FORD AX4S/AXOD-E
PRESSURE CONTROL PROBLEM DIAGNOSIS

To accurately diagnosis and repair pressure control problems, it first must be determined whether the problem is a malfunction that is inside the transaxle, or outside the transaxle. The pressure problems that we usually need to address and repair are high line, low line, and/or inadequate line rise, and fluctuations as seen on a pressure gauge while driving. One of the tools that can be used to determine inside transaxle or outside the transaxle, is the "Schaffer Shifter". However, a current draw test in the EPC circuit can also be performed, while monitoring the pressure changes on a O-400 lb. pressure gauge.

NOTE: It is very important to perform this test with a O-400 lb (or higher) gauge because this transaxle is capable of producing over 400 PSI of line pressure, which could burst a gauge of a lower rating, and possibly cause injury.

A current draw test in the EPC circuit will also require the use of a Digital Volt-Ohm Meter, that is capable of reading Amps or Milliamps. When performing this teat you will be looking at amperage changes in relation to pressure changes, as seen on the pressure gauge. With a normally functioning EPC circuit, you will see about 150 PSI on the pressure gauge while in Park, on the initial start up, which is part of the computer strategy, and is normal. After the vehicle is warmed up and/or is put into gear the idle pressure will drop immediately to between 48 and 77 PSI. As the throttle is opened, the amperage should begin to drop, and the pressure should begin to rise.

To begin the EPC circuit current draw test, the EPC ground wire that runs from the computer to the transaxle case connector must be located, and the external wire color will be White with a Yellow tracer on both versions, as shown in Figure 1. On 1991-l 992 model vehicles the wire will be found in the top case connector and comes from pin number 38 on the computer. On 1993-UP vehicles there is only one case connector and the wire still comes from pin number 38 on the computer. Refer to Figure 1. Connect the O-400 lb. pressure gauge to the mainline pressure tap, as shown in Figure 2. Cut the White wire with the Yellow tracer and hook the DVOM, in series, so that current flows through the DVOM, as shown in Figure 3. Start the engine and let it warm up until the pressure stabilizes between 48-77 PSI. The amperage reading at idle should be approximately 1 Amp. As the throttle is opened, amperage should begin to drop, and pressure should begin to rise. Refer to the chart in Figure 4.

If the amperage drops, but no pressure rise, the problem is inside the transaxle.
Problems on the inside of the transaxle will include, EPC Solenoid failure or trash in the solenoid, boost valve and/or sleeve damaged, pressure regulator valve damaged and/or sticking, blockage from gasket material (early models), pump damage and/or pump slide sticking. If the amperage does not drop, and the pressure does not rise, the problem is outside the transaxle.
The inputs that are used by the computer to determine pressure changes will now have to be checked.
These inputs include, Throttle Position Sensor, Mass Airflow Sensor, Power Steering Pressure Switch, Turbine Shaft Speed Sensor, Vehicle Speed Sensor. Bad harness connections and wiring damage must also be thoroughly checked and verified. After all sensors, connections and wiring have passed inspections and tested OK, the computer may have to be replaced.

When pressures are seen to be fluctuating on the gauge, but the amperage readings are steady, then the problems are on the inside if the transaxle. If the pressures are seen to be fluctuating on the gauge, and the amperage readings are also fluctuating, then the problems are on the outside of the transaxle and are electrical.

