



Automatic Separation Valve

The ECO model TOO is a specific gravity sensitive valve, for the automatic draining of a heavier fluid from a lighter fluid.

Commonly used for the draining of water accumulated in the bottom of petroleum product storage tanks where the stored medium has a lower specific gravity than that of the accumulated water. The TOO valve should be opened to initiate dewatering.

When all the accumulated water has drained from the storage tank the presence of product will be sensed by the TOO valve and it will automatically and immediately shut off drip tight. When fitted with the optional factory limit switch, a signal sent to a remote valve position monitoring system, signaling that the valve is closed. It is well suited for use with storage tanks containing Gasoline, Gas Oil, Jet Fuel, Kerosene, Diesel Oil, Crude Oil and all Petroleum products including Light Crude Oil. The TOO uses a simple and reliable principle with a straightforward and compact construction, designed to require minimal maintenance, and to last the lifetime of the tank.

Using the TOO can save product loss, work hours, and increase available tank storage space. It is environmentally cleaner, safer, more reliable and efficient compared to manual or other methods

Each valve is assembled and tested in the ECO ISO 9001 certified manufacturing plant. Introduced to the industry years ago, the TOO is a time proven product in use in over 20 countries worldwide and backed by the Global Service Network of E C O - VALVES LTD.



Features and Benefits

Safety

- Reduced technicians exposure to harmful product fumes
- Eliminates product spillage during dewatering
- Integral strainer for reliable sealing

High Performance

- Immediate closing response when product detected
- High accuracy / repeatability
- High drain flow efficiency
- Built in Anti Vortex Device, for efficient controlled flow

Cost Effective

- Very low maintenance
- No external power supply needed
- Increases available product storage space
- Saves Labour
- Greatly reduces the plants total water treatment volume

Factory Fitted Options

- Limit Switch: ATEX or Nema -Certified For hazardous areas
- Manual Pump: for above tank bottom installations
- Outlet Valve Handle Extension: for pit installations
- Visual Valve Position Indicator

Cover

Vent/Sampling Valve

Inlet

Float Guide/Strainer

Valve Float

Equalizing

Seal

Limit Switch

Outlet Valve



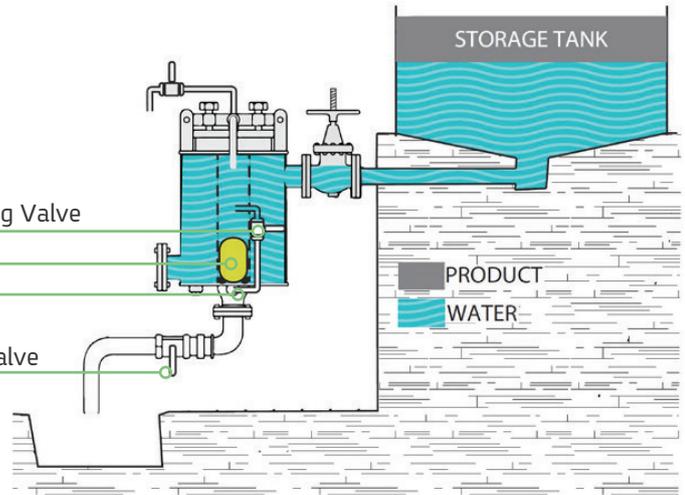


Principle of Operation

Normal Operation (before dewatering)

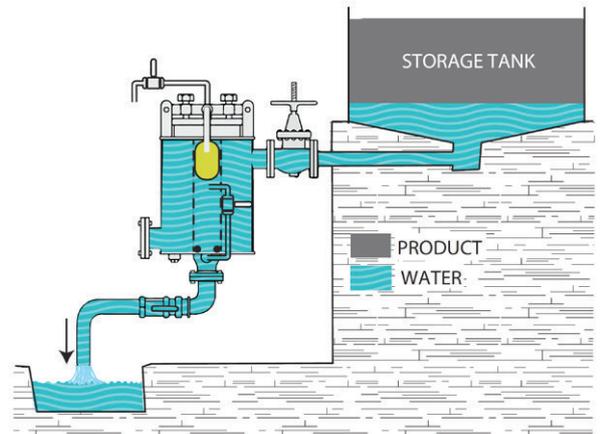
Water that accumulates in the bottom of the storage tank reaches the TOO valve. At this stage the float (2) is pressed, by the water pressure above it, against the seal at bottom of the valve sealing drip tight.

- (1) Equalizing Valve
- (2) Float
- (3) Seal
- (4) Outlet Valve



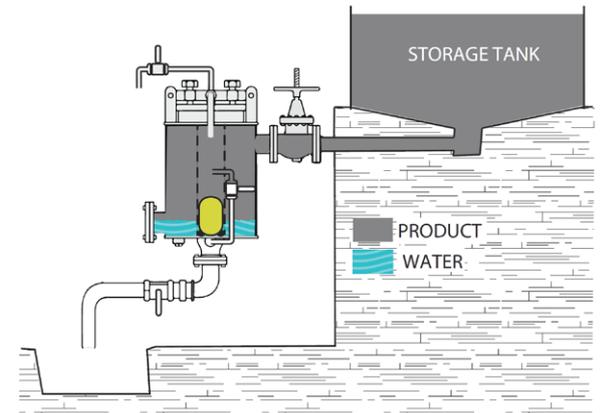
Dewatering

Dewatering is initiated by momentarily opening the pressure equalizing valve (1) if water is present, the float will rise thus opening the outlet seal (3). The outlet valve (4) should now be opened to allow free flow of the accumulated water to the drainage system. During drainage the Integral Strainer will help to keep the TOO seal clear of the debris often experienced in the bottom of storage tanks, ensuring a reliable seal at the end of the dewatering session. The built in Anti Vortex Device will control the flow, preventing the formation of a Vortex within the storage tank mixing the natural phase between the product and the accumulated water.



