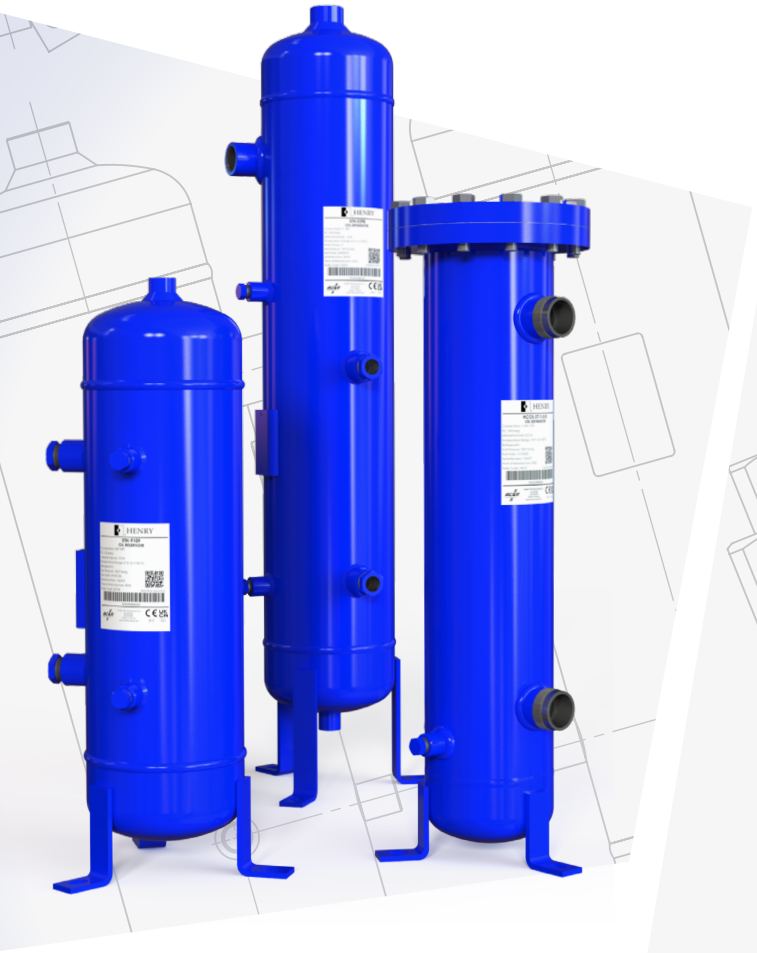
HENRY GROUP®



COMPONENTS FOR TRANSCRITICAL CO_2 SYSTEMS

CONTENTS

PRODUCTS

HIGH PRESSURE BALL VALVES (HPBV)

Applications

Ball Valves are used in a wide variety of air conditioning and refrigeration applications. They can be used for both liquid and gas applications. This type of valve is commonly used for isolating purposes. All valves are suitable for CO_2, HCFC and HFC refrigerants along with their associated oils.

Main Features

Construction Features

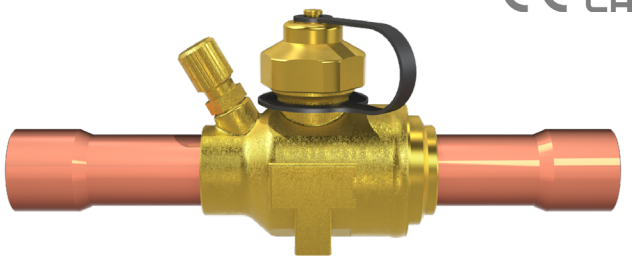
- Bi-directional flow
- Indicator on stem shows valve position - open or closed
- Positive stem stop ensures precise positioning in the open or closed position
- Blow-out proof stem
- Ball cavity vented to prevent over-pressure
- Vented seal cap
- Schrader valve option
- Mounting pad

Sealing Integrity Features

- Premium quality TFM™ ball seals
- Double O-ring system seal design
- Premium quality HNBR stem O-ring seals
- Seal cap retainer - prevents loss of cap
- PTFE cap seal - acts as a secondary seal

Technical Specifications

Allowable Operating Temperature: -40°C to +150°C
Allowable Operating Pressure: 0 to 130 barg

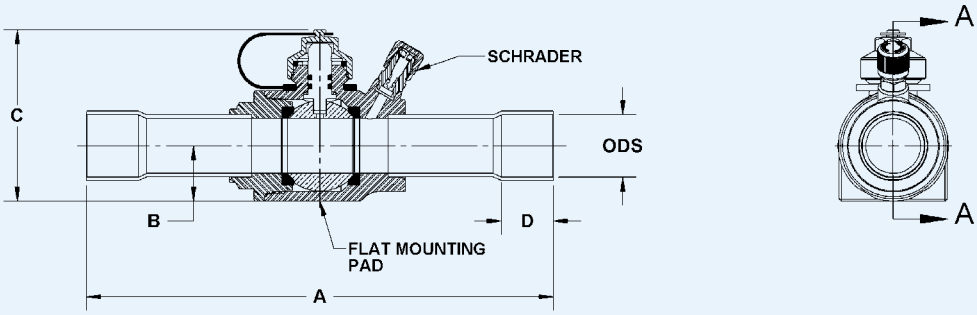


Materials of Construction

The valve body, valve body adaptor, ball and seal cap are made from brass. The stem is made from brass or plated steel. The pipe extensions are made from K65 copper alloy. The ball seals are made from virgin TFM, stem O-rings from neoprene/ HNBR and cap seal from PTFE.

Installation Instructions

Click Here or scan the QR Code to download the full product installation and application instructions from our website.



HIGH PRESUSRE BALL VALVE (SCHRADER OPTION SHOWN)

Part No:		ODS (Inch)	ODS (mm)	Dimensions (mm)					Port Size (mm)	Weight (kg)	MWP (barg)	Kv Value (m^3/hr)	CE/UKCA Cat
Standard	Schrader Valve			A	B	C	D	Mounting pad hole thread details -2 off					
907202TH	937202TH	1/4	-	165	16	58	8	8-36 UNF-2B X 20 mm pitch	12.70	0.33	130	1.81	SEP
907203TH	**937203TH**	3/8	-	165	16	58	8	8-36 UNF-2B X 20 mm pitch	12.70	0.33	130	3.70	SEP
907204TH	937204TH	1/2	-	165	16	58	10	8-36 UNF-2B X 20 mm pitch	12.70	0.33	130	6.02	SEP
907205TH	**937205TH**	5/8	16	165	16	58	13	8-36 UNF-2B X 20 mm pitch	12.70	0.33	130	11.95	SEP
907306TH	**937306TH**	3/4	-	184	21	71	16	8-36 UNF-2B X 32 mm pitch	19.05	0.62	130	18.06	SEP
907307TH	937307TH	7/8	22	184	21	71	19	8-36 UNF-2B X 32 mm pitch	19.05	0.64	130	26.06	SEP
907409TH	937409TH	1-1/8	-	216	25	80	23	10-32 UNF-2B X 40 mm pitch	25.40	0.95	130	52.72	SEP
907511TH	**937511TH**	1-3/8	35	235	31	98	25	10-32 UNF-2B X 48 mm pitch	31.75	1.52	130	73.27	Cat I
907613TH	937613TH	1-5/8	-	254	39	113	28	1/4"-28 UNF-2B X 60 mm pitch	38.10	2.44	130	182.32	Cat I

HIGH PRESSURE RANGE PRVS

How It Works

The high pressure relief valve range is specifically designed for high pressure applications up to 130 barg and in particular, transcritical CO2 systems. This range has been developed from the ground up, utilising the latest computational, simulation and experimental methods. The valves are manufactured from Brass.

The 5701AX & 5701GX models have been developed to suit the majority of applications and carry the added benefit of EN ISO 4126-1 certification. The 5700 is intended specifically for protection of pipework and small vessels whilst the 5702 models are sized to deal with large vessels or multiple compressor discharges.

Main Features

- Maximum pressure setting of 130 barg
- Set pressure tolerance = +/-3%
- Maximum overpressure = 10%
- In accordance with EN ISO 4126-1, the 5701AX valve reseats within 15% of set pressure following a discharge
- TFM second generation PTFE seal
- Suitable for HFC, HCFC, HFO and CO_2 refrigerant gases

Technical Specifications

Allowable Operating Temperature:

-40°C to +150°C

Standard pressure settings (barg):

31*, 40*, 42*, 45*, 46, 50, 60, 70, 80, 90, 100, 110, 120, 130

*Not available on 5701AX or 5701GX models

Installation Instructions

Click Here or scan the QR Code to download the full product installation and application instructions from our website.

Valve Capacity Ratings (kg Air/min) @ 20°C										
Part No.	Standard Pressure Setting (barg)									
	31.0	40.0	42.0	45.0	46.0	60.0	80.0	100.0	120.0	130.0
5700	3.9	5.0	5.2	5.6	5.7	7.4	9.8	12.2	14.7	15.9
5701AX / 5701GX	N/A*	N/A*	N/A*	N/A*	20.5	26.7	35.4	44.2	52.9	57.3
5702 (A/B/C)	34.9	44.7	46.9	50.2	51.3	66.5	88.4	110.2	132.1	143.0
* Minimum pressure setting is 46.0 barg.										

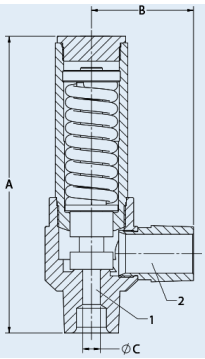


Fig.1

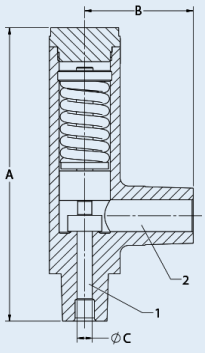


Fig.2

1. INLET
2. OUTLET

High Pressure Relief Valve Range											
Part No.	Conn Size (inch)		Dimensions (mm)			Flow Area (mm^2)	k_{dr}	Drawing Reference	Weight (kg)	ASME UV	CE/UKCA Cat
	Inlet	Outlet	A	B	ØC						
5700	3/8 NPTF	3/8 NPTF	87.0	30.7	3.5	9.62	0.81	Fig. 1	0.27	No	Cat IV
5701AX	1/2 NPTF	3/4 NPTF	132.5	50.6	7.1	39.59	0.71	Fig. 2	0.86	Yes	
5701GX	G-1/2	3/4 NPTF	132.5	50.6	7.1	39.59	0.71	Fig. 2	0.86	Yes	
5702	1/2 NPTF	1 NPTF	179.5	61.4	10.5	86.59	0.81	Fig.1	2.15	Yes	
5702A	3/4 NPTF								2.18	Yes	
5702B	1 NPTF								2.21	Yes	
5702C	1 1/4 NPTF								2.29	Yes	

PRV Air Capacity Reference Table (kg Air/min) @ 20°C.										
Range	Model	Pressure Setting (barg/PSIg)								
		31.0 *450*	40.0 *580*	42.0 *609*	46.0 *667*	60.0 *870*	80.0 *1160*	100.0 *1450*	120.0 *1740*	130.0 *1885*
High Pressure	5700	3.9	5	5.2	5.7	7.4	9.8	12.2	14.7	15.9
High Pressure	5701AX 5701GX	*N/A*			20.5	26.7	35.4	44.2	52.9	57.3
High Pressure	5702 5702A 5702B 5702C	34.9	44.7	46.9	51.3	66.5	88.4	110.2	132.1	143.0

Section Example

For safety reasons, relief valve selection should only be carried out by suitably qualified engineers. The European Standard; EN 378 and EN 13136 are recommended and are used as a reference for all below calculations.

A liquid receiver containing R744 (CO_2) refrigerant is to be protected from overpressure due to fire. The receiver is 2.0m long (L) and 1.3m in diameter (d). The set pressure (P_{set}) of the PRV is to be 120barg.

Calculate actual relieving pressure (p_0):

$p_0 = (p_{set} \times 1.1) + p_{atmos}$

p_{atmos} = atmospheric pressure

$p_0 = (120 \times 1.1) + 1.013 =$ **133 *bara***

Calculate vessel external surface area, (A_{SURF}):

$A_{surf} = (\pi \times D \times L) + 2(D^2 \times \pi/4)$

$A_{surf} = (\pi \times 1.3 \times 2.0) + 2(1.13^2 \times \pi/4) = 10.8m^2$

For Transcritical and Supercritical CO_2 selections, the following excerpt from EN 13136 applies:

If the set pressure of the pressure relief valve times 1,1, is higher than the saturated pressure of the refrigerant at (critical temperature minus 5 [K]) then h_{vap} and v_o shall be taken at critical temperature minus 5 [K].

Calculate the minimum required discharge capacity (Q_{md}):

$$Q_{md} = \frac{3600 \times \varphi \times A_{surf}}{h_{vap}}$$

φ = Density of heat flow rate (kW/m2). The standards assume a value to 10 kW/m2 but state that a higher value can be used if necessary. This figure relates to an un-lagged vessel.

h_{vap} = Heat of vaporisation calculated at 1.1 times the set pressure, in bar a, of the pressure relief valve (kJ/kg) Note EN 13136 extract

$$Q_{md} = \frac{3600 \times \varphi \times A_{surf}}{h_{vap}} = \frac{3600 \times 10 \times 10.8}{112.28}$$ **=3,463 *kg/hr***

Select an appropriate PRV to exceed Q_{md}. For this example, a 5701AX has been used.

