

TRANSMISSION REMOVAL & INSTALLATION - A/T

1995 TRANSMISSION SERVICING Ford Motor Co. Transmission Removal & Installation

TRANSFER CASE (A/T) R & I

BORG-WARNER 1354

Removal (Explorer & Ranger)

1. Raise and support vehicle. Remove skid plate (if equipped). Remove damper from transfer case (if equipped). Drain fluid from transfer case. Install drain plug. Unplug necessary electrical connections at transfer case.
2. Mark drive shaft and axle flange or yoke for reassembly reference. Remove drive shafts from transfer case and secure out of the way.
3. Disconnect speedometer drive from transfer case. Disconnect vent hose. On models with manual shift lever, remove shift lever.
4. Remove shift lever assembly and bushing from transmission extension housing. On all models, support transfer case with jack. Remove transfer case housing retaining bolts.
5. Slide transfer case rearward from transmission output shaft and lower from vehicle. Remove gasket from transfer case and transmission extension housing.

Installation (Explorer & Ranger)

1. To install transfer case, reverse removal procedure. Use NEW gasket between transfer case and transmission extension housing. It may be necessary to use grease to hold gasket in place. Tighten transfer case bolts to specification in sequence. See **Fig. 1**. See appropriate TORQUE SPECIFICATIONS table.

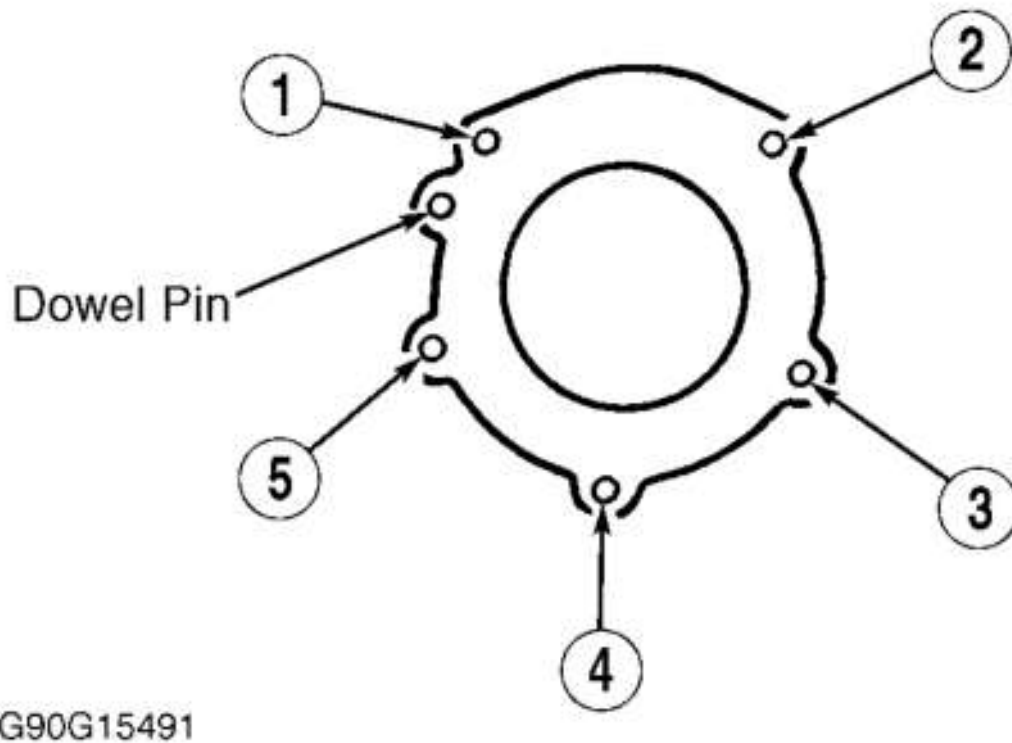
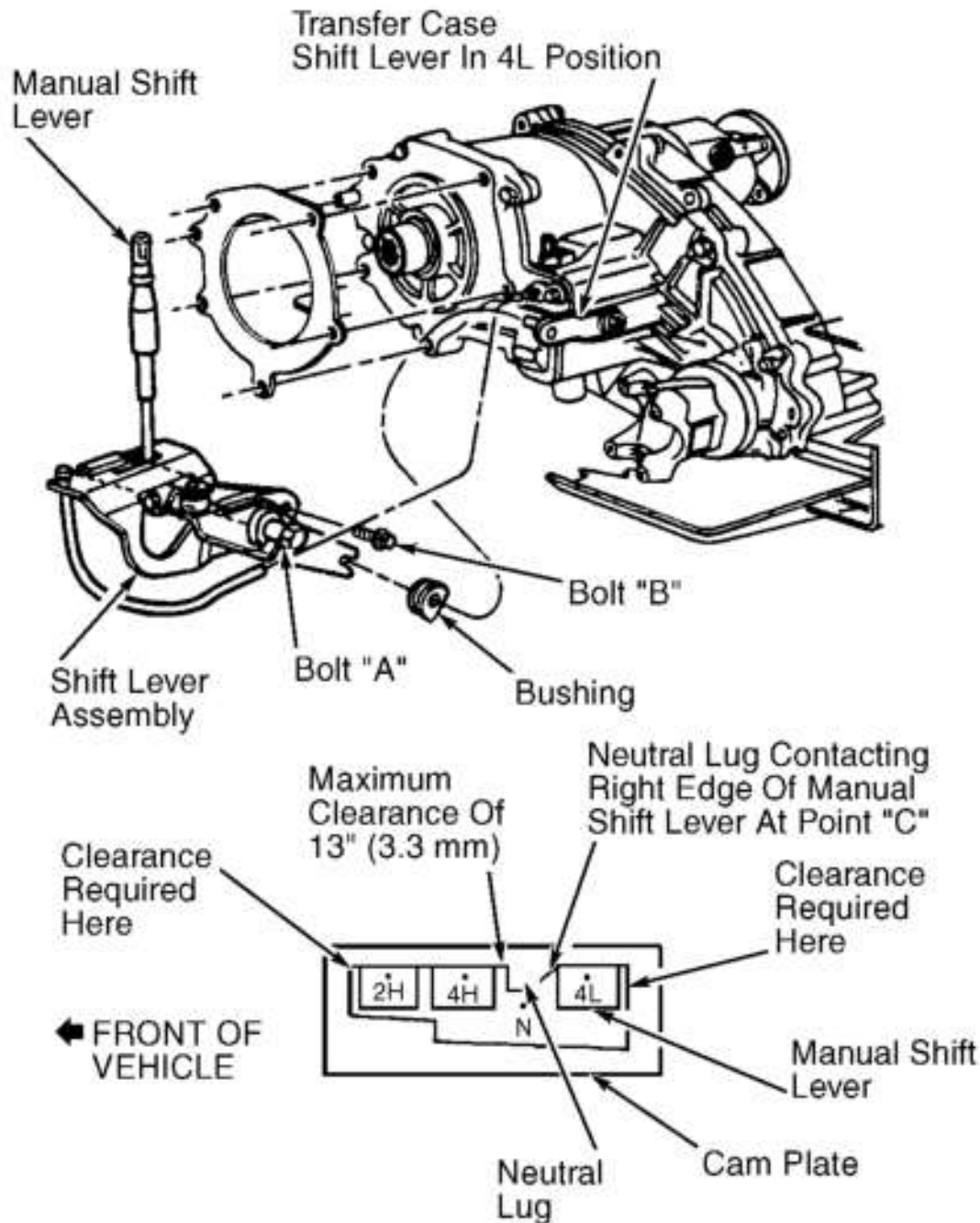


