

# 1974-79 EXHAUST EMISSION SYSTEMS

## Toyota Air Suction System

3-417

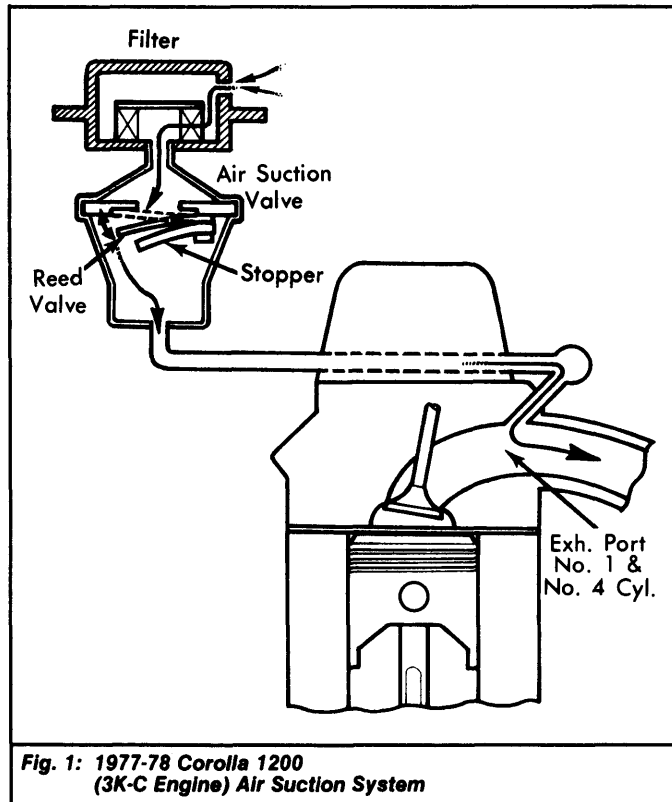
### 1977-79 Models

**NOTE:** Also see TOYOTA AIR INJECTION SYSTEM article in this section for information on air injection system.

### DESCRIPTION

Used on 1977 3K-C engine, the system directs air into exhaust ports of engine to promote burning of hydrocarbon (HC) and carbon monoxide (CO) emissions still present in exhaust gases. This air is also used as the source of oxygen for use by the catalytic converter.

All 1978-79 models (except 1979 Supra) use an air injection or air suction system to supply fresh air at the exhaust ports to burn HC and CO remaining in the exhaust gases.



**Fig. 1: 1977-78 Corolla 1200 (3K-C Engine) Air Suction System**

### AIR SUCTION SYSTEM

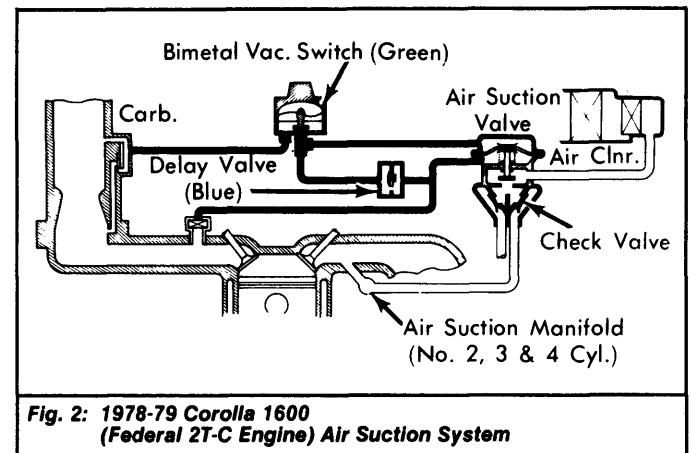
On 1977 3K-C engine, the system draws in fresh air from air suction valve into exhaust port. Negative pressure caused by valve overlap and pulsation in exhaust port makes this possible. When vacuum acts on air suction valve, valve opens and fresh air is drawn into exhaust ports. Positive pressure will cause air suction valve to close, preventing backfire from traveling back up into valve.

On 1978-79 models, the suction valve responds to exhaust system pressure and atmospheric pressure to control intake of air into the exhaust ports. This system accomplishes the same purpose as the air injection system. Pulsations created by the combustion process open and close the air suction valve. When the pulsation is negative (atmospheric pressure is greater than exhaust system pressure) the valve opens and fresh air is drawn in. When exhaust pressure is positive, the valve closes and no air is drawn in.

### TESTING

#### AIR SUCTION SYSTEM

- 1) Inspect vacuum tubes for damage. Replace as needed. Start engine and hold a piece of thin paper against filter inlet port. System is operating properly if paper is held against opening.
- 2) If paper is not held against filter port, remove filter using Wrench (SST 09228-44010). Repeat air suction system test at air suction valve. If paper is held against air suction valve, replace filter. If paper still is not held against opening, replace air suction valve.



**Fig. 2: 1978-79 Corolla 1600 (Federal 2T-C Engine) Air Suction System**