

13. AUTOMATIC HOT AIR INTAKE (HAI) SYSTEM

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13. AUTOMATIC HOT AIR INTAKE (HAI) SYSTEM

DESCRIPTION

This system keeps as constantly as possible the temperature of air drawn into the carburetor regardless of the ambient temperature. It allows hot air supply to the carburetor in cold weather to improve driveability and to prevent the carburetor from freezing in extremely cold weather.

In the control methods, there are vacuum type and the wax type (2F engine only).

OPERATION

1. Vacuum Type HAI System Operation.

[When cold]

- The thermo valve is closed.
- The intake manifold vacuum acts on the diaphragm and draws it up.
- Raising the diaphragm causes the link to pull up the air control valve.
- The air control valve closes the cold air intake and opens the hot air intake so that the hot air around the exhaust manifold is led into the carburetor.

[When warm]

- The thermo valve is opened so that the atmospheric pressure acts on the diaphragm, resulting in the diaphragm to be pushed down by spring tension.
- The air control valve will then be lowered to open the cold air inlet and close the hot air intake.

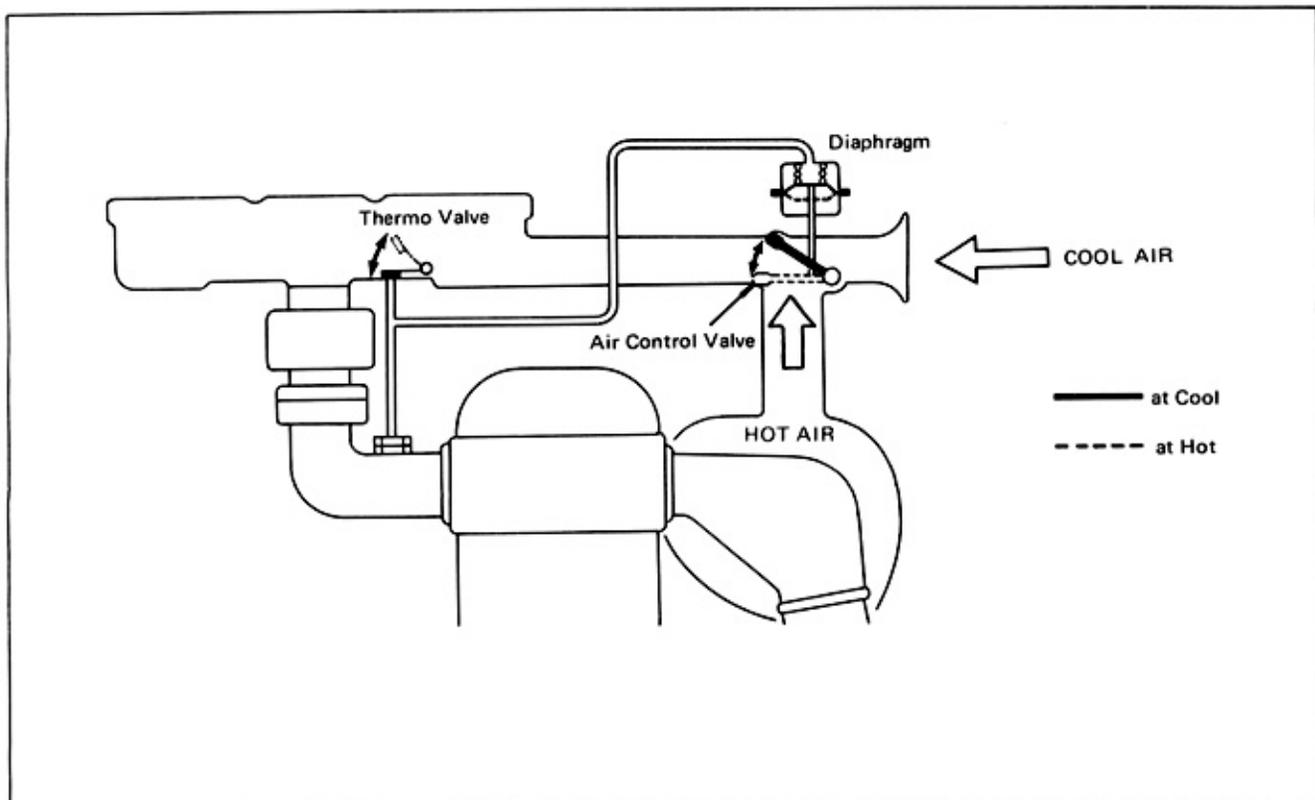


Fig. 13-1 Vacuum Type HAI System Operation

2. Wax Type HAI System Operation (2F engine only)

[When cold]

- The thermo wax is contracted when cold so that link is drawn in.
- The air control valve has the hot air inlet closed in the same manner as in the vacuum type.

