



SPECIFICATION // DATA SHEET

# Water Drain Valve

## Introduction

The Water Drain Valve was developed for a major oil company to detect the presence of fuel when discharging water through the drain line of a fuel storage tank.

Its float operation ensures that when you drain water built up in a tank (caused by rain or condensation) the density change from water to fuel is detected causing the valve to close,

saving valuable medium from being wasted and preventing any damage to the environment through contaminated water discharge.

Mechanical in operation with only one moving part the Water Drain Valve design enables easy installation with low maintenance costs. The hydraulic design is such that it is unaffected by flow but very rapid in response to density change.

The float profile ensures that when the density change occurs, a liquid tight seal is created against the valve seat.

Both the cast and fabricated versions of the valve are supplied with a manual test facility to enable regular checking of the valves operation.

### Key Benefits

- Mechanically operated
- Easy to install
- Low maintenance requirements
- Environmental protection
- Prevents pollution
- Reduces wastage of valuable stock
- Heavy duty for durability
- Customisable to suit application requirements
- Manual test facility
- Rapid response to density change

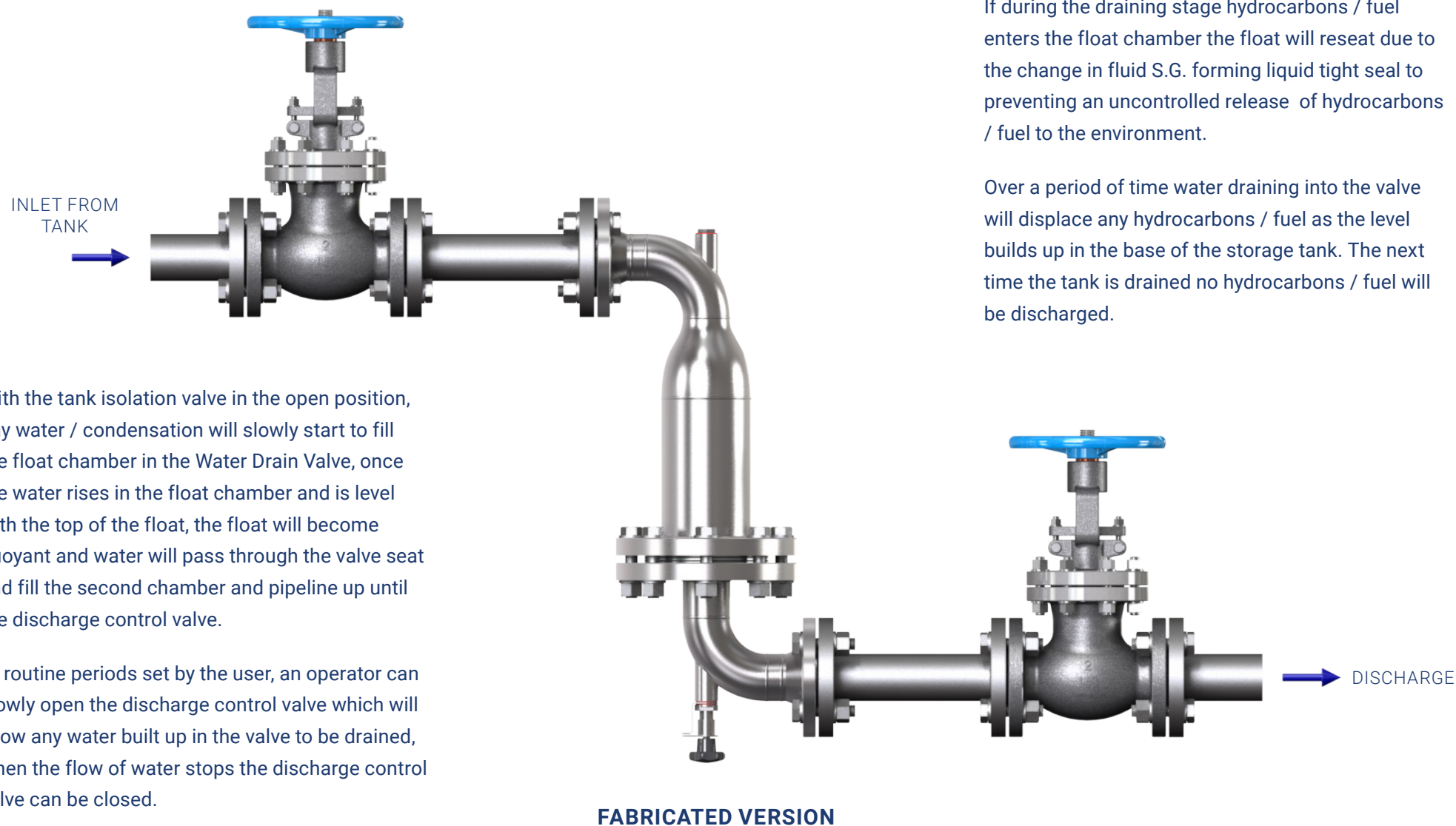


**CAST VERSION**



**FABRICATED VERSION**

## Operation



With the tank isolation valve in the open position, any water / condensation will slowly start to fill the float chamber in the Water Drain Valve, once the water rises in the float chamber and is level with the top of the float, the float will become buoyant and water will pass through the valve seat and fill the second chamber and pipeline up until the discharge control valve.

At routine periods set by the user, an operator can slowly open the discharge control valve which will allow any water built up in the valve to be drained, when the flow of water stops the discharge control valve can be closed.

If during the draining stage hydrocarbons / fuel enters the float chamber the float will reseal due to the change in fluid S.G. forming liquid tight seal to preventing an uncontrolled release of hydrocarbons / fuel to the environment.

Over a period of time water draining into the valve will displace any hydrocarbons / fuel as the level builds up in the base of the storage tank. The next time the tank is drained no hydrocarbons / fuel will be discharged.

