DIAGNOSING MALFUNCTIONS

Transmission Clutch Slippage

Restricted filter
Low system pressure
Low transmission pump output
Low transmission oil level

Slippage In First And Third Speeds

Seal leakage on underdrive brake piston
Plug leaking or missing from brake housing
Underdrive brake disks worn excessively

Slippage In Second And Fourth Speeds

Seals on direct drive clutch piston leaking
Clutch drum sealing ring leakage
Plug leaking or missing from brake housing
Direct drive clutch disks worn excessively

No Change In Speed When Moving Speed Selector Laterally (Power Shift)

Linkage broken or disconnected
Shift valve stuck
Low system pressure

Low Transmission System Pressure

Restricted oil filter
Low transmission oil level
Low transmission oil pump output
Transmission oil pump failure
Weakened or broken pressure regulating valve spring
Stuck oil filter relief valve
Torn gaskets behind clutch valve housing or oil filter relief valve housing
Adapters behind clutch valve housing leaking
Excessive leakage in Perma-Clutch

Hard To Shift

Shifter control parts dry
Shifter quadrants binding
Neutral-park interlock improperly adjusted
Shifter cam shaft end play incorrect
Shifters worn, damaged, or broken
Cold oil causing Perma-Clutch drag
Lubrication reduction valve stuck
Range shifter rod stop improperly adjusted or missing, causing hard shifting out of "park"

Excessive Gear Clash When Shifting

Excessively worn synchronizer disks
Operator attempting to shift too fast
Transmission clutch dragging
Two-speed rod adjustment incorrect
Operator not fully disengaging clutch
Shift lever and cam detent not in proper relation
Cold oil causing Perma-Clutch drag

Excessive Transmission Noise

Transmission parts worn or damaged
Transmission low on oil

TESTING

If transmission malfunction is detected or suspected, check the condition of the oil filter before conducting any tests. Be sure that the filter relief valve is operating properly.

Pressure Test

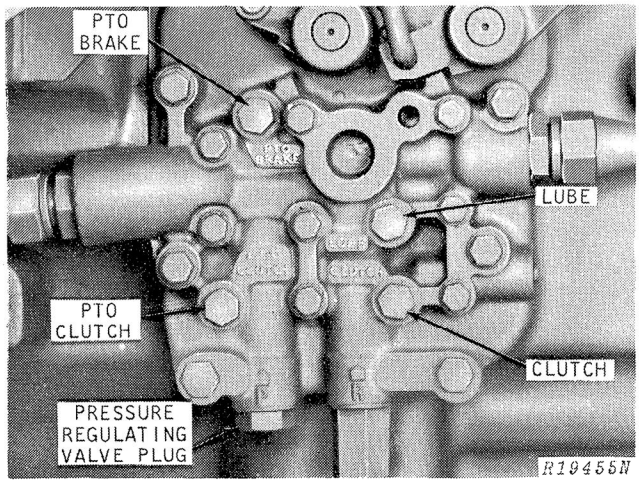

Fig. 4—Test Plug Locations

To check system pressure, install a 0-300 psi pressure gauge at the clutch test plug on left side of the clutch housing (Fig. 4). Place transmission in "park" position. Disconnect the planetary control valve operating rod from the bell crank (Fig. 39).

Run engine at 1900 rpm. With oil at operating temperature, observe the pressure with the high-low control valve operating arm in both the forward position (direct drive) and rear position (underdrive). Correct oil pressure is 105 to 115 psi.

If pressure for one position is more than 10 psi below pressure for the other, excessive leakage is indicated for the circuit with lower reading. If both positions result in low pressure, install a gauge in the PTO clutch or PTO brake test location. If this pressure is also low, adjust system pressure. If this pressure is normal, the problem is in the clutch valve circuit, oil route connections, or both elements of the planetary are leaking excessively.

To adjust system pressure, remove hex. plug from bottom of pressure regulating valve housing (Fig. 4) and adjust shims below pressure regulating valve spring. One shim equals approximately 5 psi.