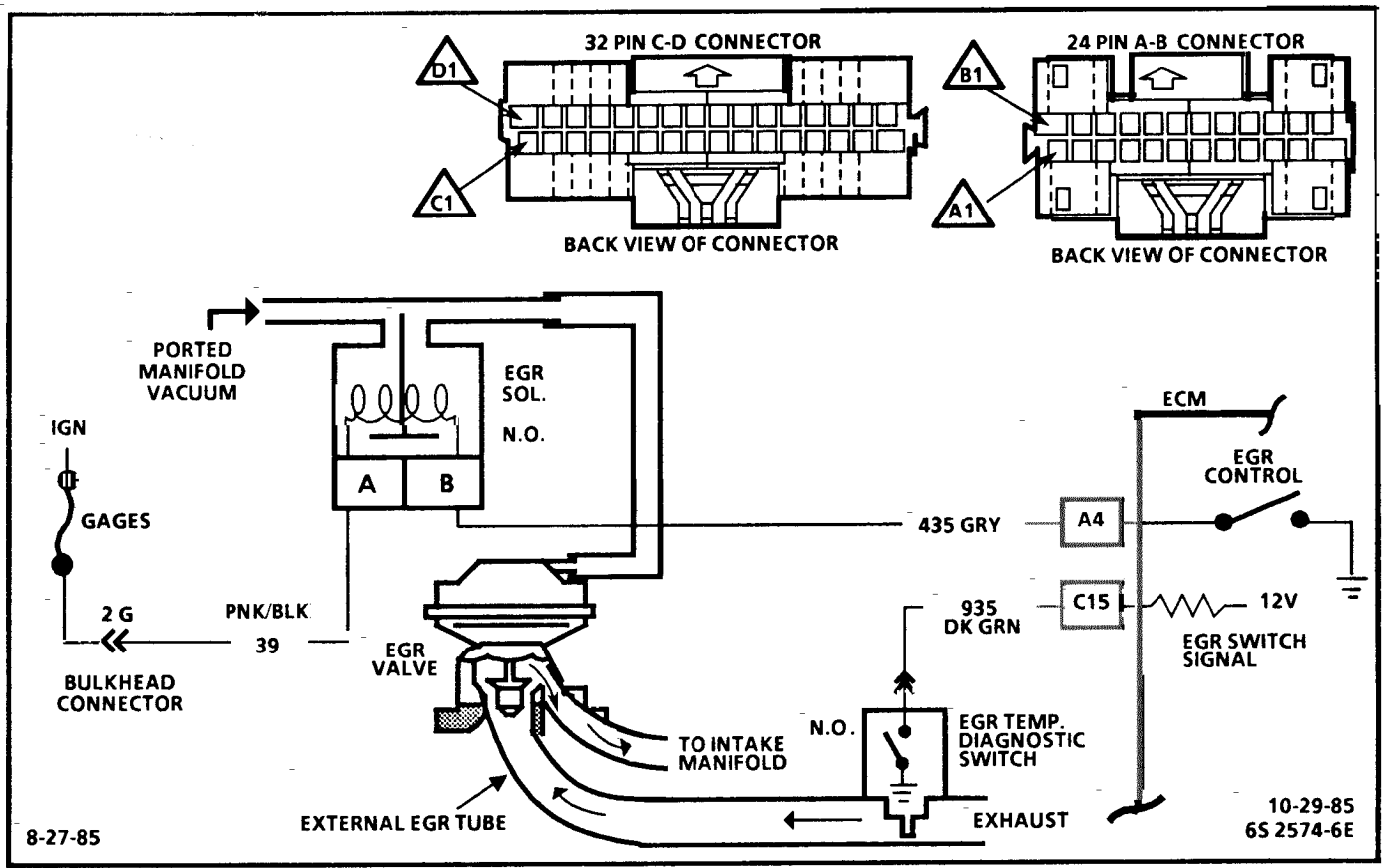

CODE 32
(EGR) SYSTEM FAILURE
5.7L "Y" SERIES

Code 32 means that the EGR diagnostic switch was closed during start-up or that the switch was not detected closed under the following conditions.

- Coolant temperature greater than 80°C (176°F).
- EGR duty cycle commanded by the ECM is greater than 48%.
- TPS less than wide open throttle (WOT), but not at idle.
- Codes 21,22,33,34 not present.
- All conditions above must be met for about 4 minutes.

If the switch is detected closed during start-up, or if the switch is detected open when the above conditions are met, the "SERVICE ENGINE SOON" light will remain "ON" unless the switch changes state.

The EGR vacuum control uses an ECM controlled solenoid valve signal. The ECM will turn the EGR "ON" and "OFF" (Duty Cycle) by grounding CKT 435. The duty cycle is calculated by the ECM based on information from the coolant and mass air flow sensor and engine RPM's. There should be (NO EGR) when in Park or Neutral, TPS input below a specified value or TPS indicating Wide Open Throttle (WOT).

With the ignition "ON", engine stopped, the EGR solenoid is de-energized, and by grounding the diagnostic terminal the solenoid is energized.

