

1974-79 EXHAUST EMISSION SYSTEMS

MG Air Injection System

1979 All Models

NOTE: For 1974-78 models, see **AIR INJECTION SYSTEMS** article in this section.

DESCRIPTION

The air injection system reduces exhaust emissions by injecting fresh air into the exhaust gas stream as it leaves the combustion chambers. The oxygen in the fresh air, plus the heat of the exhaust gases, causes further oxidation (burning) of the exhaust gases, thereby reducing exhaust emissions. The system consists of a belt-driven air pump, a pressure relief valve, a check valve, a gulp valve (if equipped), air injection manifold, and various connecting hoses and pipes.

OPERATION

MIDGET

The belt-driven air pump supplies air under pressure through the one-way check valve to a single entry point in the exhaust manifold. The air combines with exhaust gases to continue the oxidation process in the exhaust system. The one-way check valve prevents reverse flow in the air injection system when exhaust gas pressure exceeds air pump pressure. A relief valve is attached to the air pump to relieve excess pump pressure at high engine speeds. See Fig. 1.

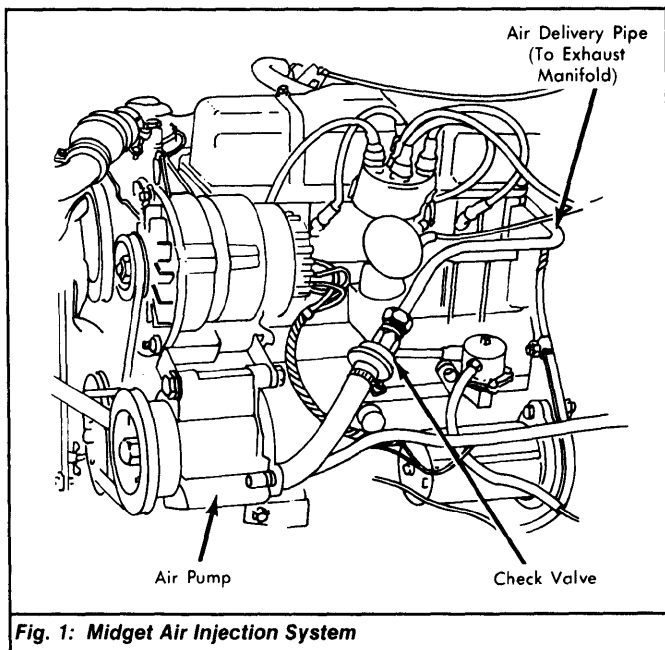


Fig. 1: Midget Air Injection System

MGB

The belt-driven air pump supplies air under pressure through the one-way check valve through an air manifold to the exhaust ports just above the exhaust valves. The air combines with exhaust gases to continue the oxidation process in the exhaust system. The check valve prevents reverse flow in the air injection manifold when exhaust gas pressure exceeds air pump pressure. A pressure relief valve, built into the pump, controls pump maximum output.

The gulp valve provides a quantity of air to the intake manifold under high manifold vacuum, such as sudden throttle closure. This additional air compensates for a temporary overrich mixture caused by evaporation of the residual fuel on the intake manifold walls to form a leaner mixture that will burn in the cylinders. See Fig. 2.

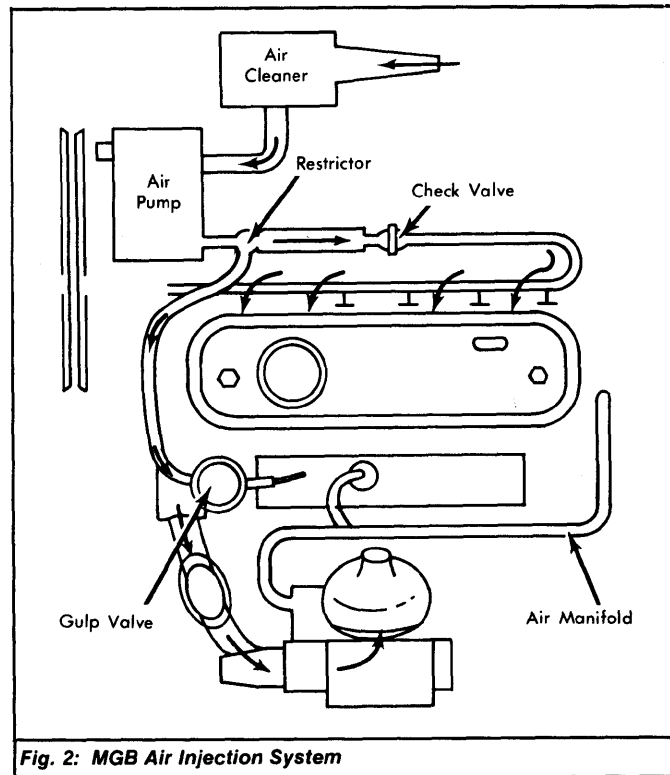


Fig. 2: MGB Air Injection System

TESTING

AIR PUMP & RELIEF VALVE

- 1) Check air pump drive belt adjustment. Belt is adjusted properly if it can be deflected 3/4-1" midway on its longest run. Disconnect air pump output hose and connect a pressure gauge to hose. Start and allow engine to idle at 850 RPM. Check pressure gauge reading.
- 2) Air pump pressure should be at least 1.0-1.5 psi (.07-.11 kg/cm²). If not, pump is defective and must be replaced. Increase engine speed and note pressure at which pressure relief valve opens the excess pump pressure. Relief valve should relieve pressure at 5.8-8.0 psi (.39-.56 kg/cm²) on Midget or 4.5-6.5 psi (.32-.45 kg/cm²) on MGB. If not, replace pressure relief valve.

NOTE: A faulty air injection pump is usually indicated by excessive air pump noise.

CHECK VALVE

Remove check valve. Blow air through check valve. Air should flow through valve in one direction only. If not, replace check valve.

GULP VALVE

NOTE: Engine speed must not increase above idle speed during this test.

- MGB** - 1) Disconnect air supply hose to gulp valve at the air pump. Connect a vacuum gauge, using a "T" fitting, to the disconnected end of hose. Start and idle engine.
- 2) Temporarily block off open end of "T" fitting and check that vacuum gauge reads zero for approximately 15 seconds. If vacuum is registered, replace gulp valve.
 - 3) With open end of "T" fitting still blocked off, quickly open, then close throttle. Vacuum gauge should indicate vacuum. Repeat this several times, unblocking "T" fitting after each time to allow vacuum to escape. If gauge fails to register vacuum, replace gulp valve.