Calculate the discharge capacity of the PRV (Q_m):

$$Q_m = 0.2883 \times C \times A \times K_{dr} \times K_b \times \sqrt{\frac{p_o}{v_o}}$$

C =Function of the isentropic exponent

A =Flow area of PRV (mm2)

K_{dr} =De-rated coefficient of discharge of PRV

K_b =Theoretical capacity correction factor for sub-critical flow. A value of 1 is used for critical flow.

v_0 =Specific volume of saturated vapour at p0 (m3/kg) Note EN 13136 extract

$$Q_m = 0.2883 \times 2.63 \times 39.59 \times 0.71 \times 1 \times \sqrt{\frac{133}{0.00393}} =$$ **3,921*kg/hr***

See the Important Selection Notes section for further guidance on selecting the most appropriate PRV.

Important Selection Notes

1. It is important not to grossly over-size a PRV so that Qm is five times greater than Qmd as the performance of the PRV can be affected. Contact Henry Technologies for further guidance
2. Henry Group recommends inlet and outlet piping for all PRVs are sized in accordance with EN 13136 to avoid excessive pressure losses which can affect valve performance.
3. If a Henry Group rupture disc is used in conjunction with a Henry Group PRV, the PRV capacity should be de-rated by 10%
4. Help with selection can also be found by visiting the PRV Selector tool. This can be accessed via the QR code below:

References

BS EN 378-2:2016*, BS EN 13136:2013+A1:2018* *Latest revisions at the time of publication. The user should ensure the latest revisions are referenced.

RUPTURE DISCS

How It Works

The function of a rupture disc is to protect against over-pressure. A foil disc is clamped in a holder. The disc is designed to burst at a pre-determined pressure - the set pressure. A reverse acting disc is used.

This means the disc is domed against the direction of the fluid pressure and designed to buckle due to compression forces, prior to bursting. Advantages of a reverse acting disc include being less sensitive to temperature, high operating pressures and improved fatigue life.

Each disc is manufactured with a precision score mark. This score mark in combination with the buckling action causes the disc to burst. At burst, the disc is designed to hinge resulting in a large available flow area. The disc is designed to be non-fragmenting after rupturing.

Applications

A rupture disc protects against any leakage or weeping of refrigerant through a relief valve. A rupture disc can also be used in combination with a pressure gauge and or/ pressure switch to detect if a relief valve has discharged.
Henry Group rupture discs are designed to operate with gases and should not be used to prevent liquid over-pressure.
The brass 55 series models are suitable for use with HCFC, HFC, A2L and CO_2 refrigerant gases. The stainless steel 56 series models are also suitable for ammonia and HFO refrigerant gases.

In line with the Institute of Refrigeration Guidelines (UK), it is recommended that at least every 5 years all low and high side bursting discs should be replaced. These intervals may have to be reduced if other regulations apply.

Main Features

- Proven safe design
- High Flow Capacity
- Compact
- Reverse acting, non-fragmenting disc
- 2 x 1/8 NPT pressure ports
- Helium leak tested
- EN ISO 4126-2 Compliant

Technical Specifications

Set Pressure Range:
10.3 to 60 barg (55 series)
10.3 to 130 barg (56 series)

Allowable Operating Pressure:
-40°C to +121°C (55 series)
-40°C to +427°C (56 series)

Note: Rupture discs burst pressures are rated at a specific temperature (e.g. 20°C). Whilst the unit can operate within the temperature limits stated, large deviations in temperature will affect the burst pressure. Refer to the “Selection Guidelines” section for more information.

Materials of Construction

For 55 series and 56 series, the main bodies are made from brass and stainless steel respectively. The foil disc is made from nickel alloy.

Tolerance Guidelines

As per industry standards, rupture disc rated burst pressures are subject to a performance tolerance.
When specifying a disc, the nominal pressure setting should be quoted as part of a part number. The rupture disc will be provided with a rated burst pressure stamped on the body, which is the average of all burst tests carried out on the batch of the discs. As a result, the rated burst pressure may differ slightly from the nominal setting depending on the manufacturing tolerance for the specific batch of discs. The manufacturing tolerance will never be greater than +/-5% and in the majority of cases is significantly less.
The rated burst pressure is subject to a performance tolerance of +/-5%. Examples of actual burst pressure ranges are shown in the table below for a selection of typical rated pressure settings.

Performance Tolerance Examples	
Rated burst pressure (barg)	Burst pressure range (barg)
10.3	9.8 - 10.8
14	13.3 - 14.7
16.2	15.4 - 17.0
17.2	16.3 - 18.0
20.7	19.7 - 21.7
24.1	22.9 - 25.3
24.8	23.6 - 26.0
25.9	24.6 - 27.2
27.6	26.2 - 29.0
31	29.5 - 32.6
40	38 - 42

Accessories

The 2 x 1/8 NPT pressure ports can be used for after-market accessories. If unused, the ports may be closed using a 1/8” NPT plug. If this is required, the Henry Group part number is A0624.

Installation Instructions

Click Here or scan the QR Code to download the full product installation and application instructions from our website.

Part No	Conn Size (inch)		Dimensions (mm)					Maximum Setting pressure (barg)	Weight (kg)	CE/UKCA Cat
	Inlet	Outlet	A	B	ØC	D	MNFA, mm² (note 1)			
5525	3/8 NPT	3/8 FPT	65	31.8 A/F	9.7	20	64.5	60	0.28	Cat IV
5526	1/2 NPT	1/2 FPT	73	31.8 A/F	12.7	23	109.7	60	0.30	Cat IV
5625	3/8 NPT	3/8 FPT	65	Ø28.6	9.7	20	64.5	130	0.20	Cat IV
5626	1/2 NPT	1/2 FPT	73	Ø28.6	12.7	23	109.7	130	0.20	Cat IV
5627	3/4 NPT	3/4 FPT	81	Ø38.1	19	29	187.1	130	0.34	Cat IV
5628	1 NPT	1FPT	93	Ø44.5	25.5	32	335.5	130	0.56	Cat IV
5629	1 1/4 NPT	1 1/4 FPT	95	50.8 A/F	33.3	33	683.9	130	0.76	Cat IV

Note 1: MNFA = Minimum net flow area. The MNFA is the net area after a complete disc burst, taking into account any structural members which reduce the nominal flow area. MNFA should be used as the flow area, A, in flow capacity calculations

Nominal standard rupture disc settings at 22˚C (barg)
Bold denotes typical stock models

5525 series: 16.2, 20.7, 24.1, 25.9, 27.6, 31.0, 40.0
5526 series: **14.0, 16.2, 20.7, 24.1, 24.8, 25.9, 27.6, 31.0, 40.0, 42.0**
5626 series: 10.3, 17.2, 20.7
5627 series: 10.3, 17.2, 20.7
5628 series: 10.3, 17.2, 20.7
5629 series: 10.3, 17.2, 20.7

Selection Guidelines

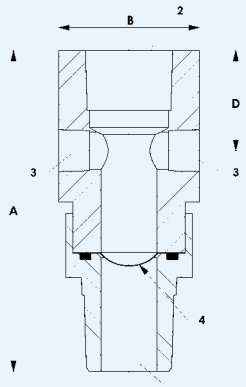
1. The rupture disc pressure setting should be the same as the Henry Technologies pressure relief valve setting.
2. The rated burst pressure is subject to a performance tolerance of +/-5 %. This tolerance should be taken into account when specifying a rupture disc setting (refer to table).
3. The burst pressure is affected by operating fluid temperature. Refer to table for temperature adjustment factors. At higher operating temperatures the disc burst pressure is reduced while at sub-zero temperatures it is increased. This factor should be taken into account when specifying a rupture disc setting.

Temperature Range °C	Temperature Adjustment Factor
-40 to -18	1.05
-17 to -1	1.04
0 to +45	1
+46 to +80	0.98
+81 to +107	0.97
+108 to +150	0.95

4. It is recommended that the maximum operating pressure of the system is no more than 80% of the rated burst pressure, in order to minimise the risk of premature fatigue failure of the disc. If operating pressures exceed 90% of the rated burst pressure, the disc should be replaced immediately.
5. The design fatigue strength of each disc is 100,000 pressure cycles. Fatigue life will be reduced by excessive pressures or temperatures, corrosion, damage, etc. A de-rating factor of 0.8 is recommended to account for the effects of fatigue during the recommended system operating pressure calculation (see the following example).

Example

Rupture disc rated burst pressure = 90 barg @ 22˚C
Minimum actual burst pressure, using performance tolerance = 0.95 x 90 = 85.5 barg
Maximum actual burst pressure, using performance tolerance = 1.05 x 90 = 94.5 barg
Maximum operating fluid temperature = 100˚C



1. INLET
2. OUTLET
3. GAUGE PORT, 1/8 NPT
4. RUPTURE DISC

To determine the recommended maximum operating pressure, the user should consider the -5% performance tolerance and the de-rate factors for both temperature and fatigue life.

Therefore:-

Minimum actual burst pressure = 85.5 barg
Temperature de-rate factor = 0.97
Fatigue life de-rate factor = 0.8

Recommended maximum operating pressure for rupture disc = 85.5 x 0.97 x 0.8 = 66.3 barg.

Installation – Main issues

1. Connect the rupture disc either directly to the pressure vessel or to a three-way valve above the liquid refrigerant level in the vapour space.
2. The rupture disc comprises of a two-piece body design. To avoid damage during assembly or removal, the product Installation Instructions must be followed.
3. The pipework must not impose loads on the rupture disc. Loads can occur due to misalignment, thermal expansion, discharge gas thrust, etc.

THREE-WAY SHUT-OFF VALVES:802 SERIES

How It Works

The function of a three-way valve is to permit replacement of the pressure relief devices, while the other is protecting the pressure vessel. In this way, a vessel is protected from over-pressure during servicing. It also allows a pressure relief device to be replaced in-situ without removing the system refrigerant charge.

Applications

The 802 series valve is suitable for HCFC, HFC, CO_2, A2L and Ammonia refrigerants along with their associated oils.

Refrigeration standard, EN378, specifies that a three-way valve is required on vessels of CE Category II, III and IV. EN378 or an equivalent National Standard should be consulted for further guidance. It should be recognised however that a three-way valve can be fitted to a vessel of any size, to enable safe, easy and economical replacement of pressure relief devices.

Main Features

- Proven Robust Design
- Compact

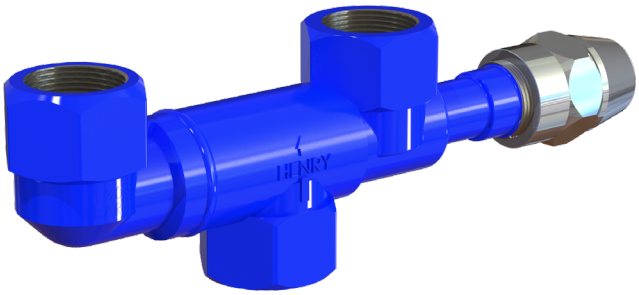
Technical Specification

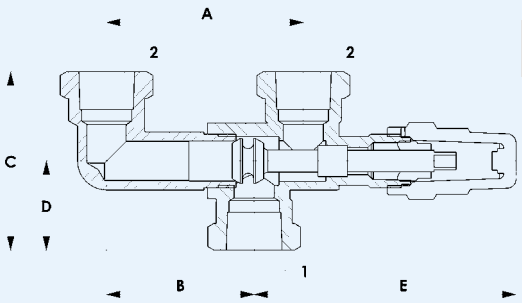
Allowable Operating Pressure:
0 to 130 barg

Allowable Operating Temperature
-29°C to +150°C

Installation - Main Issues

1. Assemble the three-way valve to a vessel using a high strength pipe nipple, suitable for the maximum operating pressure. See table below for part numbers.
2. The pipework must not impose loads onto the relief assembly. The relief valve, rupture disc and three-way valve assembly should be isolated from piping stresses through proper support, anchoring, or flexibility of the discharge piping. Mechanical piping stresses can be caused by discharge gas forces, misalignment and equipment dead weight. Thermal induced stresses should also be avoided. Appropriate standards such as API 520 Part II should be referenced.
3. The three-way valve should only be used with a single outlet port fully engaged. Do not leave the valve with both outlet ports partially open as this will impair the flow and can result in insufficient discharge capacity through the PRVs.





Installation Instructions

Click Here or scan the QR Code to download the full product installation and application instructions from our website.

