
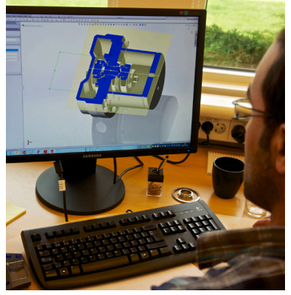

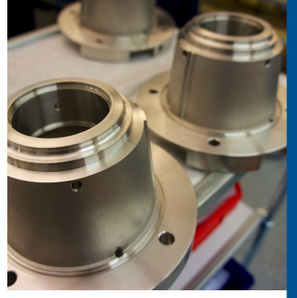

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ISO 9001 *Quality*
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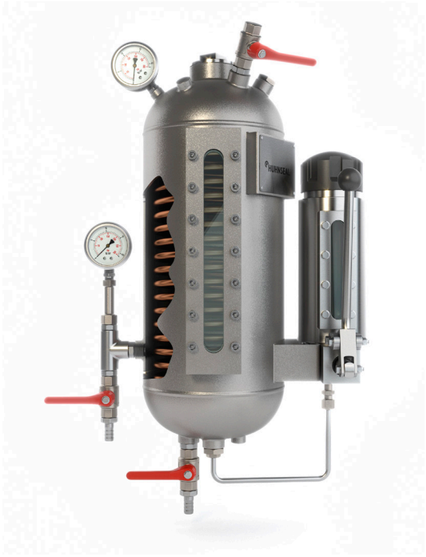
Thermosiphon System

HUHNSEAL

General Description

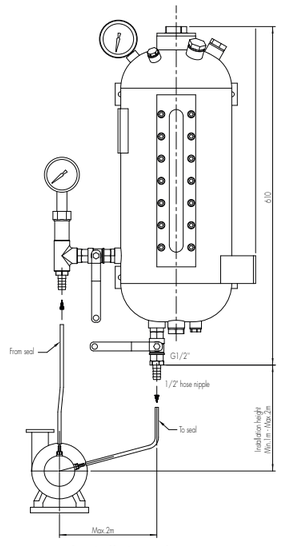
The objective of a thermosiphon system is to provide a flow of cooling media to the mechanical seal at the required pressure.
The media recirculates through the seal by heat convection generated as the pump shaft rotates through the seal. The media in the vessel is forced into the seal through the bottom line as the hot barrier fluid leaves the seal through the top line back into the vessel.
The media flows in the circuit and is cooled by contact with the walls of the tank and the cooling coils if used. The thermosiphon system is therefore passive and stand-alone, avoiding the cost and complexity of a conventional liquid pump.
In order to achieve this natural cooling effect, the tank containing a suitable sealing liquid must be located approx 1-2 m above the seal and not more than 2 m on any side, connecting the seal and the tank with pipes in stainless steel.
Depending on the application, local conditions and client preferences, a thermosiphon system can be delivered in a number of different versions by combining several options and a basic package.



Basic Package

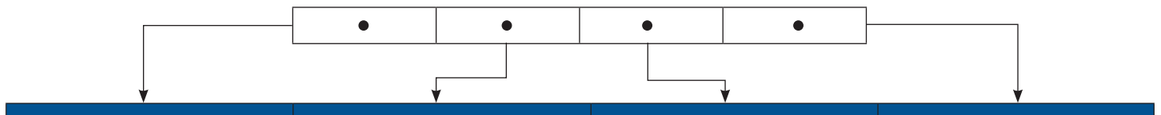
The basic package contains all items required to ensure basic function of the thermosiphon system.

Item	Description
Tank	Volume: 12 liters, approx. media volume 7 liters Max. Operating Pressure: 16 bar Material: EN. 1.4436 / AISI 316
Sight Glass	For media level inspection
Cooling Coils	Fixed Cooling Coil is standard in every tank
Manometer	Displays Pressure in the tank
Thermometer	Displays media temperature in the seal return line
Ball valves	On the "in" and "out" ports, these are used to stop flow and isolate the seal during maintenance
Fittings	G-Series pipe thread hose fittings for "in" and "out" ports
Plugs for option ports	All unused ports are plugged and sealed.



