

CLUTCH SYSTEM

GROUP 08

(7000)

SECTION TITLE	PAGE	SECTION TITLE	PAGE
CLUTCH CONTROLS	08-02-1	CLUTCH SYSTEM—SERVICE	08-00-1
CLUTCH/PRESSURE PLATE.....	08-01-1		

SECTION 08-00 Clutch System—Service

SUBJECT	PAGE	SUBJECT	PAGE
DESCRIPTION	08-00-1	DIAGNOSIS (Cont'd.)	
DIAGNOSIS		Oil Leakage	08-00-5
Clutch and Clutch Cable.....	08-00-1	Transaxle	08-00-3
Gear Noise.....	08-00-4	VEHICLE APPLICATION	08-00-1

VEHICLE APPLICATION

Capri.

DESCRIPTION

This vehicle uses two types of clutch release systems. The turbocharged vehicles have a type G transaxle and use a mechanical system. The naturally aspirated vehicles have a type F2 transaxle and have a hydraulic clutch system. When performing any service procedures, be sure of the system being serviced.

DIAGNOSIS

Clutch and Clutch Cable

The vehicle should be road tested, if possible, to confirm any complaint. Some clutch conditions may be attributed to a misadjusted cable (turbocharged vehicles) or pedal height, linkage or shift mechanism. These should be checked (and corrected) prior to attempting major service procedures. Make sure the transaxle and clutch reservoir (naturally aspirated vehicles) are filled to the proper level with the specified lubricant. Refer to Section 07-03A or 07-03B for transaxle fluid level checking procedures. Refer to Section 08-02 for clutch reservoir fluid level checking procedures.

DIAGNOSIS (Continued)

CLUTCH AND CLUTCH CABLE DIAGNOSIS

CONDITION	POSSIBLE SOURCE	ACTION
● Not Disengaging	<ul style="list-style-type: none"> ● Excessive clutch pedal play. ● Excessive deflection and distortion of clutch disc. ● Clutch disc spline is worn or rusted. ● Low clutch fluid.① ● Clutch cable worn or broken ②. ● Diaphragm spring is weakened. 	<ul style="list-style-type: none"> ● Adjust. ● Replace. ● Replace, or remove the rust. ● Fill to proper level. ● Service or replace. ● Replace.
● Clutch Shudders When Starting	<ul style="list-style-type: none"> ● Engine mount loose or weakened. ● Oil in the facing surface. ● Torsion spring weakened. ● Disc surface hardened or distorted. ● Diaphragm spring is weakened. ● Pressure plate is excessively distorted. ● Flywheel surface is hardened or damaged. 	<ul style="list-style-type: none"> ● Tighten or replace. ● Service or replace. ● Replace. ● Service or replace. ● Replace. ● Replace. ● Service or replace.
● Clutch Pedal Does Not Operate Smoothly	<ul style="list-style-type: none"> ● Pedal pivot shaft is not properly lubricated. ● Cable is kinked or binding. 	<ul style="list-style-type: none"> ● Lubricate or replace. ● Service or replace.
● Noise ③	<ul style="list-style-type: none"> ● Insufficient clutch pedal free play. ● Release bearing is damaged. ● Poor lubrication on the release bearing sleeve. ● Torsion spring is weakened. ● Excessive crankshaft end play. 	<ul style="list-style-type: none"> ● Adjust. ● Replace. ● Lubricate or replace. ● Replace. ● Replace engine thrust bearings.
● Slipping clutch	<ul style="list-style-type: none"> ● Insufficient clutch pedal free play. ● Facing is worn excessively. ● Facing surface is hardened or contaminated with oil. ● Pressure plate is distorted. ● Diaphragm spring is damaged or weakened. ● Clutch pedal or cable does not function smoothly (Binding). 	<ul style="list-style-type: none"> ● Adjust. ● Replace. ● Service or replace. ● Service or replace. ● Replace. ● Service or replace.

① Naturally aspirated vehicles with hydraulic clutch

② Turbocharged vehicles with mechanical clutch

③ Refer to gear noise

CC4197-A

DIAGNOSIS (Continued)

Transaxle

Under normal operating conditions, a large percentage of transaxle complaints are due to misadjusted or damaged components outside of the transaxle, such as clutch, clutch release assembly and shift linkage. Before and during the road test, make sure that the clutch is operating properly, the shift linkage is properly adjusted and that the transaxle is filled to the proper level with lubricant. Refer to Section 07-03A or 07-03B.

The following diagnosis procedure is provided as a guide for locating concerns related to manual transaxles. Possible causes and corrective measures are listed in the order they should be checked. If the transaxle was removed, serviced and re-installed, make certain the clutch and all gear shift linkage is correctly installed. Road test the vehicle to be sure the condition has been completely corrected.