Fig. 1: Transfer Case-To-Transmission Extension Housing Bolt Tightening Sequence (Borg-Warner 1354 & Dana TC-28)
 Courtesy of FORD MOTOR CO.

2. On models with manual shift lever, install shift lever assembly with retaining bolts loosely installed. Raise manual shift lever boot for access to cam plate. See **Fig. 2**.
3. Set shift lever to 4L position. Rotate cam plate around bolt "A" clockwise until bottom chamfered corner of neutral lug contacts forward right edge of manual shift lever at point "C". See **Fig. 2**.
4. Hold cam plate in this position. Tighten bolt "A" to 70-90 ft. lbs. (95-122 N.m), and then bolt "B" to 31-42 ft. lbs. (42-57 N.m). Move manual shift lever into all gear positions and check for proper engagement.
5. Ensure clearance exists between manual shift lever and cam plate in 2H and 4H positions, and no more than .13" (3.3 mm) exists when in 4L position. See **Fig. 2**. Install manual shift lever boot.



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Fig. 2: Adjusting Manual Shift Lever (Borg-Warner 1354)
Courtesy of FORD MOTOR CO.

6. On all models, install speedometer drive gear. Install drive shafts. Align reference marks. Install vent hose with White reference mark aligned with notch on mounting bracket (models with electronic shift), or notch on manual shift lever (models with manual shift lever).
7. Tighten drain plug to specification. See appropriate TORQUE SPECIFICATIONS table. Fill transfer case to bottom of filler plug hole with Motorcraft Mercon ATF (XT-2-QDX). Install filler plug, and

tighten to specification. To install remaining components, reverse removal procedure.

DANA TC-28

Removal (Aerostar)

1. Raise and support vehicle. Drain fluid from transfer case. Install drain plug. Unplug electrical connections at transfer case by squeezing lock tabs together and pulling from socket.
2. Remove front drive shaft dust boot retaining clamp at transfer case. Pull dust boot from transfer case. Place reference mark on drive shaft and flange or yoke for reassembly reference. Remove retaining bolts. Pull drive shafts from transfer case. Remove transfer case strut. Support transfer case with jack.
3. Remove transfer case retaining bolts. Slide transfer case rearward from transmission output shaft and lower from vehicle. Remove gasket from transfer case and transmission extension housing.

