

Application:

The Oventrop diaphragm anti-siphon valve "Oilstop V" is installed in the suction pipe of heating oil installations according to DIN 4755, where the maximum tank filling point is above the lowest point of the suction pipe.

Should a leakage occur in the suction pipe between the anti-siphon valve and the burner, the valve will prevent the oil in the tank being siphoned off up to a safety height of up to 4 m.

Installation is possible in the suction pipe of one pipe systems (with and without return flow feed) or two pipe systems.

Construction and function:

When the burner is not in operation, a spring assisted piston shuts off the suction pipe between the tank and the succeeding system. The underlying pressure which is built up by the succeeding oil column is not high enough to open the valve. Once the burner pump is switched on, the underlying pressure which is produced by the oil column and the suction pressure of the burner pump, will actuate the diaphragm, which will lift the piston via a tappet. As long as the underlying pressure is high enough, the valve will remain open.

If a leakage occurs in the suction pipe, the underlying pressure which is build up is too low and the valve will remain closed. The valve is pressure balanced, i.e. when pressure is built up in the succeeding suction pipe, the heating oil may flow towards the tank.

Technical data:

Item no.: 2104203

Connections: G 3/8 female thread with taper for Oventrop brass compression fittings 6, 8, 10 and 12 mm

Fluid: EL type of heating oil according to DIN 51603-1, as well as heating oil with a FAME portion up to 15%, e.g. EL type of heating oil A 15 Bio according to DIN SPEC 51603-6

Safety height: 1 – 4 m

Max oil flow: 200 l/h with Δp 40 mbar

Installation position: any, but easily accessible

Ambient temperature: -25 °C up to +60 °C *

Operating temperature: 0 °C up to 40 °C *

Operating pressure: Suction pressure

Max. test pressure: 6 bar

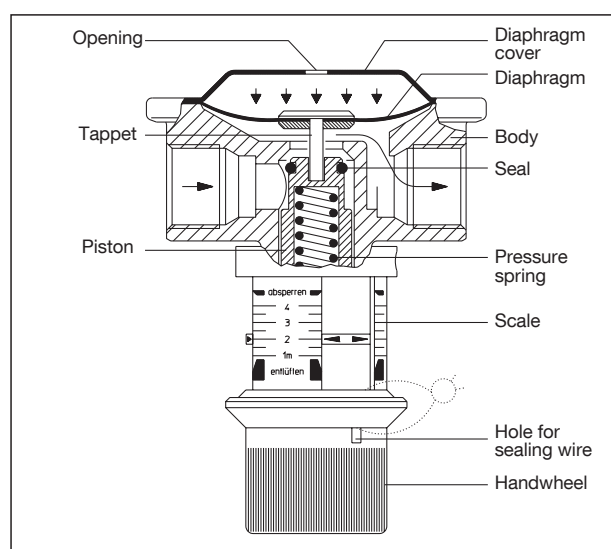
Weight: 380 g

Tested according to
EN 12514-2: TÜV Rheinland, no.: S 241 S2016 E3

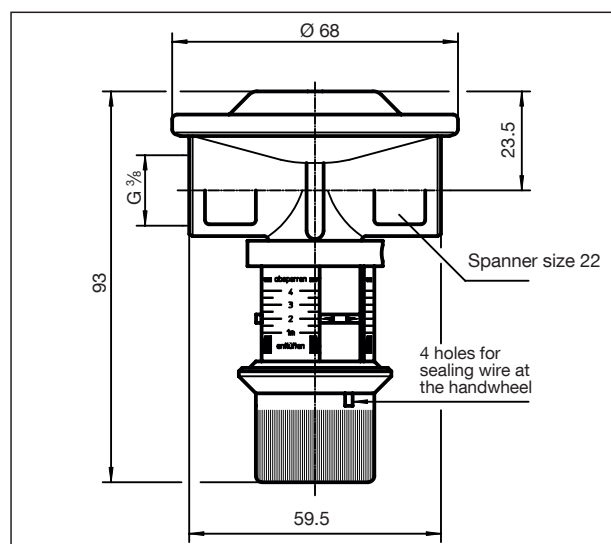
Approval, AbZ: Z-65.50-305



“Oilstop V”



Construction



Dimensions "Oilstop V"

*according to DIN 4755 the heating oil temperature shall lie between 0 and +40 °C

Installation location and position:

The valve can be installed in any position (horizontal, oblique or vertical, in ascending or descending sections).

The diaphragm anti-siphon valve is installed in the suction pipe above the maximum liquid level, see illustr. “Vertical height”.

The setting scale must be easily accessible.

The valve should preferably be installed at dry locations.

The valve can also be installed in the dome shaft of underground tanks or in an inspection chamber of the suction pipe. This might become necessary if parts of the suction pipe are laid underground below the maximum tank filling point.

In dome shafts or inspection chambers, the velocity of the heating oil must be observed because of the low ambient temperatures. The heating oil may expel paraffin which may block the suction pipe or the filter.

Note:

Care must be taken that no water enters the diaphragm chamber. If the water inside the diaphragm chamber turns into ice, this may open the valve. In dome shafts or inspection chambers, the valve therefore is to be installed with the diaphragm cover pointing downwards or is to be protected from penetrating water. The opening of the diaphragm chamber must not be blocked!

Pipe connections:

The valve is equipped with female threads G 3/8 and is suitable for Oventrop compression fittings.

