



Technical Service Information

4L60-E

STACKED SHIFTS / EARLY TCC / 1995 - 2000 T SERIES TRUCKS

COMPLAINT: The customer brings the vehicle to the shop with complaints of erratic shifting, stacked shifts, the engine is lugging or no passing gear. The concern is verified after a road test. The PCM/VCM may or may not store a P1875 fault code for a four wheel drive low switch circuit malfunction.

CAUSE: The cause may be a malfunctioning transfer case shift control module (TCCM) or a short to ground on circuit 1694.

CORRECTION: The PCM (Powertrain Control Module) for some 1995 models, or the VCM (Vehicle Control Module) for most 1995 and all 1996 to 2000 model year trucks, provides 12 volts from the engine computer to the transfer case shift control module via circuit 1694. (See wire diagram in figure 1) When the driver selects 4 wheel drive low range, the TCCM internally grounds circuit 1694 and the voltage on circuit 1694 drops to zero. The PCM/VCM uses this information to alter shift scheduling while the vehicle is in 4 wheel drive low range to prevent an engine over speed condition.

Check the status of the indicator lights at the transfer case select switch assembly to verify that only high range has been selected.

Start the engine and monitor the 4 wheel drive low switch with a scan tool to see if the data indicates ON/YES or ENABLED. If data is not available, then monitor the voltage on circuit 1694 at terminal F8/Connector 2 with a PCM, or at terminal 23/Connector 4 with a VCM. (See figure 3 for PCM/VCM location) There should be 12 volts on the wire when operating in high range and zero voltage when in low range. (See figures 4 and 5 for connector and terminal I.D.)

If zero voltage is seen even though the indicator lights at the select switch display that high range has been selected, then locate and disconnect the harness at the TCCM (See figure 2 for TCCM location) and recheck circuit 1694 at PCM/VCM. If 12 volts is now seen then the TCCM is faulty. Replace the TCCM.

If circuit 1694 still does not show 12 volts at the PCM/VCM, then cut the wire two or three inches from the PCM/VCM connector and recheck the wire protruding from the connector at the PCM/VCM. If 12 volts is now observed then the wire between the PCM/VCM and the TCCM is shorted to ground. Cut the other end of the wire at the TCCM connector and run a new wire in place of the existing wire. Solder and shrink wrap your connections and tape the old wire back into the harness to ensure a quality repair. Recheck the voltage on the wire after your repair and road test to verify proper operation.

If 12 volts is still not evident on the wire at the PCM/VCM connector then the PCM or VCM would be suspect and require replacement.

Note: 1 - All OEM control module connectors have terminal identification embossed into the plastic at the wire side of the connector.

2 - All of these voltage tests are made with the key on or engine running.

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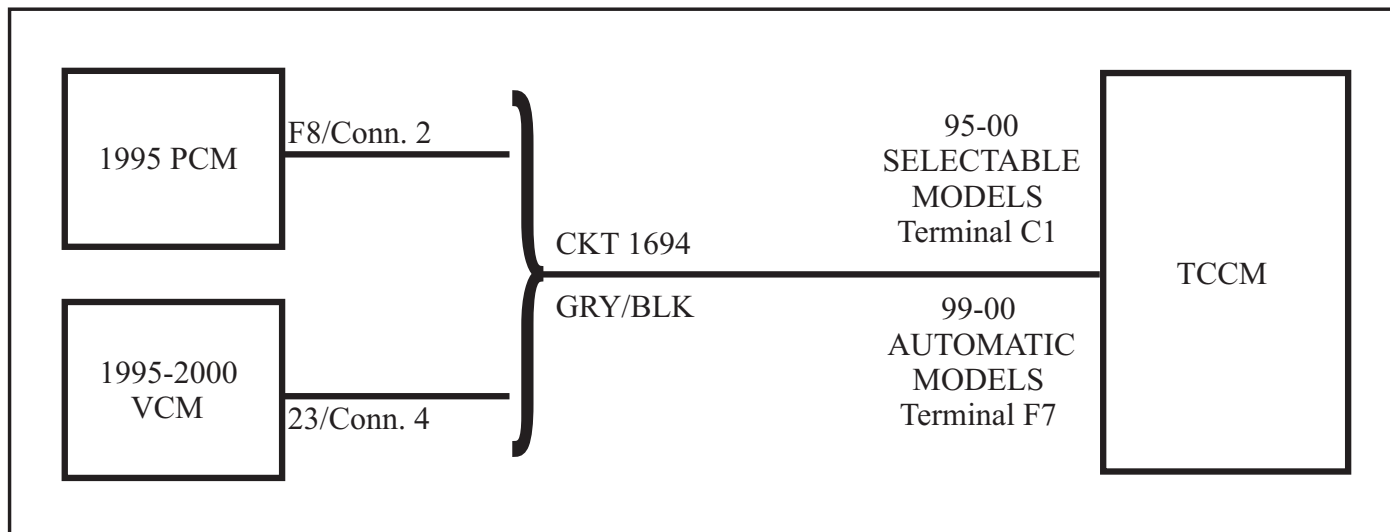


