

Oil Reservoirs

The function of an Oil Reservoir is to provide a holding charge of oil, as part of a Low Pressure Oil Management System. The amount of oil circulating in a system varies depending on the operating conditions. The Oil Reservoir caters for these fluctuations by providing additional storage capacity.

Rotalock valves are supplied with each Oil Reservoir to facilitate easy oil fill and drain. A connection is provided at the top of the unit for fitting a pressure vent valve. Models are provided with either two or three sight glasses for visual indication of oil level.

Applications

The standard range of Oil Reservoirs are suitable for HCFC and HFC refrigerants, along with their associated oils. The SH range, with a higher MWP, is also suitable for sub-critical CO₂ applications.



Features

- Three sizes available in both standard and high pressure ranges.
- Robust construction.
- All models supplied with Rotalock Valves.
- Sight glass with floating ball.
- Double seal on sight glass for leak integrity.
- Standard models supplied with mounting brackets.
- Mounting brackets available on request (SH models only).

Benefits

- Select the model appropriate for the application.
- Suitable for harsh environments.
- Supplied ready for installation.
- Quick and easy means to identify liquid level.
- Minimises risk of leakage.
- No additional accessories required.
- Secure installation.

Technical Specification

Standard models:

Allowable Operating Pressure = 0 to 3,100 kPa

Allowable Operating Temperature = -10°C to 130°C

SH models:

Allowable Operating Pressure = 0 to 4,000 kPa

Allowable Operating Temperature = -10°C to 110°C

Materials of Construction

The shell, end caps and fitting connections are made from carbon steel.

Installation – Main Issues

Full instructions are given in the Product Instruction Sheet included with each Oil Reservoir.

Selection Guidelines

Both ranges of Henry Technologies Oil Reservoir include three different oil holding capacities of approximately 7.5, 11.5 and 15 litres.

The required holding capacity is dependent on a number of system design factors such as oil return piping practice, compressor type, number of compressors, compressor run times, etc....

For single stage parallel systems the oil reservoir capacity can be selected using the simple example calculation below. This simple calculation is a guide only based on the total compressor (theoretical) displacement (V_h). For other system types please contact Henry Technologies.

Example:-

8 compressors each with a theoretical displacement of 17 m³/hr.

Therefore V_h (total) = 136 m³/hr.

The selected V_h model is S-9109, with a V_h rating of up to 150 m³/hr.

Refer to selection table.

Note: It is known that some users select Oil Reservoir capacity using different rules from the above or from field experience. The method presented above is for guidance purposes only. If in doubt, select a larger capacity Oil Reservoir.

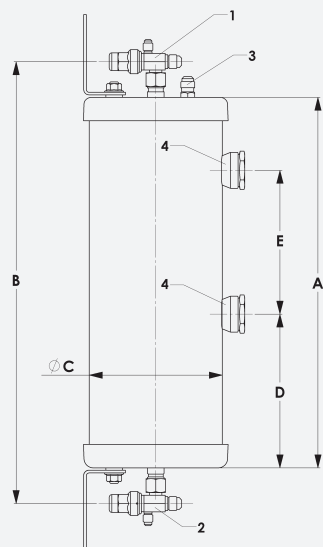


Fig.1

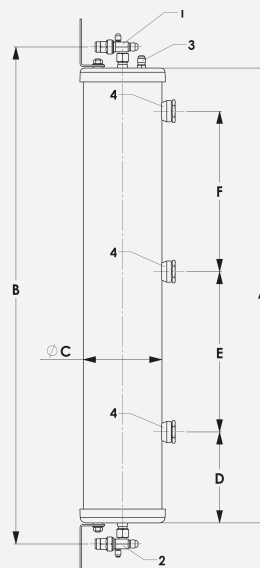


Fig.2

- 1 Inlet, Rotalock valve, 3/8 SAE Flare*
- 2 Outlet, Rotalock valve, 3/8 SAE Flare*
- 3 Vent, 3/8 SAE Flare
- 4 Sight glass