Installation diagram

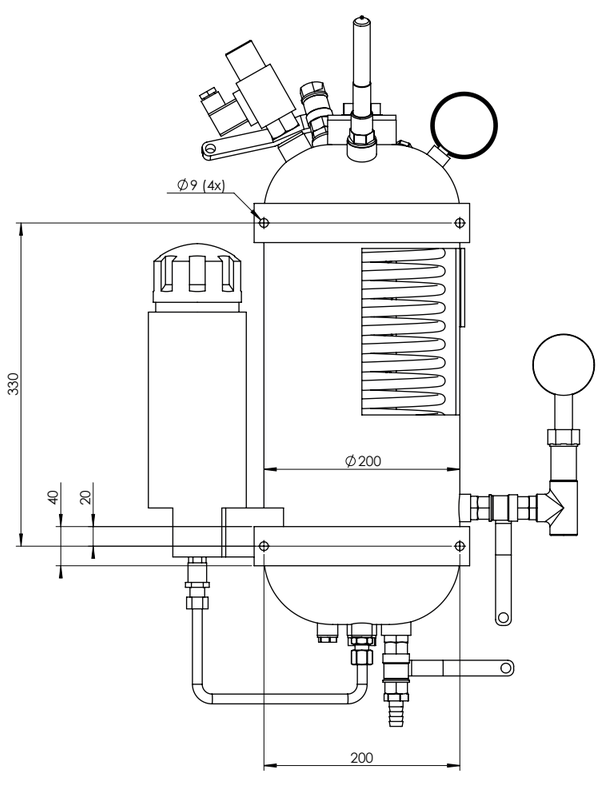
Thermosiphon Systems Designation Key

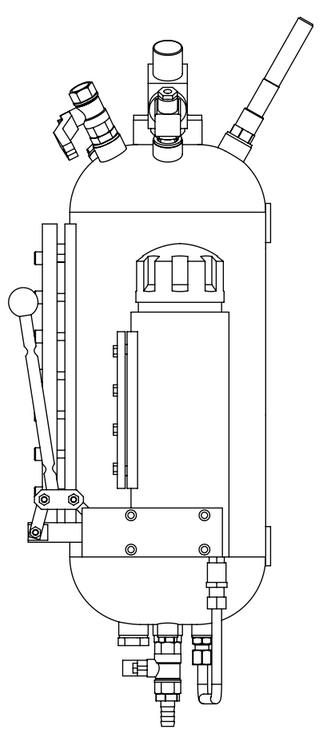


VESSEL DESCRIPTION	VESSEL PRESSURE RATING (Bar)	OPTIONS	ATEX REQUIRED
TS12: Basic Package	16	A) Temperature Switch	ATEX
	30	B) Temperature Transmitter PT-100	
	60	C) Level Switch	
		D) Level Transmitter	
		E) Pressure Switch	
		F) Pressure Transducer	
		G) Circulating Pump	
		H) Hand Pump	
		I) Safety Valve	
		J)Extra Ball Valve for Compressed Air	

Example 1: TS12 - 16 - AH - ATEX / Example 2: TS12 - 30 - E

Option	Description	Option	Description
Temperature Switch	• *Upper Limit 80 degC.* • *Used to monitor the media temperature in the seal return line. It switches if the media temperature goes above a predefined value.* • *Can be used to trigger an alarm.*	**Pressure Transducer**	• *Used to monitor the media pressure in the tank.* • *Can be used to trigger an alarm if the pressure reaches limit values.*
Temperature Transmitter	• *Used to monitor the media temperature in the seal return line.* • *Can be used to trigger an alarm if the media gets too hot.*	**Circulating Pump**	• *To be used if mechanical seal has no pumping device and thermal convection does not supply adequate media flow for mechanical seal lubrication and cooling.*
Level Switch	• *Located inside the tank, it switches if the media level goes below the minimum level, which can be caused by media loss through a leakage.* • *Can be used to trigger an alarm.*	**Hand Pump**	• *Used for manual pressurizing of the tank if no other means is available on site. Also allows for media refilling during operation.*
Level Transmitter	• *Used to monitor the media level in the tank.* • *Can be used to trigger an alarm if the level gets too low.*	**Safety Valve**	• *Releases pressure in the tank if it exceeds a given value.*
Pressure Switch	• *It switches if the pressure in the tank goes below a predefined value, whch can be cause e.g. by a media loss through a leakage.* • *It can be used to trigger an alarm.*	**Extra Ball Valve for Compressed Air**	• *Used for the tank pressurizing by compressed air.*
Stand	• *Used to support the tank* • *Material: stainless steel*	**ATEX Requirement**	*Compliant electrical and electronic components*





Circulation in accordance with:
API Plan 52, API Plan 53A, API Plan 54 with circulating pump in the seal inlet line

Mounting Pattern and Main Dimensions
Disclaimer: Specifications and dimensions given in this document represent the state of engineering at the time of releasing. Modifications can take place and materials or components replaced by others without prior notice