

Chapter 7 Part A

Manual transaxle

Contents

	<i>Section</i>		<i>Section</i>
Driveaxle oil seals - replacement.....	5	Shift cables (4WD models) - removal and installation.....	4
General information.....	1	Shift lever - removal and installation.....	2
Manual transaxle - removal and installation.....	6	Shift linkage (2WD models) - removal and installation.....	3
Manual transaxle overhaul - general information.....	7	Transaxle mount - replacement.....	8

Specifications

General

Transaxle oil type	See Chapter 1
Transaxle oil capacity	See Chapter 1

Torque specifications

	<i>Ft-lbs</i>	<i>Nm</i>
Transaxle-to-engine mounting bolts	33	45
Crossmember-to-subframe bolts.....	85	115
Longitudinal crossmember-to-subframe bolts	66	90

1 General information

The vehicles covered by this manual are equipped with either a 5-speed manual or a 4-speed automatic transaxle. This Part of Chapter 7 contains information on the manual transaxle. Service procedures for the automatic transaxle are contained in Part B. Infor-

mation on the transfer case used on 4WD models can be found in Part C.

The transaxle is contained in a cast-aluminum alloy casing bolted to the engine's left-hand end, and consists of the gearbox and final drive differential - often called a transaxle. The transaxle unit type is stamped on a plate attached to the transaxle.

Transaxle overhaul

Because of the complexity of the assembly, possible unavailability of replacement parts and special tools necessary, internal repair procedures for the transaxle are not recommended for the home mechanic. The bulk of the information in this Chapter is devoted to removal and installation procedures.

2 Shift lever - removal and installation

2WD models

- 1 Apply the Parking brake. Place the shift lever in Neutral. Unscrew and remove the shift lever knob.
- 2 Remove the center console trim panel and rubber shift lever boot.
- 3 Use a pair of snap-ring pliers to remove the steel snap-ring. Remove the plastic clip from under the steel snap-ring.
- 4 Remove the rubber O-ring.
- 5 Raise the vehicle and support it securely on jackstands.
- 6 Remove the nut and through-bolt securing the shift linkage rod to the shift lever.
- 7 Lift the gearshift lever from the housing.
- 8 Installation is the reverse of removal.

4WD models

- 9 Apply the Parking brake. Place the shift lever in Neutral. Unscrew the shift lever knob.
- 10 Remove the center console trim panel and rubber shift lever boot.
- 11 Disconnect the shift cables from the shift lever by prying them off of the ballstuds.
- 12 Using a pair of pliers, remove the spring clips securing the cables to the shifter base.
- 13 Pull the shift cables forward to release them from the base, then position them out of the way.
- 14 Remove the four bolts securing the shifter base to the floor, then remove the shifter.
- 15 Installation is the reverse of removal.

3 Shift linkage (2WD models) - removal and installation

- 1 Raise the vehicle and support it securely on jackstands.
- 2 Remove the nut and through-bolt securing the shift linkage rod to the transaxle shift lever.
- 3 At the shift lever, remove the nut and through-bolt connecting the shift lever to the shift linkage rod.
- 4 Remove the shift linkage rod from the vehicle.
- 5 Installation is the reverse of removal.

4 Shift cables (4WD models) - removal and installation

- 1 Remove the gear shift lever (see Section 2).
- 2 Remove the center console (see Chapter 11).
- 3 Trace the cables to the floor and unbolt the interior grommet.
- 4 Working inside the engine compartment, remove the shift cable retaining clips then remove the shift cables from the transaxle levers.

- 5 Disconnect the cable retainer from the retainer bracket by pulling on the black pin then lifting the cable from the bracket.
- 6 Raise the front of the vehicle and support it securely on jackstands.
- 7 Remove the nuts securing the shift cable retaining bracket.
- 8 Inside the engine compartment, carefully remove the shift cables one at a time from the vehicle.
- 9 Installation is the reverse of removal.

5 Driveaxle oil seals - replacement

- 1 Oil leaks frequently occur due to wear of the driveaxle oil seals. Replacement of these seals is relatively easy, since the repair can be performed without removing the transaxle from the vehicle.
- 2 Driveaxle oil seals are located at the sides of the transaxle, where the driveaxles are attached. If leakage at the seal is suspected, raise the vehicle and support it securely on jackstands. If the seal is leaking, lubricant will be found on the sides of the transaxle, below the seals.
- 3 Refer to Chapter 8 and remove the drive-axles.
- 4 Use a screwdriver or prybar to carefully pry the oil seal out of the transaxle bore.
- 5 If the oil seal cannot be removed with a screwdriver or prybar, a special oil seal removal tool (available at auto parts stores) will be required.
- 6 Using a large section of pipe or a large deep socket (slightly smaller than the outside diameter of the seal) as a drift, install the new oil seal. Drive it into the bore squarely and make sure it's completely seated. Coat the seal lip with transaxle lubricant.
- 7 Install the driveaxle(s). Be careful not to damage the lip of the new seal.