Figure 1

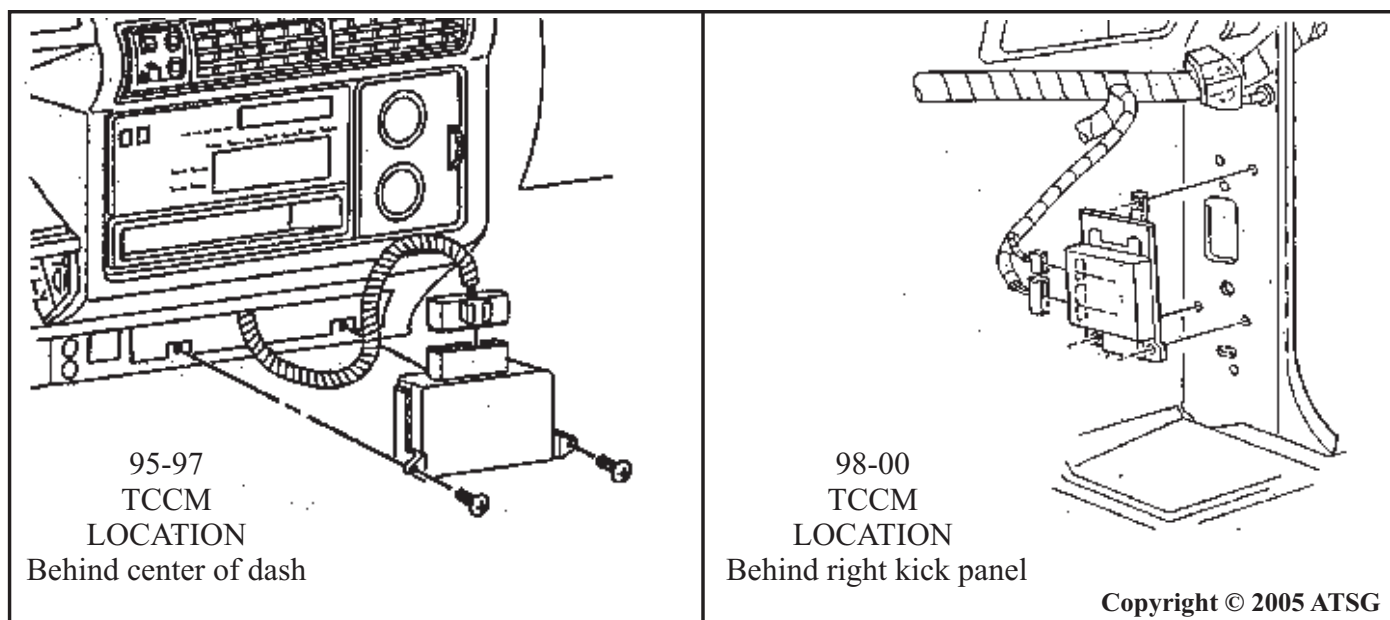


Figure 2

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