Type	Part No	Inlet Conn Size (inch)	Outlet Conn Size (inch)	Dimensions (mm)					Optional Male Inlet Pipe Nipple	Weight (kg)	Kv (m^3/hr)	Pipe Nipple Part No.	CE/UKCA Cat
				A	B	C	D	E					
802	8021TH	1/2 FPT	1/2 FPT	92	59	86	44	148	A4465	1.62	4.78	A4465	SEP
802	8022TH	3/4 FPT	3/4 FPT	92	59	86	44	148	2-009-5003	1.45	7.60	2-009-5003	SEP
802	8024TH	1 FPT	1 FPT	148	94	99	51	196	PP55-4	3.86	10.07	PP55-4	Cat II
802	8025TH	1 1/4 FPT	1 1/4 FPT	148	94	99	51	196	PP55-18	3.44	14.36	PP55-18	Cat II

THREE-WAY DUAL SHUT-OFF VALVES: 93 SERIES

How It Works

The function of a three-way valve is to permit replacement of one of the pressure relief devices, whilst the other continues to be active on the system. In this way, a vessel is protected from over-pressure during servicing. It also allows a pressure relief device to be replaced in-situ, without removing the system refrigerant charge.

Applications

Refrigeration standard, EN 378, specifies that a three-way valve is required on vessels of CE Category II, III and IV. EN 378 or an equivalent National Standard should be consulted for further guidance. It should be recognised however that a three-way valve can be fitted to a vessel of any size to enable safe, easy and economical replacement of pressure relief devices.
All 93 series three-way valves are suitable for use with HCFC, HFC, CO_2, A2L gases and R290 refrigerants along with their associated oils.

The 93 series of three-way valves have been designed to optimise flow efficiency for a given connection size. Designs are fine-tuned using the latest computational analysis and simulation techniques to ensure that the pressure drop upstream of the relief device is minimised. Minimal pressure drop upstream of a PRV in particular is essential to maintain safe and reliable behaviour during a discharge situation. The design utilises a rotatable ball to guide flow and this has the added advantage of allowing both outlet ports access to a full-bore flow area.

Main Features

- Very high flow capacity (Kvs) for a given connection size
- Maximum full-bore flow on both outlet ports
- Compact geometry minimises required installation space
- “M”, “R” and “MR” models offer Rotalock-style connections on the inlet and/or outlets for optimum angle PRV positioning
- Premium quality PTFE and HNBR sealing materials
- Double O-Ring system seal design
- Blow-out proof design

Technical Specifications

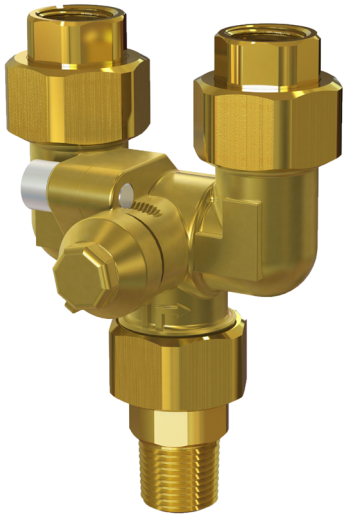
Allowable operating pressure: 0 to 130 barg
Allowable operating temperature: -40°C to +150°C

Materials of Construction

The valve bodies and balls are made from brass. The stem is made from plated steel

Installation - Main Issues

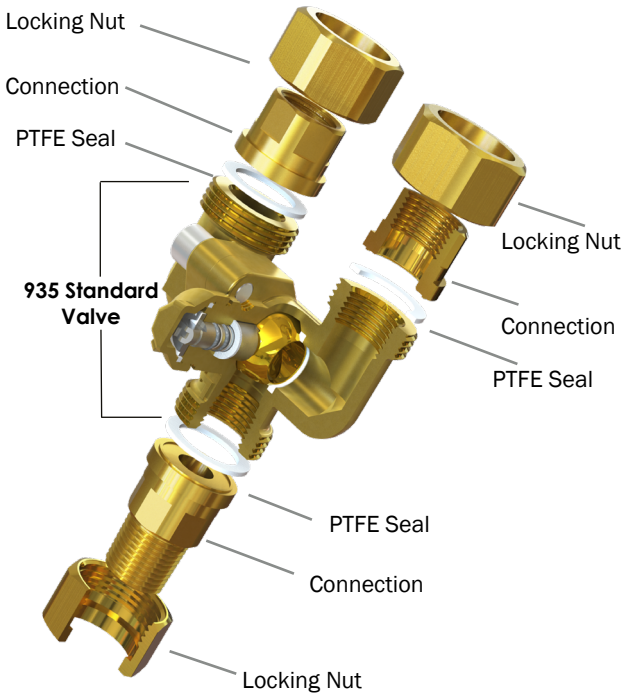
1. If using a female inlet connection model, assemble the three-way valve to a vessel using a high strength pipe nipple, suitable for the maximum operating pressure.
2. The pipework must not impose loads onto the relief assembly. The relief valve, rupture disc and three-way valve assembly should be isolated from piping stresses through proper support, anchoring, or flexibility of the discharge piping. Mechanical piping stresses can be caused by discharge gas forces, misalignment and equipment dead weight. Thermal induced stresses should also be avoided. Appropriate standards such as API 520 Part II should be referenced.
3. Should only be used with a single outlet port fully engaged. Do not leave the valve with both outlet ports partially open as this will impair the flow and can result in insufficient discharge capacity throughout the PRVs.



Rotalock-Style Adaptors

Inlet and outlet Rotalock-style adaptors can be supplied individually. Each adaptor includes the connection, locking nut and PTFE seal. As standard, the 93-series models have female NPT inlet and outlet connections. The addition of a Rotalock-style adaptor expands on the functionality & adaptability of the valve; for example to fit into a small space envelope, or to accurately align the outlet connection of angled PRVs.
The adaptors also allow the possibility of a male NPT inlet connection option. Models can be supplied with connections included as shown in the table and figures that follow. The “M” suffix indicates inclusion of the male inlet adaptor, whereas the “R” suffix signifies inclusion of two female outlet adaptors.

Adaptor Description	Part No.
3/8” NPT Female (For 933)	933-ORK
3/8” NPT Male (For 933)	933-IRK
1/2” NPT Female (For 935)	935-ORK
1/2” NPT Male (For 935)	935-IRK



Part No	Inlet Conn (inch)	Outlet Conn (inch)	Adjustment		Dimensions (mm)					Drawing Reference	Weight (kg)	K_{VS} Value (m^3/hr)	CE/UKCA Cat
			Inlet	Outlet	A	B	C	D	E				
933	3/8 NPT (Female)	3/8 NPT (Female)	Fixed	Fixed	56	30	26	31.5	63.0	Fig. 1	0.69	3.68	SEP
933M	3/8 NPT		Rotalock					69.5	101.0	Fig. 2	0.82		
933R	3/8 NPT (Female)		Fixed	Rotalock				31.5	85.0	Fig. 3	0.89		
933MR	3/8 NPT		Rotalock					69.5	123.0	Fig. 4	1.02		
935	1/2 NPT (Female)	1/2 NPT (Female)	Fixed	Fixed				31.5	63.0	Fig. 1	0.67	4.82	
935M	1/2 NPT		Rotalock					75.0	106.5	Fig. 2	0.85		
935R	1/2 NPT (Female)		Fixed	Rotalock				31.5	86.5	Fig. 3	0.91		
935MR	1/2 NPT		Rotalock					75.0	130.0	Fig. 4	1.09		

1. INLET
2. OUTLET

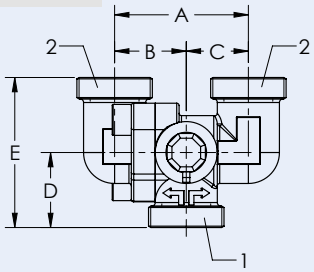


Fig. 1

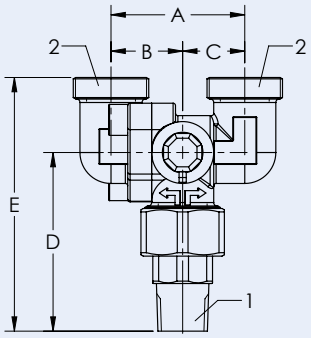


Fig. 2

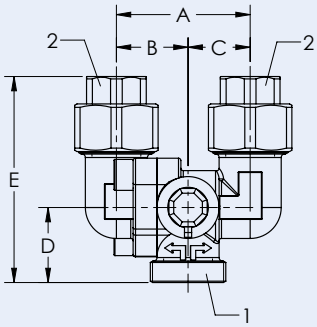


Fig. 3

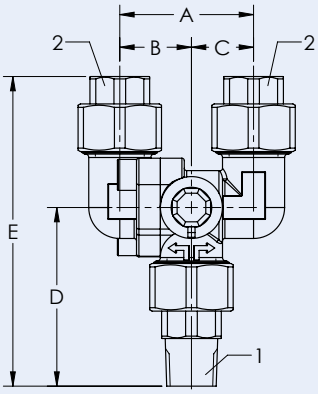


Fig. 4

Installation Instructions

Click Here or scan the QR Code to download the full product installation and application instructions from our website.

PRESSURE INDICATOR

How It Works

The function of the Pressure Indicator is to provide visual indication in the event of a rupture disc bursting. If the disc has ruptured, the pressure relief valve will have discharged and must be replaced.

Applications

The units are suitable for use with HCFC, HFC, A2L, CO_2 and ammonia refrigerants, along with their associated oils.

Main Features

- Easy to read large indicator dial
- Stainless steel movement

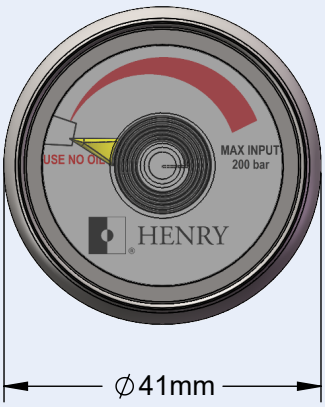
Technical Specification

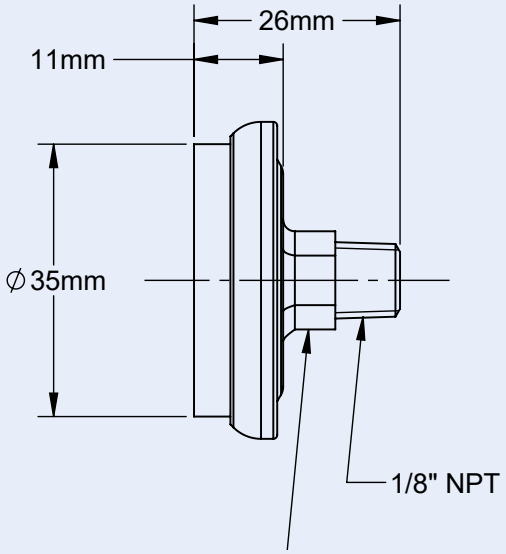
Allowable operating temperature: -40°C to +65°C

Materials of Construction

Stainless steel case and movement. Plexiglass dial window.

Part No	MWP (barg)	Weight (g)	CE/UKCA Cat
G16	55	27	SEP
G20	200	27	SEP





HIGH PRESSURE SAFETY DEVICE KITS

NEW

How It Works

Introducing Henry's innovative High Pressure Safety Device kits, specially crafted to safeguard high pressure systems from over-pressure. With a range of three variations to choose from, namely SDK2X, SDK2H0, and SDK2H1, you can select the kit that best suits your specific needs and requirements. Each kit includes 2x High Pressure range PRVs, 2x high pressure rupture discs, 1x 93-Series three-way dual shut-off valve as well as pressure gauges and rotalock-style adaptors.

Applications

The High Pressure and X-Series Henry Group Safety Device kits are designed to protect a liquid receiver from being over-pressured. The kits include components specifically designed for the higher operating pressures and unique demands of transcritical and supercritical refrigerants, especially CO_2. Refer to the catalogue pages for a description on the function of each individual component. The kits are suitable for use with HCFC, HFC, HFO, R290 and CO_2 refrigerants, along with their associated oils.

Main Features

- All in one sentry kits for total system protection
- Award-winning 93-Series valve
- Compact design with customisable installation options
- X and H1 models EN ISO 4126 certified
- X models fully ASME UV/UD certified
- ASME UV certification available for H1 models on request

Technical Specification

Refer to the individual product catalogue pages for detailed technical specifications of each item

Installation Instructions

Click Here or scan the QR Code to download the full product installation and application instructions from our website.

Materials of Construction

The main components for the SDK kits are made from brass and stainless steel. Refer to individual catalogue pages for details on each component.

Selection Data

Selection of relief devices should be as outlined in respective catalogue pages. Ensure that relief valve selection guidance is followed prior to ordering of kits. For more information refer to the online PRV selection tool.

Part No	Relief Valve		Rupture Disc		Indicator Gauge/Plug		Three-Way Valve		MWP	Temp (°C)
	Part No	Qty	Part No	Qty	Part No	Qty	Part No	Qty		
SDK2X-xx.x BAR	5231BX	2	5526	2	G16/A0624	2	935M	1	46 barg	-40°C to +120°C
SDK2H0-xx BAR	5700	2	5625	2	G20/A0624	2	933MR	1	130 barg	-40°C to +150°C
SDK2H1-xx BAR	5701AX	2	5626	2	G20/A0624	2	935MR	1	130 barg	-40°C to +150°C

Pressure Setting	Part No.		
barg	SDK2X	SDK2H0	SDK2H1
40			
42			
60			
80			
120			

Note: Blue indicates available models.

Y STRAINER

How It Works

The function of a Y Strainer is to remove system debris from refrigerant and oil.

