

6.05 Stuffing Box Drain Oil System

For engines running on heavy fuel, it is important that the oil drained from the piston rod stuffing boxes is not led directly into the system oil, as the oil drained from the stuffing box is mixed with sludge from the scavenge air space.

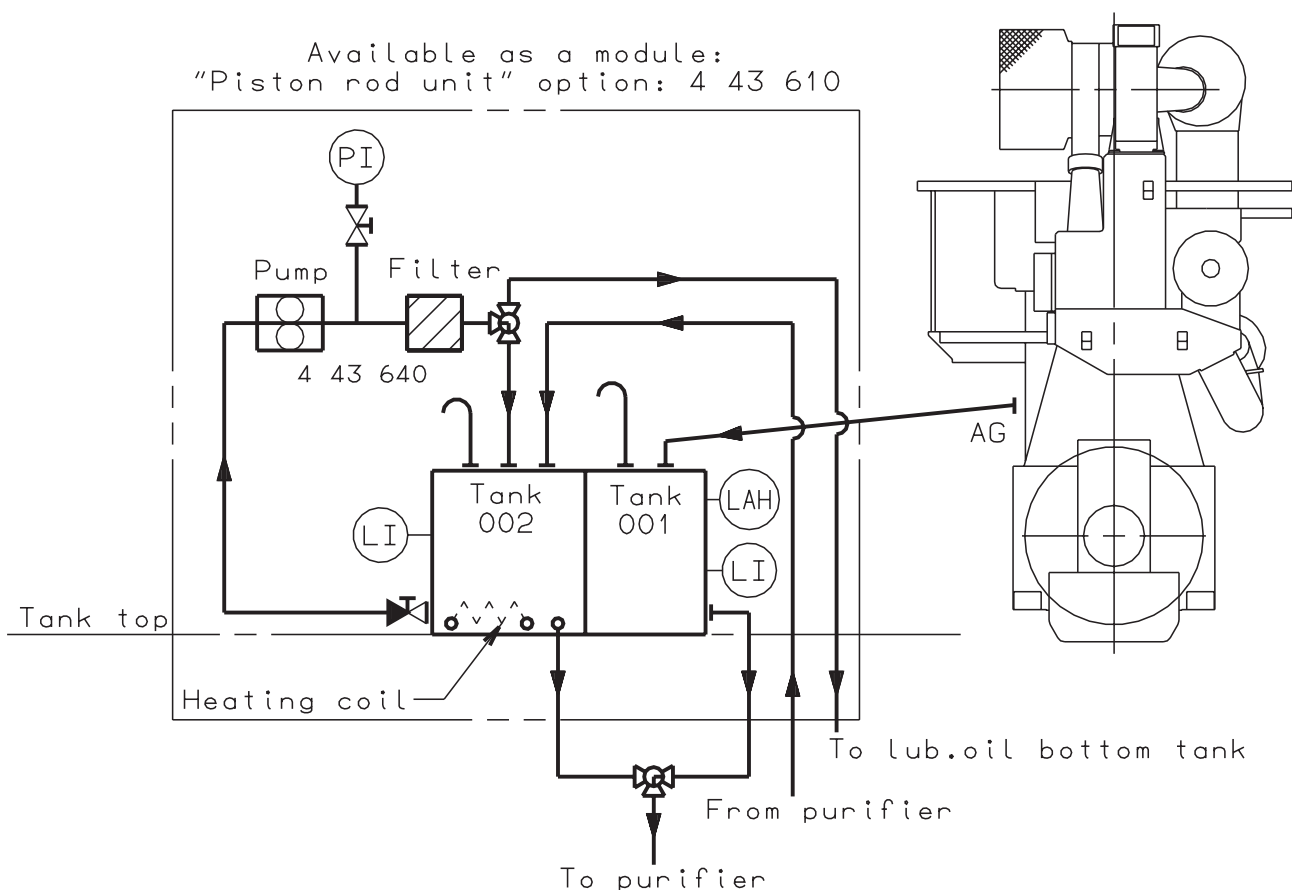
The performance of the piston rod stuffing box on the MC engines has proved to be very efficient, primarily because the hardened piston rod allows a higher scraper ring pressure.

The amount of drain oil from the stuffing boxes is about 5 - 10 liters/24 hours per cylinder during normal service. In the running-in period, it can be higher.

