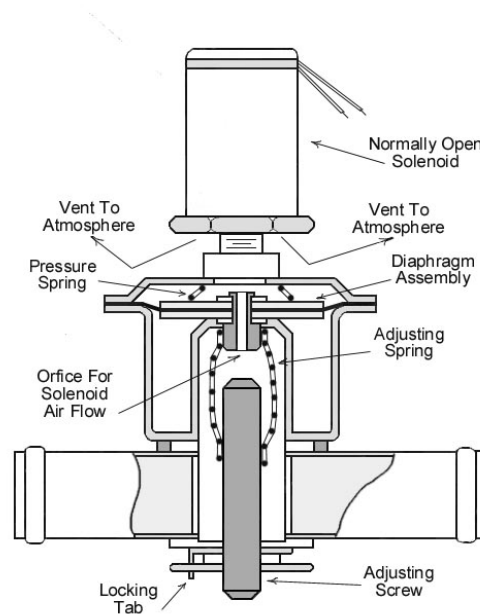


A "CLEAR VIEW"

Into Construction
& Operation

2H48-[] Deice Control Valve



Description

The 2H48-[] deice control valve is a basic 2H30 pressure regulator with a modified diaphragm assembly and a "normally open" solenoid added to the top cover. All 2H48 valves operate in the same manner, with model number variations (-[]) denoting connecting tube diameter, pressure adjustment range and/or solenoid voltage.

Operation

During normal operation, air from the air pump enters the valve center body and applies pressure to the lower side of the diaphragm and rivet assembly.

This pressure also moves through the diaphragm orifice, the regulator cover and into the "normally open" solenoid where it is vented over-board via two small holes at the bottom of the solenoid.

Since pressure does not build on top of the diaphragm, it is allowed to rise, discharging excess system pressure overboard.

Turning the adjustment screw will increase or decrease spring tension on the rivet and diaphragm assembly thereby increasing or decreasing the pressure to raise the diaphragm.

Increasing spring tension will result in higher system pressure in the valve body and higher backpressure on the air pump. The result will always be shorter pump life.

NOTE:

The gyro instrument pressure gage does not indicate air pump or system pressure !

To increase system pressure for deicing the solenoid is energized, closing the air passage within the solenoid, thus eliminating the air pressure venting at the solenoid bottom.

(Con't.)

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2H48-[] Deice Control Valve

Construction & Operation

Operation (Con't).

Airflow through the rivet orifice causes pressure to increase on the top of the diaphragm. The diaphragm is held on its seat, preventing discharge of air, causing system pressure to rise.

High system boot pressure is limited by a separate "normally closed" pressure switch which electrically disconnects power to the 2H48 solenoid when sufficient boot pressure is reached.

With the solenoid de-energized, system pressure returns to "normal" operating values.

Troubleshooting

Diaphragm rupture, leakage at the cover rivets, a blocked rivet orifice or failure of the solenoid valve to electrically activate, would prevent pressure from building to deice system values.

A blocked rivet orifice in the diaphragm assembly may be cleared with a 0.010 in. wire after removing the solenoid from the valve.

The most common failure of the 2H48-[] valve is carbon contamination of the solenoid air passage, spring and plunger assembly.

In the event of a blocked air passage, air pump pressure that has traveled through the valve rivet orifice, builds pressure on top of the diaphragm. In this condition, even though the deice system has not been activated, the diaphragm will close and system pressure will increase

Clean the vent passage with a solvent not harmful to electrical insulation and blow dry with shop air. The plunger should be free to move if the solenoid is shaken in a vertical position.

Higher "back pressure" against the air pump will cause internal pump temperatures to rise with increased amounts of carbon dust being discharged. This increase in exhaust contamination will further restrict airflow through the solenoid vent passage resulting in higher and higher system pressure.

NOTE:

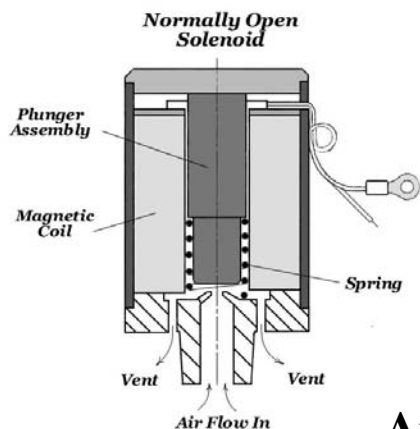
On Beech, Cessna and Piper twin engine aircraft, the system inline filter is on the "downstream" side of the deice valve.

A dirty filter means a dirty deice valve !

Installation of the CV1J4 "Clear View" inline air filter will allow the pilot, owner or mechanic to visually witness any increase in the amount of carbon being discharged from the air pump. Proper action can then be taken to repair the system prior to another air pump failure.

REMEMBER !

**Monitoring air pump carbon discharge
will help identify system problems
BEFORE
the air pump fails !!**



CV1J4 "Clear View"

The Only Filter Guaranteed
For the Life of The Air Pump

AEROTECH COMPONENTS, INC.