Applications

The Y Strainer can be fitted anywhere in a refrigeration or air-conditioning system where equipment needs to be protected from debris.

The unit is suitable for HCFC, HFC and Co2 refrigerants, along with their associated oils

Main Features

- Large screen area for low pressure drop and long life
- Removable screen for cleaning
- Solder Connection

Technical Specification

Allowable operating pressure: 0 to 130 barg

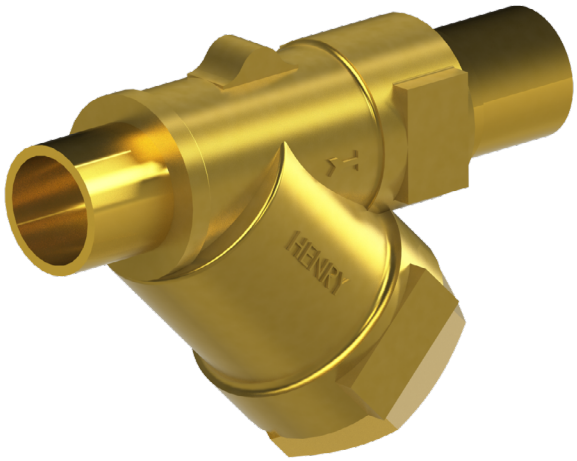
Allowable operating temperature: -29°C to +93°C

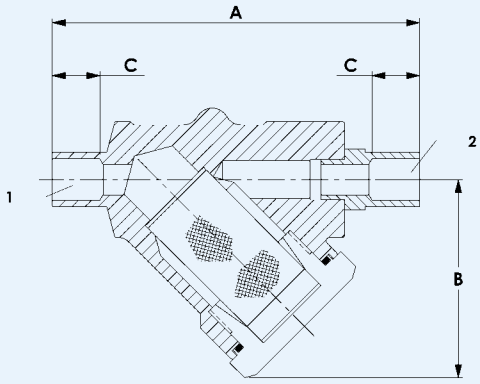
Materials of Construction

The strainer assembly is made from brass with a stainless steel mesh screen. The O-ring is made from neoprene.

Installation - Main Issues

1. Install strainer in the correct orientation. It is recommended to install valves on either side of the unit to ease replacement, in the event that the mesh screen becomes blocked.





1. INLET ODS
2. OUTLET ODS

896-S SERIES

Part No	Conn Size (inch)	Dimensions (mm)			Screen data		Weight (kg)	CE/UKCA Cat
		A	B	C	Area (mm^2)	Mesh		
896TH-3/8	3/8 ODS	90	46	16	2030	100	0.38	SEP

OIL STRAINERS FOR TRANSCRITICAL CO_2

How It Works

The function of an Oil Strainer is to remove system debris from the refrigerant oil. This protects the oil level regulators and compressors from damage.

Applications

The Henry Technologies STH-9105 series oil strainers are suitable for both high and low pressure systems and are approved for CO_2, HCFC, and HFC refrigerants and their associated oils.

Typically, the oil strainer is fitted upstream of the oil regulator to protect it from dirt ingress and thus maintain its ability to protect the compressor.

Main Features

- Large screen area for maximum capacity & long service
- Low pressure drop
- Stainless steel screen

Technical Specification

Allowable operating pressure: 0 to 130 barg
Allowable operating temperature: 10°C to 150°C
200 mesh screen, 75 cm2 filter area

Materials of Construction

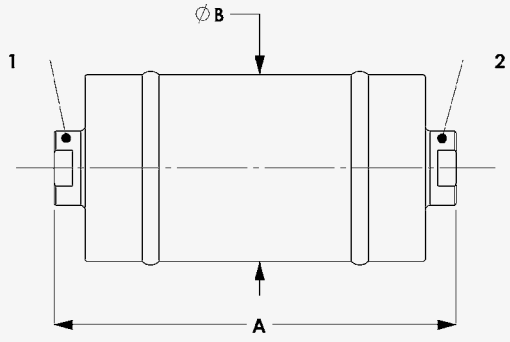
The main body and connections are made from carbon steel. The mesh screen is made from stainless steel.

Installation - Main Issues

1. The oil strainer must be installed in accordance with the flow direction arrow.
2. It is recommended to install valves on either side of the unit to ease replacement should the mesh screen become blocked.

Part No	Conn Size (inch)	Dimensions (mm)		Weight (kg)	CE Cat
		A	Ø B		
STH-9105T-1/4	1/4 NPT (female)	130	60	1.05	SEP
STH-9105T-3/8	3/8 NPT (female)	130	60	1.05	SEP

STH-9105T



1. INLET
2. OUTLET

HELICAL OIL SEPARATORS, SEPARATOR-RESERVOIRS & RESERVOIR

How It Works

The function of a helical oil separator is to efficiently remove oil from the discharge gas and return it to the compressor, either directly or indirectly. This helps maintain the compressor crankcase oil level and raises the efficiency of the system by preventing excessive oil circulation.

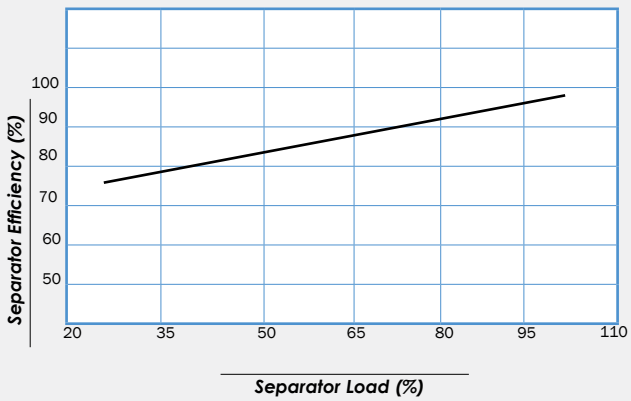
The function of an Oil Reservoir is to provide a holding charge of oil. The amount of oil circulating in a system varies depending on the operating conditions and the oil reservoir caters for these fluctuations by providing additional storage capacity.

Efficiency

To establish the oil separator efficiency when used on transcritical CO_2 applications, Henry Group commissioned independent testing. The chart shows the resultant oil separator efficiency at capacities of 25% to 103%. Efficiency levels of up to 97% were recorded. The tests utilised a semi-hermetic compressor with a variable speed drive motor to enable the capacity to be adjusted.

There are many factors that effect oil separator efficiency such as; discharge gas temperature and pressure; compressor oil carry-over and the density of the discharge gas and oil. Consequently oil separator efficiency varies on each system.

Separation Efficiency



Main Features

Separator/Separator-Reservoir

- High oil separation efficiency - up to 97%
- Consistent low pressure drop
- No clogging elements because of too much oil in the system
- No oil blow-out at start up from oil left in a coalescing element
- Maintenance free
- Oil level sensor port

Oil Reservoir

- Two sizes available, 6.0 litres and 11.0 litres
- Clear sight glasses
- Oil level sensor port

Materials of Construction

The main components: shell, end caps and connections are made from carbon steel.

Technical Specifications

Allowable operating temperature: 0°C to +150°C
Allowable operating pressure = 0 to 130 barg

Oil Separator-Reservoir

Part No	Conn Size (Inch)	Dimensions (mm)								Mounting details	Drawing reference	Capacity (l)	Weight (kg)	CE/UKCA Cat
		ØA	B	C	D	ØE	F	G	H					
STH-5392	1/4 NPT	73	695	605	137	N/A	N/A	N/A	N/A	2 x 14mm slots	fig.2	1.1*	6.2	Cat II
STH-5398	1 NPT	168.3	992	191	261	231	271	265	45	3 x 14mm slots	fig.2	6.7*	45.2	Cat III
*Indicates reservoir capacity														

Helical Oil Separator

Part No	Conn Size (Inch)	Dimensions (mm)								Mounting details	Drawing reference	Pre-charge qty (l)	Weight (kg)	CE/UKCA Cat
		ØA	B	C	D	ØE	F	G	H					
STH-5193	1/2 NPT	168.3	638	191	202	231	202	N/A	45	3 x 14mm slots	Fig.1	0.6	31.0	Cat III
STH-5196	3/4 NPT	168.3	697	191	261	231	261	N/A	41	3 x 14mm slots	Fig.1	0.6	31.0	Cat III
STH-5198	1 NPT	168.3	747	191	261	231	261	N/A	45	3 x 14mm slots	Fig.1	0.6	21.0	Cat III
STH-5199	1 NPT	168.3	791	191	261	231	261	N/A	40	3 x 14mm slots	Fig.1	0.6	35.7	Cat III
STH-5410	1 1/4 NPT	168.3	752	196	261	231	261	N/A	39	3 x 14mm slots	Fig.1	0.6	34.5	Cat III

OIL RESERVOIR

Part No	Conn Size (Inch)	Dimensions (mm)								Mounting details	Drawing reference	Capacity (l)	Weight (kg)	CE/UKCA Cat
		ØA	B	C	D	ØE	F	G	H					
STH-9109	3/8 NPT	168.3	623	199	240	231	209	120	120	3 x 14mm slots	Fig.3	6.0*	28.0	Cat III
STH-9108	3/8 NPT	168.3	930	199	547	231	209	269	278	3 x 14mm slots	Fig.3	11.0*	41.5	Cat III
*Indicates reservoir capacity														

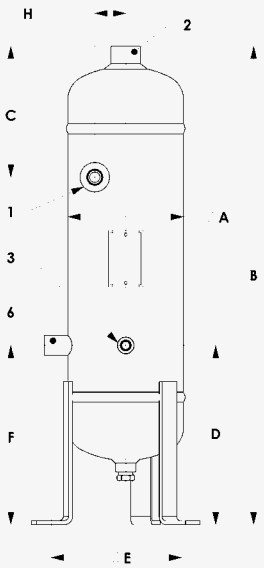


FIG.1

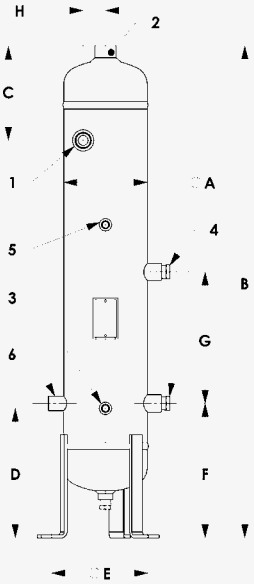


FIG.2

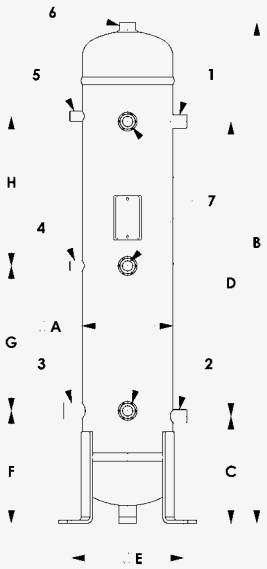


FIG.3

FIGURE 1/FIGURE 2

1. INLET
2. OUTLET
3. OIL RETURN, 3/8 NPT
4. SIGHT GLASS
5. PORT, 3/8 NPT
6. LEVEL CONTROL CONN, 1/2 NPT

FIGURE 3

1. INLET
2. OUTLET
3. LEVEL CONTROL CONN, 1/2 NPT
4. CHARGING CONN, 1/4 NPT
5. VENT VALVE CONN, 1/4 NPT
6. RELIEF VALVE CONN, 1/2 NPT
7. SIGHT GLASS (CENTRE SIGHT GLASS ON STH-9108 ONLY)

Performance Data

This table provides a summary of the kW capacity of each separator for fixed evaporating and condensing temperatures. The table can be used as a quick reference guide. However, the Selection Guidelines in the Coalescent Separator section are also recommended for helical separator sizing.

Installation Instructions

Click Here or scan the QR Code to download the full product installation and application instructions from our website.

Separator-Reservoir Performance Data

Part No	Capacity in kW of refrigeration at nominal evaporator temperature (°C)						Vol discharge (m^3/h)
	-30	-20	-10	0	10	15	
STH-5392	9.2	10	10.9	11.7	12.5	12.9	1.7
STH-5398	54.9	59.9	65.1	70.1	74.9	77.1	10.2
All data is based on 90 bar high pressure, 35°C gas cooler, 8K suction gas superheat and 5K useful superheat							

Separator Performance Data

Part No	Capacity in kW of refrigeration at nominal evaporator temperature (°C)						Vol discharge (m^3/h)
	-30	-20	-10	0	10	15	
STH-5193	14	15.3	16.6	17.9	19.1	19.7	2.6
STH-5196	36.6	39.9	43.4	46.7	49.9	51.4	6.8
STH-5198	54.9	59.9	65.1	70.1	74.9	77.1	10.2
STH-5199	73.2	79.9	86.8	93.5	100	103	13.6
STH-5410	128	140	152	163	175	180	23.8
All data is based on 90 bar high pressure, 35°C gas cooler, 8K suction gas superheat and 5K useful superheat							

HENRY COALESCING OIL SEPARATOR (HCOS)

Applications

The Transcritical Range of Coalescent Separators use the same filter technology as the conventional models, but are specifically designed for the particular demands of high pressure transcritical CO_2 (R744) systems.