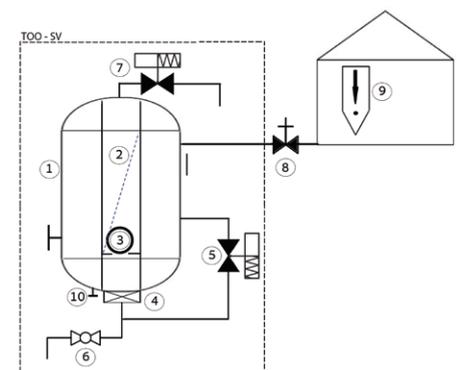
Normal Operation

When the water has completely drained and product enters the TOO valve, the float (2) quickly descends in the lighter medium and seals the valve. After closing, the float remains hydraulically pressed against the seat, sealing the outlet. The TOO should be reset by closing the outlet valve (4) until the next dewatering session. Remaining product in the TOO will "float" back to the tank.



System P&ID

- | | |
|---|-------------------------------------|
| 1. Separating valve body | 6. Outlet ball valve |
| 2. Strainer/float guide | 7. Venting/sampling valve |
| 3. Balanced float | 8. Storage tank drain valve |
| 4. Vortex inhibitor | 9. Storage tank /gravity separation |
| 5. Equalizing valve (spring return N.C) | 10. Sump plug |



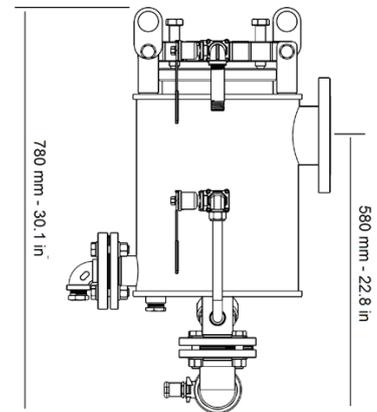
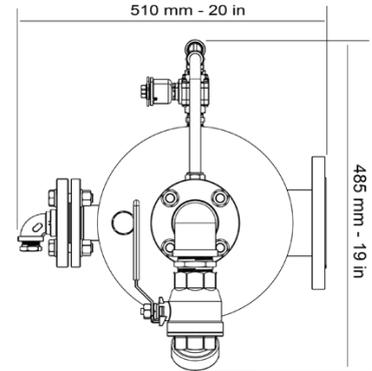


Technical Specifications

Part	Material
Valve Body and Cover	Epoxy Coated Carbon Steel
Internal Parts	Stainless Steel
Seals	NBR or Fluoroelastomer
Ball Valves	Stainless Steel AISI 316
Bolts	Valves Stainless Steel AISI 316
Plugs	Stainless Steel AISI 303
Coating	Fusion Bonded Epoxy: RAL 5017
Inlet Connection*	4" ANSI #150 RF B16.5
Drain Connection	Threaded NPT/BSPT
Limit Switch	Stainless Steel – ATEX or NEMA Zone 1 Div 1 Certified for Hazardous Locations
Max. Working Pressure	2.5 bar / 36 psi
Approx. Weight	64 kg / 141 lb

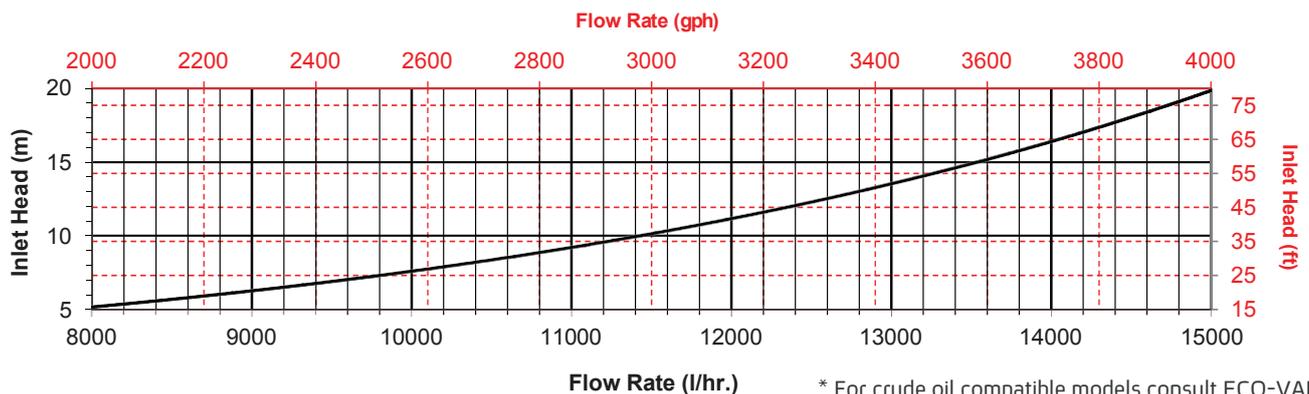
*Other connections available – contact ECO-VALVES

Dimensions



61017_15.1

Flow Chart



* For crude oil compatible models consult ECO-VALVES

Ordering Code Designations

Type	Size	Connection	Options
TOO	4"	A5	S9A/S9N/M/C/P/I/
		ANSI#150 - A5	A5 Limit Switch (Atex) - S9A
			Limit Switch (NEMA) - S9N
			Outlet Valve Handle Extension - M
			Crude Oil Compatible - C
			Manual Return Pump - P
			Visual Indicator - I