AB: Injector Driver Circuit Operation Introduction

AB: Pinpoint Tests ➡

Output Functions

High Side Drive Outputs (Right and Left Bank) — The high side driver output function is to distribute energy to the proper bank based on cylinder identification (CID) and provide regulated current to the unit injectors, based on fuel delivery command signal (FDCS) from the injector driver module (IDM) internal 115v supply. The injection timing and duration is commanded by the powertrain control module (PCM) in the FDCS.

Low Side Drive Outputs — The low side drive outputs control the sequencing (firing order) of the engine based on the CID and FDCS inputs.

⚠ **WARNING: RED-STRIPED WIRES CARRY 115V DC. SEVERE ELECTRICAL SHOCK MAY BE RECEIVED. DO NOT PIERCE.**

⚠ **CAUTION: Do not pierce engine electrical wires or damage to the harness may occur.**

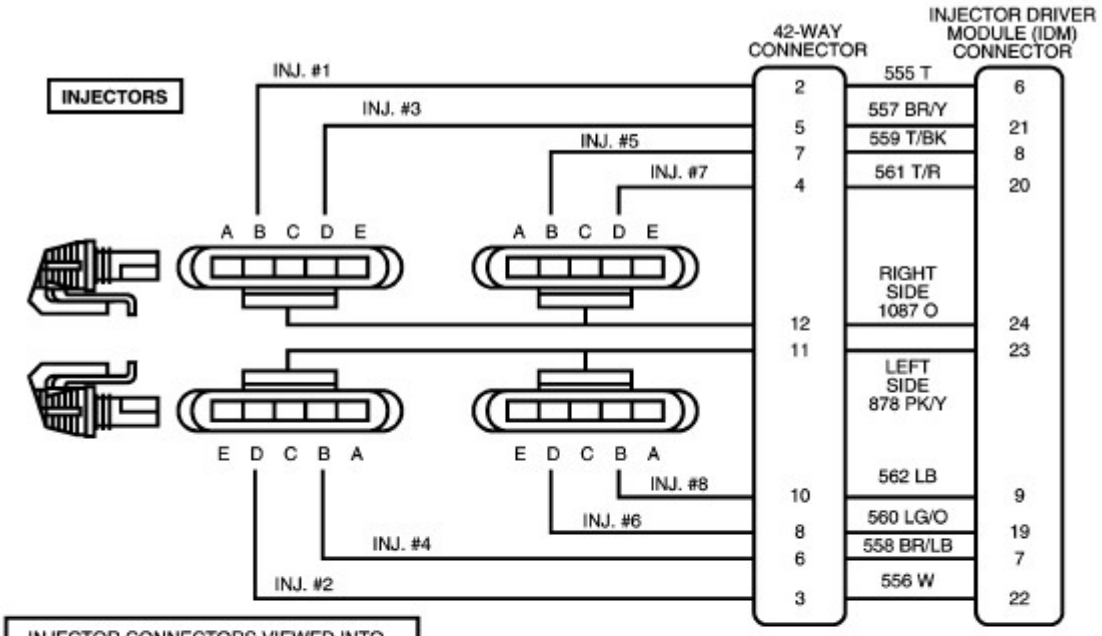
Detection/Management

Note: Special instructions required to clear IDM trouble codes (1995/1996 model year).

- Key on.
- Record IDM trouble codes stored in KOEO ON-DEMAND SELF TEST and KOEO INJECTOR ELECTRICAL SELF TEST modes.
- Access RETRIEVE/CLEAR CONTINUOUS DTCs from NGS Tester menu to clear IDM trouble codes from memory.
- Record any codes displayed. (P1111 may be the only code displayed.)
- Push CLEAR ALL button on NGS Tester.
- IDM trouble codes are now cleared from memory. Repeat the KOEO On-Demand Self Test and KOEO Injector Electrical Self Test. Any IDM codes that reappear are IDM hard faults. If no IDM codes reappear, then the fault is an intermittent IDM fault.

The IDM is capable of detecting individual injector open and shorts to either ground or battery while the engine is running. It is also capable of detecting right or left bank high side opens or shorts to ground. A special on-demand buzz electrical self test will also allow the operator to enable all injector solenoids while the engine is off to verify circuit operation. **IDM detected trouble codes will not be transmitted if the EF line is not functioning; however, the engine will not shut down due to a non-functional EF line.**

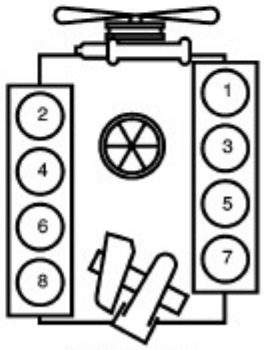
If a low side short to ground condition is determined by the IDM, this condition will be transmitted to the PCM via the EF signal. The PCM will enable the CHECK ENGINE light and command minimum fuel to the affected bank.



INJECTOR CONNECTORS VIEWED INTO MATING SURFACES.

INDIVIDUAL INJECTOR DIAGNOSTIC TROUBLE CODES					
	LOW SIDE SHORT TO GROUND	LOW SIDE SHORT TO BATTERY	CYLINDER CONTRIBUTION TEST	HIGH TO LOW SIDE SHORT	HIGH TO LOW SIDE OPEN
CYL. #1	0261	0262	0263	1261	1271
CYL. #2	0264	0265	0266	1262	1272
CYL. #3	0267	0268	0269	1263	1273
CYL. #4	0270	0271	0272	1264	1274
CYL. #5	0273	0274	0275	1265	1275
CYL. #6	0276	0277	0278	1266	1276
CYL. #7	0279	0280	0281	1267	1277
CYL. #8	0282	0283	0284	1268	1278

INJECTOR BANK DIAGNOSTIC TROUBLE CODES
1291 HIGH SIDE #1 (RIGHT) SHORT TO GRD. OR B+
1292 HIGH SIDE #2 (LEFT) SHORT TO GRD. OR B+
1293 HIGH SIDE OPEN, RIGHT GROUP
1294 HIGH SIDE OPEN, LEFT GROUP
1295 MULTIPLE FAULTS ON BANK #1 (RIGHT)
1296 MULTIPLE FAULTS ON BANK #2 (LEFT)
1297 HIGH SIDES SHORTED TOGETHER



FIRING ORDER
1-2-7-3-4-5-6-8
(CCT ORDER 1-2-3-4-5-6-7-8)

A25112-B

AB: Pinpoint Tests ➡