We therefore consider the piston rod stuffing box drain oil cleaning system as an option, and recommend that this relatively small amount of drain oil is used for other purposes or is burnt in the incinerator.

If the drain oil is to be re-used as lubricating oil, it will be necessary to install the stuffing box drain oil cleaning system described below.

As an alternative to the tank arrangement shown, the drain tank (001) can, if required, be designed as a bottom tank, and the circulating tank (002) can be installed at a suitable place in the engine room.



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Fig. 6.05.01: Optional stuffing box drain oil system

No. of cylinders	C.J.C. Filter 004	Minimum capacity of tanks		Capacity of pump option 4 43 640 at 2 bar m ³ /h
		Tank 001 m ³	Tank 002 m ³	
4 - 6	1 x HDU 427/54	0.6	0.7	0.2
7 - 9	1 x HDU 427/54	0.9	1.0	0.3
10 - 12	1 x HDU 427/81 or 1 x HDU 327/108	1.2	1.3	0.6

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Fig. 6.05.02: Capacities of cleaning system, stuffing box drain

Piston rod lub oil pump and filter unit

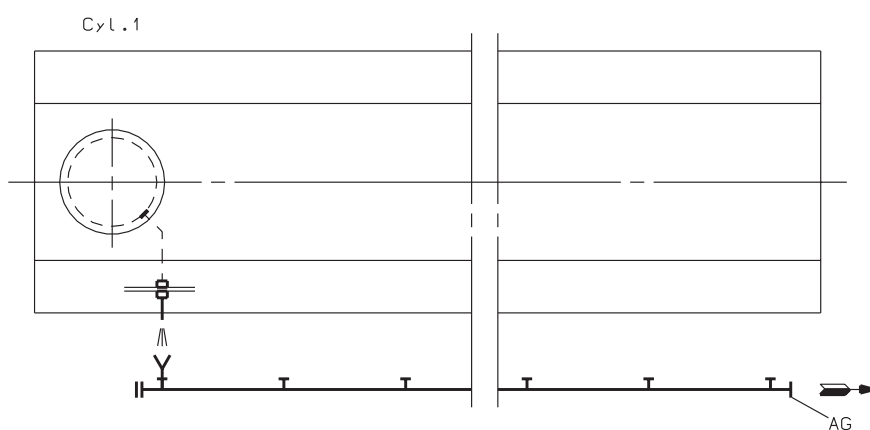
The filter unit consisting of a pump and a finefilter (option: 4 43 640) could be of make C.C. Jensen A/S, Denmark. The fine filter cartridge is made of cellulose fibres and will retain small carbon particles etc. with relatively low density, which are not removed by centrifuging.

Lube oil flow see table in Fig. 6.05.02
 Working pressure 0.6-1.8 bar
 Filtration fineness 1 µm
 Working temperature 50 °C
 Oil viscosity at working temperature 75 cSt
 Pressure drop at clean filter maximum 0.6 bar
 Filter cartridge . . . maximum pressure drop 1.8 bar

No. of cylinders	3 x 440 volts 60 Hz	3 x 380 volts 50 Hz
4 - 6	PR - 0.2 - 6	PR - 0.2 - 5
7 - 9	PR - 0.3 - 6	PR - 0.3 - 5
10 - 12	PR - 0.6 - 6	PR - 0.6 - 5

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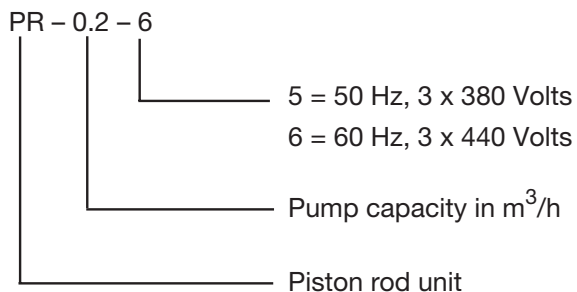
Fig. 6.05.03: Types of piston rod units



The letters refer to "List of flanges"
 The piping is delivered with and fitted onto the engine

