OPERATING INSTRUCTIONS

for quench pot 7525-4

Typ 8LSUK

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1 General

Mechanical seals in tandem arrangement

In tandem arrangement the atmosphere-side mechanical seal acts as a safety seal, which only has a sealing function if the product-side mechanical seal fails. In order to dissipate the friction heat generated at the sealing face of the atmosphere-side mechanical seal, quenching liquid must be supplied from the quench pot described below.

2 Design

The quench pot is used for the supply of quenching liquid without pressure. It is not designed for absorbing pressure in the event of leakage at the pump-side mechanical seal. Any leakage must be drained without pressure via the overflow line (part 8).
The quench pot is equipped with a cooling coil an can be cooled to reduce the temperature of the quenching liquid.

Warning! For safety reasons, the overflow line (part 8) must not be plugged, as any leakage at the product-side mechanical seal would put the quench pot under system pressure and thus make it a pressure vessel.

Quench pot data:	Capacity	8 litres
	Admissible operating pressure	0 bar (pressureless!)
	Admissible operating temperature	+ 340 °C
	Max. cooling water pressure	20 bar
	Req. cooling water flow	approx. 6 - 8 l/min
	Material	all parts in contact with the quenching liquid are made of 1.4571 or 1.4301

3 Fields of application

The quench pot serves as a reservoir for the quenching liquid used in double-acting mechnical seals in tandem arrangement. When heat transfer oils are used, the quenching liquid prevents cracked products and oil carbon from forming deposits on the product-side "hot" seal face, which would inevitably lead to mechnical seal failure. To keep the temperature at the seal faces low, the recirculated quench liquid is cooled in the quench pot. For this purpose, the internal cooling coil must be fed with cooling water.

4 Circulation of quench liquid

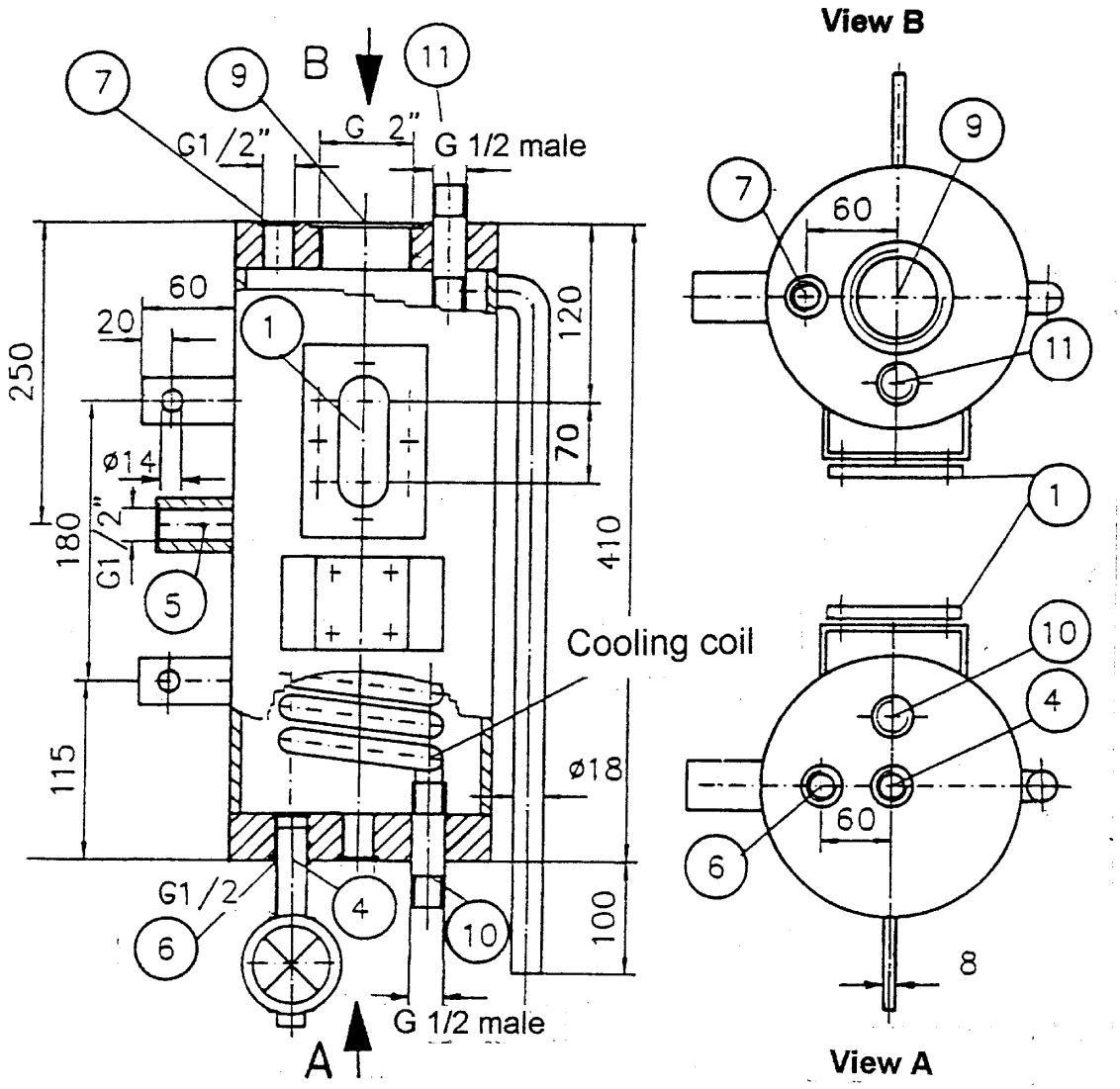
Liquid circulation is based on the thermosyphon principle, with the additional effect of a pumping screw fitted on the atmosphere-side mechanical seal.

