

1980 Exhaust Emission Systems

TOYOTA AIR SUCTION

**Corolla (Federal)
Tercel**

DESCRIPTION

The air suction system is used on Federal Corolla models and on all Tercel models. It uses exhaust gas pulses to draw air into the exhaust manifold, where the fresh air helps to complete oxidation of emissions. The system includes an air suction (AS) valve (2 on Tercel), an air intake filter, various hoses, and a thermal vacuum transmitting valve (Corolla only).

OPERATION

Air is drawn through the air filters and air suction valves into the exhaust ports of all cylinders on Corolla, and into cylinders 3 and 4 on Tercel. The Tercel system uses a restrictor to delay air suction during rapid deceleration, while the Corolla system uses a TVTV to accomplish the same purpose. This prevents engine backfiring on deceleration. The TVTV also deactivates the air suction system while the engine is cold.

TESTING

COROLLA

- 1) Check condition of all hoses and tubes. Disconnect air suction hose from air cleaner and start cold engine. Listen at air suction hose. As engine warms up, a "bubbling" noise should be heard at idle. No noise should be heard when engine is cold.
- 2) Follow small hose from end of air suction valve to TVTV. Disconnect the hose; "bubbling" noise should stop. Reconnect hose; noise should start within a few seconds. If system operates properly, testing is complete. If not, check valve and TVTV.

3) With TVTV below 46°F (8°C), close port "S". Air should flow from port "M" to "A". Raise temperature of TVTV in warm water to 66°F (19°C). With port "S" blocked, air should not flow from "M" to "A".

4) Air should flow from port "M" to "S" easily. Air should pass with difficulty from port "S" to "M". Replace TVTV if operation is not correct.

5) Remove air suction valve and apply vacuum to pipe on vacuum chamber "B". Air passage should close. Remove vacuum and try to blow air from outlet pipe to air cleaner side. Air should not pass. Replace valve if operation is not correct.

TERCEL

- 1) Check condition of all hoses and pipes. Remove small vacuum hose from air suction valve "B" and plug hose end. With engine idling, a "bubbling" sound should be heard when air cleaner lid is removed.
- 2) Replace vacuum hose on valve "B". A noise should be heard from inlet pipe of valve within 2-5 seconds after replacing hose. If system operates properly, test is complete. If not, check air suction valve.
- 3) Remove filter and valve from air cleaner housing. No air should pass when blowing into valve pipe. Air should pass if sucking through valve pipe. Reinstall valve and filter.
- 4) Remove air suction valve "B". Check valve by blowing into pipes. With vacuum applied to valve diaphragm, air should flow from filter side to air cleaner side and not the other way. With no vacuum, air should not flow from filter side to outlet side. Reinstall valve.

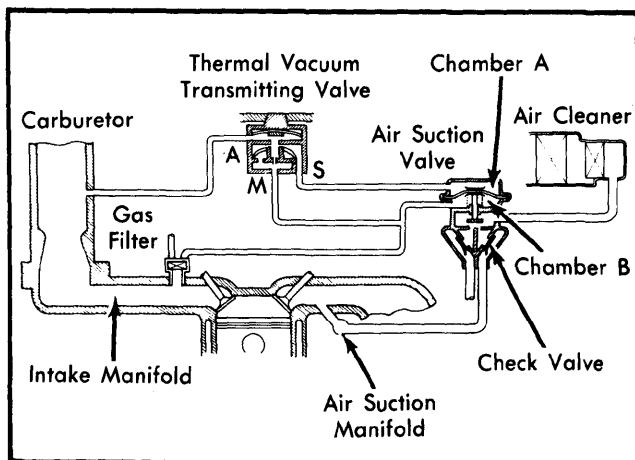


Fig. 1 Corolla (Federal) Air Suction System

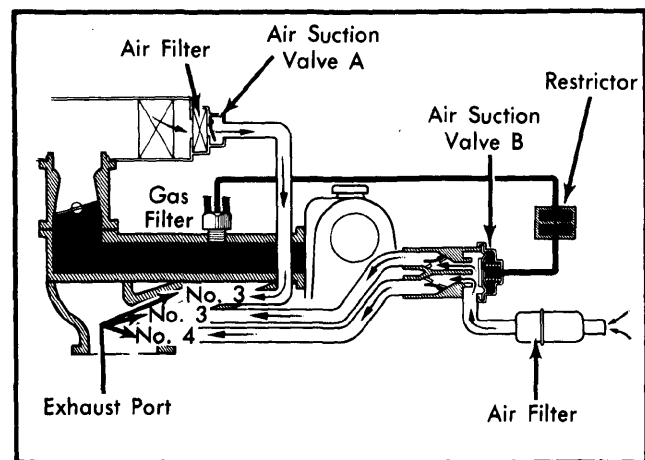


Fig. 2 Tercel Air Suction System