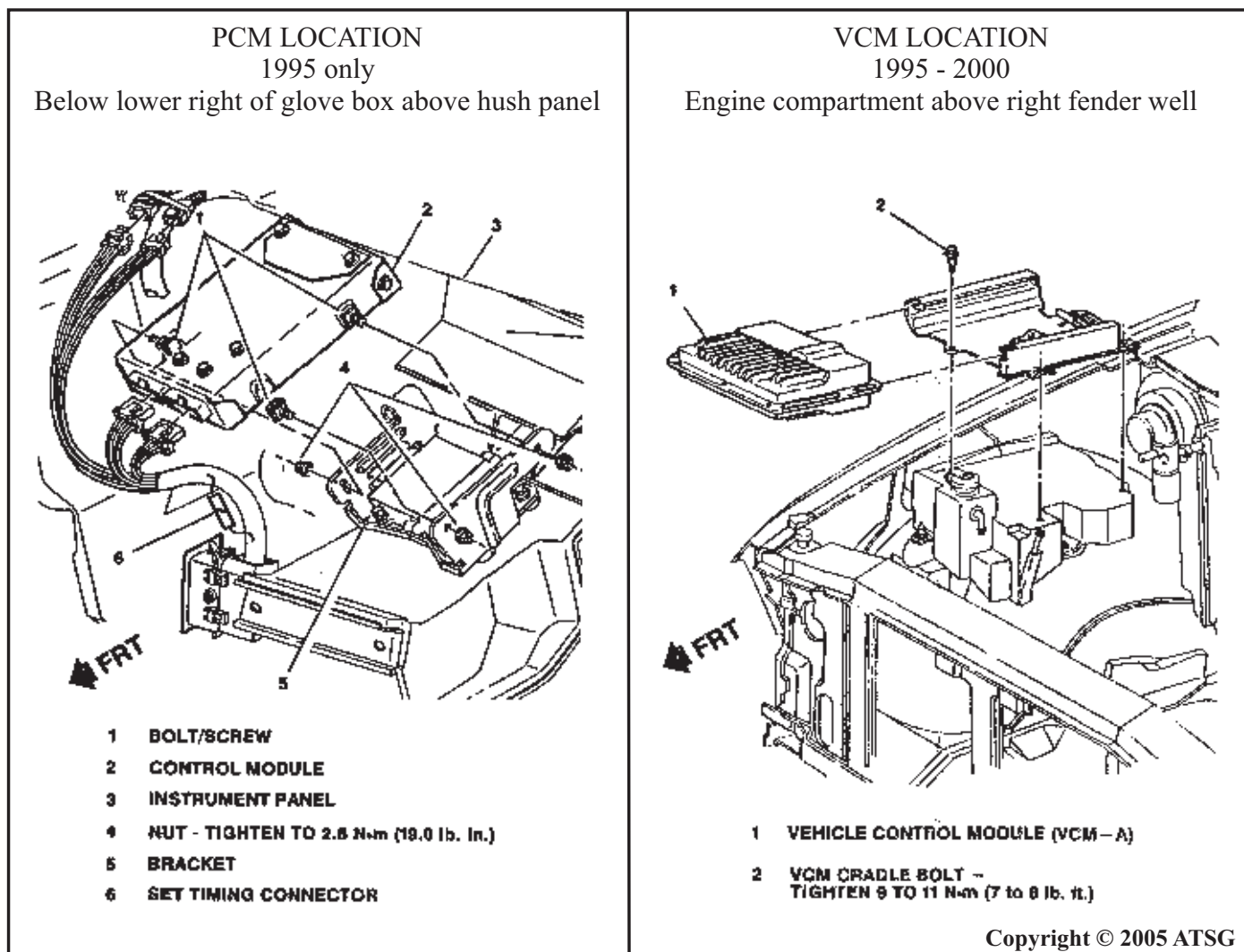


Figure 3

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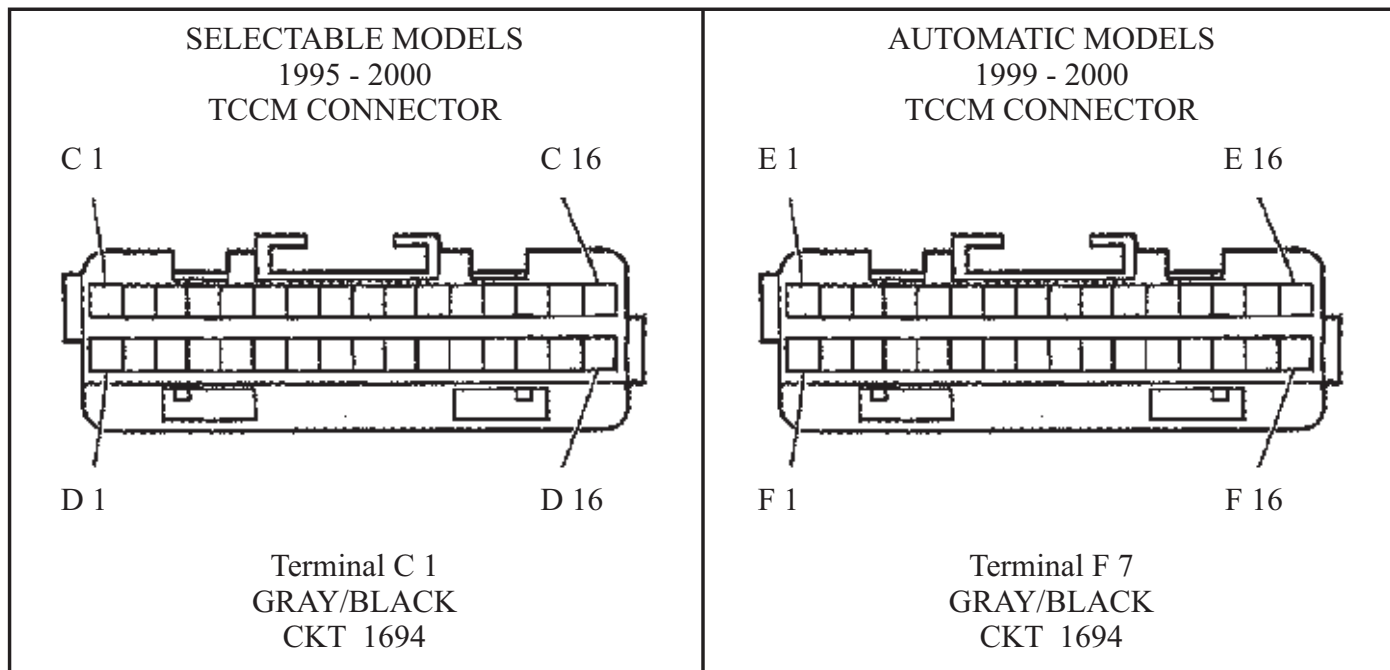