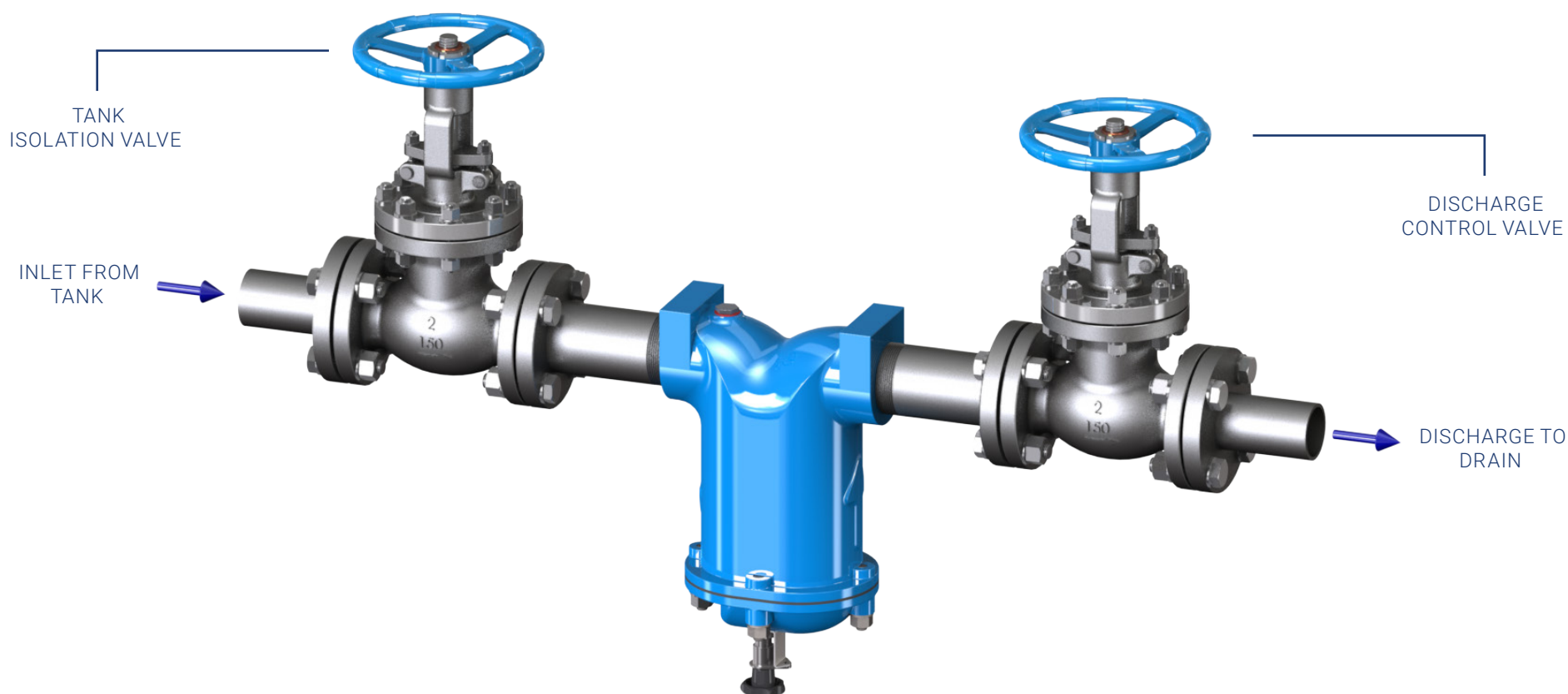
## Installation

The Water Drain Valve should be installed in the storage tank drain line, close to the tank outlet.

The valve should be situated after a storage tank isolation valve and before a discharge control valve.

There is no minimum distance required between the isolation and control valve and the Water Drain Valve inlet and outlet; however AMS-IAC would recommend a distance of at least 200mm.

**Note:** The WDV's are designed for use in gravity fed system and do not operate on a pump fed system, for density shut off on pump fed systems please refer to the AMS-IAC fuel grade monitoring valve.



**SUGGESTED INSTALLATION FOR THE CAST WATER DRAIN VALVE WITH SCREWED CONNECTION  
(OPTIONAL FLANGED VERSION ALSO AVAILABLE)**

## Specification

	Cast Versions	2" Fabricated Version	4" Fabricated Version
<b>Part No:</b>	WDV-SV2050/WDV-SV2056	WDV-SV2107	WDV-SV596
<b>Body Material:</b>	Aluminium Alloy or 316 Stainless Steel	316L Stainless Steel/ Carbon Steel	316L Stainless Steel/ Carbon Steel
<b>Float Material:</b>	Polypropylene	Polypropylene	Polypropylene
<b>Seal Materials:</b>	Viton/Klingsill	Viton/Klingsill	Viton/Klingsill
<b>Std Process Connections:</b>	Screwed connections 2.5" BSPP or 2" NPT Flanged Connections 2" or 3" ANSI/ASME 150lb or 300lb*	Flanged 2" ANSI/ASME 150lb. RF	Flanged 4" ANSI/ASME 150lb. RF
<b>Max Flow Rate:</b>	300 Ltrs/Min	300 Ltrs/Min	1250 Ltrs/Min
<b>Max Line Pressure:</b>	10 Bar	10 Bar	15 Bar
<b>Temperature Rating:</b>	-18 to 200°C	-18 to 200°C	-18 to 200°C
<b>Weight:</b>	10 Kgs	35 Kgs	70 Kgs

\*Other flange sizes/ratings available on request.

Maximum medium specific gravity (S.G) with the standard float is 0.92; the float will close in all mediums with an S.G below this value.