1. This test will determine if the ECM set the code due to CKT 935 being grounded on start up. If the code does not repeat but the customer complained of a Service Engine Soon light after start up then this circuit should be checked carefully for an intermittent grounded condition.
2. If Code 32 repeated, then disconnect the EGR temperature switch and try to reset the code. This will determine if the ECM, wiring or temperature switch is at fault.
3. This test will check for a possible open in CKT 935. The ECM supplies 9-12 volts to CKT 935.
4. By grounding the diagnostic terminal, the EGR solenoid should close and allow vacuum to be applied and the vacuum should hold.
5. This test will determine if the electrical control part of the system is at fault or if the connector or solenoid are at fault.
6. By plugging the EGR valve side and ungrounding the diagnostic terminal, the solenoid valve should open and allow vacuum to bleed off through the vent.
7. With the engine not running and vacuum is applied to the valve, the valve should move to the fully open position.
8. Due to this engine using a negative back pressure valve, the valve should close when the engine is cranked over.

CODE 32
EGR SYSTEM FAILURE
5.7L "Y" SERIES
FUEL INJECTION (PORT)

BEFORE USING THIS CHART, CHECK VACUUM HOSES FOR LEAKS, RESTRICTIONS AND CHECK FOR PORTED VACUUM SOURCE TO EGR SOLENOID SHOULD HAVE AT LEAST 7" VACUUM AT 2000 RPM

1. • IGNITION "OFF", CLEAR CODES.
   • COOLANT TEMPERATURE BELOW 28°C (82°F)
   • START ENGINE. AND RUN FOR 15 SECONDS OR UNTIL SERVICE ENGINE SOON LIGHT COMES ON.
   • IGNITION "ON", ENGINE STOPPED.
   • GROUND DIAGNOSTIC TERMINAL AND NOTE CODE.

- NO CODE 32
  3. • DISCONNECT EGR TEMPERATURE SWITCH.
     • CONNECT A VOLTMETER BETWEEN HARNESS TERMINAL (CKT 935) AND GROUND.
     • KEY "ON", ENGINE STOPPED.
     • SHOULD BE BETWEEN 9-12 VOLTS..
  - OK
    4. • IGNITION "ON", ENGINE STOPPED.
       • GROUND DIAGNOSTIC TERMINAL
       • DISCONNECT VACUUM HARNESS AT THE EGR SOLENOID.
       • APPLY VACUUM TO THROTTLE BODY SIDE OF SOLENOID.
    - ABLE TO GET 10" VACUUM
      6. • PLUG EGR SIDE OF SOLENOID
         • UNGROUND DIAGNOSTIC TERMINAL
         • NOTE VACUUM (SHOULD BLEED OFF)
      - OK
        7. • IGNITION "OFF",
           • CONNECT A VACUUM PUMP TO EGR VALVE.
           • USING A MIRROR, OBSERVE EGR DIAPHRAGM WHILE APPLYING VACUUM.
           • DIAPHRAGM SHOULD MOVE FREELY AND HOLD VACUUM FOR AT LEAST 20 SECONDS
        - NOT OK
          - REPLACE EGR VALVE
        - OK
          8. • APPLY VACUUM TO EGR VALVE
             • START ENGINE AND IMMEDIATELY OBSERVE VACUUM GAGE ON VACUUM PUMP.
             • VALVE IS GOOD IF DIAPHRAGM HAS MOVED TO SEATED POSITION (VALVE CLOSED) AND VACUUM DROPPED WHILE STARTING ENGINE.
          - VACUUM DROPPED
            - FAULTY EGR TEMPERATURE SWITCH
          - NO VACUUM DROP
            - • REMOVE EGR VALVE
              • CHECK PASSAGES FOR BEING PLUGGED IF NOT PLUGGED REPLACE VALVE.
      - NOT OK
        - • DISCONNECT SOLENOID ELECTRICAL CONNECTOR.
          • NOTE VACUUM.
        - NO DROP
          - REPLACE SOLENOID
        - DROPS
          - REPAIR SHORT TO GROUND IN CKT 435. IF NOT SHORTED IT IS A FAULTY ECM.
    - UNABLE TO GET 10" VACUUM
      5. • DISCONNECT EGR SOLENOID
         • CONNECT TEST LIGHT BETWEEN HARNESS CONNECTOR TERMINALS
      - NO LIGHT
        - PROBE EACH HARNESS CONNECTOR TERMINAL WITH A TEST LIGHT CONNECTED TO GROUND.
        - LIGHT ON ONE
          - CHECK FOR OPEN CKT 435
          - IF OK
            - CHECK SOLENOID. RESISTANCE SHOULD BE 20 OHMS OR MORE
            - OK
              - FAULTY ECM CONN. OR ECM
            - NOT OK
              - REPLACE SOLENOID AND ECM
        - NO LIGHT
          - REPAIR OPEN CKT 39
        - LIGHT ON BOTH
          - REPAIR SHORT TO VOLTAGE IN CKT 435 AND REPLACE ECM.
      - LIGHT
        - FAULTY SOLENOID CONNECTION OR SOLENOID.

- CODE 32
  2. • IGNITION "OFF", CLEAR CODES.
     • DISCONNECT EGR TEMP. SWITCH CONNECTOR.
     • REPEAT TEST.
  - NO CODE 32
    - WIRE TO SWITCH SHORTED TO GROUND OR FAULTY SWITCH.
  - CODE 32
    - CHECK CKT 935 FOR SHORT TO GROUND. IF NOT SHORTED, IT IS A FAULTY ECM.

- NOT OK
  - CHECK FOR OPEN CKT 935, IF NOT OPEN IT IS FAULTY ECM CONNECTION OR ECM.

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