[When hot]

- The thermo wax expands and pushes the link, causing the air control valve to open the cold air inlet.

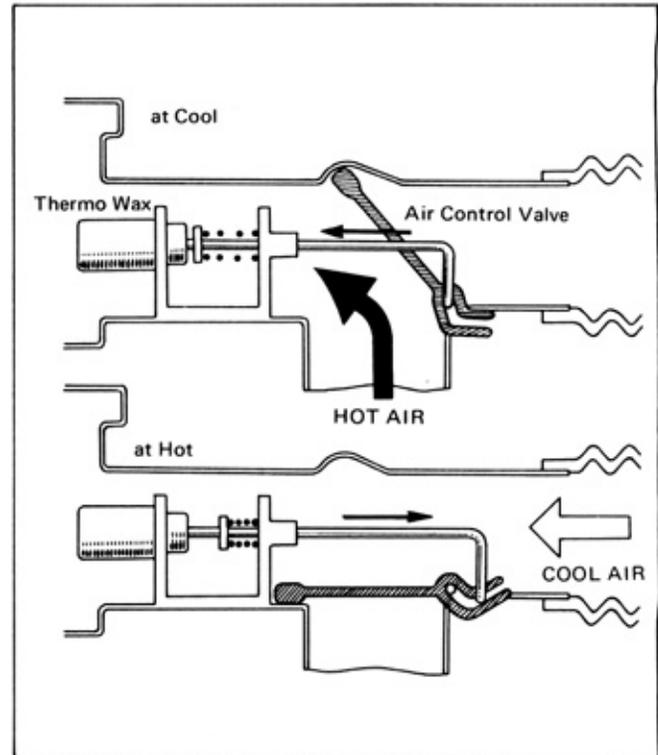


Fig. 13-2 Wax Type HAI System Operation

3. HAI System Operating Temperature.

Engine Family	Temperature A	Temperature B
2T-C	90°F	108°F
20R	101°F	106°F
4M	68°F	77°F
2F	81°F	100°F

The diagram shows the linkage mechanism of the HAI system. Point A is located at the top of the linkage, and point B is at the bottom. The linkage is shown in a position where the cold air inlet is closed.

INSPECTION

Diaphragm Inspection

While idling, connect the diaphragm hose directly to the intake manifold. The cold air inlet should close.

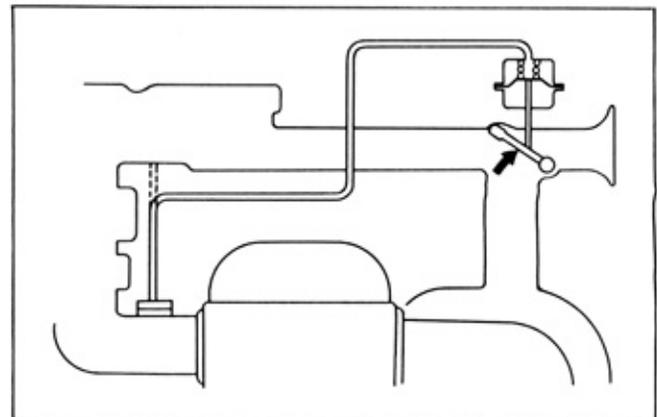
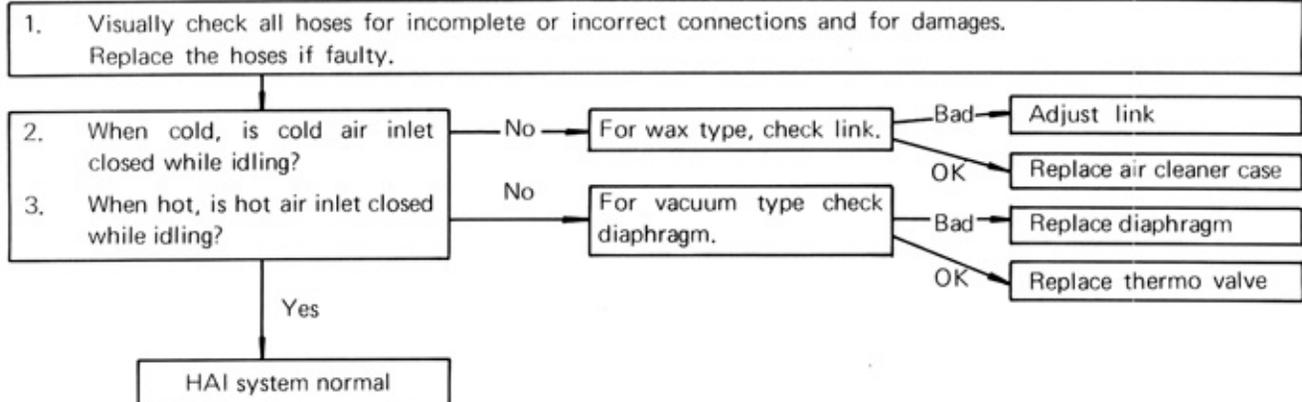


