

RELY ON EXCELLENCE

TS4000

Seal supply systems | Thermosiphon systems



Features

With the EagleBurgmann gap-free executed TS4000 thermosiphon system it is possible to supply buffer/barrier fluid to double and tandem mechanical seals for a broad range of applications. The range is available in completely gap-free design with torispherical heads, sight-glass for level monitoring and with cooling coil. TS vessels are equipped as standard with all the necessary system connections and brackets.

Circulation based on API 682 / ISO 21049:
[Plan 52](#), [Plan 53A](#)

Advantages

- Gap-free design; pickled and passivated surface inside and outside
- Suitable for a wide range of demanding operating conditions: TS4030 up to 30 bar / 200°C
- Cooling water connections at top (OUT) and bottom (IN): optimum draining and venting
- Sockets with recessed gasket: no contamination of the circuit by thread sealant

Standards and approvals

- PED 2014/68/EU (Design and production in accordance with EU Pressure Equipment Directive)

Notes

The modular system allows the TS4000 vessels to be combined with a wide range of system components such as, e.g. level switch, circulation pump, hand refill pump, thermometer, etc.

Recommended applications

- Chemical industry
- Pharmaceutical industry
- Food and beverage industry
- Refining technology
- Oil and gas industry

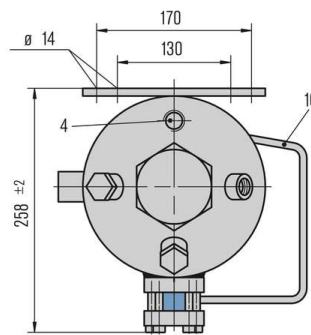
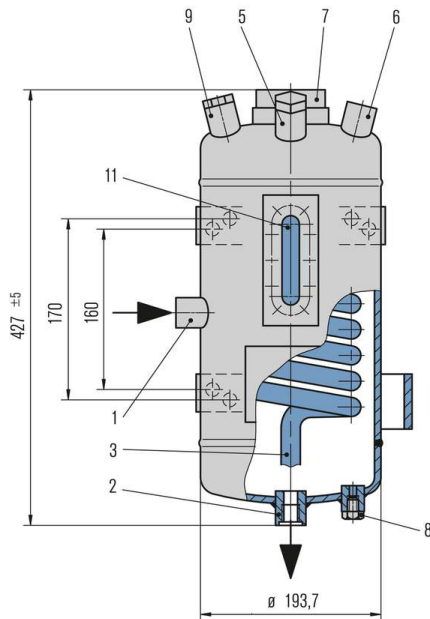
Functional description

The TS system performs all the basic functions of a buffer/barrier system for the operation of double seals:

- to pressurize the buffer chamber
- leakage compensation
- buffer/barrier fluid is circulated by thermosiphon effect or external circulation system
- to cool the seal
- to selectively absorb product leakage and prevent dry running (tandem arrangement)

Use compressed air or nitrogen for pressurization.

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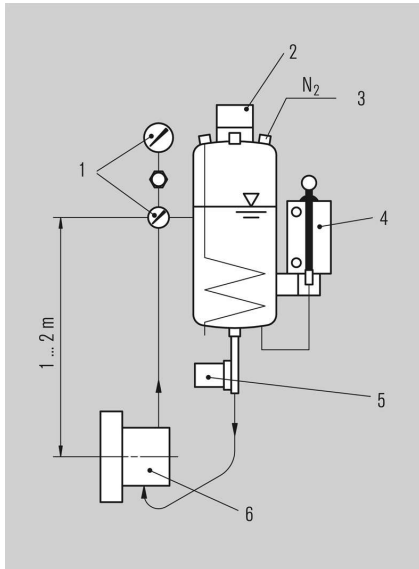


Item Description

- 1 Buffer/barrier fluid IN (G1/2")
- 2 Buffer/barrier fluid OUT (G1/2")
- 3 Cooling water IN (G1/2")
- 4 Cooling water OUT (G1/2")
- 5 Filling connection with plug 1(G1/2")
- 6 Pressure gas connection (G1/2")
- 7 Connection for level switch or level indicator (G2")
- 8 Connection for refill unit (G1/8")
- 9 Universal connection (G1/2" for safety valve, flare, etc.)
- 10 Bracket for refill unit
- 11 Sight-glass

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Installation, details, options



Operating and installation diagram for a TS4000 system.

The TS vessel must always be installed higher than the mechanical seal. The buffer/barrier fluid flows via the return pipe into the vessel and is cooled. The exchange of fluid takes place by the thermosiphon principle or by forced circulation, e.g. with a pumping screw. Connection pipes to the seal should be designed with as little resistance as possible.

- 1 SPI Measuring unit
- 2 SPS Level switch
- 3 From PCV, we recommend using a reverse controlled pressure control valve (PCV)
- 4 SPN
- 5 SPU
- 6 Mechanical seal

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Product variants

Designation

Design code
Integrated cooling coil
Volume, vessel (liters)
Volume, tube (liters)
Allowable pressure¹⁾

Allowable temperature¹⁾

Working volume, MAX-MIN (liters)
Cooling capacity –
without cooling water (kW)²⁾
Cooling capacity –
natural circulation (kW)²⁾
Cooling capacity –
forced circulation (kW)²⁾
Metal parts
Sight-glass
Seal

TS4030/A002

PED 2014/68/EU
■
9
0.5
30 bar
(435 PSI)
-60 °C ... +200 °C
(-76 °F ... +392 °F)
1.8
0.5

1.5
4.0

1.4571
Reflex Borosilicate
PTFE

Other versions on request.

1) Design data, permissible working values depend on the actual conditions of service.

2) The cooling performance depends on the available fluids, their temperatures and flow rates. Please contact EagleBurgmann for professionally selecting the correct heat exchanger.