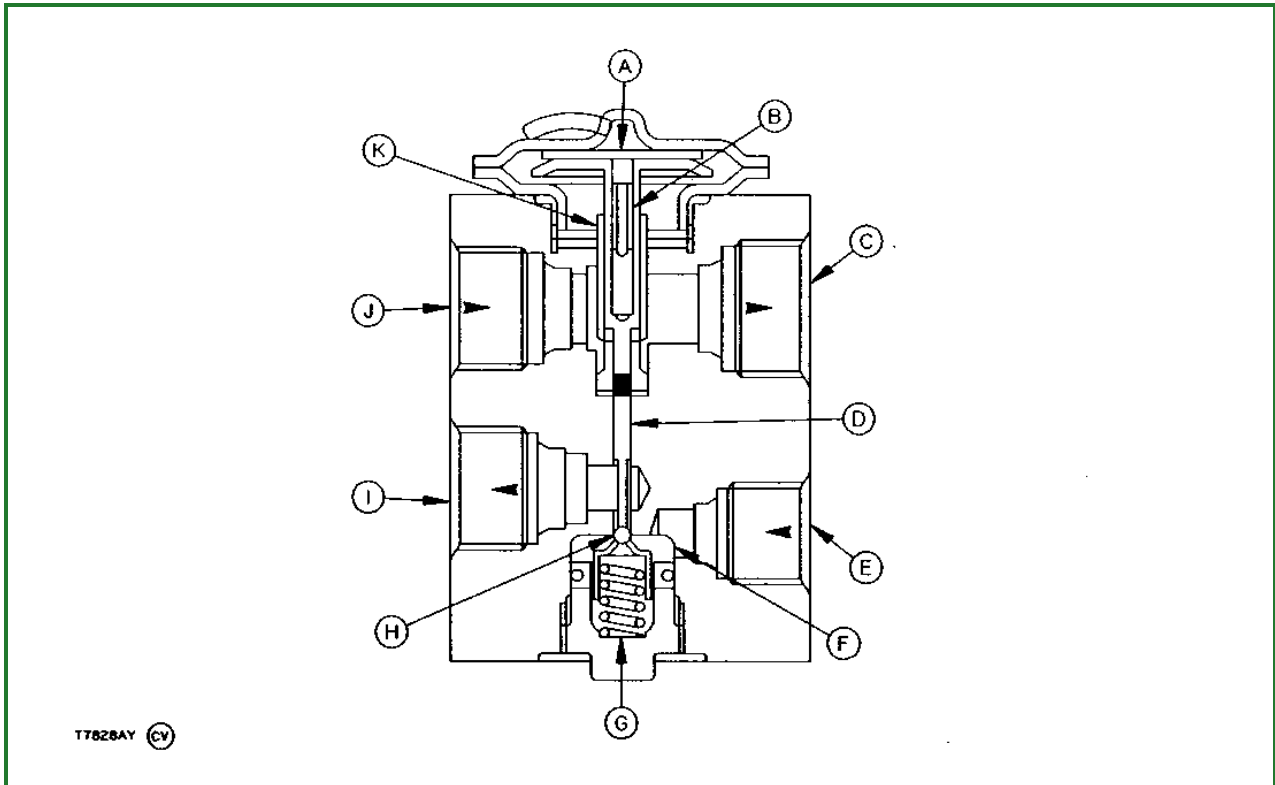


Expansion Valve Operation



T7828AY-19: Expansion Valve

LEGEND:

- A - Valve Diaphragm
- B - Sealed Sensing Bulb
- C - Outlet to Compressor
- D - Operating Pin
- E - Inlet Flow
- F - Metering Orifice
- G - Valve Spring
- H - Ball Seat
- I - Outlet to Evaporator
- J - Discharge from Evaporator
- K - Internal Equalization Passage

The expansion valve is used to regulate the amount of refrigerant flowing into the evaporator. At this point in the system, the high pressure/high temperature liquid is sprayed into the evaporator where it changes state and becomes a gas.

The valve diaphragm (A) is activated by sensing temperature and pressure within the valve body. The sealed sensing bulb (B) senses the evaporator outlet (I) or discharge temperature and pressure of the refrigerant as it passes through the valve back to the low pressure or suction side of the compressor.

The metering orifice (F) and ball seat area (H) in the expansion valve is relatively small. The rapidly expanding refrigerant passing through this area can cause any moisture in the system to freeze at this point and block refrigerant flow. Other contaminants in the system can also cause a valve to malfunction. If expansion valve malfunctions, it must be replaced. Expansion valve is not repairable.

Compressor Relief Valve Operation

The compressor relief valve is a direct acting pressure limiting valve. If a malfunction in the system occurs that would cause high pressure, such as a restricted line, the valve will open near 4137 kPa (41.4 bar) (600 psi) and remain open until pressure drops to below the valve setting.

If the relief valve opens, a loud popping noise will be heard. Some oil may also be lost from the system. Correct any condition that would cause the valve to open.

TX,9031,UU3146-19-1996/08/13