TRANSAXLE DIAGNOSIS

CONDITION	POSSIBLE SOURCE	ACTION
<ul style="list-style-type: none"> Shift Lever Does Not Operate Smoothly or Binds or Cannot Be Operated at All 	<ul style="list-style-type: none"> Selector rod joint stiff. Selector rod bent. Lack of lubrication on shift linkage pivots. Shift lever ball unit stiff. Gearshift gate incorrectly adjusted. 	<ul style="list-style-type: none"> Service or replace. Replace bent rod. Clean and lubricate with Multi-Purpose Grease D0AZ-19584-AA or equivalent. Service or replace. Adjust gate.
<ul style="list-style-type: none"> Excessive Shift Lever Play 	<ul style="list-style-type: none"> Selector rod bushing worn. Loose or worn selector rod clamping bolts. The spring in the shift lever ball unit is weakened. The bushing in shift lever ball unit is worn. 	<ul style="list-style-type: none"> Replace Tighten or replace as necessary. Replace Replace.
<ul style="list-style-type: none"> Hard Shifting 	<ul style="list-style-type: none"> Insufficient oil in transaxle. Incorrect oil quality. Selector rod bent. Transaxle shifting mechanism insufficiently lubricated. Excessive clutch pedal free play. Shift fork and shift rod worn. Synchronizer ring worn. Worn cone surface of gear. Improper contact between synchronizer ring and cone surface. Excessive play in the axial direction of each gear. Bearings worn. Synchronizer key is weakened. 	<ul style="list-style-type: none"> Add oil. Drain and fill with specified oil. Replace. Lubricate. Adjust. Replace. Replace. Replace. Replace. Replace worn component. Adjust or replace. Replace.
<ul style="list-style-type: none"> Locked in Gear 	<ul style="list-style-type: none"> Shift gate out of adjustment or worn. Worn interlock sleeve or bent or damaged shift fork. Gear seizure. Synchronizer keys out of position. 	<ul style="list-style-type: none"> Service or replace as necessary and adjust. Check interlock sleeve for wear and service or replace as necessary. Replace worn parts. Service or replace as necessary.
<ul style="list-style-type: none"> Jumping Out of Gear 	<ul style="list-style-type: none"> Worn or improperly installed engine mount. Loose or worn control rod clamping bolts or linkage. Bent shift control rod. Worn shift control rod bushing. Weakened lever ball spring. Improper installation of stabilizer bar. Worn synchronizer clutch hub. Worn synchronizer clutch hub sleeve. Worn steel ball sliding groove on control rod end. Weakened steel ball spring. Excessive backlash. Worn bearings. 	<ul style="list-style-type: none"> Service or replace. Service or replace and tighten as necessary. Replace. Replace. Replace. Install correctly and tighten. Replace. Replace. Replace. Replace. Replace components as required. Adjust or replace bearings.

DIAGNOSIS (Continued)

TRANSAXLE DIAGNOSIS (Continued)

CONDITION	POSSIBLE SOURCE	ACTION
<ul style="list-style-type: none"> Noise 	<ul style="list-style-type: none"> Insufficient oil in transaxle. Poor oil quality. Worn sliding surfaces at synchronizer. Excessive backlash. Surface of a gear is damaged. Foreign matter in transaxle. Differential gear is damaged. Backlash is excessive. Ring gear bolts loose. Bearings worn or out of adjustment. 	<ul style="list-style-type: none"> Add oil as required. Drain and refill with specified oil. Service or replace. Replace components as required. Replace. Service or replace as necessary. Service or replace as necessary. Tighten to specification. Service or adjust as necessary.
<ul style="list-style-type: none"> Gear Clash 	<ul style="list-style-type: none"> Excessive engine idle speed. Inadequate clutch pedal release resulting in excessive spin time (cable system). Inadequate clutch disengagement. Disc binding on transaxle input shaft. Excessive disc runout. Flywheel housing misalignment. Oil or grease on clutch facings. Damaged or contaminated clutch lining. Weak or broken insert keys in the synchronizer assembly. Worn synchronizer rings and/or cone surfaces. Broken synchronizer rings. 	<ul style="list-style-type: none"> Adjust engine idle rpm. Check clutch adjustment, operating mechanisms or for excessive clutch disc runout—replace components as required. Check for burrs on splines, replace if necessary. Replace. Realign. Replace disc and correct cause of contamination. Replace disc. Replace components as required. Replace components as required. Replace.

Gear Noise

- Gear rattle is a repetitive metallic impact or rapping noise which occurs on a manual transaxle powertrain when the vehicle is lugging in gear. The rattle noise intensity increases with transaxle operating temperature and engine torque and decreases with increasing vehicle speed. Since the gear ratios have been designed to achieve maximum fuel economy, there may be instances when gear rattle is distinctly noticeable under lugging conditions. This, however, is not detrimental to the engine or transaxle provided that the appropriate gear ratio is selected for the vehicle speed.
- Neutral rollover rattle has the same characteristics as gear rattle except rollover occurs with the engine idling, transaxle in NEUTRAL and the clutch engaged. The rollover noise intensity increases with transaxle operating temperature and engine torque load resulting from engine driven accessories (air conditioning and alternator). Gear rollover noise is inherent in manual transaxles and is not detrimental to the engine or transaxle. However, in vehicles where the engine idling speed is below specification or rough, the rollover noise can deteriorate to a level where a harsh clattering noise similar to loose parts in the transaxle will become audible. Replacement of transaxle components will NOT correct this condition.

- Gear rollover noise, caused by engine torsional vibrations, and clutch release bearing noise are sometimes mistaken for bearing noise. Gear rollover noise will disappear when the transaxle is engaged in gear. Due to a constant running release bearing noise caused by a worn or damaged release bearing will be noticeable only when the clutch is disengaged. When complaints of this nature are encountered, it will be necessary to check the vehicle to determine if bearing noise exists. Transaxle servicing will not eliminate gear rollover noise or clutch release bearing noise.

DIAGNOSIS (Continued)**Oil Leakage**

To diagnose suspected transaxle leakage, the affected area should be cleaned of all grease, dirt and oil first. The vehicle should be operated long enough to bring the transaxle fluid to operating temperature. Inspect the areas shown. Remember to check the transaxle fluid level and fill to the full mark before performing the diagnosis. Refer to Section 07-03A or 07-03B.

