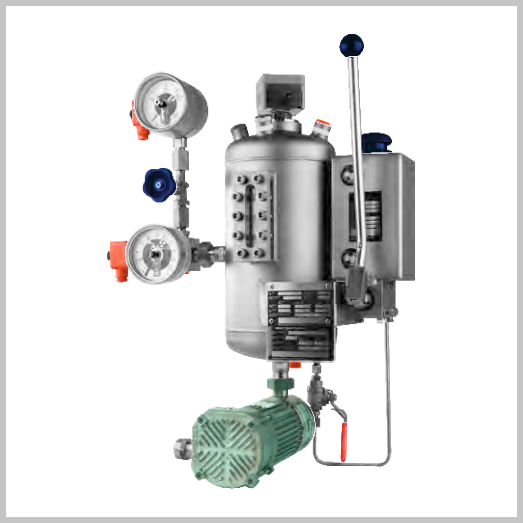
SHARK POTS

Thermosiphon Systems

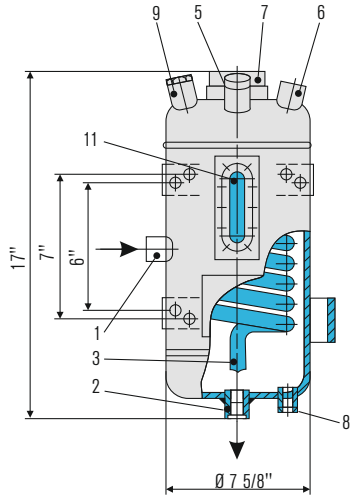


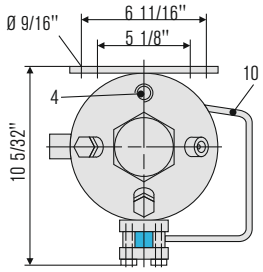
Product Description

1. POT-435 thermosiphon system makes it possible to supply buffer/barrier fluid to a double and a tandem mechanical seal for a broad range of applications.
2. The range is available in different pressure levels with dished heads, sight-glass for level monitoring and with or without cooling coil.
3. Vessels are equipped as standard with all the necessary system connections and brackets.
4. The modular system allows the POT-435 vessels to be offered with a wide range of system components such as, level switch, circulation pump , hand refill pump , thermometer, base frame, etc.
5. Circulation in accordance with API 682/ISO 21.

Technical Features

1. Standard with cooling coils.
2. Cooling water connections at top (OUT) and bottom (IN): optimum draining and venting.
3. Sockets with recessed gasket : no contamination of the circuit by thread sealant.
4. Suitable for a wide range of demanding operating conditions: 435 psig /400°F.
5. Vessel made of 316 stainless steel / borosilicate sight-glasses: suitable for a wide rang of applications.





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 (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

Typical Industrial Applications

Chemical industry
Oil and gas industry
Petrochemical industry
Refining technology

Standards

ASME VIII, Div. 1 (Design, calculation and production)

Functional Description

The **SHARK POT** system meats all the basic requirements of a buffer /barrier system for the operation of double seals: • to pressurize the barrier chamber

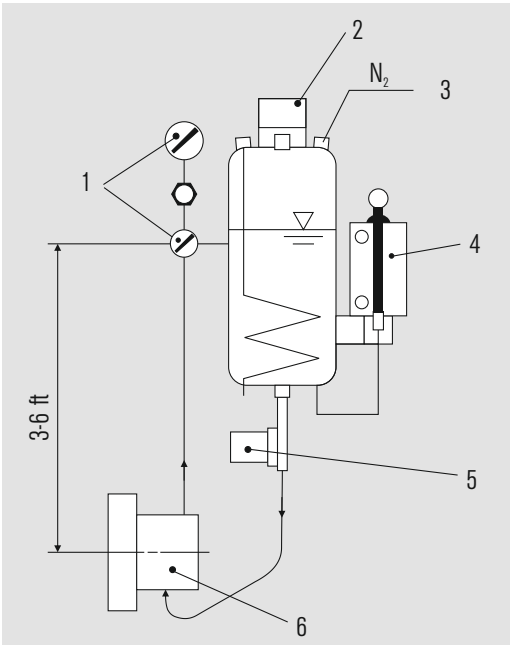
- leakage compensation
- buffer/barrier fluid is circulated by thermosiphon effect or external circulation system
- to cool the seal
- to selectively absorb product leakage and prevent dry running (tandem arrangement)
- Use compressed air or nitrogen for pressurization.
- Circulation in accordance with API 682 / ISO 21 049: Plan 52, Plan 53A

Technical Features

Designation	POT-435
Pressure Equipment Directive	PED
Integrated cooling coil	Yes
Volume, vessel (liters)	2.4
Volume, tube (gallons)	1/8
Allowable pressure[1)]	435 PSIG
Allowable temperature[1)]	-76 to +392°F
Working volume , MAX-MIN (gallons)	0.5
Cooling capacity – without cooling water (kW)[3)]	0.5

1) Higher values on request
2) Other materials on request

Operating and Installation Schematic



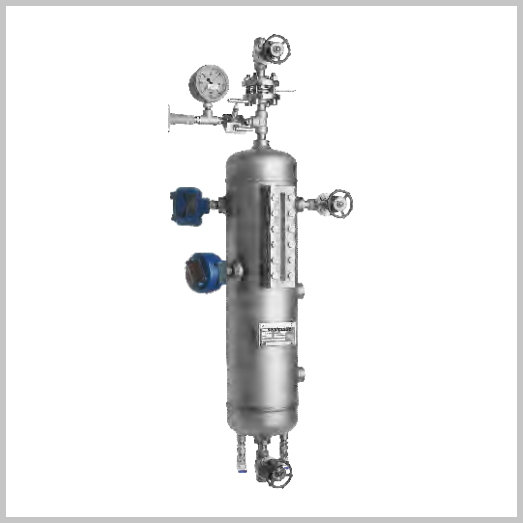
The **SHARK POT** should be installed at least 2 ft higher than the mechanical seal. The buffer/barrier fluid flows via the return pipe into the vessel and is cooled . The exchange of fluid takes place by the thermosiphon principle or by forced circulation , e.g. with a pumping screw . Connection pipes to the seal should be designed with as little resistance as possible.

