FORD AX4N
NO FOURTH GEAR OR NEUTRALS AT STOPS

COMPLAINT: Ford Motor Company vehicles equipped with the AX4N Transaxle may exhibit a no fourth gear up-shift condition, or will at times, neutral at a stop.

CAUSE: One cause may be, that the Forward Clutch Control Valve is sticking in an up-shifted position, which will cause the no fourth gear up-shift complaint.

Explanation: At engine start-up, SS3 oil pushes the Forward Clutch Control Valve into an up-shifted position, allowing Main Line pressure to pass through the "K" orifice, through the Forward Clutch Control Valve, through the 3-4 and 1-2 Shift Valves, and into the Forward Clutch. Mainline Pressure from the OD D 2 L Circuit , passing through the 2-3 Shift Valve also acts upon the Forward Clutch Control Valve in First and Second Gear, to help keep the Forward Clutch Control Valve in an up-shifted position. When the 2-3 up-shift takes place, SS3 is energized, which cuts off the SS3 oil to the Forward Clutch Control Valve, and the OD D 2 L Circuit oil to the Forward Clutch Control Valve is cut off by the movement of the 2-3 Shift Valve. At this time, the Forward Clutch Control Valve Should move to a down-shifted position, allowing the Forward Clutch oil to exhaust through the 3-4 Shift Valve, and through the exhaust passage through the downshifted Forward Clutch Control Valve. If the Forward Clutch Control Valve sticks in the up-shifted position, Forward Clutch oil will still be present at the 3-4 Shift Valve, preventing the 3-4 Shift Valve from moving, and preventing a 3-4 up-shift from taking place. If the transaxle exhibits a symptom of neutral at a stop, that might indicate when a downshift from fourth to a lower gear was commanded, the Forward Clutch Control Valve did not move inboard, thus not establishing line pressure to the Forward Clutch. One way to establish if you have a sticking Forward Clutch Control Valve causing the neutral at a stop condition is to prevent the transaxle from making a 3-4 upshift, by either moving the shift selector to the Drive 3 location, or if your vehicle has an Overdrive Cancel Switch, press the button to cancel overdrive. When overdrive has been cancelled, upon an upshift to third gear, Shift Solenoid Three will not be energized and the Forward Clutch remains on and will not have to be re-applied during a downshift. So if the neutral condition goes away with overdrive cancelled, the Forward Clutch Control Valve is most likely sticking and causing the neutral complaint.

CORRECTION: After all electrical systems have been checked and verified for proper operation, remove the Valve Body, check the Forward Clutch Control Valve for sticking, and for debris that may be obstructing the valve movement. (See Figure 1).

Note: The Forward Clutch Control Valve Retainer may be bent or broken, which can cause the valve to stick. Replace as necessary. An updated retainer can be purchased from Ford, under part number F8DZ-7F194-AA (See Figure 1). Sometimes the action of the Forward Clutch control Valve hitting the retainer may also damage the Forward Clutch Control valve, causing the sticking problem. Ford Motor Co. does not service this valve and no one in the aftermarket is currently addressing it, so a replacement would have to come from another valve body.

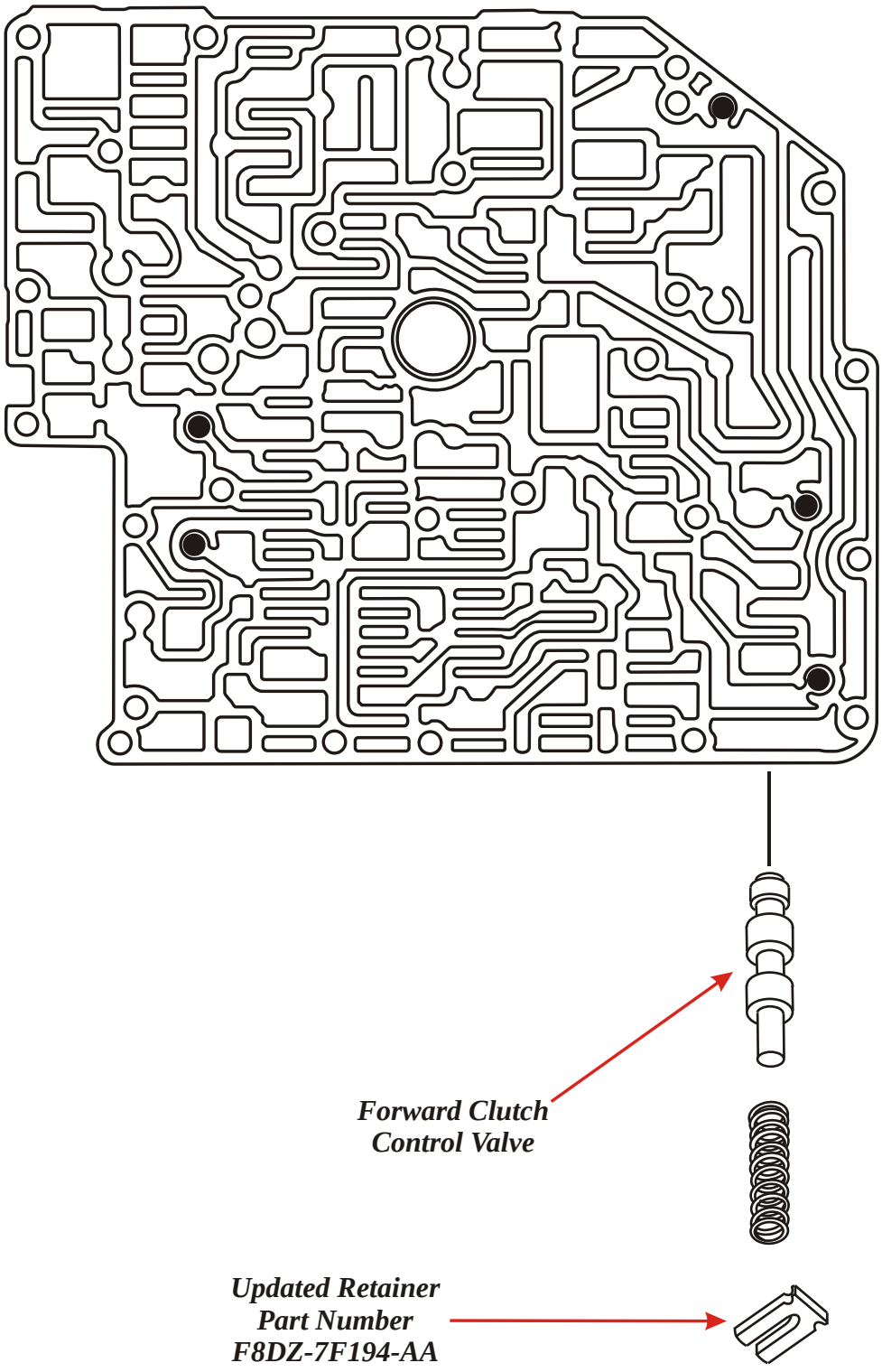

Figure 1