

Svanehøj Deepwell Cargo Pumps

LPG/Ethylene and combined LEG/Chemical Tankers



Multi-stage

Deepwell Cargo Pumps Type DW



Discharge base for Svanehøj deepwell pumps.



Multi-stage pump cylinder with inducer.

This brochure describes Deepwell Cargo Pumps for LPG/ethylene and combined LEG/chemical carriers.

The pumps have been developed by Svanehøj through extensive research.

They have been marketed for more than 30 years and gradually improved to almost perfection in close cooperation with our many customers all over the world.

Deepwell pumps consist of three major items:

- A. Pump cylinder, multi-stage type with inducer.
Pump capacity 50-700 m³/h, normal delivery head 120 ml.c., 1500 or 1800 r.p.m.
- B. The pipe stack, which includes shafts and cargo-lubricated bearings. One bearing placed for each 1.4 metres. The pump is available in lengths of up to 18 metres without intermediate support. Above 18 metres intermediate support is required.
- C. The discharge base with motor stool, main bearing arrangement and pressurized double mechanical seal.

The pump is as standard manufactured in stainless steel AISI 304 or similar and for cargo temperatures down to -104°C.

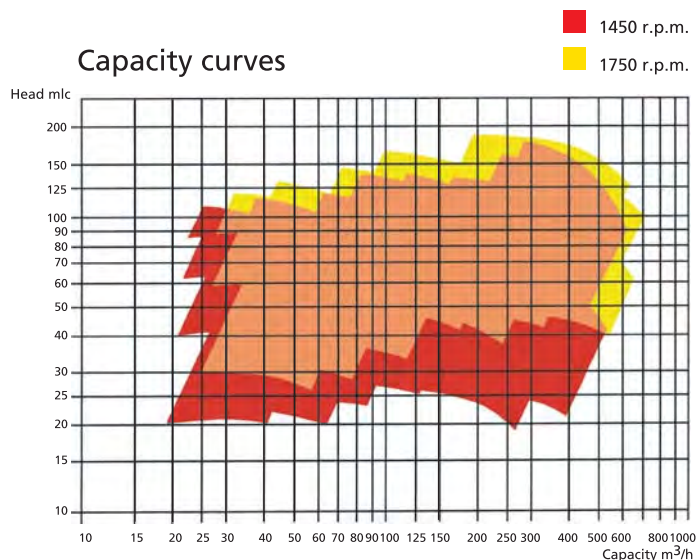
Combi-pumps are delivered in stainless steel AISI 316L or similar.

As an option, a drain pipe from the discharge base to 100 mm above the pump cylinder can be delivered for propylene oxide service.

Furthermore connection flange for methanol injection is available.