Main Features

- Micro-borosilicate fibre filters enable highly efficient separation, even at low fluid velocities.
- Flange face sealing ensures no loss of charge even at lower pressures which can be critical with other seal designs. Face seal design also reduces the risk of seal damage on installation.
- 3/4 NPT connection for use with Henry Liquid Level Switch or Liquid Level Sensor.

Installation Recommendations

Whilst the HCOS range filters are designed to separate oil from refrigerant vapour, the nature of the filter will also remove small system debris. It is possible that on removal of the filter this accumulated debris will remain within the separator, likely with the refrigerant oil at the bottom of the separator. It is recommended that a Henry Transcritical Y-Strainer, 896TH-3/8, is fitted to the oil return line to prevent these solids returning to the compressor. This strainer has a removable screen to allow any debris to removed from the oil return line.
To warn against excessive oil build up in the vessel a Henry Oil Level Switch, STH-9424DN-3/4, or Oil Level Sensor, HLSH series with H12073 adapter, can be used.

Technical Specification

Allowable Operating Temperature: -10°C to +150°C
Allowable Operating Pressure: 0 to 130 Bar

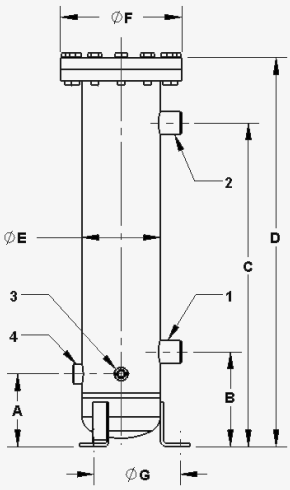
Materials of Construction

The main components; shell, end cap, connections, flange ring and cover plate are made from carbon steel. The face seal O-ring is high temperature HNBR.

Installation Instructions

Click Here or scan the QR Code to download the full product installation and application instructions from our website.

1. INLET
2. OUTLET
3. 3/8 NPT OIL RETURN
4. 3/4 NPT OIL SENSOR PORT



Model Number	Conn Size (inch)	Dimensions (mm)							Mounting Details	Total Volume (l)	Oil Pre-charge Volume (l)	Weight (kg)	Bolt Torque (Nm)	CE/UKCA Cat
		A	B	C	D	ØE	F	ØG						
HCOS-37-1MPT	1 NPT Male	131	171	584	702	141	219	211	3 x 14mm Slots	8.5	0.95	26.5	84	Cat III
HCOS-37-1BW	1 BW													
HCOS-37-1-14MPT	1-1/4 NPT Male													
HCOS-37-1-14BW	1-1/4 BW													
HCOS-37-1-18	1-1/8 ODS													
HCOS-37-1-38	1-3/8 ODS													
HCOS-38-1-12MPT	1-1/2 NPT Male			752	870					10.6		30		
HCOS-38-1-12BW	1-1/2 BW													
HCOS-38-1-58	1-5/8 ODS													

Separator Performance Data

This table provides a summary of the kW capacity of each separator for fixed evaporating and condensing temperatures. The table can be used a quick reference guide, however, it is important to note the Selection Guidelines in regard to Coalescent Separator sizing.

	Sizing criteria	Evaporating Temperature, °C						Volumetric Flow Rate, m^3/hr
		-25	-20	-10	0	10	20	
HCOS-37 Series	Mass flow [kg/hr]	8647	9035	9892	10895	12111	13658	65
	Refrigeration [kW]	354	371	405	440	474	507	
HCOS-38 Series	Mass flow [kg/hr]	11972	12510	13697	15085	16769	18911	90
	Refrigeration [kW]	490	513	561	609	656	701	
Data based on 35°C gas cooler outlet temperature, 90 bar gas cooler , 8K evaporator superheat and 2K suction line superheat.								

Selection Guidelines

The most important parameter for selection is the discharge volumetric flow rate, expressed in m^3/hr. This is the calculated volumetric flow rate at entry to the oil separator. It is not to be confused with the compressor displacement or swept volume. To calculate the discharge volumetric flow rate, the maximum and minimum system mass flow rates are required along with the density of the gas at the inlet to the separator.
These mass flow rates can either be calculated from first principles or by using refrigeration cycle analysis software. In this way, super-heating (useful or not) can be accounted for in the mass flow rate calculation.
The gas density at inlet to the separator is a function of both pressure and temperature. The inlet gas temperature is dictated by a number of system design factors including compressor performance. The gas will be in a superheated state.

Example

Refrigerant CO_2 (R744)
Maximum refrigeration capacity: 320 kW
Minimum refrigeration capacity: 210 kW
Evaporating temperature: -15°C
Gas cooler outlet: 35°C
High pressure: 90 barg(a)
Suction gas superheat: 5K
Useful superheat: 5K
From analysis software:
Maximum mass flow rate: 8004 kg/hr
Minimum mass flow rate: 5252 kg/hr
Gas density, superheated at inlet to separator: 146kg/m^3
Note: Mass flow rate = [(kW refrigeration/refrigerating effect) X 3600]

Use the equation: $\frac{\text{Mass flow rate}}{\text{Gas density}}$

Hence for this example:

Calculated maximum discharge Volume flow rate = $\frac{8004}{146}$ = 54.8 m^3/hr

Calculated minimum discharge volume flow rate = $\frac{5252}{146}$ = 36.0 m^3/hr

Using these m^3/hr figures, the recommended coalescent separator selection is model HCOS-37 series model.

Additional Notes on Selection

1. It is recommended that the separator is not operated below 25% of its rated maximum capacity. This is to optimise efficiency. On systems with extreme unloading conditions, one separator per compressor should be used rather than one separator for common discharge line.
2. Understanding the system refrigeration capacity and the percentage of full and low load run times can also be helpful in selecting the separator.
3. In cases where the maximum discharge has been exceeded by only a minimal amount and the system has unloading characteristics, select the smaller separator. It is not recommended to oversize.

Installation - Main Issues

1. Oil separators are not 100% efficient, so installing an oil separator should not be viewed as a replacement for oil traps, suction line accumulators or good oil return piping practices.
2. An initial oil pre-charge of 0.6L and 0.95L is required for the helical and coalescent separator models respectively.
3. Install the oil separator vertically and reasonably close to the compressor. Proper piping practice should be adopted to prevent excessive loads or vibration at the inlet and outlet connections. The separator must be properly supported at the bottom mounting feet interface.
4. A check valve should be located downstream of the outlet connection. This check valve is to prevent liquid refrigerant migrating from the condenser/gas cooler.

Replacement Components

Part No	Description
7-043-5000	HCOS-37 Series filter complete with sealing washer
7-043-5001	HCOS-38 Series filter complete with sealing washer
2-023-5000	Face seal O-ring for HCOS 37/38 Series separators

LIQUID LEVEL SWITCHES

How It Works

The function of a Liquid Level Switch is detect and monitor liquid levels.

The S-94 series electronic level switches use infrared light reflecting from a conical glass prism as means of detecting the absence of fluid at the level of the glass cone. An integral part of the switch is an infrared module, containing a light emitter and receiver.

When no fluid covers the lower half of the cone, infrared light reflecting from the emitter reflects from the inner surface of the cone back to the receiver. This signals the module to switch. When fluid covers the lower half of the cone, the light from the emitter disperses into the fluid. The resulting absence of reflected light is detected by the receiver and the module switches in the opposite direction.

Applications

The level switch can be installed in a number of locations in the refrigeration system such as liquid receivers, suction line accumulators and compressor crankcases.

The range is designed for use with HCFC, HFC, A2L, CO_2 and Ammonia refrigerants, along with their associated oils. A 1" NPT level switch is recommended for ammonia applications. For other refrigerant/ oil combinations, please contact Henry Group

Main Features

- Patented optical sensor technology*
- Robust Design
- Serviceable without refrigerant loss
- No moving parts
- Fused glass hermetic seal
- Flying leads and DIN connector options

*US patent 5278426

Materials of Construction

The switch consists of a plated steel body with a built-in fused glass prism.

Adapter to fit 3/4" Level Switch to 1-1/4"-12 UNF (Copeland Scroll) is available. Part Number A 5065

Technical Specification

Allowable Operating Pressure

0 to 46 barg
0 to 130 barg (STH Models)

Allowable Operating Temperature

-40°C to +99°C

Mounting:

Horizontal Only

Supply Voltage:

Refer to table

Switch Inductive Rating:

36VA Pilot Duty Rated

Contact Life:

Over 1 million cycles at rated electrical load

Power for Operation:

3.5mA AC, 5.5mA DC

Minimum Load:

2mA (without bleed resistor)

Resistive Rating:

Refer to Table

Contacts, Power Off:

Normally Open (NO)

Contacts, Power on (Liquid Present):

Refer to table

Customer Interface:

Refer to table

Protection Class:

IP 65 DIN models only

** Part No	Voltage	Resistive rating	Contacts - power on & liquid present	Customer interface	Wire colour codes	Drawing reference	Dimensions			Replacement Module/kit number	Weight (kg)	CE/ UKCA Cat
							A (mounting thread)	B across flats (mm)	C (mm)			
S-9400	120V 50/60 HZ	0.5 A	Closed	Flying leads	Yellow & White	Fig.1	1/2" NPT	28.6	192	2-044-012	0.22	SEP
S-9420	208/240V 50/60 HZ	0.25A	Closed	Flying leads	Red & White	Fig.1	1/2" NPT	31.8	192	A4416	0.22	SEP
S-9420A	208/240V 50/60 HZ	0.25A	Open	Flying leads	Red & White/Stripe	Fig.1	1/2" NPT	31.8	192	A4415	0.22	SEP
S-9424	24V AC/DC	0.5A	Closed	Flying leads	Orange & White	Fig.1	1/2" NPT	31.8	192	A4414	0.22	SEP
S-9424A	24V AC/DC	0.5A	Open	Flying leads	Orange & White/Stripe	Fig.1	1/2" NPT	31.8	192	A4417	0.22	SEP

**A 1" NPT connection is available for the S-9400 series by ordering with a "-1" suffix (i.e. S-9424-1)
Note: load is to be wired between black and coloured leads.

Note: The optional 1" NPT level switches allow the unit to be mounted closer to the inner wall of the vessel. This eliminates the potential for a pool of liquid next to the glass prism, which can be detrimental to performance. A 1" NPT level switch is recommended for ammonia applications where residue can build up on the glass prism.

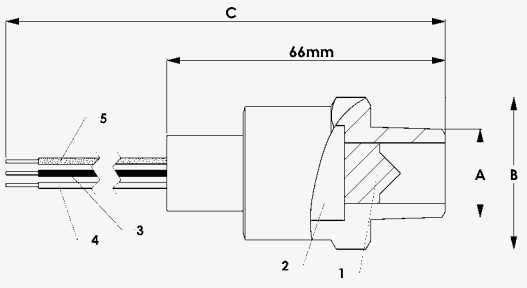


Fig.1

1. FUSED GLASS PRISM
2. RELAY MODULE (REPLACEABLE)
3. BLACK LEAD; L1/AC, (+)/DC
4. WHITE (OR WHITE WITH A STRIPE) LEAD; L2/AC, (-)/DC
5. RELAY OUTPUT, SEE TABLE FOR LEAD COLOUR

** Part No	Voltage	Resistive rating	Contacts - power on & liquid present	Customer interface	Wire colour codes	Drawing reference	Dimensions		Replacement Module number	Weight (kg)	CE/UKCA Cat
							A (mounting thread)	B (mm)			
S-9420DN	208/240V 50/60 HZ	0.25 A	Closed	DIN socket	Red & White	Fig.2	1/2" NPT	105	A4425	0.23	SEP
S-9424DN	24V AC/DC	0.5 A	Closed	DIN socket	Orange & White	Fig.2	1/2" NPT	105	A4414	0.23	SEP
S-9424ADN	24V AC/DC	0.5A	Open	DIN socket	Orange & White/stripe	Fig.2	1/2" NPT	105	A4417	0.23	SEP
S-9424-3/4UK	24V AC/DC	0.5A	Closed	DIN plug	Orange & White	Fig.3	N/A	N/A	A4414	0.23	SEP
STH-9424DN	24V AC/DC	0.5A	Closed	DIN socket	Orange & White	Fig.2	1/2" NPT	105	A4414	0.23	SEP
STH-9424DN-3/4	24V AC/DC	0.5A	Closed	DIN socket	Orange & White	Fig.2	3/4" NPT	107	A4414	0.23	SEP

NOTE: load is to be wired between black and coloured leads.