5 Connections

For position and size of the connections please refer to the drawing below:

Key:

1	= Sight glass	
4	= Drain connection (via drain valve)	G 1/2
5	= Quench connection return line	G 1/2
6	= Quench connection supply line	G 1/2
7	= Filling connection (if level switch fitted)	G 1/2
9	= Connection for level switch (if supplied)	G 2
10	= Cooling water inlet	G 1/2 (male)
11	= Cooling water outlet	G 1/2 (male)



6 Mounting of quench pot

The quench pot should be mounted 1 - 1,5 m above and not more than 1 m off the shaft axis. It is usually supplied complete with all the necessary pipework and mounted on the baseplate. For easier shipment and transport, the quench pot may also be supplied pre-assembled and unmounted together with the pump.

In order to achieve an efficient thermosyphon effect, make sure that lines are routed continually rising and falling, respectively, and that only wide bends without changes in diameter are used. Quench lines (stainless steel, diameter 18 x 2) must be clean and free of scale. To ensure optimum tightness, supply and return lines must be connected with DILO screwed connections.

7 Filling

The quench pot is filled via connection 7. If the quench pot is not fitted with a level switch, the best way to fill it is via connection 9 (G 2 INCH plug). Cold heat transfer oil shall be used (Syltherm 66 is well-proven as it rarely forms cracked products. The same goes for mono- and triethylene glycol).

Note!
To ensure an acceptable service life of the mechnical seal, it is essential that the seal chamber is well vented and filled with quench medium, especially during commissioning. To this end, disconnect the return line at connection 6 and slowly fill the quench pot. In doing so, close connection G 1/2 at the quench pot with plug or thumb and keep filling slowly until quench medium flows out of the disconnected return line. Then reconnect return line at the quench pot and top up until the filling level is mid-way between the **"Min"** and the **"Max"** mark in the sight glass 1.

8 Venting

The filling procedure described (see para. 7) ensures sufficient venting of both the seal chamber and the supply and return lines. The filled quench pot is automatically vented via the overflow line 8, which must not be plugged (see para.2)

9 Commissioning and maintenance

When the cooling coil has been connected and commissioned and when the quench pot has been filled with quench liquid, the quench pot is operational.
The filling level must not fall below the **"Min"** mark in the sight glass of the quench pot.If the filling level falls below the **"Min"** mark, quench circulation will be interrupted and heat dissipation at the seal faces will fail. In the end, this will result in mechnical seal failure.

Note:
Correct quench circulation is characterized by a temperature difference of approx, 10 - 15 °C in the supply resp. return line. This should be checked after commissioning.

10 Drainage

The quench pot can be drained by opening the drain valve. The quench medium is then discharded into the drain line to be supplied on site.

11 Level monitoring

The liquid level in the quench pot must be monitored. If a level switch is installed and wired, automatic monitoring is ensured. For technical data on level switch (if supplied) refer to enclosure.