

DENSITY SENSITIVE VALVE



- **Suitable for gravity discharge**
- **Responsive to 1% change in density**
- **Ideal for fuel grade monitoring**
- **Simple and easy to maintain**
- **Purely mechanical operation**
- **Multi application**

This highly sensitive valve has been developed in collaboration with a major oil company with the prime objective of detecting the slight differences in density between aviation fuel grades.

Originally designed to detect the difference between oil and water, it has been used for many years to prevent oil being discharged into the environment in a number of applications within fuel storage facilities and has proved particularly effective as a water drain valve to remove condensation from the bottom of storage tanks.

To discriminate between aviation fuels, it has been re-developed to detect a minimum density difference of 1% if required - an extremely demanding requirement for such a simple device, but extensive tests have proved that it will function reliably under all service conditions.

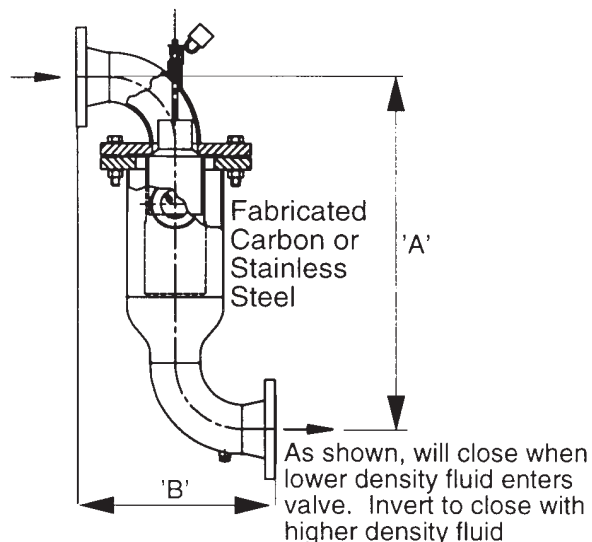
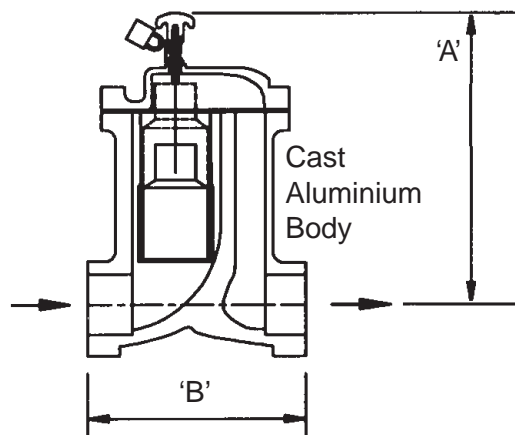
The unit will primarily be used to prevent higher density aviation turbine fuel being put into aviation gasoline tanks, as this can cause immediate engine failure. However the same device has merely to be fitted in the inverted position to prevent aviation gasoline being put into a turbine tank, with no loss in sensitivity.

Designed for use on small airfields in remote areas worldwide, it is very simple to operate and maintain. The specially contoured and shrouded float works directly as a valve in the product stream. The hydraulic design is such that it is totally unaffected by the flow and yet very rapid in its response to a density change. Under most conditions it will close before 10 litres of an incorrect density fuel have passed through.

Optional Features

The unit is supplied pre-set to discriminate between two density limits. The ballasted float is sealed for life.

The unit can be supplied with a Borosilicate glass observation tube or plain body. Drain and bypass valves can be fitted to assist resetting if required but are not essential.



Specification

Cast Aluminium Units			Fabricated Units - Carbon or Stainless Steel		
Max flow rate l/min	2 1/2"	4"	Max flow rate (l/min)	2"	4"
	300	1200		300	1250
Max pressure with glass window	1 bar	-	Max pressure with/without sight glass	10 bar	10 bar
Max pressure without window	1.5 bar	10 bar	Inlet/outlet connections ANSI Cl 150 flanges std	2.5"	4"
Inlet/outlet connections	2.5 BSP	ANSI cl 150 FF Flanges	Dimension A (mm)	501	810
Dimension A (min)	368	618	Dimension B (mm)	301	457
Dimension B (min)	230	500			

All Units Minimum density difference (sg) 0.02 Density range (sg) 0.68 to 1.2

Other Applications

Tank Draindown

By installing an inverted Cobham valve close to the tank outlet in the drainline, it can be used to avoid discharging unnecessary product when draining off water from hydrocarbon storage tanks.

The valve will progressively fill with water and open as condensation settles. When the drain discharge valve is opened at the outer end of this drainline it will allow water to pass but will close as soon as it sees product leaving only water in the discharge line. The next time the tank is drained no product will be discharged.

Floating Roof Tanks

If a floating roof fails, product can discharge down the rain water drains, with serious consequences. This valve can be used in the line to allow rain water to pass but to close if product is detected.

Oil Water Separators and Interceptors

Variants of this valve can be supplied for controlling the oil outlet of oil water separators. Alan Cobham also supply density sensitive float and displacer switches. These are available in flameproof or intrinsically safe form.



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