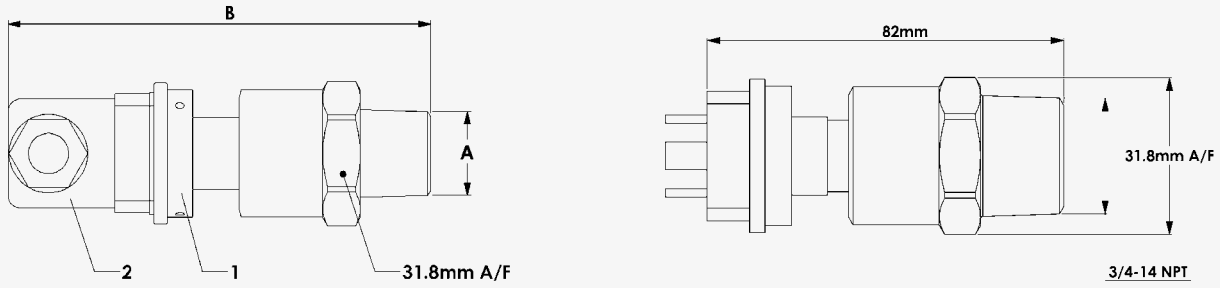


Fig.2

1. ADAPTOR
2. SOCKET CONNECTOR

Installation – Main issues

1. Install a level switch horizontally. If the unit is mounted at an angle or vertically, liquid can be trapped which will cause switching problems.
2. Ensure that no object is within 50 mm of the glass prism.
3. Wiring diagrams are included in the Product Instruction sheets.
4. The switches should not be used with very dirty liquids.
5. Full instructions are given in the Product Instruction sheet, provided with each unit.

INTELOIL CONTROLLERS

How It Works

The function of the IntelOil Controller is to monitor and maintain the oil level in compressor crankcase using proven high resolution float sensor technology. This protects the compressor from damage. The IntelOil Controller regulates the oil level in the compressor crankcase by means of a Hall effect sensor and a float assembly with built-in magnets. As the oil level rises or falls, variations in the magnetic field strength of the float assembly are detected by the sensor. These are converted to a variable voltage and read by the electronic unit. This, in turn, updates the status LEDs and if necessary, triggers the solenoid valve to feed oil to the compressor.
Oil level controllers are designed to attach the sight glass housing on the compressor crankcase. Adapter kits are available for both scroll and reciprocating compressors. Oil supply to the IntelOil unit is via a 1/4" flare connection.

Applications

The IntelOil Controller is suitable for low and high pressure oil management systems. It is designed for use with both scroll and reciprocating compressors.
The oil controller is approved for HCFC, HFC, A2L and CO_2 refrigerants and their associated oils. It is also approved for use with R290 and R1270 refrigerants.

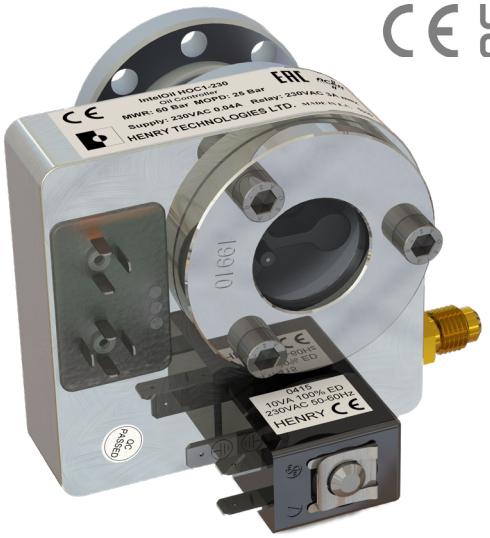
Main Features

- High resolution float sensor
- Integral diagnostics
- Supplied with 3m power and relay cables
- Reliable performance even with foaming or dirty oil
- Compact and lightweight
- Precise level sensing
- Low energy solenoid valve
- Easy to install adapters
- Alarm relay
- 100 micron filter mesh on oil inlet

Models

- H0C1-24-3 (24V AC with 3m power and relay cables)*
- H0C1-230-3 (230V AC with 3m power and relay cables)*
- H0C2H-24-3 (24V AC with 3m power and relay cables)*
- H0C2H-230-3 (230V AC with 3m power and relay cables)*
- H0C3H-230-3 (230V AC with 3m power and relay cables)*

*Adapter kits sold separately.
Tropical versions are available on request for use in areas with high humidity.



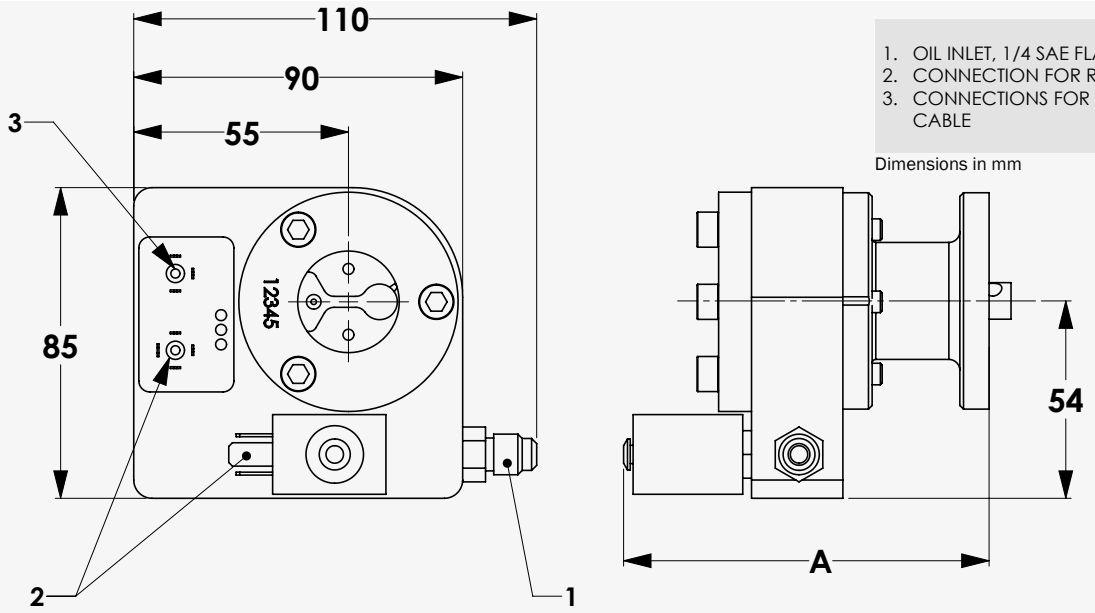
Technical Specification

Allowable Operating Pressure:
0 to 60 barg (H0C1)
0 to 120 barg (H0C2H, H0C3H)
Maximum Differential Pressure:
40 bar (H0C1)
80 bar (H0C2H)
100 bar (H0C3H)
Maximum Ambient Temperature:
50°C, 80°C
Maximum Fluid Temperature:
24V AC or 230V AC 50/60 Hz (H0C1 & H0C2H)
230V AC 50/60 Hz (H0C3H)
Supply Voltage:
0.4 Amps (24V AC)
Rated Operating Current:
0.04 Amps (230V AC)
Electrical Connection:
Moulded plugs connect to oil controller
Alarm Contact:
Volt free, normally closed**
Alarm Contact Rating:
Max 3 A, 230V AC, Voltage Free
Wiring:
Flying leads on designated cables
Power Supply:
Brown, blue & green/yellow wire
Alarm Contact:
Blue, black & brown wires
Protection Class:
IP 65
Status LED's:
3
Oil Inlet Connection:
1/4 SAE Flare
Weight:
H0C1: 0.94kg
H0C3H: 1.0kg

CE/UKCA Cat marked for EMC and Low Voltage Directive
Approvals: EAC
**Alarm contacts are open when power is applied and oil level is good.

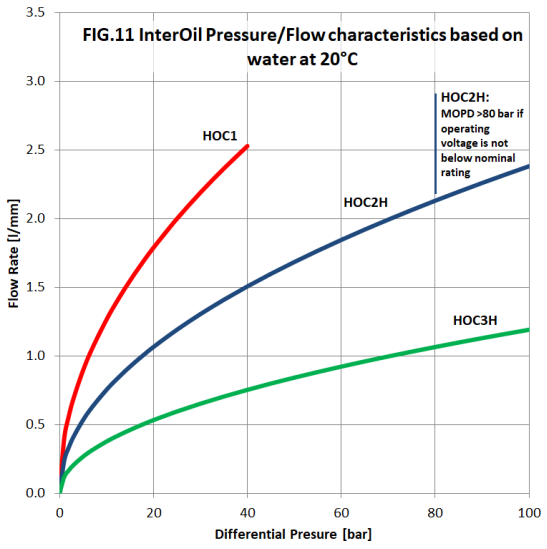
Materials of Construction

The main pressure retaining parts are made from aluminium alloy and plated steel (sight glass). The electronic control module's cover is made from polycarbonate.



INTELOIL CONTROLLER

Adapter	A(mm) Installed
H12070	101
H12071	85
H12072	85
H12073	81
H12074	100
H12075	96
H12076	85
H12077	104
H12078	101
H12079	81



Flow Rate Data

The flow rate of oil through the IntelOil Controller is dependent on the pressure differential between the supply line and the compressor crankcase. If applicable, gravity pressure level should be included. The graph illustrates typical flow rates at various pressures. The flow rates shown are measured in water at a temperature of 20°C

Installation - Main Issues

1. The electronic module will be damaged if the 24V/230V supply voltage is exceeded.
2. Power to the unit should be maintained during compression running, stand-by and shut-down modes.
3. To protect the oil controller from system debris, a filter is recommended.

INTELOIL ADAPTERS			
Part No	Compressor Type	Mounting Style	Weight (kg)
H12070	Multi-Adapter	3 & 4 bolt combination flange with O-ring	0.13
H12071	Bitzer/Bock/Copeland	1 1/8”-18 UNEF thread with O-ring	0.08
H12072	Dorin	1 1/8”-18 UNEF thread with aluminium seal	0.08
H12073	Copeland Scroll	3/4”-14 NPTF	0.07
H12074	Copeland Scroll	1 3/4”-12 UN thread Rotalock with teflon gasket	0.14
H12075	Copeland Scroll	1 1/4”-12 UNF thread Rotalock with teflon gasket	0.11
H12076	Danfoss/Maneurop	1 1/8”-18 UNEF thread with O-ring and adapter ring	0.08
H12077	Bock & Bitzer (120 bar)	1 1/8”-18 UNEF thread with O-ring - extended length	0.10
H12078	Dorin	6/6 hole mounting	0.12
H12079	N/A	1/2’’- 14 NPTF	0.07

INTELOIL CABLES	
Part No	Description
HOC-P300***	Power Cable 3mtr.
HOC-S300***	Relay Cable 3mtr.
HOC-P600	Power Cable 6 mtr.
HOC-S600	Relay Cable 6 mtr.

***Supplied with each IntelOil.

INTELOIL LIQUID LEVEL SENSORS

How It Works

The function of the IntelOil Liquid Level Sensor is to monitor the liquid level in a vessel and generate an alarm signal if the level either exceeds or falls below an acceptable limit. To achieve this, the unit uses proven high resolution float sensor technology. Each unit can be used for either low or high level sensing simply by rotating through 180°C when mounting.

The IntelOil Liquid Level Sensor measures the level by means of a Hall effect sensor and a float assembly are detected by the sensor. These are converted to a variable voltage and read by the electronic unit which updates the green (normal), yellow (control) and red (alarm) status LEDS.

When a unit is being used for high level sensing, if the liquid goes above approximately 50% sight glass level, both the green and yellow LEDs will be lit and the output signal S will be switched on following a 10 second delay. This signal can be used to switch an actuator. If the level continues to rise, the green LED will be extinguished and both yellow and red LEDs will be lit. The unity relay will then switch after a 90 second delay and can be used to shut down the system.

Where a unit is being used for low level sensing, if the liquid drops below approx 50% sight glass level, the output signal S will be switched on after a 10 second delay and it continues to fall, the unit relay will switch after 90 seconds.

A range of adapter kits is available to allow mounting of the unit.

Applications

The IntelOil Liquid Level Sensor is suitable for both high and low pressure systems and is approved for HCFC, HFC, A2L and CO_2 refrigerants and their associated oils. It is also approved for use with R290 and R1270 refrigerants.