Installation (Aerostar)

1. To install, reverse removal procedure. Use NEW gasket between transfer case and transmission extension housing. It may be necessary to use grease to hold gasket in place.
2. Tighten transfer case bolts to specification in sequence. See **Fig. 1**. See appropriate TORQUE SPECIFICATIONS table.
3. Apply light coat of grease to front drive shaft splines and inner edge of dust boot area on transfer case before installing. When installing drive shafts, align reference marks on drive shafts and flanges.
4. Install and crimp NEW clamp to retain front drive shaft dust boot. Tighten drain plug to specification.
5. Fill transfer case to bottom of filler plug hole with Motorcraft Mercon ATF (XT-2-QDX). Install filler plug, and tighten to specification. To install remaining components, reverse removal procedure.

AUTOMATIC TRANSMISSION

CAUTION: When battery is disconnected, vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. See COMPUTER RELEARN PROCEDURES article in GENERAL INFORMATION before disconnecting battery.

A4LD TRANSMISSION

Removal

1. Disconnect negative battery cable. Raise and support vehicle. Loosen oil pan bolts, allowing fluid to drain. When fluid stops draining, remove all but 2 bolts at front of oil pan. Allow oil pan to drop downward. Drain remaining fluid. Reinstall bolts to hold oil pan in place.

NOTE: On Explorer models, it may be necessary to pry lower clips on transmission heat shield back slightly for access to oil pan bolts.

2. Remove torque converter access cover. Remove starter motor. Remove torque converter-to-drive plate retaining nuts. Rotate engine clockwise (viewed from front of engine) for access to retaining nuts.

CAUTION: On 2.3L, DO NOT rotate engine counterclockwise (viewed from

front of engine) or engine damage may result.

3. Mark drive shaft and axle flange or yoke for reassembly reference. Remove drive shaft. Disconnect speedometer cable, vacuum hoses, electrical connections, and shift cable at transmission.
4. Disconnect kickdown cable from ball stud lever. Press tabs on kickdown cable, and disengage cable from bracket. Using floor jack, raise transmission slightly.
5. Remove transmission mount-to-crossmember nuts. Remove crossmember. Lower floor jack, allowing transmission to hang downward.
6. On Explorer and Ranger models, use floor jack and a piece of wood to raise front of engine slightly. This must be done for access to upper transmission-to-cylinder block bolts.
7. On all models, disconnect oil cooler lines at transmission. Plug all oil cooler line openings. Remove lower transmission-to-cylinder block bolts. Remove transmission filler tube.
8. Secure transmission to floor jack with safety chain. Remove upper transmission-to-cylinder block bolts. Move transmission rearward and lower from vehicle.

NOTE: If transmission is to be removed for a long period of time, support engine with safety stand and a wooden block.

Installation

1. To install, reverse removal procedure. Ensure torque converter is fully seated. Align reference marks on drive shaft and axle flange. Tighten bolts and nuts to specification. See appropriate TORQUE SPECIFICATIONS table.
2. Fill transmission with Motorcraft Mercon ATF (XT-2-QDX). For fluid capacity and control cable adjustment, see TRANSMISSION SERVICING - A/T article in AUTOMATIC TRANS SERVICE.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS - TRANSFER CASE

TORQUE SPECIFICATIONS (TRANSFER CASE)

Application	Ft. Lbs. (N.m)
Damper Bolt	25-35 (34-47)
Drain & Filler Plug	12-20 (16-27)
Shift Lever Assembly Bolt	
Bolt "A" ⁽¹⁾	70-90 (95-122)
Bolt "B" ⁽¹⁾	31-42 (42-57)
Transfer Case-To-Cylinder Block Strut Bolt/Nut	
Dana TC-28	
Cylinder Block Side	45-60 (61-81)
Transfer Case Side	55-65 (75-88)
Transfer Case-To-Transmission Extension	
Housing Bolt	
Borg-Warner 1354 ⁽²⁾	25-35 (34-47)
Dana TC-28 ⁽²⁾	25-35 (34-47)

(1) Bolt "A" is large bolt and bolt "B" is the small bolt. See **Fig. 2**.

(2) Tighten bolts to specification in sequence. See **Fig. 1**.

TORQUE SPECIFICATIONS - AUTOMATIC TRANSMISSION

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Crossmember-To-Frame Bolt	
2.9L & 3.0L	65-85 (88-115)
Crossmember-To-Frame Through Bolt	
4.0L	37-52 (51-71)
2.3L	65-85 (88-115)
Oil Pan Bolt	(1)
Torque Converter-To-Drive Plate Nut	20-34 (27-46)
Transmission Mount-To-Crossmember Nut	71-85 (96-115)
Transmission-To-Engine Bolt	
3.0L	33-44 (45-60)
All Others	28-38 (38-52)
(1) Tighten bolts to 97-115 INCH lbs. (11-13 N.m).	