6 Manual transaxle - removal and installation

Removal

- 1 Disconnect the cable from the negative terminal of the battery (see Chapter 5).
- 2 Remove the air filter housing (see Chapter 4).
- 3 Disconnect the electrical connector for the back-up light switch.
- 4 If you're working on a 4WD model, disconnect the shift cables from the transaxle shift levers (see Section 4).
- 5 Remove the transaxle front and rear wire harness brackets from the transaxle.
- 6 Disconnect the electrical connector for the vehicle speed sensor (see Chapter 6).
- 7 Attach an engine support fixture to the lifting hook at the transaxle end of the engine. If no hook is provided, use a bolt of the proper size and thread pitch to attach the support fix-

ture chain to a hole at the end of the cylinder head. **Note:** Engine support fixtures can be obtained at most equipment rental yards and some auto parts stores.

- 8 Disconnect the clutch release cylinder and line from the transaxle (see Chapter 8).
- 9 Remove the left side transaxle mount and bracket.
- 10 Remove the front transaxle mount and bracket.
- 11 Remove the rear transaxle mount through bolt.
- 12 Remove the starter (see Chapter 5).
- 13 Remove the four upper transaxle-to-engine mounting bolts.
- 14 Loosen the driveaxle/hub nuts and the wheel lug nuts, raise the front of the vehicle and support it securely on jackstands. Remove the wheels.
- 15 Remove the driveaxles (see Chapter 8).
- 16 Drain the transaxle lubricant (see Chapter 1).
- 17 Remove the three bolts securing the transaxle support insulator bracket, then remove the bracket.
- 18 If you're working on a 2WD model, disconnect the shift linkage bar (see Section 3) and support bar.
- 19 Remove the subframe crossmember.
- 20 Remove the longitudinal crossmember.
- 21 Remove the upper and lower left-side splash shields.
- 22 If you're working on a 4WD model, remove the transfer case (see Chapter 7 Part C).
- 23 Support the transaxle with a jack - preferably a jack made for this purpose (available at most tool rental yards). Safety chains will help steady the transaxle on the jack.
- 24 Remove the seven remaining bolts securing the transaxle to the engine.
- 25 Move the transaxle to the rear to disengage it from the engine block dowel pins. Then carefully remove the transaxle.

Installation

- 26 Lubricate the input shaft with a light coat of high-temperature grease. With the transaxle secured to the jack, raise it into position behind the engine and carefully slide it forward, engaging the input shaft with the clutch. Do not use excessive force to install the transaxle - if the input shaft won't slide into place, readjust the angle of the transaxle or turn the input shaft so the splines engage properly with the clutch.
- 27 Once the transaxle is flush with the engine, install the transaxle-to-engine bolts. Tighten the bolts to the torque listed in this Chapter's Specifications. **Caution:** Don't use the bolts to force the transaxle and engine together.
- 28 The remainder of installation of the transaxle is a reversal of the removal procedure, but note the following points:
 - a) Tighten the suspension crossmember mounting bolts to the torque values listed in this Chapter's Specifications.

- b) Tighten the driveaxle/hub nuts to the torque value listed in the Chapter 8 Specifications.
- c) Tighten the starter mounting bolts to the torque value listed in the Chapter 5 Specifications.
- d) If installing the transfer case, refer to Chapter 7, Part C.
- e) Tighten the wheel lug nuts to the torque listed in the Chapter 1 Specifications.
- f) Fill the transaxle with the correct type and amount of transaxle fluid as described in Chapter 1.

7 Manual transaxle overhaul - general information

1 Overhauling a manual transaxle is a difficult job for the do-it-yourselfer. It involves the disassembly and reassembly of many small parts. Numerous clearances must be precisely measured and, if necessary, changed with select-fit spacers and snap-rings. As a result, if transaxle problems arise, it can be removed and installed by a competent do-it-yourselfer, but overhaul should be left to a

transmission repair shop. Rebuilt transaxles may be available - check with your dealer parts department and auto parts stores. At any rate, the time and money involved in an overhaul is almost sure to exceed the cost of a rebuilt unit.

2 Nevertheless, it's not impossible for an inexperienced mechanic to rebuild a transaxle if the special tools are available and the job is done in a deliberate step-by-step manner so nothing is overlooked.

3 The tools necessary for an overhaul include internal and external snap-ring pliers, a bearing puller, a slide hammer, a set of pin punches, a dial indicator and possibly a hydraulic press. In addition, a large, sturdy workbench and a vise or transaxle stand will be required.

4 During disassembly of the transaxle, make careful notes of how each piece comes off, where it fits in relation to other pieces and what holds it in place.

5 Before taking the transaxle apart for repair, it will help if you have some idea what area of the transaxle is malfunctioning. Certain problems can be closely tied to specific areas in the transaxle, which can make com-

ponent examination and replacement easier. Refer to the Troubleshooting Section at the front of this manual for information regarding possible sources of trouble.

8 Transaxle mount - replacement

1 Insert a large screwdriver or prybar between the mount and the transaxle and pry up.

2 The transaxle should not move excessively away from the mount. If it does, replace the mount.

3 If you're working on a four-cylinder model, remove the battery (see Chapter 5).

4 Remove the air filter housing cover and air intake tube (see Chapter 4).

5 Support the transaxle with a jack, remove the nuts and bolts and remove the mount. It may be necessary to raise the transaxle slightly to provide enough clearance to remove the mount.

6 Installation is the reverse of removal.

Note: Install all of the mount fasteners before tightening any of them.