# 1974-79 EXHAUST EMISSION SYSTEMS
# Honda Thermostatic Air Cleaners

## All Models

## DESCRIPTION

The thermostatic air cleaner/air intake control system is a thermostatic air cleaner assembly which maintains a uniform air temperature of air entering the carburetor. Temperature is maintained to approximately 95-100°F (35-38°C), regardless of outside of temperature, to permit finer tuning and balancing of the carburetor. This helps control hydrocarbon (HC) and carbon monoxide (CO) emissions and permits better fuel atomization for more complete combustion.

The thermostatic air cleaner/air intake control system consists of the air cleaner, an outside air intake hose, a hot air hose, an air control diaphragm, an air bleed valve, an air control valve door, a vacuum pressure control check valve, and a vacuum pressure control fixed orifice.

## OPERATION

With engine temperature below 100°F (38°C), the bleed valve is closed as manifold vacuum builds. The air control diaphragm exerts vacuum pressure which pulls up on the valve door. The valve door rises, permitting heated air from around the exhaust manifold to enter the air cleaner (outside, cold air is blocked).

With engine temperature above 100°F (38°C), the bleed valve is open and manifold pressure bleeds out. The air control diaphragm no longer has vacuum pressure and the internal spring pushes down on the valve door. The valve door returns to down position, blocking off heated air and permitting outside air to enter air cleaner.

A check valve is used to prevent vacuum pressure loss during periods of wide-open throttle. A fixed orifice prevents rapid pressure changes at the diaphragm. It allows smooth operation of the valve door. It also maintains the proper air/fuel ratio.

## TESTING

### THERMOSTATIC AIR CLEANER

**1974-76 Non-CVCC Models - 1)** Check for loose, cracked or deteriorated hoses. *See Fig. 1.* Remove air cleaner cover and element. Allow air cleaner case to cool for at least 5 minutes.

**2)** With transmission in Neutral and Blue distributor wire disconnected, engage starter motor for 5 seconds. Temperature control valve in air cleaner should rise and stay open for at least 3 seconds, unless there is a leak in system.

**3)** If valve does not stay open longer than 3 seconds, check 4-way fitting by passing a No. 65 drill through orifice in manifold. Retest valve operation. If valve still does not open for at least 3 seconds, disconnect vacuum line from diaphragm. Open valve and block inlet to diaphragm. If door does not stay open, replace diaphragm.

**4)** If valve now stays open, remove finger from inlet. Make sure valve fully closes. Connect a hand-held vacuum pump to diaphragm and apply enough vacuum to open valve. If valve closes in less than 3 seconds, vacuum is leaking through bleed valve. Replace as necessary.

**5)** Apply vacuum at manifold vacuum line until valve opens. Disconnect vacuum source. If valve closes in less than 3 seconds, replace check valve. Reinstall air cleaner element and cover.

**6)** Connect vacuum gauge in-line between vacuum source and vacuum diaphragm. Reconnect Blue distributor wire. Start engine and allow to idle at 1500-2000 RPM. As engine warms, vacuum gauge should read zero. If vacuum does not drop to zero, replace air bleed valve.

**1974-76 CVCC Models - 1)** Check for loose, cracked or deteriorated hoses. *See Fig. 1.* Remove air cleaner cover and element. With engine cold, engage starter motor for at least 5 minutes. Temperature control valve in air cleaner should rise and stay open for at least 3 seconds.

**2)** If valve does not rise, check 4-way fitting by passing a No. 77 drill through orifice in manifold. Retest valve operation. If valve still does not open for at least 3 seconds, disconnect and plug vacuum line leading to air bleed valve. Crank engine for at least 5 seconds. If valve opens and stays open for at least 3 seconds, replace air bleed valve.

**3)** If valve still fails to open for at least 3 seconds, disconnect hose to diaphragm. Manually open valve and block diaphragm inlet with finger. If valve stays open, replace check valve. If valve still fails to open, replace vacuum diaphragm.

**1977-79 Models (Cold Engine) -** Remove air cleaner cover and filter element. With engine cold, crank engine for about 5 seconds. Air control door should rise and remain fully open for at least 3 seconds after cranking. If not, ensure fixed orifice is clear by passing a No. 77 drill through orifice, or by blowing out with compressed air. Repeat test.