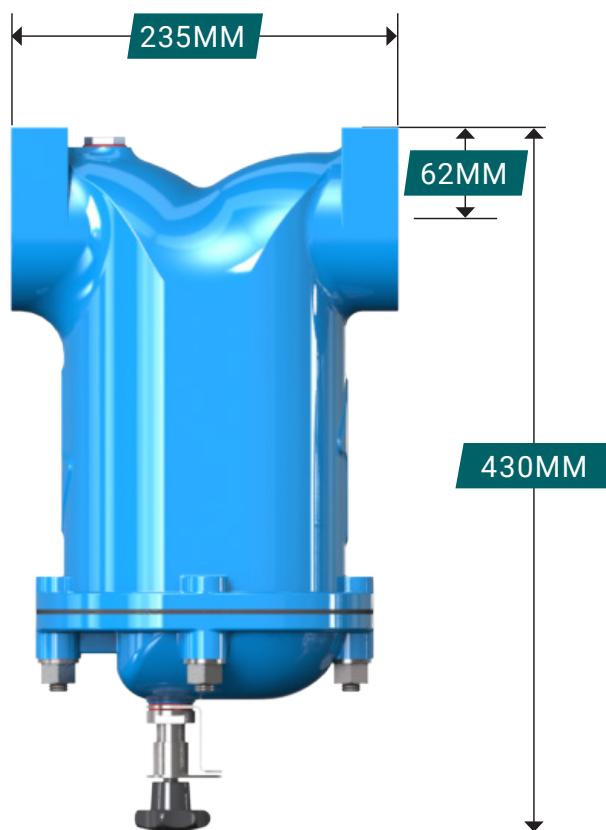
When the line medium freezes the valve will return to operation once the medium has thawed. Although Viton seals have a brittle point of -45°C and can operate satisfactorily at temperatures approaching this, it is recommended that they are replaced if subjected to temperatures below -18°C before the valve returns to operation.

AMS-IAC specialise in custom made instrumentation & valve products and as such offer a wide range of documentation options and where possible, will amend standard features to meet customer specific requirements.

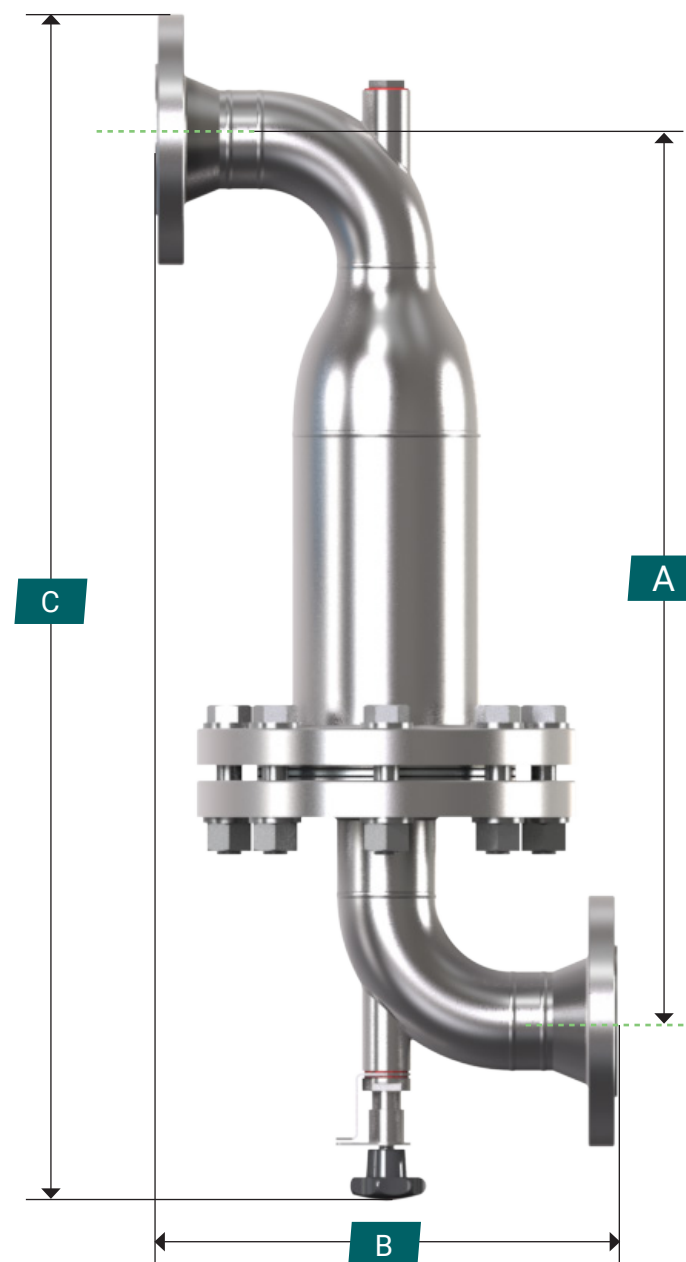
A version of this valve can also be used to detect the difference between two fuels to ensure the correct product is being emptied into storage tanks, see our Density Sensitive Valve for more information.