1. Measuring unit
2. Level Switch
3. From PCV, we recommend using a reverse controlled pressure control valve (PCV)
4. Hand Refill Pump
5. Circulating Pump
6. Mechanical seal

SHARK SEALS

SHARK POTS

Thermosiphon Systems



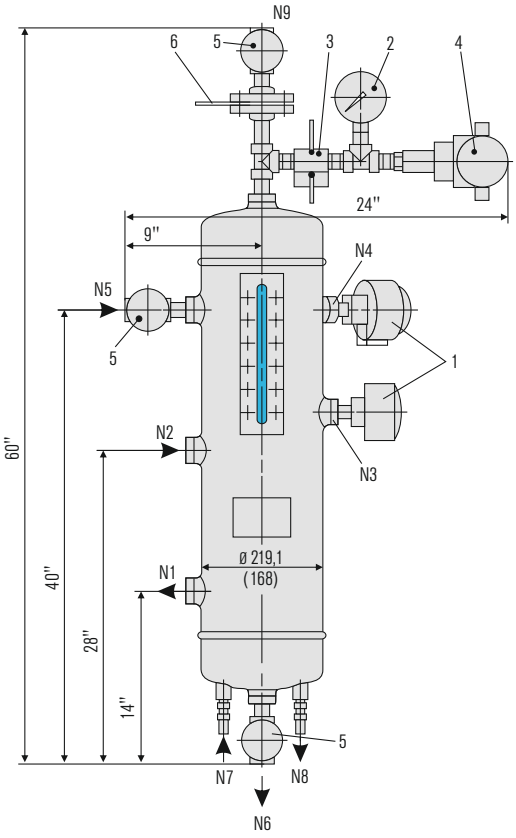
Product Description

POT-725 Thermosiphon system meets all the requirements to supply mechanical seals in accordance with the API 682 guidelines. The vessels are equipped with all essential connections for fitting additional components. The modular system allows the POT-725 vessels to be combined with a wide range of system components such as, level switch/transmitter, pressure switch/ transmitter, base frame, etc. Circulation in accordance with API 682 / ISO 21049:

Plan 52 (tandem) or Plan 53A (pressurized)

Technical Features

1. A version which can be dismantled is also available as an option: for optimum and simple cleaning of the vessel interior
2. Vessel made of 316 stainless steel
3. Operating limits up to 725 psig / 390°F suitable for a wide range of demanding operating conditions
4. Robust design with weld-pad type sight-glass for optimum visual level monitoring



Typical Industrial Applications

Refining technology
Oil and gas industry
Chemical industry
Petrochemical industry

Standards

ASME VIII, Div. 1

Thermosiphon System (API Plan 52)

Item	Description
1	Level switch
2	Pressure Gauge
3	Manifold
4	Pressure switch
5	Shut-off valve
6	Orifice

Functional Description

The SHARK POT system performs all the basic functions of a buffer/barrier system for the operation of double seals: • to pressurize the buffer chamber

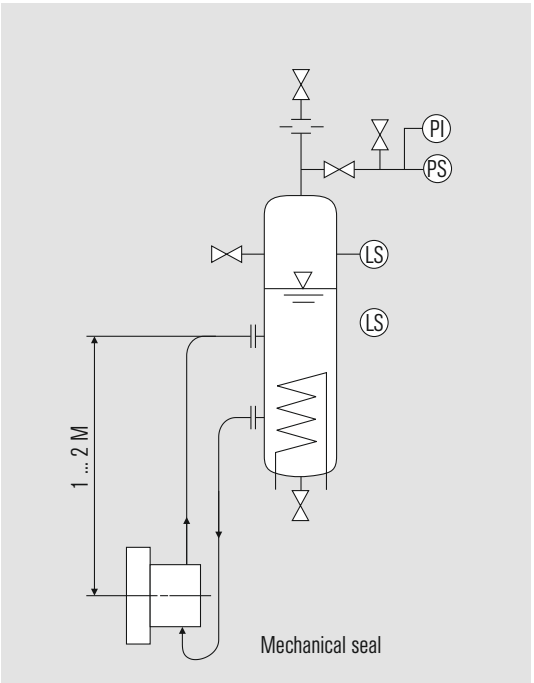
- leakage compensation
- buffer/barrier fluid is circulated by thermosiphon effect or forced circulation system
- to cool the seal
- to selectively absorb product leakage and prevent dry running (tandem arrangement)

Use compressed air or nitrogen for pressurization; pressurization is monitored by a pressure switch.
The incorporated level switch issues a signal whenever the level of buffer/barrier fluid is too low.

Thermosiphon System (API Plan 52)

Item	Description
N1	to the mechanical seal
N2	from the mechanical seal
N3	Level switch
N4	Level switch
N5	Filling connection
	Bottom
N6	Drain
N7	Cooling water IN
N8	Cooling water OUT
	Cover
N9	Connection to flare

Installation, Details, Options



POT-725 schematic

The SHARK POT must be installed at least 2 ft 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.

SHARK SEALS