Connection types:

- Oventrop brass compression fittings for pipe 6, 8, 10 or 12 mm, item no. 212705_ (see “Accessories”)
- Flat sealing short couplings with short thread G 3/8 according to ISO 228, e.g. item no. 208307_ (see “Accessories”),
- The threads are based on the DIN 3858 standard. Couplings with short thread R 3/8 can also be sealed.

Note:

Non-return check valves (without pressure balance) may impair the operation of the diaphragm anti-siphon valve. In case of pressure built-up caused by rising temperatures, especially in separate oil storage rooms, they should be removed or inactivated. Alternatively, a pressure compensating device may be installed in the pipe (e.g. Oventrop pressure compensation device “Olex”, item no. 2107003).

The valve has to be protected against coarse impurities and has to be installed free from tension.

The suction pipes has to be sized according to DIN 4755 (see “Sizing of the suction pipe”).

The valve has to be installed by a specialist company with due consideration of the valid standards and regulations.

The installation and operating instructions have to be kept by the user of the heating oil installation!

Settings at the “Oilstop V”:

The safety height of the diaphragm anti-siphon valve is infinitely adjustable between 1 and 4 m and features a deaeration function “entlüften” and an isolation function “absperren”.

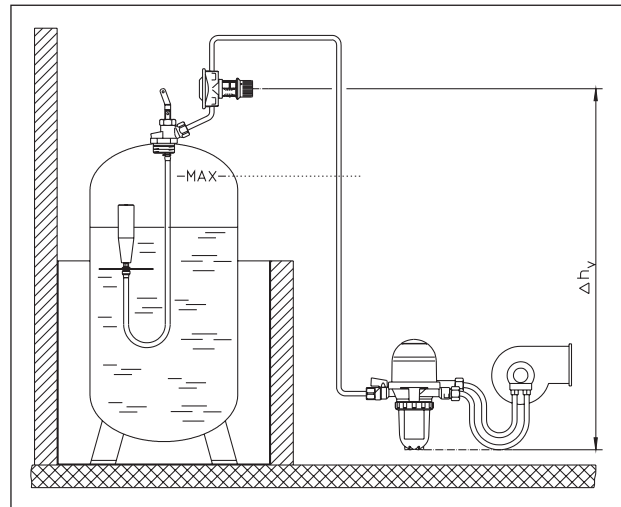
When the valve is set to “**entlüften**” (deaeration), the piston will be lifted off its seat and the safety function will be deactivated. This will facilitate deaeration of the pipework when the system is put into operation for the first time or after maintenance work.

When set to position “**absperren**” (isolation), the valve will be closed and cannot be opened by the underlying pressure. This setting allows for maintenance work on the suction pipe.

The tank content may only escape from leakages lying below the maximum filling height of the tank.

It is therefore sufficient to install the valve into the suction pipe slightly above the maximum filling height of the tank before the pipe runs below this level for the first time. This way, the required setting height is reduced.

The setting can be secured with the help of a locking wire (see “Accessories”).



Safety height

Operation and maintenance:

Under working conditions, the valve does not require any operation.

Anti-siphon valves have to be checked at regular intervals, at least every 5 years:

- Correct installation
- Safety height control
- Leakage test of valve, connections and suction pipe
- Functional control

Sizing of the suction pipe:

The DIN 4755 standard recommends a velocity of the suction pipe between 0.2 and 0.5 m/s.

Heating oil may contain air. In case of underlying pressure in the upper parts of the suction pipe, the air may be expelled with volatile oil particles. These air bubbles must be transported constantly to the burner. They may gather in pipes which are too large. If a big air bubble reaches the burner, it may cause a malfunction.

In one pipe systems, the heating oil flow corresponds to the quantity of burned oil (per 10 kW heat output approx. 1 litre/hour). In two pipe systems, the burner pump capacity has to be taken into consideration.

Formula for the velocity w in m/s:

$$w = 0.3537 \cdot V / D^2$$

with V – Heating oil flow in l/h

D – Inner diameter of the suction pipe in mm

Pipes with an inner diameter of less than 4 mm are not recommended.

This results in the following standard values:

Flow range in the suction pipe V	Inner pipe diameter [mm]	Pipe (s=1mm) Example:
up to 23 l/h	4	6 x 1
20 up to 50 l/h	6	8 x 1
35 up to 90 l/h	8	10 x 1
56 up to 145 l/h	10	12 x 1
95 up to 240 l/h	13	15 x 1

The suction pressure should not exceed 0.4 bar.

Accessories:

Compression fittings "Ofix-Oil" G $\frac{3}{8}$ "

Connection sets 2-fold

Size	Item no.:
6 mm	2127050
8 mm	2127051
10 mm	2127052
12 mm	2127053

Straight couplings "Ofix-Oil", flat sealing;
steel with brass cutting ring,

Size

G $\frac{3}{8}$ x 6 mm	2083074
G $\frac{3}{8}$ x 8 mm	2083075
G $\frac{3}{8}$ x 10 mm	2083076

Locking wire with lead seal

10 pieces	1089091
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Brass reinforcing sleeves for copper pipes with a wall thickness of 1 mm

Pipe dimension

6 mm	2123951
8 mm	2123952
10 mm	1029651
12 mm	1029652



General construction supervising admission (AbZ)

Subject to technical modifications without notice.

Product range 9
ti 159-EN/10/MW
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