

## GASOLINE FUEL INJECTION TROUBLE SHOOTING

CONDITION & POSSIBLE CAUSE	CONDITION & POSSIBLE CAUSE
<p><b>COLD START SYMPTOM</b></p> <p><b>Engine Cranks, Will Not Start</b></p> <ul style="list-style-type: none"> <li>● Inoperative fuel pump (blown fuse or relay).</li> <li>● Incorrect "cold" control pressure (CIS).</li> <li>● Auxiliary air valve does not operate.</li> <li>● Cold start injector does not operate.</li> <li>● Incorrectly adjusted sensor plate stop (CIS).</li> <li>● Incorrectly adjusted throttle switch (AFC).</li> <li>● Sensor plate and/or plunger sticking.</li> <li>● Vacuum leak(s).</li> <li>● Fuel system leak(s).</li> <li>● Faulty thermo time switch.</li> <li>● Distributor triggering contacts (AFC).</li> <li>● Faulty temperature sensors (AFC).</li> <li>● Faulty air flow meter potentiometer (AFC).</li> <li>● Faulty air flow meter (AFC).</li> </ul> <p><b>Engine Hard Starting</b></p> <ul style="list-style-type: none"> <li>● Incorrect "cold" control pressure (CIS).</li> <li>● Auxiliary air valve does not open.</li> <li>● Cold start injector does not open.</li> <li>● Cold start injector leaking.</li> <li>● Incorrectly adjusted sensor plate stop (CIS).</li> <li>● Incorrectly adjusted throttle switch (AFC).</li> <li>● Vacuum leak(s).</li> <li>● Fuel leak(s).</li> <li>● Thermo time switch does not close.</li> <li>● Faulty air flow meter potentiometer (AFC).</li> </ul>	<p><b>Rough Idle During Warm-Up</b></p> <ul style="list-style-type: none"> <li>● Incorrect "cold" control pressure.</li> <li>● Auxiliary air valve does not close.</li> <li>● Auxiliary air valve does not open.</li> <li>● Cold start injector leaking.</li> <li>● Vacuum leak(s).</li> <li>● Fuel system leak(s).</li> <li>● Injectors leaking.</li> <li>● Thermo time switch inoperative.</li> </ul> <p><b>HOT ENGINE DRIVEABILITY SYMPTOM</b></p> <p><b>Rough Idle With Warm Engine</b></p> <ul style="list-style-type: none"> <li>● Incorrect "warm" control pressure (CIS).</li> <li>● Auxiliary air valve does not close.</li> <li>● Faulty cold start injector.</li> <li>● Sensor plate and/or plunger stuck (CIS).</li> <li>● Throttle valve stuck (AFC).</li> <li>● Incorrectly adjusted throttle switch (AFC).</li> <li>● Vacuum leak(s).</li> <li>● Fuel system leak(s).</li> <li>● Injectors leaking.</li> <li>● Improper idle mixture setting.</li> <li>● Defective air temperature sensor (AFC).</li> </ul>
<p><b>HOT STARTING SYMPTOM</b></p> <p><b>Engine Cranks, Will Not Start</b></p> <ul style="list-style-type: none"> <li>● Inoperative fuel pump (blown fuse or relay).</li> <li>● Incorrect "warm" control pressure (CIS).</li> <li>● Incorrectly adjusted sensor plate (CIS).</li> <li>● Incorrectly adjusted throttle switch (AFC).</li> <li>● Sensor plate and/or plunger stuck (CIS).</li> <li>● Vacuum leak(s).</li> <li>● Fuel system leak(s).</li> <li>● Injectors leaking.</li> <li>● Improper idle mixture setting.</li> </ul> <p><b>Engine Hard Starting (Long Cranking Time)</b></p> <ul style="list-style-type: none"> <li>● Incorrect "warm" control pressure (CIS).</li> <li>● Auxiliary air valve does not close.</li> <li>● Incorrectly adjusted sensor plate stop (CIS).</li> <li>● Incorrectly adjusted throttle switch (AFC).</li> <li>● Vacuum leak(s).</li> <li>● Fuel system leak(s).</li> <li>● Injectors leaking.</li> <li>● Improper Idle mixture setting.</li> </ul>	<p><b>CO Level Too High at Idle</b></p> <ul style="list-style-type: none"> <li>● Incorrect "warm" control pressure (CIS).</li> <li>● Cold start injector leaking.</li> <li>● Sensor plate and/or plunger stuck (CIS).</li> <li>● Incorrectly adjusted throttle switch (AFC).</li> <li>● Fuel system leaking.</li> <li>● Improper idle mixture setting.</li> <li>● Improper fuel pressure.</li> <li>● Faulty oxygen sensor.</li> <li>● Faulty air flow meter potentiometer (AFC).</li> <li>● Faulty temperature sensors (AFC).</li> <li>● Dirty (restricted) air cleaner.</li> </ul> <p><b>CO Level Too Low at Idle</b></p> <ul style="list-style-type: none"> <li>● Incorrect "warm" control pressure (CIS).</li> <li>● Vacuum leak(s).</li> <li>● Improper idle mixture setting.</li> </ul> <p><b>Poor Engine Performance</b></p> <ul style="list-style-type: none"> <li>● Incorrect "warm" control pressure (CIS).</li> <li>● Cold start injector leaking.</li> <li>● Sensor plate and/or plunger stuck (CIS).</li> <li>● Incorrectly adjusted throttle switch (AFC).</li> <li>● Improper idle mixture setting.</li> <li>● Throttle valve not opening completely.</li> </ul>