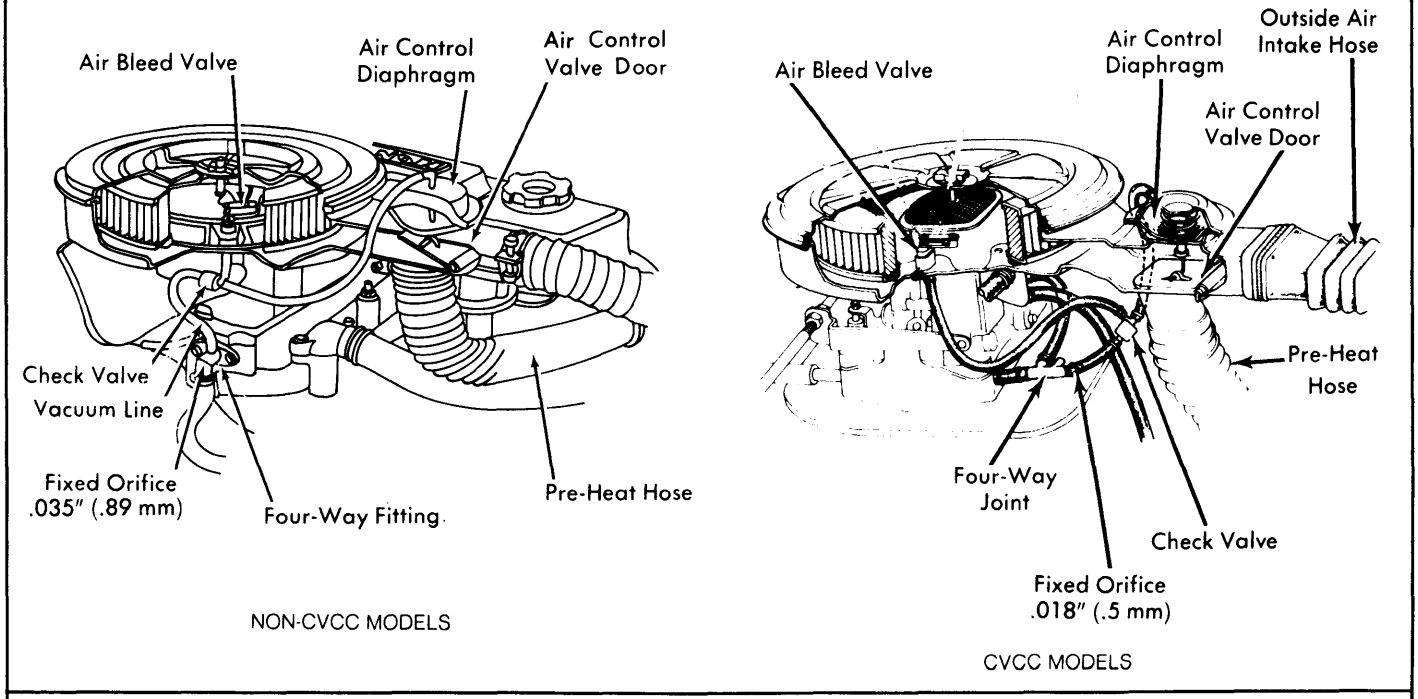


*Fig. 1: 1974-76 Thermostatic Air Cleaners*

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# Honda Thermostatic Air Cleaners (Cont.)

**1977-79 Models (Hot Engine)** - With engine running at normal operating temperature, remove air cleaner cover and filter. Immediately inspect door position. Valve door should have dropped down to fully closed position (hot air intake blocked off).

***NOTE: Do not force air bleed valve on or off the rubber valve seat in an attempt to achieve correct door position, as damage will occur to valve or to seat.***

## IMPROPER DOOR ACTION

**1977-79 Models** - **1)** If air door did not respond as indicated in cold/hot engine tests (did not rise or fall), test the air bleed valve. To do so, disconnect and plug hose leading to air bleed valve. Crank engine for about 5 seconds.

**2)** Air control valve door should rise and remain up for at least 3 seconds. If it does, replace air bleed valve and repeat test. If door does not rise or remain open, go to next step.

**3)** Test air control diaphragm and check valve. To do so, disconnect vacuum hose from the air control diaphragm. Raise air control valve door manually and, while blocking the inlet pipe, release the valve door. *See Fig. 2.*

**4)** If valve door remains up, replace the check valve and repeat test. If valve door drops to closed position, replace the air control diaphragm and repeat test.

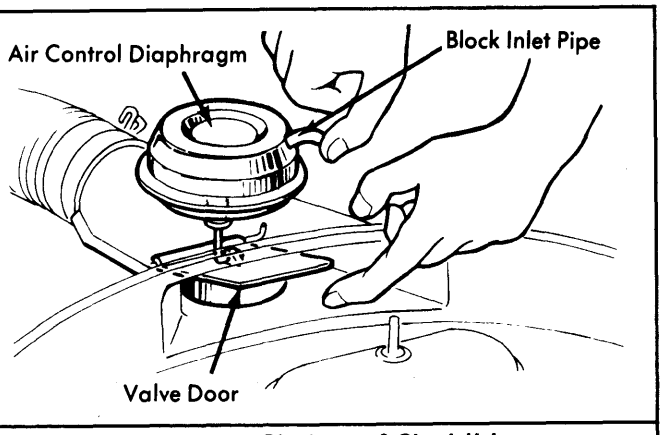


*Fig. 2: Testing Air Control Diaphragm & Check Valve*