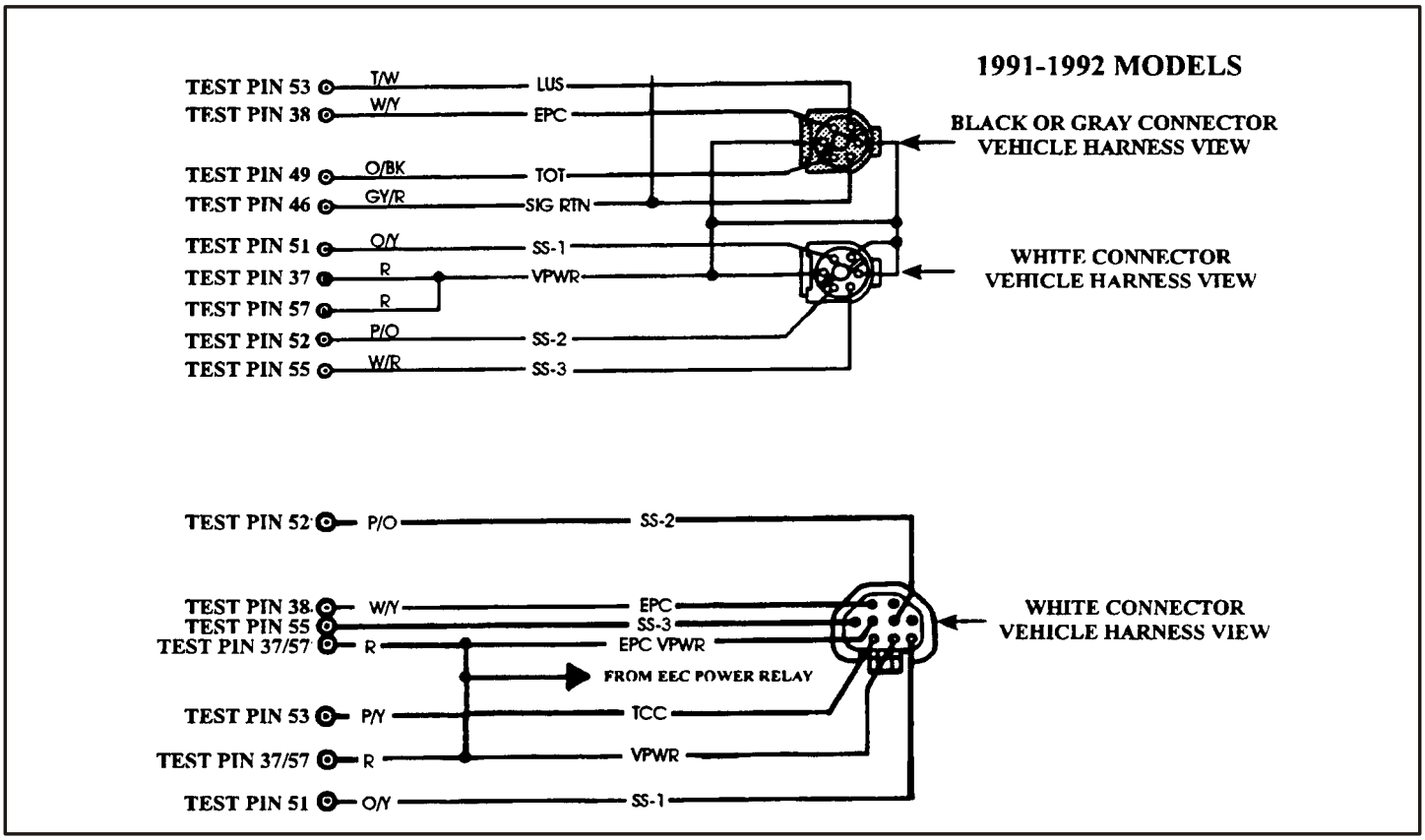

Figure 1

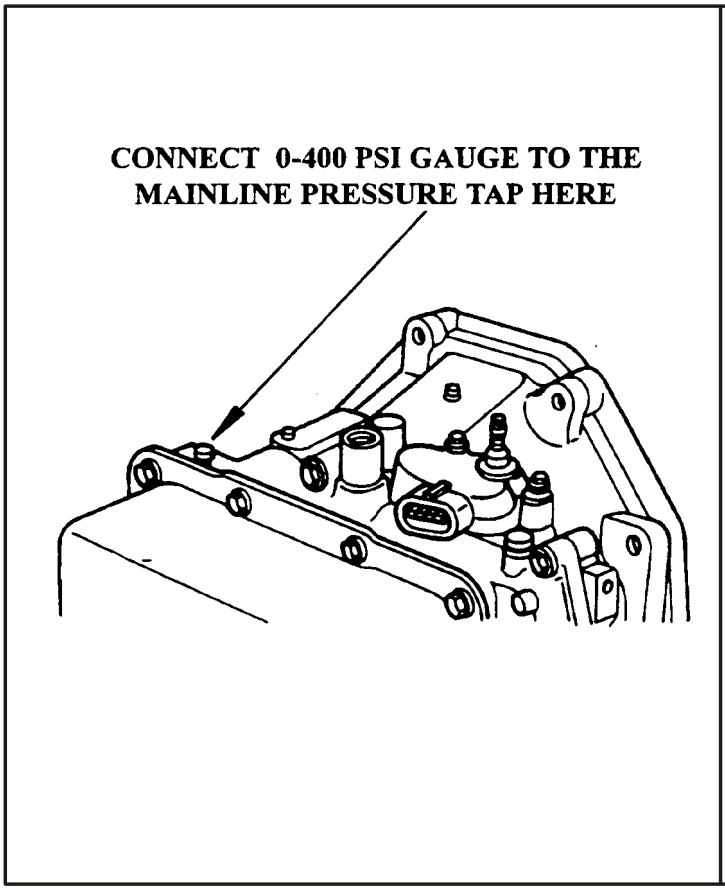

Figure 2

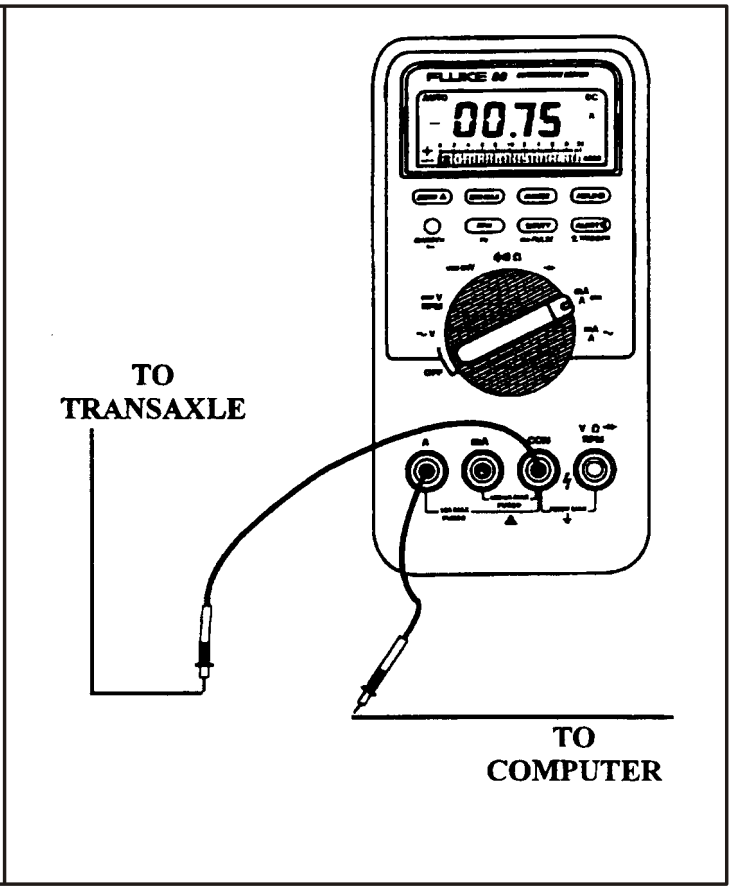

Figure 3

EPC AMPS	1.0	.90	.75	.70	.60	.50	.35		
EPC PSI	20	30	40	50	60	70	80	*	*
P	75	---	---	---	---	---	---	*	*
R	90	145	175	200	225	275	310	*	*
N	75	---	---	---	---	---	---	*	*
OD	75	100	125	145	165	180	210	*	*
D	75	100	125	145	165	180	210	*	*
L	80	100	125	155	175	190	220	*	*

MAINLINE PRESSURES SHOULD NOT EXCEED THE MAXIMUMS AS SHOWN ABOVE

This chart is based on EPC Amps and Mainline Pressure. EPC pressure readings have also been shown for convinces. During driving conditions, pressures will show a momentary cut-back during the upshifts, and this is normal

Figure 4