Main Features

- High resolution float sensor
- Units can be used for either high or low level monitoring
- Integral diagnostics
- Supplied with 3m power and relay cables
- Reliable performance even with foaming or dirty oil
- Compact and lightweight
- Precise level sensing
- Easy to install adapters

Models

- HLS-24-3 (24V AC with 3m power and relay cable)*
- HLS-230-3 (230V AC with 3m power and relay cable)*
- HLSH-24-3 (24V AC with 3m power and relay cable)*
- HLSH-230-3 (230V AC with 3m power and relay cable)*

*Adapter kits sold separately

Technical Specification

Allowable Operating Pressure:
0 to 60 barg (HLS)
0 to 120 barg (HLSH)

Minimum Required Fluid Density:
0.5kg/l

Ambient Temperature:
-40°C min/ +50°C max

Fluid Temperature:
-40°C min/ +80°C max

Supply Voltage:
24V AC or 230V AC 50/60 Hz

Current Consumption:
0.02 Amps

Electrical Connection:
Moulded plugs connect to Liquid Level Sensor

Alarm Contact:
Max. 3A, 230V AC, floating

Sensor Output:
0.5A inductive, 1A resistive

Wiring:
Flying leads on designated cables

Power Supply - Black:
Brown, blue, yellow-green and (Signal S) wires

Alarm Contact:
Blue, black and brown wires

Protection Class:
IP 65 (IEC529/ EN 60529)

Status LEDs:
3

Weight:
HLS: 0.47kg
HLSH: 0.54kg

CE/UKCA Cat marked for EMC and Low Voltage Directive

Approvals: EAC

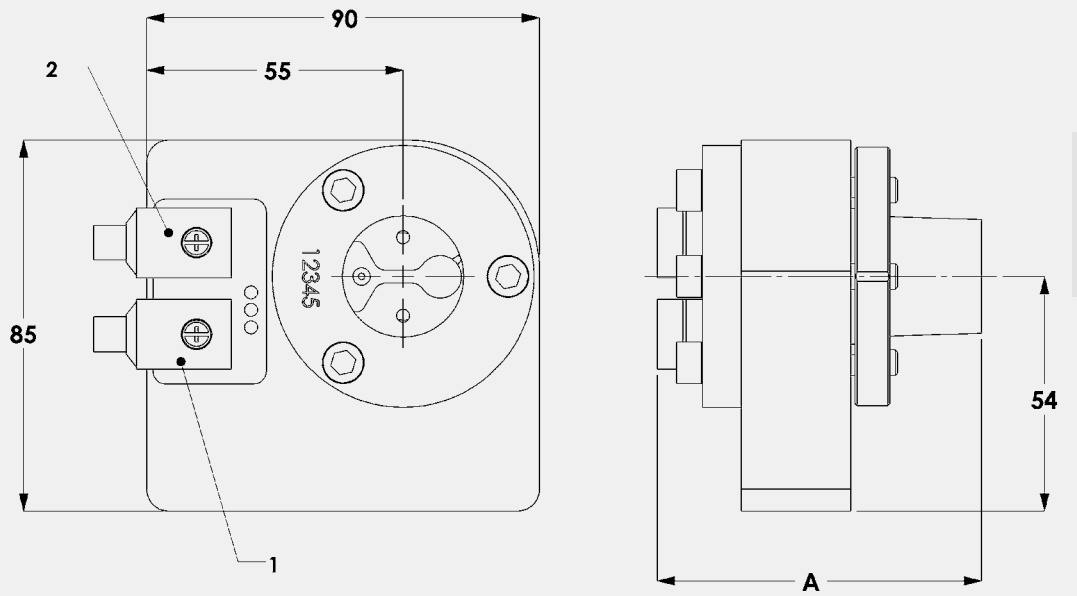
Tropical versions for use in areas with high humidity available upon request.

INTELOIL LIQUID LEVEL SENSOR CABLES	
Part No	Description
HOC-N300**	Power Cable 3mtr.
HOC-S300**	Relay Cable 3mtr.
HOC-N600	Power Cable 6 mtr.
HOC-S600	Relay Cable 6 mtr.

**Supplied with each IntelOil Liquid Level Sensor

Materials of Construction

The main pressure retaining parts are made from aluminium alloy and plated steel (sight glass). The electronic control module cover is made from polycarbonate.



1. CONNECTIONS FOR POWER CABLE
2. CONNECTION FOR RELAY CABLE

Dimensions in mm

INTELOIL LIQUID LEVEL SENSOR

Installation - Main Issues

1. The electronic module will be damaged if the 24V/230V supply voltage is exceeded.
2. Power to the unit should be maintained during standby and shut-down modes.
3. The unit should be mounted in the horizontal position
4. To protect the liquid level sensor from system debris, adequate system filtration should be employed.

Adapter	A (mm) Installed
H12070	85
H12071	69
H12072	69
H12073	65
H12074	84
H12075	80
H12076	69
H12077	88
H12078	85
H12079	85

INTELOIL LIQUID LEVEL SENSOR ADAPTERS		
Part No	Mounting Style	Weight (kg)
H12070	3 & 4 bolt combination flange with O-ring	0.13
H12071	1 1/8”-18 UNEF thread with O-ring	0.08
H12072	1 1/8”-18 UNEF thread with aluminium seal	0.08
H12073	3/4”-14 NPTF	0.07
H12074	1 3/4”-12 UN thread Rotalock with Teflon gasket	0.14
H12075	1 1/4”-12 UNF thread Rotalock with Teflon gasket	0.11
H12076	1 1/8”-18 UNEF thread with O-ring and adapter ring	0.08
H12077	1 1/8”-18 UNEF thread with O-ring - extended length	0.10
H12078	6/6 hole mounting	0.12
H12079	1/2’’- 14 NPTF	0.07

RESERVOIR PRESSURE VALVES

How It Works

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

Applications

A reservoir pressure valve 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, HFO and CO_2 refrigerants, along with their associated oils.

Main Features

- Proven design
- Five pressure settings
- Premium quality Neoprene or PTFE seal

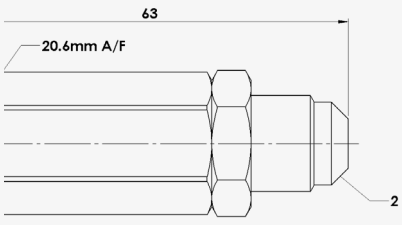
Technical Specification

Allowable operating pressure: 0 to 130 barg
Allowable operating temperature: -10°C to +150°C

Materials of Construction

The valve body components are made from brass, the spring from stainless steel and the seal from Neoprene or PTFE (STH-9104-2.4 upwards).

Part No	Drawing reference	Pressure Setting (barg)	Conn Size (inch)		Weight (kg)	CE/UKCA Cat
			Inlet	Outlet		
STH-9104-0.35 BAR	Fig.1	0.35 fixed	3/8" SAE Flare Female	3/8" SAE Flare Male	0.11	SEP
STH-9104-1.4 BAR		1.4 fixed				
STH-9104-2.4 BAR		2.4 fixed				
STH-9104-4.5 BAR		4.5 fixed				
STH-9104-25 BAR		25 fixed				



1. INLET
2. OUTLET

Fig.1

RESERVOIR PRESSURE VALVE

Selection Guidelines

The models provide 0.35, 1.4 and 2.4, 4.5 and 25 bar pressure differentials are required. 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 use a low differential pressure setting.

Installation Instructions

Click Here or scan the QR Code to download the full product installation and application instructions from our website.

SEALED FILTER DRIERS

How It Works

The function of a filter drier is to remove system contaminants, acid and moisture.

Applications

Sealed Filter Driers are designed to protect refrigeration and air-conditioning systems by removing moisture, acids and solid particles. Sealed Filter Driers are for use in the liquid line of the system. The range is suitable for use with HCFC, HFC, CO_2, (See Core Data).

Main Features

- SDMH models have an increased maximum working pressure of 60 barg
- SAE Flare end connections
- Solid core for drying
- Filter pad and mesh to remove solid particles
- 1000 hour salt spray tested to ASTM B117

Cores

"M" Core:

- 100% Molecular Sieve
- High drying capacity
- Suitable for HCFC, HFC, A2L, R290 and CO_2 refrigerants

Materials of Construction

The shell is construed from carbon steel and powder coated for corrosion resistance. Connections are available as either copper ODS or steel flare type. Each core is constructed from a moulded composite of desiccant materials bonded to provide very high mechanical strength, micronic filtration and high moisture absorption.

Technical Specification

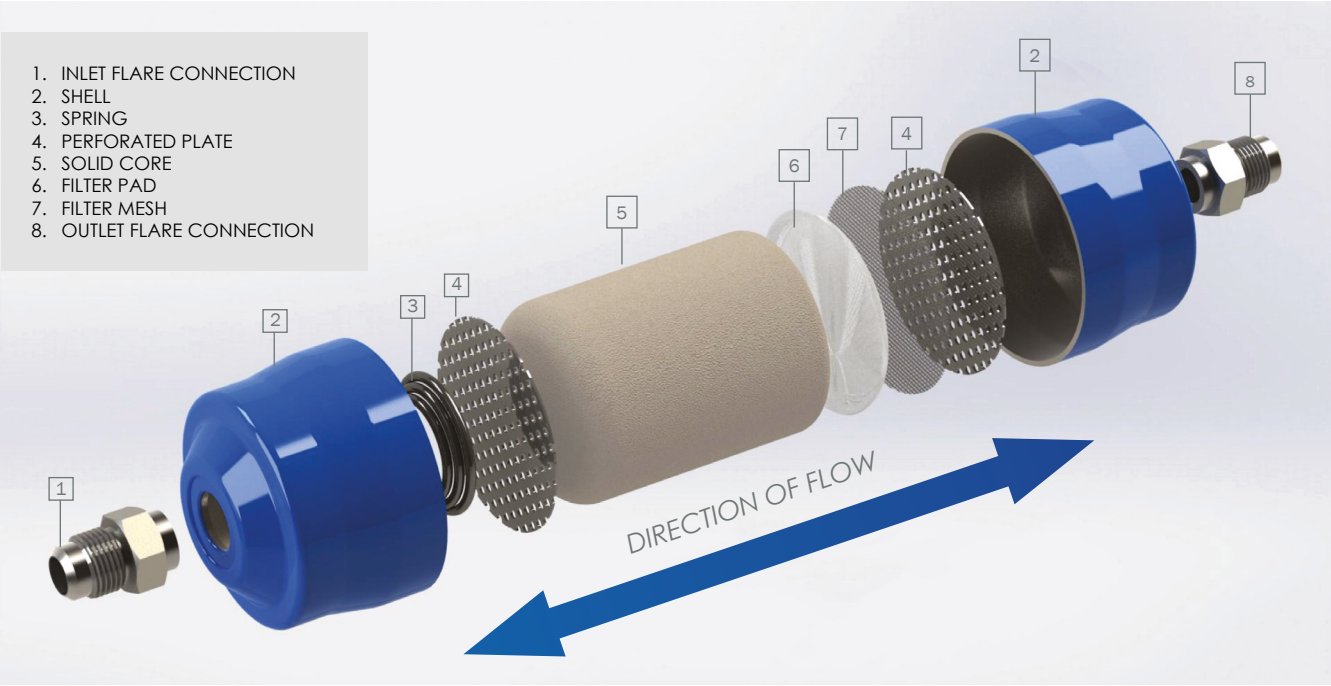
Allowable Operating Temperature: -40°C to +100°C
Allowable Operating Pressure: 0 to 60 barg

Installation - Main Issues

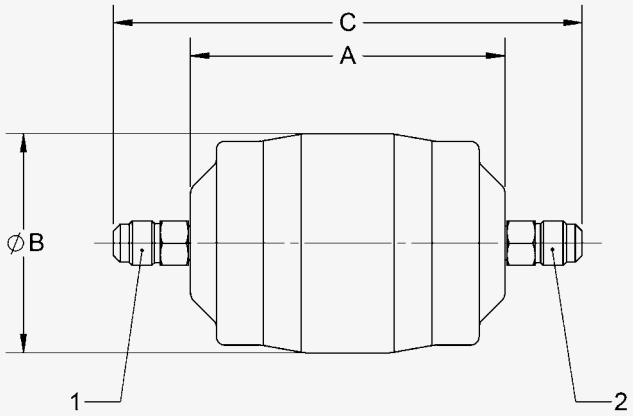
1. Install the filter drier upstream of the liquid line controls to give maximum protection. Locate upstream of moisture indicators that drying effectiveness can be measured.
2. Ensure the indicated flow direction is complied with.

Installation Instructions

Click Here or scan the QR Code to download the full product installation and application instructions from our website.



Part No	Conn Size (inch)	A (mm)	ØB (mm)	C (mm)	Weight (kg)	CE/UKCA Cat
SDMH-083	3/8	99	67	157	0.58	SEP
SDMH-084	1/2	99	67	165	0.63	SEP
SDMH-163	3/8	113	79	171	0.92	SEP
SDMH-164	1/2	113	79	179	0.97	SEP
SDMH-165	5/8	113	79	186	1.01	SEP



1. INLET
2. OUTLET

DRYING AND LIQUID CAPACITY TABLE

Model Details		Drying Capacity (kg of refrigerant)								Liquid Capacity (kW)					
Part No	Conn Size (inch)	R22		R134a		R404A/R507		R407C/R410A		R-22	R-134a	R-404A	R-407C	R-410A	CO_2
		24°C	52°C	24°C	52°C	24°C	52°C	24°C	52°C						
SDMH-083	3/8	15.8	14.6	16.9	16.1	24.9	15.4	17	14.6	21.7	18.7	10.5	21.7	23.1	28.7
SDMH-084	1/2	15.8	14.6	16.9	16.1	24.9	15.4	17	14.6	31.1	26.7	15.6	31.1	33.2	40.8
SDMH-163	3/8	24.6	22.8	26.4	25.2	38.9	24.1	26.6	22.8	23	20.1	11.1	23	24.5	30.8
SDMH-164	1/2	24.6	22.8	26.4	25.2	38.9	24.1	26.6	22.8	34.9	30.3	16.9	34.9	37.3	46.4
SDMH-165	5/8	24.6	22.8	26.4	25.2	38.9	24.1	26.6	22.8	34.4	30.1	16	34.4	36.7	46.1

Drying Capacity is based on the following moisture content before and after drying:

R22: From 1050 ppm W to 60 ppm W in accordance with ARI 710-86
R134a: From 1050 ppm W to 75 ppm W. If refrigerant is to be dried to 50 ppm W, reduce the stated capacities by 15%
R404A, R407C, R507: From 1020 ppm W to 30 ppm W
R410A: From 1050 ppm W to 60 ppm W

Liquid Capacity is based on:
Evaporating temperature of t_e = -15˚C (-30˚C for CO_2)
Condensing temperature of t_c = +30˚C (-5˚C for CO_2)
Pressure drop across filter drier of Δp = 0.07 bar

SURFACE AND VOLUME INFORMATION

Model	Core surface area	Core Volume	Shell Volume
	cm^2	cm^3	ltr
SDMH-08	180	146	0.3
SDMH-16	290	219	0.5

REPLACEABLE CORE FILTER DRIERS

How It Works

The function of a filter drier is to remove system contaminants, acid and moisture. Henry SRCH and SRCT models are designed specifically for the demands for high pressure refrigerant systems and transcritical CO_2 installations respectively.

