

Diagnosis and Testing

General Equipment

Ultraviolet fluid leak detection equipment

Inspection and Verification

1. Verify the customer concern.
2. Visually inspect for obvious signs of mechanical damage.

VISUAL INSPECTION CHART

Mechanical
• Oil leaks. • Visibly damaged or worn components. • Loose or missing nuts or bolts.

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. If the cause is not evident, verify the symptom and REFER to the Symptom Chart.

The following checks should be carried out before repairing or installing a new transmission.

The inspection and verification of manual transmission concerns can be considered in three main areas.

Gear shifting concerns

1. Check the operation of the clutch: Position a block of wood approximately 25 mm thick under the clutch pedal and depress the clutch pedal as far as possible. If first or second gear can be selected with the engine running and the parking brake applied, without any concerns, the clutch is OK.
2. If the gear(s) cannot be selected, REFER to the Symptom Chart.

Transmission noise concerns

1. Check the engine and transmission support for insufficient gap between the transmission and the body.
2. If a noise occurs in various gears at the same engine speed, check if the noise also occurs in the neutral position. If it does, the noise is not caused by the transmission.
3. REFER to the Symptom Chart.

Oil leakage concerns

1. Check the transmission fluid level. If necessary, drain off any excess fluid.
2. Clean the transmission and the adjacent areas carefully and road test the vehicle. REFER to: [Road/Roller Testing](#) (100-00 General Information, Description and Operation).
3. Using suitable ultraviolet fluid leak detection equipment, locate the leak and check whether the leaking fluid is transmission fluid, brake fluid (from the hydraulically operated clutch) or engine oil.

4. REFER to the Symptom Chart.

Symptom Chart

The following table provides all the possible symptoms and sources related to Manual Transmission and Clutch. For the actual diagnostics, proceed to use the Ford diagnostic equipment.

Symptom Chart	Possible Sources
Clutch slippage	Clutch master cylinder
	Clutch slave cylinder
	Clutch pressure plate
	Clutch disc
Clutch slippage	Crankshaft rear seal
Clutch slippage	Transmission input shaft seal
Clutch chatter or shudder	Engine and transaxle mounts
	Clutch pressure plate
	Clutch disc
	Flywheel
Clutch drag	Insufficient brake fluid
	Air in the clutch hydraulic system
	Clutch pedal free travel
	Clutch pressure plate
	Clutch disc
	Crankshaft end play
Clutch drag	Pilot bearing
Clutch pedal pulsation	Clutch pressure plate
	Clutch disc
	Crankshaft end play
Excessive noise	Engine vibrations inadequately damped
	Transaxle fluid level low
	Engine or transaxle is in contact with the chassis or body
	Engine and transaxle out of alignment
	External controls
	Gear wheels and bearings
	Clutch pedal
Excessive noise	Clutch release bearing
Fluid leakage	Clutch master cylinder
	Clutch slave cylinder
	Clutch hydraulic lines
	Transmission Halfshaft seal
	Fluid leak between the transaxle housing sections
Fluid leakage	Transmission input shaft seal