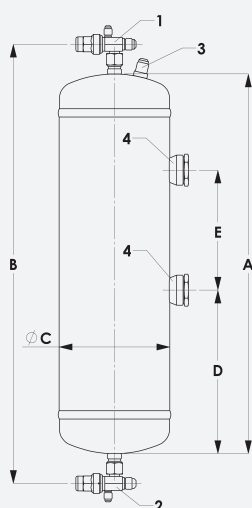


Fig.3

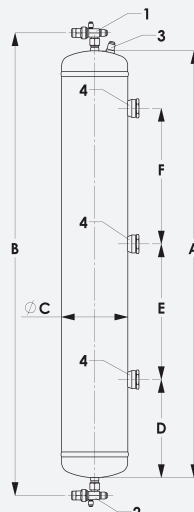


Fig.4

Part No	Dimensions (mm)						Drawing reference	Weight (kg)	MWP (barg)	CE Cat
	A	B	C	D	E	F				
S-9109-CE	426	507	152	177	165	N/A	fig.1	9	31	Cat II
S-9108U-CE	654	735	152	177	394	N/A	fig.1	12.5	31	Cat II
S-9108-CE	883	965	152	177	311	311	fig.2	15.5	31	Cat II
SH-9109-CE	522	604	152	225	165	N/A	fig.3	9	45	Cat II
SH-9108U-CE	751	832	152	225	394	N/A	fig.3	12.5	45	Cat II
SH-9108-CE	980	1061	152	225	311	311	fig.4	15.5	45	Cat II

* ODS Rotalock valve connections available on request

OIL RESERVOIR SELECTION TABLE

Part No	Capacity (litres)	V _n , total (m ³ /hr)
S-9109-CE	6.9	up to 150
S-9108U-CE	10.7	150-300
S-9108-CE	14.5	300-400
SH-9109-CE	8.2	up to 150
SH-9108U-CE	12.0	150-300
SH-9108-CE	15.8	300-400

Note: V_n = Summation of the theoretical displacement for all compressors in system

Reservoir Pressure Valves

The function of a Reservoir Pressure Valve is to control pressure in an oil reservoir.

Applications

A reservoir pressure valve is used in a Low Pressure Oil Management System. It is used to vent pressure in the oil reservoir while still maintaining a positive pressure differential between the reservoir and the compressor crankcase. This positive pressure ensures an adequate oil supply to the oil level regulators. The reservoir pressure valve is piped to suction pressure.

These valves are suitable for use with HCFC, HFC and CO₂ refrigerants, along with their associated oils.

Main Features

- Proven design
- Three different pressure settings
- Premium quality neoprene seal

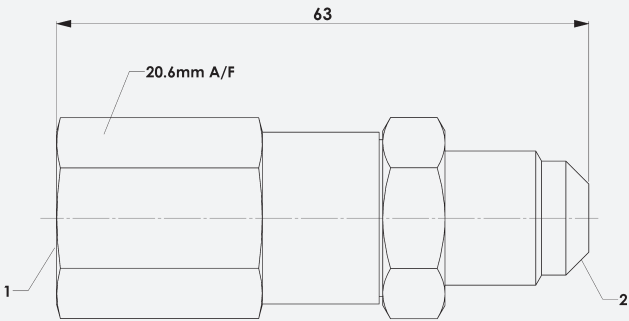
Technical Specification

Allowable operating pressure = 0 to 45 barg

Allowable operating temperature = -10°C to +120°C

Materials of Construction

The valve body components are made from brass, the spring from stainless steel and the seal from neoprene or PTFE (S-9104XHT).



- 1 Inlet
- 2 Outlet

Part No	Pressure Setting (barg)	Conn Size (inch)		Weight (kg)	CE Cat
		Inlet	Outlet		
S-9104	0.35 fixed	3/8 SAE Flare Female	3/8 SAE Flare Male	0.13	SEP
S-9104H	1.4 fixed	3/8 SAE Flare Female	3/8 SAE Flare Male	0.13	SEP
S-9104XH	2.4 fixed	3/8 SAE Flare Female	3/8 SAE Flare Male	0.13	SEP
S-9104XHT	2.4 fixed	3/8 SAE Flare Female	3/8 SAE Flare Male	0.13	SEP

RESERVOIR PRESSURE VALVE

Selection guidelines

The S-9104, S-9104H and S-9104XH models provide 0.35, 1.4 and 2.4 barg pressure differentials respectively.

A higher pressure differential will increase the oil flow rate from the oil reservoir back to the compressors.

The user should select a model taking into account individual compressor crankcase pressures along with the differential pressure range of the oil regulators. If foaming is a concern do not use the S-9104XH model.