Figure 4

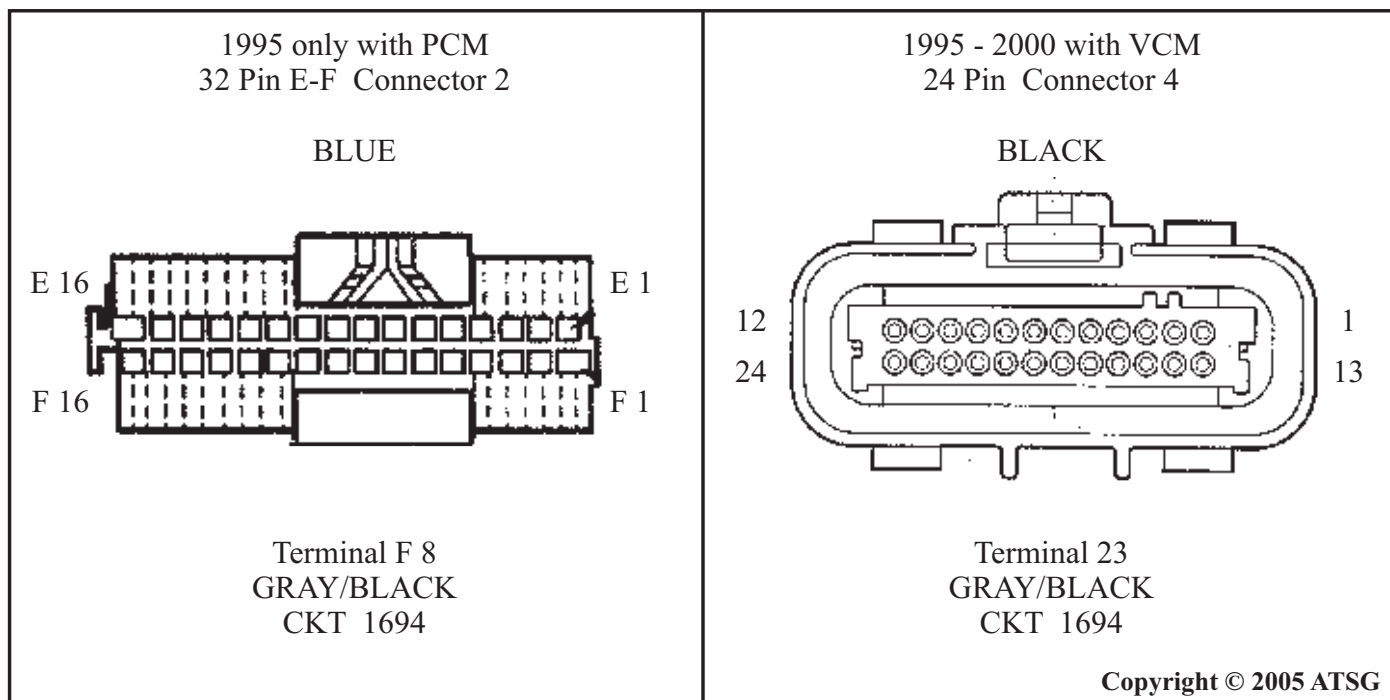


Figure 5