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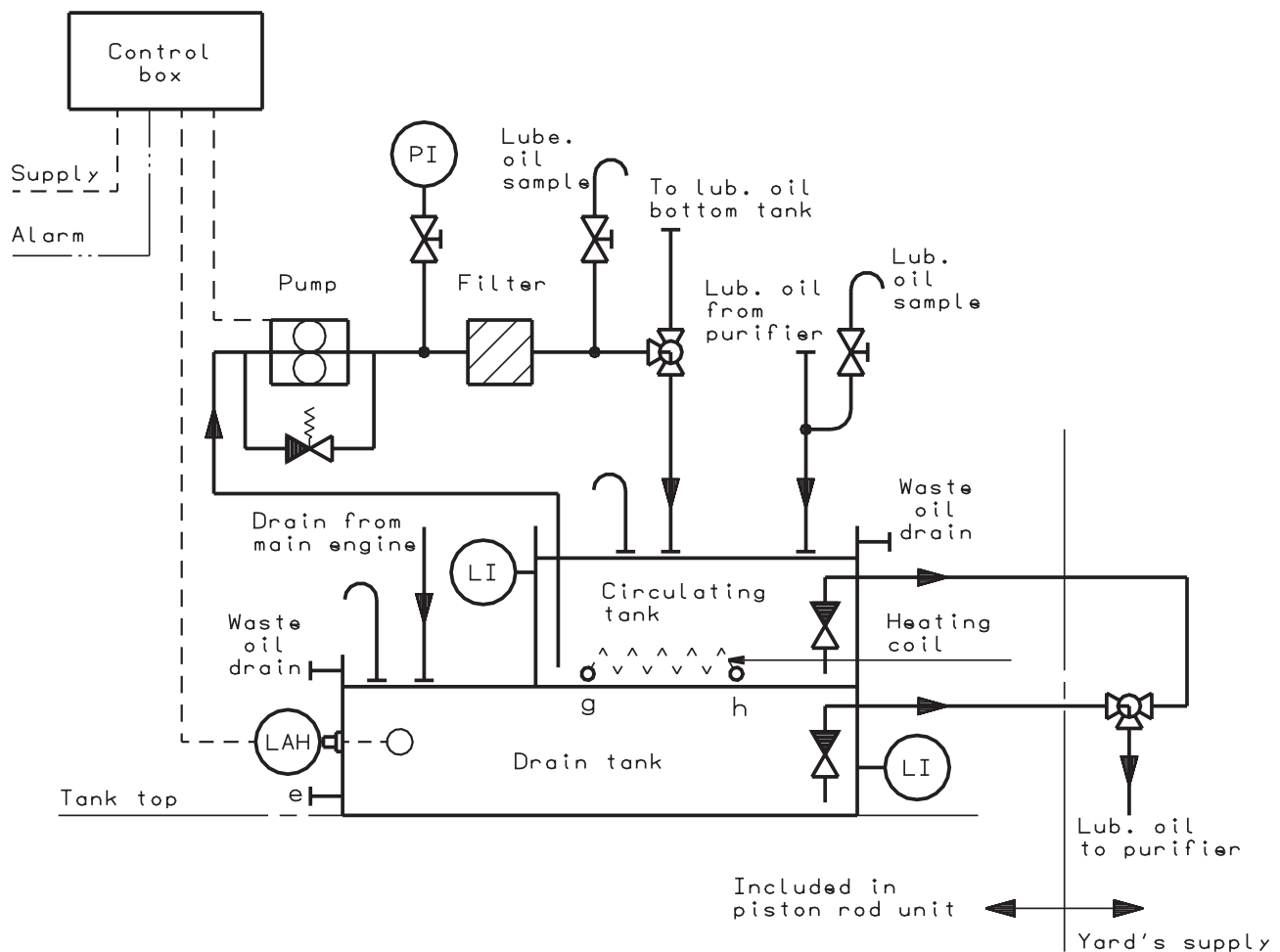
Fig. 6.05.04: Stuffing box, drain pipes

Designation of piston rod units

A modular unit is available for this system, option: 4 43 610. See Fig. 6.05.05 "Piston rod unit, MAN B&W/C.C. Jensen".

The modular unit consists of a drain tank, a circulating tank with a heating coil, a pump and a fine filter, and also includes wiring, piping, valves and instruments.

The piston rod unit is tested and ready to be connected to the supply connections on board.



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Fig. 6.05.05.: Piston rod drain oil unit, MAN B&WDiesel/C. C. Jensen, option: 4 43 610