

Tank venting

VOCTRAC

VOC loss documented by Scanjet's integrated venting and tank monitoring systems

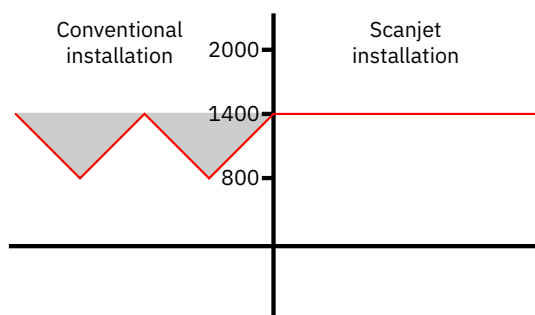
Reliability issues and inadvertent flow characteristics have caused VLCC venting operations to avoid dependence on individual p/v valves and, instead, open the mast riser, resulting in severe VOC loss rates.

Scanjet's new line of high velocity p/v valves are specifically designed to permit release during voyage of over-pressure only, hence solving the VOC loss issue instantaneous.

These valves are now in service in numbers exceeding 8,000 on VLCCs, parcel tankers, and bitumen barges, and have provided optimum levels of reliability due to the unique full bore net clearance in the valve body. All other valve designs have narrow gas-passage ways with gaps of 3-10 mm; here the net-clearance is 100%.

Owing to crude oil venting specifications calling for controlled mast riser venting (i.e., systems that are in fact less VOC efficient than the stand-alone Scanjet valves), market demand is answered by taking advantage of Scanjet's package of tank level and pressure monitoring.

The Scanjet VOC STOP VALVE is step-less controlled by the tank pressure and opens proportionally to release the bare minimum necessary in order to maintain the highest possible operating pressure, in accordance with IMO MSC/Circ. 680. Thus, the boil-off is minimized compared to piston-type valves.



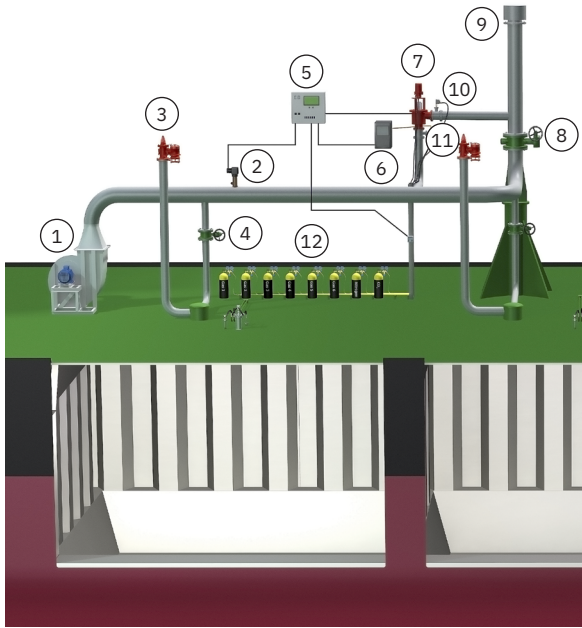
Scanjet Venting System for Oil Tankers with Accountability of Lost Cargo Vapour

The VOC STOP VALVE's flow capacity for opening angle vs. flow volume is pre-programmed into the tank monitoring system, so the total volume of gas vented is constantly logged. The replenishment of IG is deducted in order to reach the net VOC loss figure, assessed by connecting the IG blower to the Scanjet monitoring system or by using the Scanjet pressure sensors and basic gas laws as outlined in Circ. 680.

Another advantage is seen in terms of maintenance. A ship fitted with the Scanjet VOCTRAC valve system has no further maintenance than without.

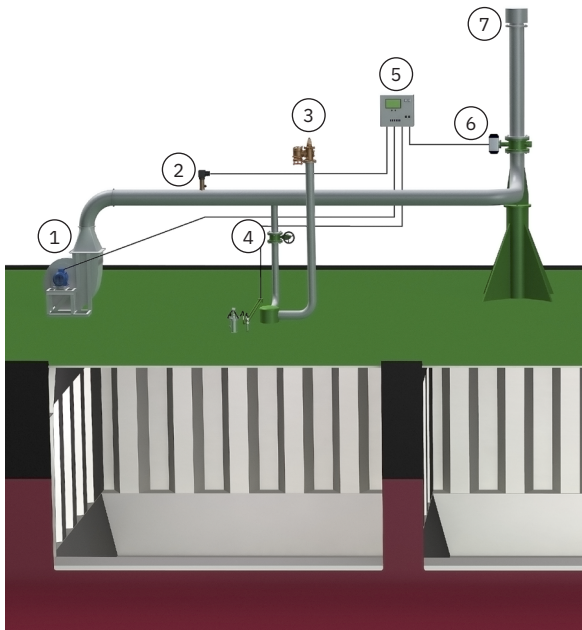
During voyage, the crew can shut the VOC STOP VALVE completely and rely on the VOC dedicated twin nozzle of the Scanjet high velocity valves for an even higher operating pressure. The Scanjet tank monitoring system will still track and log the net VOC loss.

Conventional VOCON system with mass flow meter and gas analyzing



Item	Description
1	Inert gas blower
2	Pressure sensor
3	Conventional high velocity valve with blow-down of up to 50%
4	Mandatory isolation valve
5	PLC
6	Control box for gas analysing apparatus (Ex approved)
7	Piston type VOCON valve
8	Mast riser full flow valve
9	Flame screen
10	Flow meter
11	Sampling point for gas analysing
12	Calibration gas bottles, one for each gas to be analysed

VOCTRAC system based on intelligent mast riser full flow valve and Scanjet dual nozzle P/V valve



Item	Description
1	Inert gas blower
2	Pressure sensor
3	Dual nozzle high velocity valve, nil blow-down during voyage from VOC dedicated valve
4	Mandatory isolation valve
5	PLC
6	VOCTRAC full flow valve
7	Flame screen

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