## Dimensions

	A	B	C
WDV-SV2107 (2")	516mm	280mm	668mm
WDV-SV596 (4")	810mm	458mm	1089mm



**CAST VERSION**



**FABRICATED VERSION**

## Ordering Information

### Part Number Selection

WATER DRAIN VALVE	WDV-	XXXX-	XX-	X-	X-	XX
Base Model						
4" Fabricated Version		SV596				
2" Fabricated Version		SV2107				
2" NPT Cast Version		SV2056				
2" BSPP Cast Version		SV2050				
BODY MATERIAL						
Aluminium Alloy (Cast) Grade: Lm 25M			AC			
Stainless Steel (Cast) Grade: Bs3100 316 C16			SC			
Stainless Steel (Fabricated) Grade: 316Ss			SF			
Carbon Steel (Fabricated) Grade: ASTM A106 (Body) / ASTM A234 (Elbows & Reducers)			CF			
Flange Material						
316 Stainless Steel Grade: ASTM A182 F316				S		
Carbon Steel Grade: ASTM A105				C		
No Flange				0		
FLANGE SIZE						
2"					2	
3"					3	
4"					4	
Others (Special)					X	
FLANGE RATING						
150Lb ANSI/ASME B16.5						15
300Lb ANSI/ASME B16.5						30
Others (Special)						X

### Paint Specification

The Cast Aluminium and Fabricated Carbon Steel Density Sensitive Valves are supplied painted with Amercoat 385 Multi-Purpose Epoxy (+120 Deg C Max), AMS-IAC Blue Colour (RAL 5005) as standard. AMS-IAC can supply the Density Sensitive Valves painted to suit individual customer paint requirements, please specify at time of enquiry.

### Spares

<b>DSV-MSK-SV596</b>	Maintenance Spares Kit for WDV/DSV596, includes 1x gasket for body/cover, 1x SV384 Plunger Assembly
<b>DSV-SV2107</b>	Maintenance Spares Kit for WDV/DSV2107, includes 2x gasket for body/cover, 1x SV471 Plunger Assembly
<b>DSV-MSK-SV2056</b>	Maintenance Spares Kit for WDV/DSV2056, includes 1x gasket for body/cover, 1x SV364 Plunger Assembly
<b>DSV-MSK-SV2050</b>	Maintenance Spares Kit for WDV/DSV2050, includes 1x gasket for body/cover, 1x SV364 Plunger Assembly
<b>SV399</b>	Float Guide Assembly (WDV/DSV596)
<b>SV2070</b>	Float Guide Assembly (WDV/DSV2107)
<b>SV273</b>	Float Guide Assembly (WDV/DSV2050/WDV/DSV2056)



## Documentation and Testing

AMS-IAC can supply the Density Sensitive Valves with documentation to suit individual customer requirements, these documents include but not limited to:

- Material Certification EN 10204-3.1
- Hydrostatic Pressure Test Certificates
- Weld Procedures
- Welder Qualifications
- Certificate of Conformity
- PED
- Installation, Operation and Maintenance Manual etc.
- Non-destructive Testing
- Material Analysis
- Special Tagging
- Inspection and Test Plans

In addition to the above AMS-IAC can also provide:

- **Accessories:**

AMS-IAC offer a range of accessories for use in conjunction with the Valves, such as Gaskets, nuts/bolts and fittings.

- **Instrumentation:**

AMS-IAC offer a range of process instrumentation and valves to cover a wide variety of process measurement applications.





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