Applications

The Henry Technologies range of replaceable core filter driers are designed to be used in both the liquid and suction lines of refrigeration and air-conditioning systems. The product range is suitable for use with HCFC, HFC and CO2 refrigerants (see core data).

Main Features

- Elevated operating pressure range
- Proven system protector
- High filtering capability
- High moisture absorption and acid removal
- Stainless steel mesh screen
- Solid copper full flow connections
- Interchangeable cores
- Corrosion-resistant, powder coated shells
- 1000 hour salt spray tested to ASTM B117

Cores

S-848-CM

- 100% molecular sieve
- High drying capacity
- Suitable for HCFC, HFC, and CO_2 refrigerants

S-848-C

- 80% molecular sieve and 20% activated alumina
- Absorbs moisture and acid in the system
- Suitable for HCFC, HFC, and CO_2 refrigerants
- Not suitable for oils containing additives

S-848-CC

- 47/48/5% molecular sieve/activated alumina/activated carbon
- High acid absorption
- Suitable for use after compressor burnout
- Suitable for HCFC, HFC, and CO_2 refrigerants
- Not suitable for oils containing additives

S-848-SC

- 100% molecular sieve
- Low pressure drop
- Suitable for HCFC, HFC, and CO_2 refrigerants

S-848-F

- Filter element
- Low pressure drop
- Use when moisture removal is not required

Note: Cores not included with drier shells - to be ordered separately

Materials of Construction

Drier Shells

The main shell and fixed end cap are constructed from carbon steel and are powder coated for corrosion resistance. Cover plate is constructed from nickel plated steel (SRCH) or powder-coated carbon steel (SRCT).

Cores

Each core is constructed from a moulded composite of desiccant material(s) bonded to provide very high mechanical strength, micronic filtration, high moisture absorption and acid removal where applicable. Each core is fully activated and placed in a hermetically sealed container.

Technical Specification

SRCH:

Allowable Operating Temperature: -40°C to +70°C
Allowable Operating Pressure: 0 to 80 barg

SRCT:

Allowable Operating Temperature: -10°C to +70°C
Allowable Operating Pressure: 0 to 130 barg

Selection Guidelines

The user should select a model based on refrigerant type, refrigeration capacity and the preferred degree of moisture/ acid removal required. The preferred connection size can then be matched to the system requirements to establish which model is best. Alternatively, the user may select a connection size first and then check that the application is within the refrigeration capacity limits of the selected model.
Note: The user may decide to oversize the filter drier based on experience or if the system contamination level is likely to be higher than normal.

Installation – Main issues

Install the filter drier upstream of the liquid line controls to give maximum protection. Locate upstream of moisture indicator so that drying effectiveness can be measured.
Ensure dimension 'F' is complied with in order to remove cores. It is recommended to install the unit horizontally for easier core replacement.

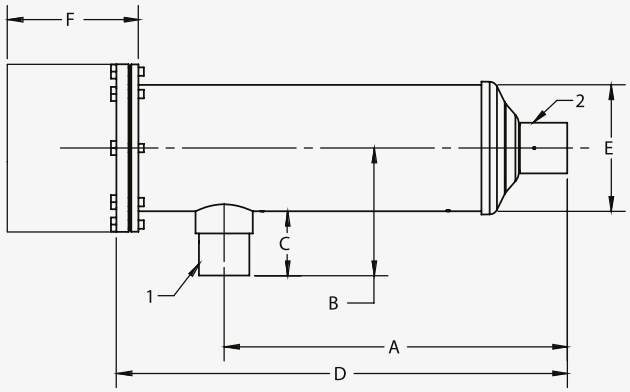
Installation Instructions

Click Here or scan the QR Code to download the full product installation and application instructions from our website.

Replaceable Core Filter Drier Shells

Model Details			Core Data		Dimensions (mm)						MWP (barg)	Weight (kg)	CE/UKCA Cat
Part No	Conn. Size (inch)	Cores	Surface Area (cm^2)	Volume (cm^3)	A	B	C	D	ØE	F*			
SRCT-485	5/8	1	683	716	158	100	29	276	141	172	130	17.9	Cat II
SRCT-965	5/8	2	1366	1432	304	100	29	419	141	313	130	18.6	Cat II
SRCT-487	7/8	1	683	716	163	105	34	281	141	172	130	17.9	Cat II
SRCT-967	7/8	2	1366	1432	306	105	34	424	141	313	130	18.6	Cat II
SRCT-489	1 1/8	1	683	716	164	105	35	281	141	172	130	17.9	Cat II
SRCT-969	1 1/1	2	1366	1432	307	105	35	424	141	313	130	18.6	Cat II
SRCH-4813	1 5/8	1	683	716	159	98	41	263	114	172	80	8.1	Cat I
SRCH-9613	1 5/8	2	1366	1432	299	98	41	403	114	312	80	10.0	Cat II
SRCH-4817	2 1/8	1	683	716	160	98	41	264	114	172	80	8.2	Cat I
SRCH-9617	2 1/8	2	1366	1432	298	98	41	403	114	312	80	10.1	Cat II

*'F' is the minimum space required to remove the filter drier cores from the shell.



1. INLET
2. OUTLET

S-848-CM

Model Details			Drying Capacity (kg of refrigerant)						Liquid Capacity (kW)					
Part No	Conn. Size (inch)	Cores	R134a		R404A/R507		R407C/R410A		R134a	R404A	R507	R407C	R410A	CO_2
			24 °C	52 °C	24 °C	52 °C	24 °C	52 °C						
SRCT-485	5/8	1	83.5	79.5	123	76	84	72	78.2	57.6	55.8	81.9	85.3	125.9
SRCT-965	5/8	2	167	159	246	152	168	144	78.2	57.6	55.8	81.9	85.3	125.9
SRCT-487	7/8	1	83.5	79.5	123	76	84	72	124.2	89.7	86.9	128.6	132.7	197.0
SRCT-967	7/8	2	167	159	246	152	168	144	116.0	83.1	80.5	119.5	122.8	184.1
SRCT-489	1 1/8	1	83.5	79.5	123	76	84	72	178.8	128.6	124.5	184.7	190.0	283.7
SRCT-969	1 1/8	2	167	159	246	152	168	144	178.1	128.2	124.0	183.9	189.1	282.7
SRCH-4813	1 5/8	1	83.5	79.5	123	76	84	72	273.7	199.8	193.6	285.4	295.7	434.3
SRCH-9613	1 5/8	2	167	159	246	152	168	144	298.7	216.7	210.0	310.2	320.5	474.1
SRCH-4817	2 1/8	1	83.5	79.5	123	76	84	72	399.6	298.2	289.2	422.6	442.2	634.1
SRCH-9617	2 1/8	2	167	159	246	152	168	144	419.9	307.2	297.7	438.4	454.6	666.4

S-848-C

Model Details			Drying Capacity (kg of refrigerant)								Liquid Capacity (kW)					
Part No	Conn. Size (inch)	Cores	R22		R134a		R404A/R507		R407C/R410A		R134a	R404A	R507	R22 / R407C	R410A	CO_2
			24˚C	52˚C	24˚C	52˚C	24˚C	52˚C	24˚C	52˚C						
SRCT-485	5/8	1	68	63	73	69.5	117	63	71.5	61	83.7	57.6	55.8	81.9	85.3	127.6
SRCT-965	5/8	2	136	126	146	139	234	126	143	122	83.7	57.6	55.8	81.9	85.3	127.6
SRCT-487	7/8	1	68	63	73	69.5	117	63	71.5	61	124.2	89.7	86.9	128.6	132.7	197.0
SRCT-967	7/8	2	136	126	146	139	234	126	143	122	116.0	83.1	80.5	119.5	122.8	184.1
SRCT-489	1 1/8	1	68	63	73	69.5	117	63	71.5	61	178.8	128.6	124.5	184.7	190.0	283.7
SRCT-969	1 1/8	2	136	126	146	139	234	126	143	122	178.1	128.2	124.0	183.9	189.1	282.7
SRCH-4813	1 5/8	1	68	63	73	69.5	117	63	71.5	61	273.7	199.8	193.6	285.4	295.7	434.3
SRCH-9613	1 5/8	2	136	126	146	139	234	126	143	122	298.7	216.7	210.0	310.2	320.5	474.1
SRCH-4817	2 1/8	1	68	63	73	69.5	117	63	71.5	61	399.6	298.2	289.2	422.6	442.2	634.1
SRCH-9617	2 1/8	2	136	126	146	139	234	126	143	122	419.9	307.2	297.7	438.4	454.6	666.4

Drying Capacity is based on the following moisture contents before and after drying:

R22: From 1050 ppm W to 60 ppm W according to ARI 710-86
R134a: From 1050 ppm W to 75 ppm W
R404A, R407C, R507: From 1020 ppm W to 30 ppm W
R410A: From 1050 ppm W to 60 ppm W

Liquid Capacity is based on:
Evaporating temperature of t_e = -15˚C (-30˚C for CO_2)
Condensing temperature of t_c = +30˚C (-5˚C for CO_2)
Pressure drop across filter drier of Δp = 0.07 bar

S-848-CC

Cores	Drying Capacity (kg of refrigerant) Evaporating Temperature t_e (˚C)											
	-40	-20	4.4	-30	-20	4.4	-40	-20	4.4	-40	-20	4.4
	R22			R134a			R404A/R507			R407C/R410A		
1	29	20	13	46	39	27	47	31	19	43	35	25
2	58	40	26	92	78	54	94	62	38	86	70	50
3	87	60	39	138	117	81	141	93	57	129	105	75
4	116	80	52	184	156	108	188	124	76	172	140	100

Drying Capacity is expressed during drying in:

R22: EDP = 10 ppm W, corresponding to a dew point temperature of -50˚C
R134a: EDP = 50 ppm W, corresponding to a dew point temperature of -37˚C
R404A: EDP = 10 ppm W, corresponding to a dew point temperature of -40˚C
R407C: EDP = 10 ppm W, corresponding to a dew point temperature of -40˚C

Model	Refrigerant	Acid adsorb capacity (drops)	Acid capacity (grams)
S-848-C (80%/20% MS/AA)	R134a	196	10.24
	R410A	232	12.12
S-848-CC (47%/48%/5% MS/AA/C)	R134a	465	24.30
	R410A	523	27.33
Test Condition: T = 25°C, TAN = 0.3mgKOH/g of oil, Humidity = 2%			

Recommended Plant Capacity in suction line (kW) S-848-CC (Burn Out) - (Imperial)

Model Details			Evaporating Temperature t_e˚C											
Part No	Conn. Size (inch)	Cores	-40	-20	4.4	-30	-20	4.4	-40	-20	4.4	-40	-20	4.4
			R22			R134a			R404A/R507			R407C/R410A		
SRCT-485	5/8	1	3.0	8.6	20.4	2.9	5.2	12.6	2.3	6.9	17.0	3.0	8.6	20.4
SRCT-965	5/8	2	5.6	15.7	37.0	5.4	9.6	22.9	4.4	12.5	30.5	5.6	15.7	37.0
SRCT-487	7/8	1	5.6	15.6	36.7	5.4	9.6	22.7	4.4	12.5	30.3	5.6	15.6	36.7
SRCT-967	7/8	2	5.6	15.7	37.0	5.4	9.6	22.9	4.4	12.5	30.5	5.6	15.7	37.0
SRCT-489	1 1/8	1	7.6	21.0	49.2	7.3	12.9	30.6	5.8	16.7	40.5	7.6	21.0	49.2
SRCT-969	1 1/8	2	8.2	23.1	54.8	7.9	14.1	33.7	6.4	18.5	45.2	8.2	23.1	54.8
SRCH-4813	1 5/8	1	9.0	24.6	57.0	8.6	15.1	35.6	6.9	19.6	46.7	9.0	24.6	57.0
SRCH-9613	1 5/8	2	12.7	35.9	85.7	12.2	21.9	52.7	9.9	28.8	70.8	12.7	35.9	85.7
SRCH-4817	2 1/8	1	9.2	25.1	58.2	8.8	15.5	36.3	7.1	20.1	47.7	9.2	25.1	58.2
SRCH-9617	2 1/8	2	12.4	35.1	83.8	12.0	21.4	51.5	9.7	28.2	69.3	12.4	35.1	83.8

Recommended plant capacity is based on:

Evaporating temperature of t_e = +4.4˚C
Condensing temperature of t_c = +32.2˚C

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