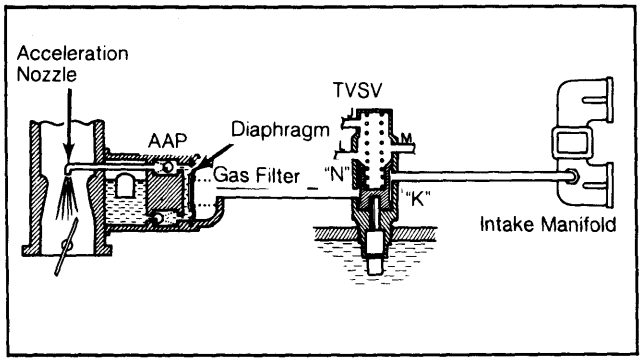
TOYOTA AUXILIARY ACCELERATOR PUMP SYSTEM

Celica, Corolla, Pickup, Tercel

DESCRIPTION

The Auxilary Accelerator Pump (AAP) system increases cold engine performance by forcing more fuel into the accelerator nozzle to obtain better acceleration. The system consists of an AAP, Thermostatic Vacuum Switching Valve (TVSV) or Bi-metallic Vacuum Switching Valve (BVSV), accelerator nozzle and a gas filter.

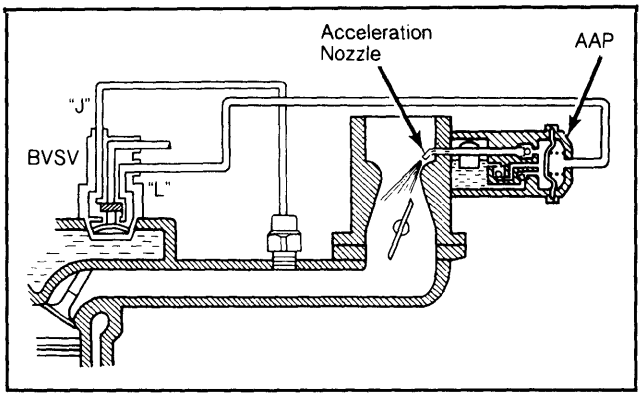
Fig. 1: Corolla (1AC Engine) & Tercel AAP System



OPERATION

When accelerating with a cold engine, the main acceleration pump capacity is insufficient to provide good acceleration. The AAP system is vacuum controlled and the VSV is open during constant RPM. Intake vacuum pulls on the AAP diaphragm drawing fuel into the AAP chamber. During acceleration, low vacuum applied to the AAP diaphragm allows spring tension to force fuel from the AAP chamber into the acceleration nozzle.

Fig. 2: Celica, Corolla (3T-C Engine) & Pickup AAP System



TESTING

AUXILIARY ACCELERATOR PUMP (AAP)

1) On Corolla with 1AC engine and Tercel models, check that engine coolant temperature is below 122°F (50°C). On Celica, Corolla with 3T-C engine and Pickup models, check that coolant temperature is below 131°F (55°C). Remove air cleaner and start engine.

2) Pinch AAP vacuum hose and stop engine. Release vacuum hose and ensure that gasoline spurts out of accelerator nozzle.

3) Warm engine to normal operating temperature. Pinch vacuum hose and stop engine. Check that gasoline does not spurt from accelerator nozzle. If no problem was found, system is okay.

THERMOSTATIC VACUUM SWITCHING VALVE (TVSV)

Start engine and allow to idle. Disconnect hose from AAP diaphragm. Apply and release vacuum directly to AAP diaphragm. Check that engine RPM changes by releasing vacuum. Reconnect AAP hose. Replace diaphragm if a problem is found.

BI-METALLIC VACUUM SWITCHING VALVE (TVSV)

1) Drain coolant from radiator. Remove BVSV from intake manifold. Cool BVSV to below 131°F (55°C). Check that air flows from top port "J" to bottom port "L".

2) Heat BVSV to above 165°F (74°C). Check that air flows from top port "J" to middle port "K". If a problem is found, replace BVSV. Apply sealant to threads of BVSV and reinstall.