# 1981 Fuel Systems Trouble Shooting

## GASOLINE FUEL INJECTION TROUBLE SHOOTING (Cont.)

CONDITION & POSSIBLE CAUSE	CONDITION & POSSIBLE CAUSE
<p><b>Excessive Fuel Consumption</b></p> <ul style="list-style-type: none"> <li>• Incorrect "warm" control pressure (CIS).</li> <li>• Cold start injector leaking.</li> <li>• Fuel system leak(s).</li> <li>• Improper idle mixture setting.</li> <li>• Improper fuel pressure.</li> <li>• Defective air flow meter potentiometer (AFC).</li> <li>• Defective sensors (AFC).</li> </ul> <p><b>Engine Misfire at High Speed</b></p> <ul style="list-style-type: none"> <li>• Loose electrical contact at fuel pump.</li> <li>• Primary pressure too low or too high (CIS).</li> <li>• Fuel system leak(s).</li> <li>• Defective air flow meter (AFC).</li> <li>• Defective fuel pump circuit (AFC).</li> </ul> <p><b>Engine Backfires into Intake Manifold</b></p> <ul style="list-style-type: none"> <li>• Incorrect "warm" control pressure (CIS).</li> <li>• Vacuum leak(s).</li> <li>• Improper idle mixture setting.</li> <li>• Defective air flow meter (AFC).</li> </ul>	<p><b>Engine "Diesels"</b></p> <ul style="list-style-type: none"> <li>• Sensor plate and/or plunger stuck (CIS).</li> <li>• Incorrectly adjusted throttle switch (AFC).</li> <li>• Injectors leaking.</li> <li>• Faulty cold start injector.</li> <li>• Defective air flow meter potentiometer (AFC).</li> <li>• Defective sensors (AFC).</li> </ul> <p><b>Idle Speed Too High; Cannot Be Lowered</b></p> <ul style="list-style-type: none"> <li>• Auxiliary air valve does not close.</li> <li>• Faulty throttle valve (AFC).</li> </ul> <p><b>Engine Backfires into Exhaust Manifold</b></p> <ul style="list-style-type: none"> <li>• Incorrect "warm" control pressure (CIS).</li> <li>• Cold start injector leaks.</li> <li>• Fuel system leaking.</li> <li>• Improper idle mixture setting.</li> <li>• Defective control unit.</li> <li>• Improper fuel pressure.</li> </ul>

## DIESEL FUEL INJECTION TROUBLE SHOOTING

CONDITION & POSSIBLE CAUSE	CONDITION & POSSIBLE CAUSE
<p><b>HARD STARTING SYMPTOMS</b></p> <p><b>Engine Cranks, Will Not Start</b></p> <ul style="list-style-type: none"> <li>• Incorrect fuel or no fuel.</li> <li>• Faulty glow plug.</li> <li>• Air in fuel system.</li> <li>• Faulty injector(s).</li> <li>• Faulty injection pump.</li> <li>• Improper injection pump timing.</li> </ul> <p><b>Engine Starts, Will Not Run</b></p> <ul style="list-style-type: none"> <li>• Air in fuel system.</li> <li>• Modulator valve out of adjustment.</li> <li>• Fuel lines, filter or tank plugged.</li> <li>• Incorrect idle speed setting.</li> </ul> <p><b>LOW SPEED DRIVEABILITY SYMPTOM</b></p> <p><b>Engine Runs Rough</b></p> <ul style="list-style-type: none"> <li>• Air or dirt in fuel system.</li> <li>• Fuel system leak(s).</li> <li>• Clogged or sticking injectors.</li> <li>• Incorrect fuel.</li> <li>• Governor or timing incorrect.</li> <li>• Incorrect injection pump timing.</li> </ul>	<p><b>Engine Idle Speed Too High</b></p> <ul style="list-style-type: none"> <li>• Incorrect idle speed setting.</li> <li>• Jammed modulator valve.</li> <li>• Improperly adjusted governor.</li> <li>• Vacuum leak(s) in manifold.</li> </ul> <p><b>Poor Acceleration</b></p> <ul style="list-style-type: none"> <li>• Incorrect fuel.</li> <li>• Timing device stuck in idle position.</li> <li>• Faulty fuel pump.</li> <li>• Air or dirt in fuel system.</li> <li>• Improper injection pump timing.</li> <li>• Dirty or faulty injectors.</li> </ul> <p><b>Engine Knocks</b></p> <ul style="list-style-type: none"> <li>• Incorrect fuel.</li> <li>• Air in fuel system.</li> <li>• Incorrect injection pump timing.</li> <li>• Dirt in injection pump or injectors.</li> <li>• Incorrect idle speed setting.</li> </ul>