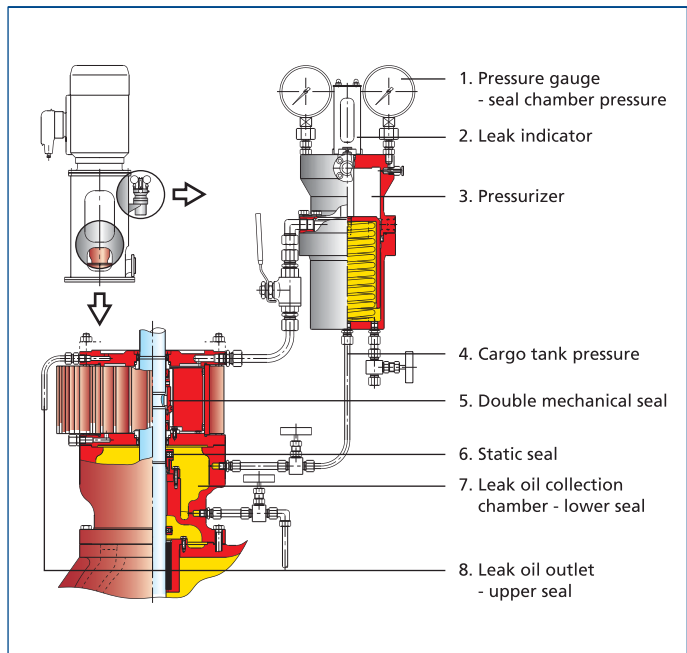
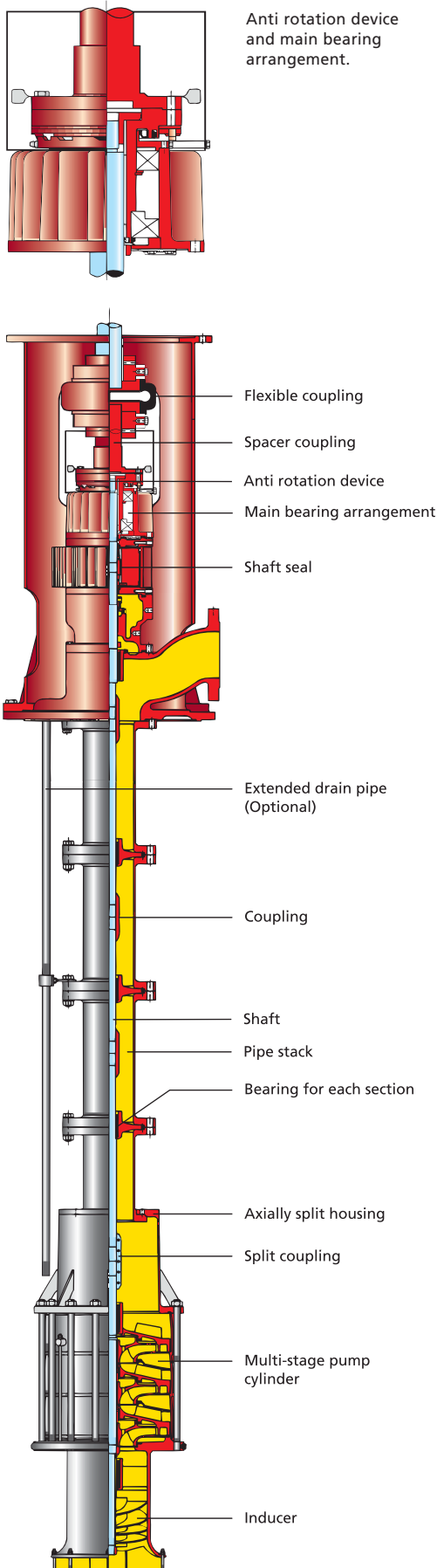
The discharge flange of the pump is manufactured according to DIN standard but other flange standards are available, e.g. ANSI and JIS.

All gas pumps are supplied with anti rotation device.



Multi-stage pump cylinder with inducer.

Shaft sealing arrangement



The system needs no external connection of compressed air or nitrogen, as it works on the cargo tank pressure (4).

As it is imperative that no leakages occur, where vapour or liquid penetrates to the surroundings of the pump, a safe shaft sealing arrangement must be installed.

Svanehøj's gas pumps are provided with a double mechanical seal mounted back-to-back in oil bath and under pressure by a pressurizer ensuring that the pressure in the seal chamber is higher than the tank pressure.

The distance sleeve between shaft seals is made as an oil pump ensuring circulation of the oil and consequently optimum carrying-off of the oil temperature rise.

Should a leakage arise due to a defective shaft seal, the following will happen:

Lower seal

The oil in the seal chamber will run down into the collection chamber (7) and thus not get in contact with the cargo or penetrate into the cargo tank itself.