Fig. 13-3 Diaphragm Inspection

HAI SYSTEM INSPECTION PROCEDURE



Note

1. Do not push the air control valve too strongly.
2. At inspection, also remove the air duct in the 4M and 2F engines, and visually check the air control valve opening and closing action.

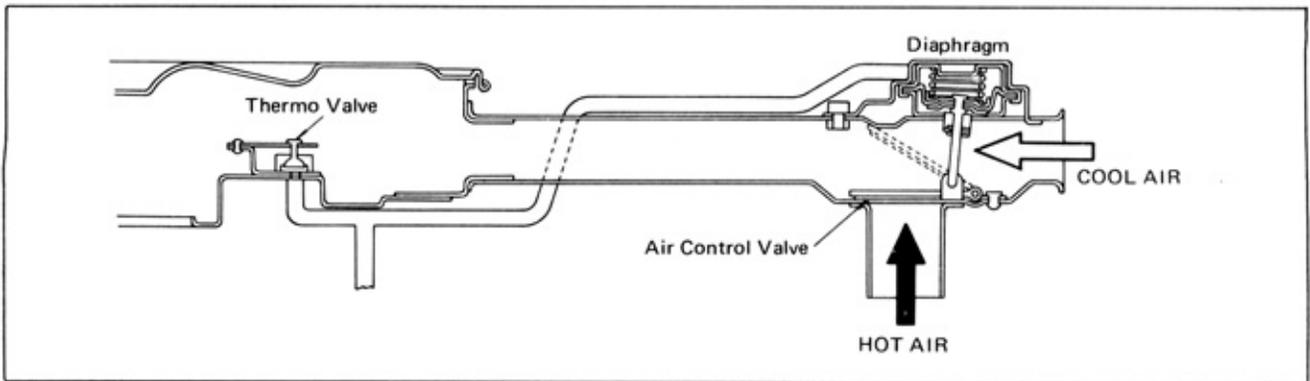


Fig. 13-4 Air Cleaner (2T-C Engine)

