joint tulip with CV joint grease supplied in overhaul kit. Grease capacity is 6.3 ozs. (180 g). Slide tulip over onto axle shaft. Install inboard boot, but DO NOT tighten clamps at this time.

3) Pack outboard joint with CV joint grease supplied in overhaul kit. Grease capacity is 4.2 ozs. (120 g). Slide boot over joint; DO NOT tighten clamps. Ensure boots are not stretched or compressed with shaft at standard length. Standard length for both axles is 18.07" (459.1 mm). See Fig. 3. Tighten boot clamps.



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Fig. 3: Measuring Rear Axle Shaft Standard Length
Courtesy of Toyota Motor Sales, U.S.A., Inc.

Installation

To install rear axle shaft, reverse removal procedure.
Tighten fasteners to specification. See TORQUE SPECIFICATIONS.

REAR AXLE HUB & CARRIER

Removal

1) Raise and support vehicle. Remove rear wheel. Remove

cotter pin and lock nut cap. Remove disc brake caliper without disconnecting hydraulic line. Place matching marks on rotor and axle hub. See Fig. 4. Remove rotor.

2) Check hub bearing end play and axle hub runout. See Fig. 5. If bearing end play is greater than .002" (.05 mm), replace bearing. If hub runout is greater than .003" (.07 mm), replace hub. Apply parking brake and remove bearing lock nut. Release parking brake. Remove parking brake assembly and cable. Remove rear speed sensor (if equipped).

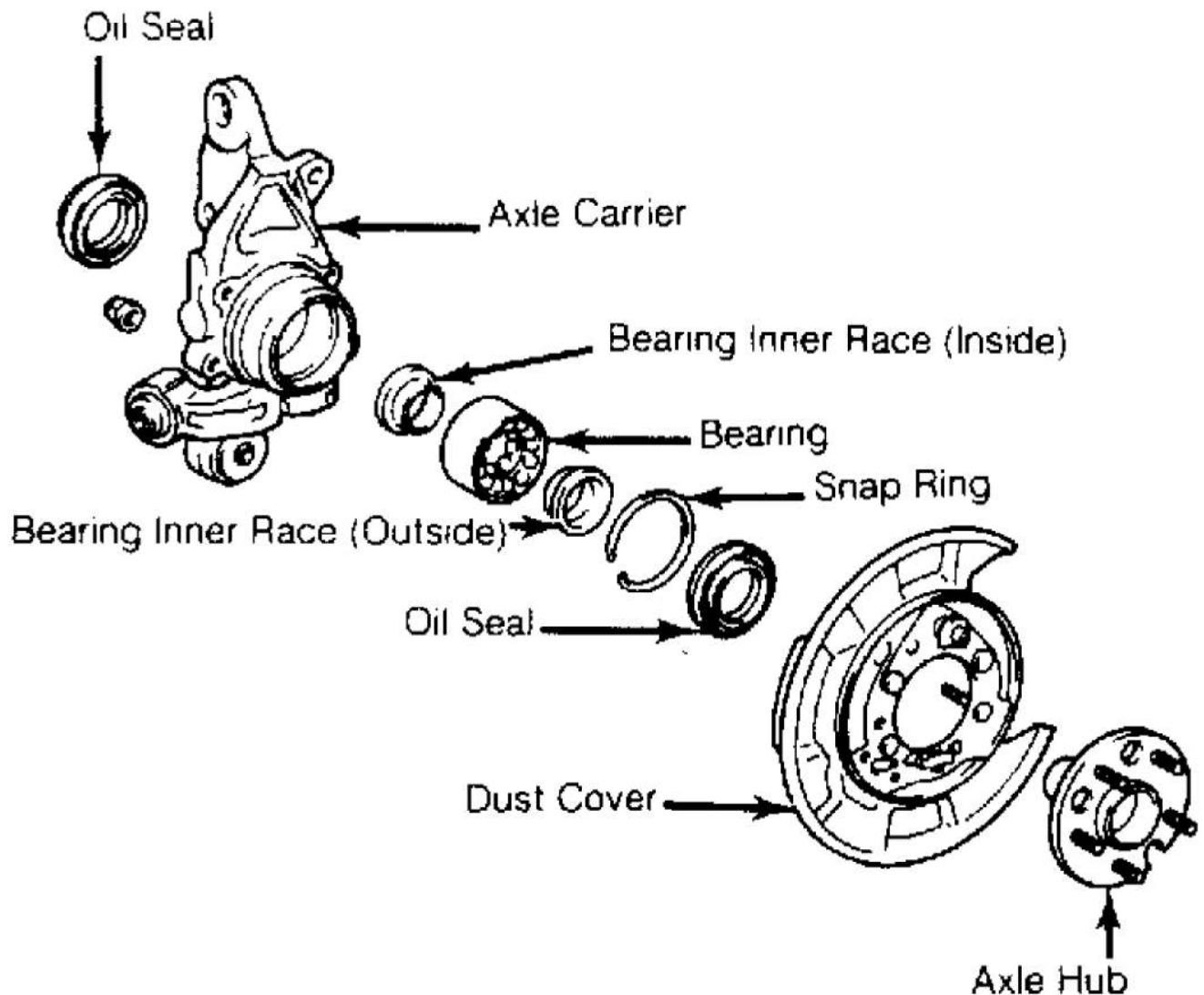
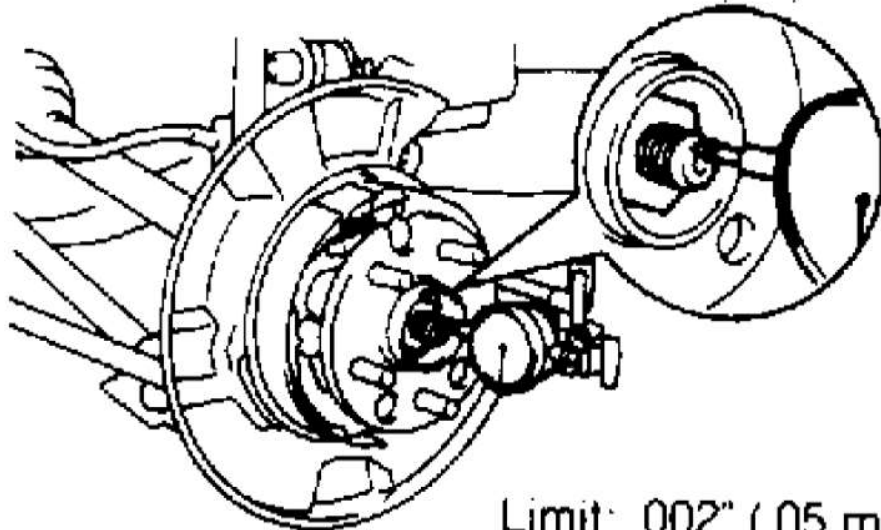