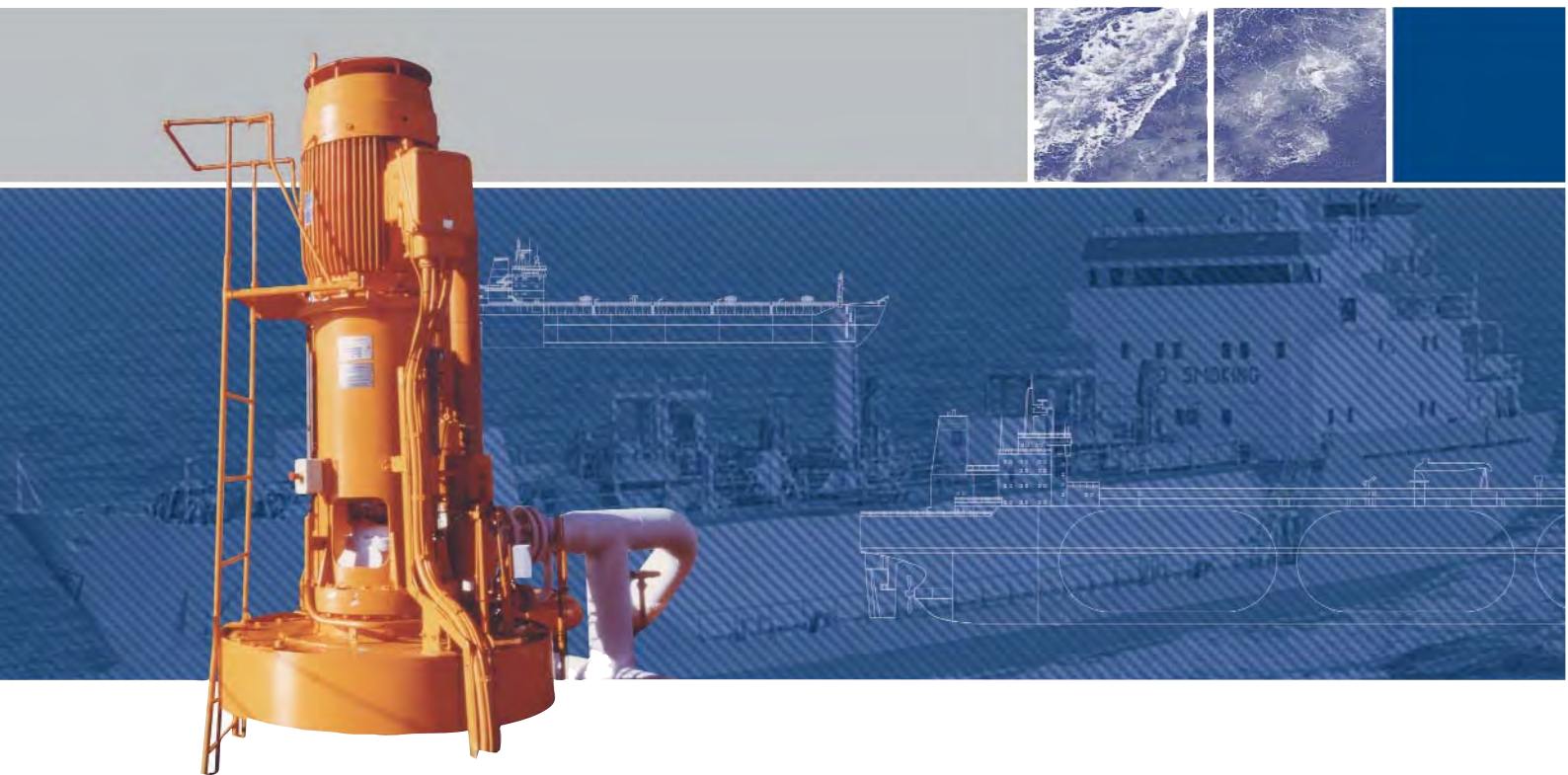
Upper seal

The oil runs out of the leak pipe (8).

In both cases the leak indicator (2) will rise and thereby indicate leakage. The leak indicator can be provided with a switch, which can be connected to an alarm and/or an automatic stop of the pump.

Leak oil collection chamber (7) is provided with a static seal, which can be used when shaft seals are to be exchanged while there is still cargo in the tank.

By lowering of the pump shaft also the static seal rotating part is lowered so that this touches the stationary part of the static seal. Cargo vapour and liquid are thus shut off.



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