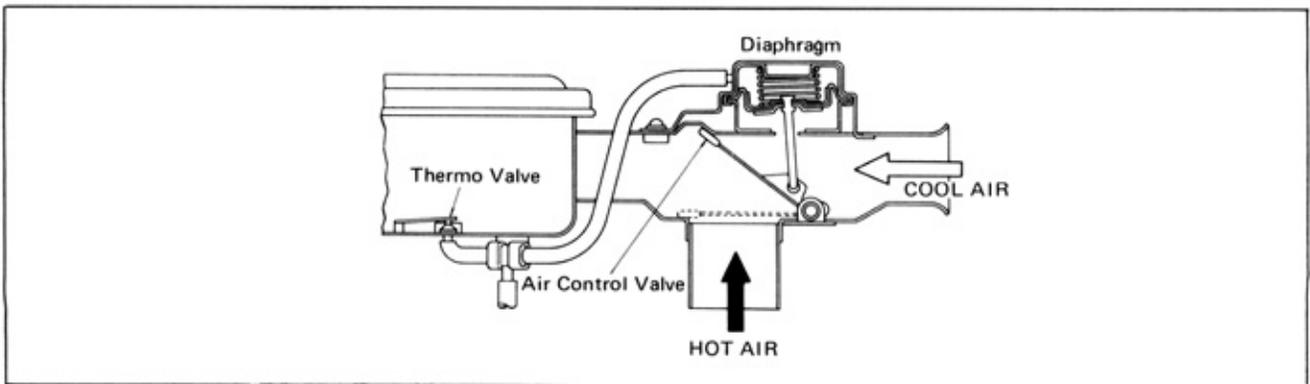


Fig. 13-5 Air Cleaner (20R Engine)

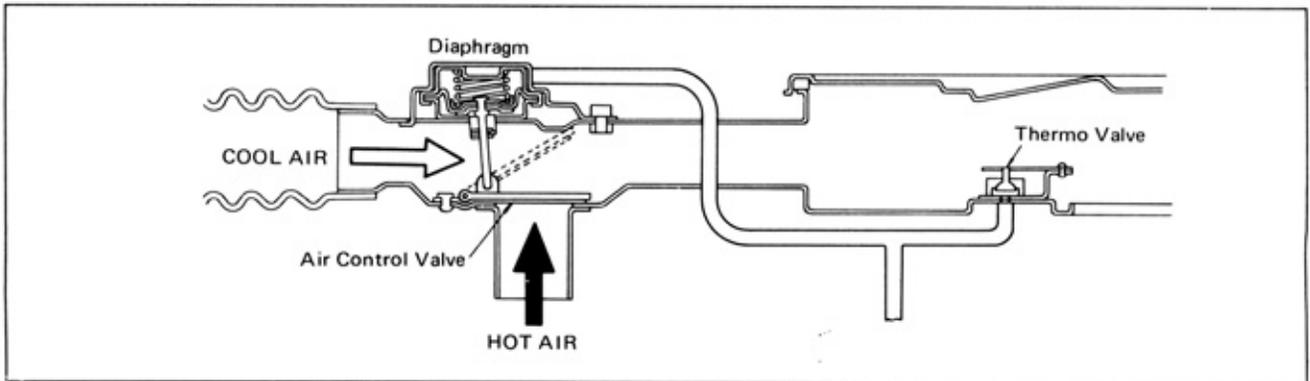


Fig. 13-6 Air Cleaner (4M Engine)

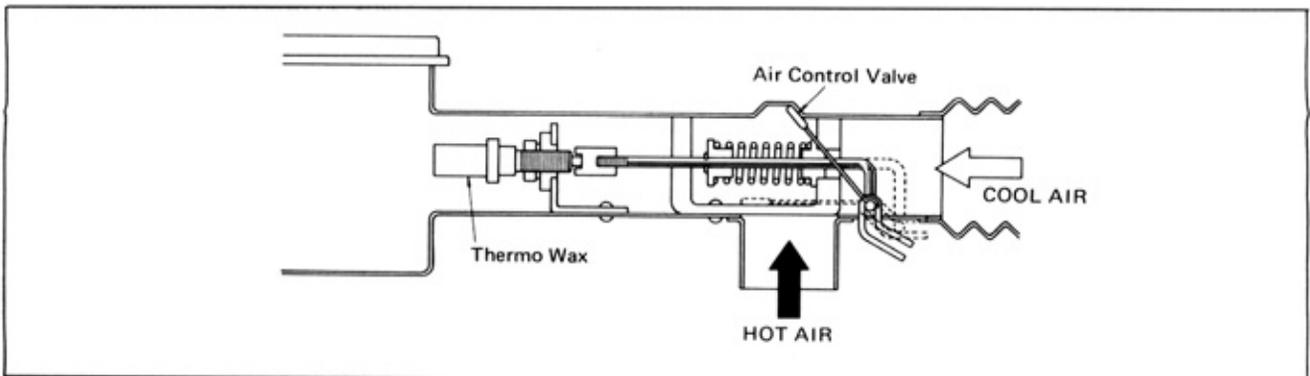


Fig. 13-7 Air Cleaner (2F Engine)