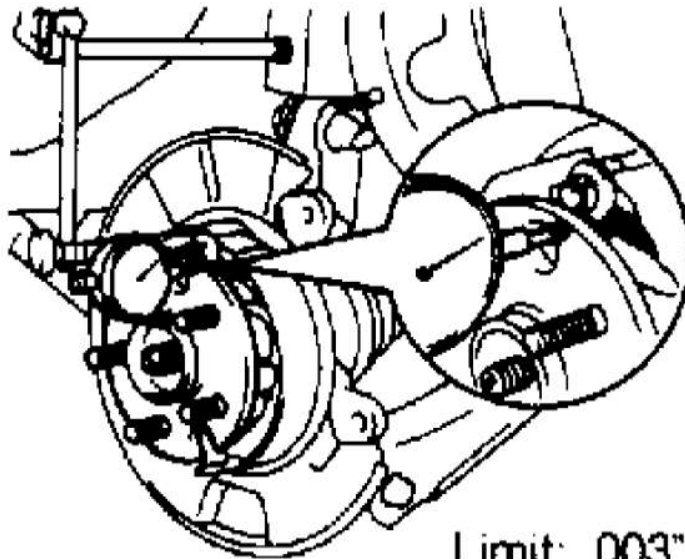
Fig. 4: Identifying Rear Axle Hub & Carrier Components
Courtesy of Toyota Motor Sales U.S.A., Inc.

BEARING END PLAY



Limit: .002" (.05 mm)

AXLE HUB RUNOUT



Limit: .003" (.07 mm)

Fig. 5: Checking Axle Hub & Bearings
Courtesy of Toyota Motor Sales U.S.A., Inc.

3) After noting camber setting on adjusting cam, remove 2 bolts securing axle carrier to shock strut. Disconnect strut rod and suspension arms from axle carrier. Tap axle shaft from center of axle hub, and remove axle carrier from vehicle.

Disassembly & Reassembly

Press axle hub from carrier. Press bearing inner race off of axle hub. Remove backing plate from carrier. Remove inner and outer oil seal from carrier. Remove retaining snap ring from carrier. Press bearing from axle carrier. To reassemble axle carrier, reverse disassembly procedure.

Installation

To install axle carrier, reverse removal procedure. Tighten 2 axle carrier-to-strut nuts to 188 ft. lbs. (255 N.m). After attaching suspension strut rod and lower suspension arms, DO NOT final tighten bolts. Reinstall wheels, lower vehicle and bounce several times to settle suspension. Raise vehicle and remove wheels. Place wooden block on jack and jack up axle carrier. Final tighten No. 2 suspension arm, No. 1 suspension arm and strut rod mounting bolts. Reinstall wheels and check rear wheel alignment.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS TABLE

Application	Ft. Lbs. (N.m)
Celica All-Trac	
Axle Carrier-To-Strut Nuts	188 (255)
Disc Brake Caliper Bolts	34 (46)
Drive Axle Shaft Hub Nut	166 (226)
Inboard Axle Shaft Flange Nuts	51 (69)
Rear Speed Sensor Bolt	14 (19)
Strut Rod-To-Lower Suspension Arm Bolt	83 (113)
Wheel Lug Nuts	76 (103)